Ninth Annual Undergraduate Research Symposium

Arts Showcase
Friday, March 24th
4:30 PM – 7:30 PM
Burns Fine Arts Center

Symposium
Saturday, March 25th
8:30 AM – 4:30 PM
University Hall

For more information, please visit our website:
www.lmu.edu/symposium
Cover Design by:

Mikaela Ventura, Studio Arts-Graphic Design '18

Ralph Eurich Patacsil, Studio Arts-Graphic Design '18

Saeri Dobson, Faculty Mentor, Studio Arts

Nery Lemus, Faculty Mentor, Studio Arts
Dear LMU Students, Faculty, Staff, and Guests,

Welcome to the Ninth Annual Undergraduate Research Symposium! This event has become a campus-wide tradition celebrating the very best in faculty-mentored undergraduate research and creative activity at LMU. It reflects Loyola Marymount’s unwavering commitment to academic excellence both inside and outside of the classroom.

This year we are pleased to feature the work of over 360 students from all five undergraduate colleges and schools. The diverse sessions will be intellectually stimulating for all. Among the presentations on Saturday are 160 posters, 88 papers in 23 oral sessions, and 2 panels. In the morning and afternoon sessions, students wrestle with complex issues in Los Angeles including the future of urban identity, diversity in K-12 education and barriers faced by homeless youth. They explore issues of domestic and foreign policy, views about literature both contemporary and classic, theological and philosophical perspectives on issues of the past and present, correlations between socioeconomic backgrounds and future expectations and analyses of the dietary needs of sea turtles. Among the sessions are discussions ranging from black holes to autonomous drones to sound in film to uses of social media. The three poster sessions offer topics ranging from all manner of the sciences and engineering, business, the social sciences, and the arts.

On Friday, we devote an evening to the arts (music, dance, theatre and the visual arts), taking place in the arts spaces of the Burns Fine Arts Center. The formal presentations, as well as the art-making in the studios, are grounded in opportunities for students to explore the human experience through work that is intellectual, creative, and critical.

The Undergraduate Research Symposium provides an excellent opportunity for students, faculty, staff, parents, and members of the LMU community to actively engage with students who have been immersed in thought-provoking questions and challenging global issues. In an increasingly complex world, it is important for students to take learning to a deeper and more integrated level. The work showcased today is evidence of this learning process.

Congratulations to this year’s presenters and to all the students and faculty participating in the 2017 LMU Undergraduate Research Symposium!

Sincerely,

Ricardo Arturo Machón, Ph.D.
Special Assistant to the Provost, Undergraduate Education

Elizabeth Wimberly-Young, M.F.A.
Associate Director, Undergraduate Education & Creative Experience
## Table of Contents

**Friday, March 24th | Arts Showcase**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts Showcase Schedule</td>
<td>6</td>
</tr>
</tbody>
</table>

**Saturday, March 25th | Research Symposium**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schedule of Events</td>
<td>11</td>
</tr>
<tr>
<td>Oral Presentations</td>
<td>13</td>
</tr>
<tr>
<td>Poster Sessions</td>
<td>26</td>
</tr>
<tr>
<td>Abstracts</td>
<td>46</td>
</tr>
<tr>
<td>Index of Student Presenters</td>
<td>149</td>
</tr>
<tr>
<td>Acknowledgments</td>
<td>157</td>
</tr>
</tbody>
</table>
Friday, March 24, 2017
♀ Undergraduate Research Symposium: Arts Showcase ♂

PROGRAM BY VENUE and TIME

BUFFET RECEIPTION 4:30pm-7:00pm (please note end time of Buffet)

PRESENTATIONS BY VENUE and TIME

THOMAS P. KELLY STUDENT ART GALLERY: Graphic Design Presentations

Session One
4:40-4:50  Invisible Ceilings: Exposing the everyday experiences that hold women back
Frances Karrer (Studio Arts-Graphic Design)
Saeri Cho Dobson & Terry Dobson (Studio Arts-Graphic Design), Faculty Mentors

4:50-5:00  Perfect Poison: America’s Sugar Addiction
Madeline Mary (Studio Arts-Graphic Design)
Saeri Cho Dobson & Terry Dobson (Studio Arts-Graphic Design), Faculty Mentors

5:00-5:10  Dismantling the stigma surrounding the rhetoric of female sexuality
Sara Jensen (Studio Arts-Graphic Design)
Saeri Cho Dobson & Terry Dobson (Studio Arts-Graphic Design), Faculty Mentors

5:10-5:20  For Profit: Incarceration in America. Sponsored by YOU!
Benjamin Katz (Studio Arts-Graphic Design)
Saeri Cho Dobson & Terry Dobson (Studio Arts-Graphic Design), Faculty Mentors

5:20-5:30  Labeled: Erasing the Stigma Surrounding Mental Illness
Megan Wilton (Studio Arts-Graphic Design; Art History & Psychology Minors)
Saeri Cho Dobson & Terry Dobson (Studio Arts-Graphic Design), Faculty Mentors

5:30-5:40  The Elephant in the Womb: A Visual Critique About Planned Parenthood
Heather Pilkington (Studio Arts-Graphic Design)
Saeri Cho Dobson & Terry Dobson (Studio Arts-Graphic Design), Faculty Mentors

ENTR’ACTE

5:40-6:15  View ongoing exhibits in the Thomas P. Kelly Student Art Gallery. Visit the Buffet (Dunning Courtyard).
THOMAS P. KELLY STUDENT ART GALLERY: Graphic Design and Dance Presentations

Session Two
6:15-6:25  [I'm]migrate: The Transformed Lives of Undocumented Students
Michelle Castro Bastida (Studio Arts-Individualized Studies & Art History Minor);
Saeri Cho Dobson & Terry Dobson (Studio Arts-Graphic Design), Faculty Mentors

6:25-6:35  Dividing Los Angeles: A Photographic Exploration of Urban Development
Catherine Tara Edwards (Studio Arts-Photography; Elementary Education Minor)
Diane Meyer (Photography), Faculty Mentor

6:35-6:45  Plant Solutions: The Growing Environmental Impact Caused by the Meat Industry
Julia Biber (Studio Arts-Graphic Design)
Saeri Cho Dobson & Terry Dobson (Studio Arts-Graphic Design), Faculty Mentors

6:45-6:55  Healthy Eating: How health becomes an unhealthy eating disorder
Rachel Rittwage (Studio Arts-Graphic Design)
Saeri Cho Dobson & Terry Dobson (Studio Arts-Graphic Design), Faculty Mentors

6:55-7:05  Consumer Traffick: Revealing the Everyday Products Made by Modern-Day Slaves
Catherine Lozano (Studio Arts-Graphic Design; Art History Minor)
Saeri Cho Dobson & Terry Dobson (Studio Arts-Graphic Design), Faculty Mentors

7:05-7:15  Don’t Sugarcoat Diabetes
Eliana Porcelli Jorgensen (Studio Arts-Graphic Design)
Saeri Cho Dobson & Terry Dobson (Studio Arts-Graphic Design), Faculty Mentors

Please go to next page for Music, Spoken Word, Dance, and Theatre Arts Presentations
MURPHY RECITAL HALL – Music, Spoken Word, and Dance Presentations

4:30-4:45  Shoulder to Shoulder: An Investigation of Dance Relationships
           Eva Crystal (Dance) and Halie Donabedian (Dance)
           Teresa Heiland (Dance), Faculty Mentor

4:50-5:05  Fantasy in A: Composing a work for Viola and Piano Inspired by French Impressionist, Claude Debussy
           Daniel Schniepp (Music-Instrumental Studies & Instrumental Theory/Composition)
           Paul Humphreys (Music), Faculty Mentor

5:10-5:25  Of(f) Color and Other Poems
           Mekleit Dix (English and Women’s and Gender Studies Minor)
           Gail Wronsky (English), Faculty Mentor

5:25-5:40  M: An Identity Crisis
           Ian Salazar (Screenwriting; Theatre Arts Minor)
           Judith M. Scalin (Theatre Arts & Dance) and Arnab Banerji (Theatre Arts), Faculty Mentors

5:40-5:55  13
           Justice Domingo (Dance & Communication Studies) and Brandon Mathis
           (Political Science & Dance)
           Kristen Smiarowski (Dance) and Rosalynde LeBlanc Loo (Dance), Faculty Mentors

ENTR’ACTE

5:55-6:15  View ongoing exhibits in the Thomas P. Kelly Student Art Gallery. Visit the Buffet (Dunning Courtyard).

BURNS 211 – ART HISTORY CLASSROOM: Theatre Arts Presentations

Session One
4:45-5:00  Directing “Date and a Fifth”
           Jordan Block (Theatre Arts; Business Administration Minor)

5:00-5:15  Colored Characters: A Scene from “Fati’s Last Dance”
           Tiffani Williams (Theatre Arts; Women’s and Gender Studies and Journalism Minors)
5:15-5:30  “Taming” Politics, Then and Now
          Kayla Kaufman (Film and Television Production & Theatre Arts)

5:30-5:45  scene from “Tartuffe”
          Louie Enriquez (English & Theatre Arts)

<table>
<thead>
<tr>
<th>ENTR’ACTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>5:45-6:15</td>
</tr>
</tbody>
</table>

Session Two

6:15-6:30  Nairobi, An Ensemble Piece: Exploring the AIDS crisis of the 80's and how the disease affected diverse communities within our society
          Tabitha Mitchell (Theatre Arts)

6:30-6:45  Performance Breakdown: “It Had to Be You”
          Natasha Behnam (Communication Studies & Film and Television Production; Theatre Arts Minor)

6:45-7:00  Bittersweet Cigarettes
          Ekaterina Siciliano (Theatre Arts)

7:00-7:15  Production Stage Managing the New Works Festival ’17
          Janine Leano (Theatre Arts)
Saturday, March 25, 2017
Schedule of Events

8:30am – 12:30pm  REGISTRATION
                    University Hall – 1st Floor

8:30am – 9:50am    ORAL SESSION I
                    1st Floor

9:30am – 10:50am   ORAL SESSION II
                    1st and 3rd Floors

10:30am – 12:00pm  POSTER SESSION I
                    2nd Floor Hallways

11:00am – 12:30pm  ORAL SESSION III
                    1st Floor and 3rd Floors

12:00pm – 1:30pm   ORAL SESSION IV
                    1st Floor and 3rd Floors

1:30pm – 3:00pm    POSTER SESSION II
                    Atrium and 1st Floor Hallway

1:30pm – 3:00pm    ORAL SESSION V
                    1st Floor and 3rd Floors

3:00pm – 4:30pm    POSTER SESSION III
                    Atrium and 1st Floor Hallway

3:00pm – 4:30pm    ORAL SESSION VI
                    3rd Floor

Refreshments served throughout the day
### ORAL SESSION I

8:30am-9:50am

<table>
<thead>
<tr>
<th>Time</th>
<th>Room</th>
<th>Student Presenter</th>
<th>Project Title</th>
<th>Faculty Mentor</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30-8:50</td>
<td>1402</td>
<td>Luciano Manfredi</td>
<td>Black Holes, Image Contouring &amp; Plasma</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Console</td>
<td>Horizont Wavefunction of Generalized Uncertainty Principle</td>
<td>Jonas Mureika</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physics</td>
<td>Black Holes</td>
<td>Physics</td>
</tr>
<tr>
<td>8:50-9:10</td>
<td></td>
<td>Brad Stiehl</td>
<td>Necessary Correlation and Dosimetric Quality Evaluation of Contours Produced by Automatic Atlas-Based Segmentation</td>
<td>David Berube</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physics</td>
<td></td>
<td>Physics</td>
</tr>
<tr>
<td>9:10-9:30</td>
<td></td>
<td>Joe Arra</td>
<td>Measuring Long Term Variation of Magnetosphere Plasma</td>
<td>David Berube</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physics</td>
<td>Mass Density</td>
<td>Physics</td>
</tr>
</tbody>
</table>

### Studies of Race & Diversity in America: Motivation, Agency, Language & Healthcare

Moderated by Prof. Ricardo Machón, Psychology

<table>
<thead>
<tr>
<th>Time</th>
<th>Room</th>
<th>Student Presenter</th>
<th>Project Title</th>
<th>Faculty Mentor</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30-8:50</td>
<td>1403</td>
<td>Emma Hardy</td>
<td>Predictors of White Individuals' Commitment to Racial Justice Work</td>
<td>Adam Fingerhut</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Psychology</td>
<td></td>
<td>Psychology</td>
</tr>
<tr>
<td>8:50-9:10</td>
<td></td>
<td>Carla Ventura</td>
<td>The Cordoba Naming Test: Preliminary Findings in the USA</td>
<td>Jennifer Abe</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Psychology</td>
<td></td>
<td>Psychology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Alice Gavarrete</td>
<td></td>
<td>David Hardy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Olvera</td>
<td></td>
<td>Psychology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Janelle Crowther</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Psychology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:10-9:30</td>
<td></td>
<td>Nicole Muldoon</td>
<td>The Relationship Between College Students' Socioeconomic Background and Future Expectations</td>
<td>Ricardo Machón</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Psychology</td>
<td></td>
<td>Psychology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Samantha Leung</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Psychology</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Melissa Gavilanes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Psychology</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Skye Shodahl</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Psychology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:30-9:50</td>
<td></td>
<td>Adrian Narayan</td>
<td>The Awareness of California's Government Health Insurance Marketplace</td>
<td>Janie Steekenrider</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Political Science</td>
<td></td>
<td>Political Science</td>
</tr>
</tbody>
</table>
## Influence and the Media

*Moderated by Prof. Christopher Finlay, Communication Studies*

<table>
<thead>
<tr>
<th>Time</th>
<th>Session ID</th>
<th>Speaker</th>
<th>Title</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30-8:50</td>
<td>1222</td>
<td>Dominick Divine III Psychology</td>
<td>Authenticity or Threat?: YG's &quot;Meet the Flockers&quot; and Cultivation Theory</td>
<td>Christopher Finlay Communication Studies</td>
</tr>
<tr>
<td>8:50-9:10</td>
<td></td>
<td>Caitlin Pigott Political Science</td>
<td>You Are What You Read: How Political News Media Platforms Promulgate Engagement</td>
<td>Richard Fox Political Science</td>
</tr>
<tr>
<td>9:10-9:30</td>
<td></td>
<td>Arriona Randazzo History</td>
<td>Dissent and Disloyalty: Media, Music and Protest during the Vietnam War</td>
<td>Cara Anzilotti History</td>
</tr>
<tr>
<td>9:30-9:50</td>
<td></td>
<td>Kaya McMullen Political Science</td>
<td>Local Government Agency Use of Social Media and Public Trust</td>
<td>Michael Genovese Political Science</td>
</tr>
</tbody>
</table>

## Sports & Movement: Drones, Commodification, Parkour & Flexibility

*Moderated by Prof. James Bunker, Communication Studies*

<table>
<thead>
<tr>
<th>Time</th>
<th>Session ID</th>
<th>Speaker</th>
<th>Title</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30-8:50</td>
<td>1218</td>
<td>Huayang Zhang Computer Engineering; Ethan Fujioka Electrical Engineering; Keola Ramierz Computer Engineering; Electrical Engineering</td>
<td>Drone Autonomous Basketball</td>
<td>Mohammadhossein Asghari Electrical Engineering and Computer Science</td>
</tr>
<tr>
<td>8:50-9:10</td>
<td></td>
<td>Ricky Sherer Communication Studies</td>
<td>No Pay for Play: The NCAA's Commodification of Student-Athlete</td>
<td>James Bunker Communication Studies</td>
</tr>
<tr>
<td>9:10-9:30</td>
<td></td>
<td>Rhett Spongberg Physics</td>
<td>The Aesthetic and Historical Integration of Parkour and Post Modern Dance</td>
<td>Teresa Heiland Dance</td>
</tr>
<tr>
<td>9:30-9:50</td>
<td></td>
<td>Makda Medhanie Health and Human Sciences; Marina Marmolejo Health and Human Sciences</td>
<td>Comparing Flexibility Rates Between Homeless Young Adults and University Students</td>
<td>Heather Tarleton Health and Human Sciences</td>
</tr>
</tbody>
</table>
### Ascot Hills Park: A Los Angeles Ecosystem

*Moderated by Prof. Demian Willette, Biology*

<table>
<thead>
<tr>
<th>Time</th>
<th>Room</th>
<th>Student Presenter</th>
<th>Project Title</th>
<th>Faculty Mentor</th>
</tr>
</thead>
</table>
| 8:30-8:50 | 1226 | **Kesterlyn Wilson**  
*Biology* | Current and Future Value of Ecosystem Services Provided by Los Angeles’ Ascot Hills Park | Demian Willette  
*Biology* |
| 8:50-9:10 |      | **Sarah Shapiro**  
*Biology* | Assessing Baseline Avian Biodiversity and Threatened Species in Ascot Hills Park | Demian Willette  
*Biology* |
| 9:10-9:30 |      | **Jacquelyn Galvez**  
*Biology* | Assessing baseline native and invasive plant biodiversity of Ascot Hills Park | Demian Willette  
*Biology* |

### ORAL SESSION II

**9:30am-10:50am**

#### Branding, Marketplace & Wealth

*Moderated by Prof. Matthew Stefl, Marketing and Business Law*

<table>
<thead>
<tr>
<th>Time</th>
<th>Room</th>
<th>Student Presenter</th>
<th>Project Title</th>
<th>Faculty Mentor</th>
</tr>
</thead>
</table>
| 9:30-9:50 | 1404 | **Dylan Ramos**  
*History* | How Should Wealth Factor into America's Constitutional Republic?  
*Core Curriculum* | Joshua Kulmac Butler  
*Core Curriculum* |
| 9:50-10:10 |      | **Brittany Beery**  
*Finance* | The Chinese Film Industry: Opportunity or Threat?  
*Finance* | David Offenberg  
*Finance* |
| 10:10-10:30 |      | **Ralph Eurich**  
*Patacsl*  
*Studio Arts: Graphic Design* | Creating the Look: 9th Undergraduate Research Symposium  
*Art and Art History* | Saeri Dobson  
*Art and Art History* |
## Art & Experience: Narratives, Development, Architecture

*Moderated by Prof. Melody Rodari, Art and Art History*

<table>
<thead>
<tr>
<th>Time</th>
<th>Room</th>
<th>Speaker(s)</th>
<th>Topic</th>
<th>Faculty/Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30</td>
<td>Ahmanson</td>
<td>Diana Vedova (Art History)</td>
<td>(Re) Imagining Each Other</td>
<td>Melody Rodari</td>
</tr>
<tr>
<td></td>
<td>Auditorium</td>
<td>Elizabeth Burton (Art History)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yadira Enciso (Art History)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Julia McArthur (Art History)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kaitlyn Morrisey-Braden (Art History)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Alexandra Rosas-Maxemin (Art History)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:50</td>
<td></td>
<td>Mitchell Braun (Biology)</td>
<td>LGBT Art In Context: Robert Rauschenberg and Cy Twombly's Romantic Relationship and Art Development</td>
<td>Damon Willick (Art and Art History)</td>
</tr>
<tr>
<td>10:10</td>
<td></td>
<td>Dominic Budetti (History; Political Science)</td>
<td>Constructing the Modern: The Role and Development of Modern Architecture and Bauhaus Thought in Weimar Germany</td>
<td>Elizabeth Drummond (History)</td>
</tr>
</tbody>
</table>

## Police in America: Community Profiling, Training & Gender

*Moderated by Prof. Joshua Kulmac Butler, Core Curriculum*

<table>
<thead>
<tr>
<th>Time</th>
<th>Room</th>
<th>Speaker(s)</th>
<th>Topic</th>
<th>Faculty/Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30</td>
<td>1858</td>
<td>Tealanie Baldwin (Political Science; African American Studies)</td>
<td>The Constitutionality of Race-based Law Enforcement Practices</td>
<td>Evan Gerstmann (Political Science)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Gene Park (Political Science)</td>
</tr>
<tr>
<td>9:50</td>
<td></td>
<td>Alec Harrison (Studio Arts: Multimedia)</td>
<td>Police Training in America</td>
<td>Joshua Kulmac Butler (Core Curriculum)</td>
</tr>
</tbody>
</table>

## The Urban Experience & Los Angeles

*Moderated by Prof. Fernando Guerra, Political Science; Chicana/o Studies*

<table>
<thead>
<tr>
<th>Time</th>
<th>Room</th>
<th>Speaker(s)</th>
<th>Topic</th>
<th>Faculty/Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30</td>
<td>3222</td>
<td>Brian Gilmartin (Liberal Arts Undeclared)</td>
<td>Post Utopia, Post Dystopia: Blade Runner's Los Angeles and the Future of Urban Identity</td>
<td>Christopher Finlay (Communication Studies)</td>
</tr>
</tbody>
</table>
9:50-10:10  Sofia Esteves  
Biochemistry  
Nicholas Pilaud  
Environmental Science
High Level of Seafood Fraud Persists Year-to-Year in Los Angeles Sushi Restaurants  
Demian Willette  
Biology

10:10-10:30  Jorge Gamboa  
Urban Studies; Sociology
LA STEW-MAP: An Assessment of Environmental Governance Networks in Los Angeles  
Michele Romolini  
Center for Urban Resilience  
Eric Strauss  
Biology; Center for Urban Resilience

10:30-10:50  Brenda Quintanilla  
Political Science; Chicana/o Studies  
Elizabeth Guhl  
Political Science
Top 100: The Shift in Political Representation  
Fernando Guerra  
Political Science; Chicana/o Studies

POSTER SESSION I
10:30am-12:00pm
2nd Floor Hallways

ORAL SESSION III
11:00am-12:30pm

Digital Applications

Moderated by Prof. John David Dionisio, Electrical Engineering and Computer Science

11:00-11:20 1403  Flanders Lorton  
Computer Science
Creating a Better Digital Logic Simulation for Teachers and Students  
John Dionisio  
Electrical Engineering and Computer Science  
Barbara Marino  
Electrical Engineering and Computer Science

11:20-11:40  Nicole Anguiano  
Computer Science  
Anindita Varshneya  
Biology
Design and Layout Improvement to GRNsight v2.0: A Web app and Service for Visualizing Small- to Medium-scale Gene  
Kam Dahlquist  
Biology  
John David Dionisio  
Electrical Engineering and Computer Science
**Women in History: Weimar, Prejudice & Religious Interpretations**

*Moderated by Prof. Tracy Tiemeier, Theological Studies*

11:00-11:20  1404  **Abigail Marie Goad**
*History*

Abortion: The Precursor to Equality

Elizabeth Drummond
*History*

11:20-11:40  1404  **Alex Witter**
*Communication Studies*

Sexism in Greek Theater, a Primary Focus on Greek Tragedy

Arnab Banerji
*Theatre Arts and Dance*

11:40-12:00  1404  **Melissa Cedillo**
*Theology*

Shameless Women: Reclaiming Mary and Kali

Tracy Tiemeier
*Theological Studies*

**Of War & Treason**

*Moderated by Prof. Najwa Al-Qattan, History*

11:00-11:20  3218  **Suzanne Swanson**
*English*

This Treatyse Concernynge the Fruitful Sayings of David the Kynge

Stephen Shepherd
*English*

11:20-11:40  3218  **Justin Pasquale**
*Accounting*

Dulce et Decorum Est - The evolution of Soldiers on the Western Front during World War One

Najwa Al-Qattan
*History*

11:40-12:00  3218  **Elliott Sauerwald**
*History*

The Greatest Generation's Little Brothers: American Masculinity and the Korean War

Cara Anzilotti
*History*

12:00-12:20  3218  **Gisele Bitar**
*Political Science*

Boko Haram & The Rise of Female Suicide Bombers in Nigeria

Kerstin Fisk
*Political Science*

**ORAL SESSION IV**

12:00pm-1:30pm

<table>
<thead>
<tr>
<th>Time</th>
<th>Room</th>
<th>Student Presenter</th>
<th>Project Title</th>
<th>Faculty Mentor</th>
</tr>
</thead>
</table>
| 12:00    | 1402 | **Facundo Gonzalez-Icardi**        | The Christianization of Rome                                      | Marc Reeves
|          |      | *Theology; Humanities*            |                                                                   | *Theological Studies*           |
|          |      | **Kirstin Noreen**                |                                                                   | *Art and Art History*           |

**Panel – Christianity and Art in Rome**

*Moderated by Bishop Gordon Bennett, SJ, Catholic Studies*

12:00-12:20  1402  **Facundo Gonzalez-Icardi**
*Theology; Humanities*

The Christianization of Rome

Marc Reeves
*Theological Studies*

Kirstin Noreen
*Art and Art History*
<table>
<thead>
<tr>
<th>Time</th>
<th>Name</th>
<th>Department</th>
<th>Title</th>
<th>Moderator</th>
<th>Chair</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:20-12:40</td>
<td>Mariana Alifa</td>
<td>Civil Engineering</td>
<td>The Papacy and the Cult of Relics in Rome: From the Early Christian Period Through the Early Middle Ages</td>
<td>Marc Reeves</td>
<td>Kirstin Noreen</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Catholic Studies</td>
<td>Art and Art History</td>
</tr>
<tr>
<td>12:40-1:00</td>
<td>Troy Kassien</td>
<td>Theology; Philosophy</td>
<td>Santa Maria Maggiore: Mary, the Theotokos, and the Council of Ephesus</td>
<td>Marc Reeves</td>
<td>Theological Studies</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Kirstin Noreen</td>
<td>Art and Art History</td>
</tr>
</tbody>
</table>

**Panel – Voices of Justice: Service, Action and Engaged Learning Experiences**

*Moderated by Sr. MaryAnne Huepper, Sr. Judith Royer, Center for Reconciliation and Justice & Marina Marmolejo, Health and Human Sciences*

<table>
<thead>
<tr>
<th>Time</th>
<th>Name</th>
<th>Department</th>
<th>Title</th>
<th>Moderator</th>
<th>Chair</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:00-12:10</td>
<td>Ahmanson</td>
<td>Accounting</td>
<td>The Power of the Voice</td>
<td>Judith Royer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ashley Lillegraven</td>
<td></td>
<td></td>
<td>Center for Reconciliation and Justice; Theatre</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MaryAnne Huepper</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Center for Reconciliation and Justice</td>
<td></td>
</tr>
<tr>
<td>12:10-12:20</td>
<td>Oscar Orozco</td>
<td>Accounting; Marketing</td>
<td>The Francisco Homes the Store of Ples Cross</td>
<td>Judith Royer</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Center for Reconciliation and Justice; Theatre</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MaryAnne Huepper</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Center for Reconciliation and Justice</td>
<td></td>
</tr>
<tr>
<td>12:20-12:30</td>
<td>Chase Speicher</td>
<td>English</td>
<td>DR/Haiti Social Justice Awareness</td>
<td>Patrick Viscontii</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jenna Peterson</td>
<td>Communication Studies</td>
<td></td>
<td>Campus Ministry</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MaryAnne Huepper</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Center for Reconciliation and Justice</td>
<td></td>
</tr>
<tr>
<td>12:30-12:40</td>
<td>Christopher Franco</td>
<td>Computer Science</td>
<td>The Role of Technology in Relational Welfare for Youth Experiencing Homelessness</td>
<td>Robert Johnson</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Electrical Engineering and Computer Science</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MaryAnne Huepper</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Center for Reconciliation and Justice</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>Title</td>
<td>Speaker(s)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------------------------------------------------</td>
<td>------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:40-12:50</td>
<td>Health and Ability to Thrive: Barriers Faced by Homeless Young Adults in Los Angeles</td>
<td>Makda Medhanie, Health and Human Sciences</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marina Marmolejo, Health and Human Sciences</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Heather Tarleton, Health and Human Sciences</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>MaryAnne Huepper, Center for Reconciliation &amp; Justice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:50-1:10</td>
<td>Questions &amp; Answers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Education &amp; Engagement</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Moderated by Elizabeth Wimberly-Young, Office of Undergraduate Research &amp; Creative Experience</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:00-12:20</td>
<td>Redefining and Reconceptualizing Parental and Family Engagement in a Low-income Elementary School</td>
<td>Kendra Glenn, Liberal Studies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bernadette Musetti, Liberal Studies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:20-12:40</td>
<td>Achieving Diversity in the Los Angeles Unified School District</td>
<td>Candace Yamanishi, Political Science</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lance Blakesley, Political Science</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gene Park, Political Science</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:40-1:00</td>
<td>Children's Literature and Young Adult Novels: Reflections on the Complexity of Representation of the Immigration</td>
<td>Mariajose Gomez, Liberal Studies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aimee Ross, English</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Cultural Explorations: Ancient Greece to Modern Japan</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Moderated by Prof. Matthew Dillon, Classics and Archaeology</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:00-12:20</td>
<td>Distant Worlds, Together: Traditional Japanese Religious Practices and Customs and their Relation to Contemporary Japanese Lifestyle and Culture</td>
<td>Ian Dizon, Film and Television Production</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Charlotte D'Evelyn, Asian and Pacific Studies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>James Fredericks, Theological Studies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:20-12:40</td>
<td>Cultural Exchange in Ancient Greece and India</td>
<td>Elizabeth McLaughlin, Classics and Archaeology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Matthew Dillon, Classics and Archaeology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:40-1:00</td>
<td>Strangers in Strange Lands: the Political Landscapes that Lead to the Rises of Reform and Hasidic Judaism</td>
<td>Alex Weisz, Political Science</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Holli Levitsky, English; Jewish Studies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>Speaker</td>
<td>Title</td>
<td>Location</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>----------------------------------</td>
<td>-------------------------------------------------------------</td>
<td>---------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:00-1:20</td>
<td>Shannon Hayes</td>
<td>The Life and Legacy of Gertrude Bell</td>
<td>Caroline Sauvage</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Modern Languages; Classics and</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Archaeology</td>
<td></td>
<td>Elizabeth McLaughlin</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>McLaughlin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Classics and Archaeology</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:00-12:20</td>
<td>Timothy Vassallo</td>
<td>Illuminating the Unseen: How Ingmar Bergman Changed Cinema</td>
<td>Richard Hadley</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Film Production</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:20-12:40</td>
<td>Klaus Shipman</td>
<td>The Sound of Existence</td>
<td>Albert Gasser</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Recording Arts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:40-1:00</td>
<td>Karly Garster</td>
<td>The Power of Sound Design in Film</td>
<td>Corey Eccles</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Recording Arts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:00-1:20</td>
<td>Victoria Artaza</td>
<td>Peace and Reconciliation Through the Outlet of Film</td>
<td>Jennifer Ramos</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Political Science; Spanish</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Through the Lens: Film, Sight & Sound**

_Moderated by Prof. Richard Hadley, Film/TV Studies_

**POSTER SESSION II**

1:30pm-3:00pm

_Atrium and 1st Floor hallway_

**ORAL SESSION V**

1:30pm-3:00pm
<table>
<thead>
<tr>
<th>Time</th>
<th>Room</th>
<th>Student Presenter</th>
<th>Project Title</th>
<th>Faculty Mentor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:30-1:50</td>
<td>Ahmanson Auditorium</td>
<td>Allison Houston</td>
<td>The Politics of Self Interest: Am I My Brother's Keeper?</td>
<td>Claudia Sandoval Political Science</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Political Science; Philosophy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:50-2:10</td>
<td></td>
<td>Amy Aceto</td>
<td>The role of beliefs in shaping low self-esteem individuals' health-related responses to social stress</td>
<td>Maire Ford Psychology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Alisha Ginsberg</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mackenzie Whitfield</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2:10-2:30</td>
<td></td>
<td>Konstantinos C. Kaplanis</td>
<td>Virtue Ethics: A Parallelism</td>
<td>Matthew Dillon Classics and Archaeology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Classics and Archaeology; Mechanical Engineering</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### On Climate: Attitudes, Politics & Policy

**Moderated by Prof. Jennifer Ramos, Political Science**

<table>
<thead>
<tr>
<th>Time</th>
<th>Room</th>
<th>Student Presenter</th>
<th>Project Title</th>
<th>Faculty Mentor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:30-1:50</td>
<td>3222</td>
<td>Caroline Cordova</td>
<td>Religion and the Road to the White House</td>
<td>Claudia Sandoval Political Science</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Political Science; Screenwriting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:50-2:10</td>
<td></td>
<td>Erisa Takeda</td>
<td>Changing Attitudes: Cultural and Educational Exchanges as a Form of Public Diplomacy</td>
<td>Jennifer Ramos Political Science</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Political Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2:10-2:30</td>
<td></td>
<td>Maria Carolina Gomez</td>
<td>Shakespearean Implications and Reflections on Immigration</td>
<td>Theresia De Vroom English</td>
</tr>
<tr>
<td></td>
<td></td>
<td>English; Philosophy</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Use of the Senses: Taste, Touch & Feel

**Moderated by Prof. David Hardy, Psychology**

<table>
<thead>
<tr>
<th>Time</th>
<th>Room</th>
<th>Student Presenter</th>
<th>Project Title</th>
<th>Faculty Mentor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:30-1:50</td>
<td>3226</td>
<td>Elaina Harr</td>
<td>That Tingling Sensation: Autonomous Sensory Meridian Response</td>
<td>David Hardy Psychology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Psychology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>Name</td>
<td>Title</td>
<td>Moderated by</td>
<td>Department</td>
</tr>
<tr>
<td>----------</td>
<td>--------------------</td>
<td>----------------------------------------------------------------------</td>
<td>--------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>1:50-2:10</td>
<td>Rhett Spongberg</td>
<td>A Physics Analysis of the Effects of Dance Warm-Ups</td>
<td>Jeff Phillips</td>
<td>Physics</td>
</tr>
<tr>
<td></td>
<td><strong>Physics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2:10-2:30</td>
<td>Alejandra Silva</td>
<td>Heavy Episodic Drinking and Skeletal Health in Young Adults</td>
<td>Hawley Almstedt</td>
<td>Health and Human Sciences</td>
</tr>
<tr>
<td></td>
<td><strong>Health and Human Sciences</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Reaction! Catalysts, Superconductivity, Interface & Magnetic Properties**

*Moderated by Prof. John Bulman, Physics*

<table>
<thead>
<tr>
<th>Time</th>
<th>Name</th>
<th>Title</th>
<th>Moderated by</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:30-1:50</td>
<td>Jose Alvarado</td>
<td>Investigation of the water oxidation mechanism with mononuclear metal catalysts and their resulting energetics and intermolecular features</td>
<td>Emily Jarvis</td>
<td>Chemistry and Biochemistry</td>
</tr>
<tr>
<td></td>
<td><strong>Biochemistry</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kelly Hunter</td>
<td>Characterization of a DC SQUID with Observed Shapiro Steps</td>
<td>John Bulman</td>
<td>Physics</td>
</tr>
<tr>
<td></td>
<td><strong>Economics; Physics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2:10-2:30</td>
<td>Amy Weber</td>
<td>Improved Operational Amplifier to Boost the Output Current of an Arduino Microcontroller</td>
<td>Hossein Asghari</td>
<td>Electrical Engineering and Computer Science</td>
</tr>
<tr>
<td></td>
<td><strong>Electrical Engineering</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tamara Jovanovic</td>
<td>Nuclear Magnetic Resonance Spectroscopy</td>
<td>John Bulman</td>
<td>Physics</td>
</tr>
<tr>
<td></td>
<td><strong>Electrical Engineering</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Expression & Revision: Studies of Genes**

*Moderated by Prof. Kam Dahlquist, Biology*

<table>
<thead>
<tr>
<th>Time</th>
<th>Name</th>
<th>Title</th>
<th>Moderated by</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:30-1:50</td>
<td>Natalie Williams</td>
<td>Comparison of the regulatory dynamics of related small gene regulatory networks that control the cold shock response in Saccharomyces cerevisia</td>
<td>Kam Dahlquist</td>
<td>Biology</td>
</tr>
<tr>
<td></td>
<td><strong>Biology</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ben Fitzpatrick</td>
<td>Systems modeling and statistical analysis allows comparison in the response to cold shock in Saccharomyces cerevisiae between Hap4 and randomly generated networks</td>
<td>Kam Dahlquist</td>
<td>Biology</td>
</tr>
<tr>
<td></td>
<td><strong>Mathematics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:50-2:10</td>
<td>Kristen Horstmann</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Individualized Studies</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The transcription factors Hap4 and Swi4 contribute to the regulation of the transcriptional response to cold shock in Saccharomyces cerevisiae.

The Benefits and Risks of Human Genetic Modification with CRISPR

POSTER SESSION III
3:00pm-4:30pm
Atrium and 1st Floor hallway

ORAL SESSION VI
3:00pm-4:30pm

Plants & Animals: Land, Air & Sea

Moderated by Prof. Wendy Binder, Biology

<table>
<thead>
<tr>
<th>Time</th>
<th>Room</th>
<th>Student Presenter</th>
<th>Project Title</th>
<th>Faculty Mentor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:00-3:20</td>
<td>3226</td>
<td>Joshua Ramsey</td>
<td>Morphological Asymmetry as an Indicator of Stress in Rodents, a Comparative Study of Rodent Species in Southern California</td>
<td>Wendy Binder Biology</td>
</tr>
<tr>
<td>3:20-3:40</td>
<td></td>
<td>Melissa Morado</td>
<td>Using Thermal Imaging to Detect Torpor in Nesting Hummingbirds</td>
<td>Peter Auger Environmental Science; Center for Urban Resilience Eric Strauss Biology; Center for Urban Resilience</td>
</tr>
<tr>
<td>3:40-4:00</td>
<td></td>
<td>Candice Cross</td>
<td>Nutrient Value of Invasive Seagrass, Halophila stipulacea, and Analysis of its Ability to Meet the Dietary Needs of Green Sea Turtles in the Caribbean</td>
<td>Demian Willette Biology</td>
</tr>
<tr>
<td>4:00-4:20</td>
<td></td>
<td>Armaan Zare</td>
<td>Modifications and Expansions to a Novel Predator Aversion System Intended to Protect Nesting Endangered Least Terns <em>Sternula antillarum browni</em> at Venice Beach, CA</td>
<td>Peter Auger Environmental Science; Center for Urban Resilience</td>
</tr>
</tbody>
</table>
# International Politics: Platforms, Identity & Framework

Moderated by Prof. Gene Park, Political Science

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:00-3:20</td>
<td>3222</td>
<td>Megan Behar</td>
<td>Ethno-Religious Conflicts in Nigeria: How Political Forces Have Exacerbated Violence</td>
</tr>
<tr>
<td>3:20-3:40</td>
<td></td>
<td>Victoria Artaza</td>
<td>The Saliency of Ethnicity in African Elections</td>
</tr>
<tr>
<td>3:40-4:00</td>
<td></td>
<td>Joseph Young</td>
<td>Factors that explain Security Cooperation Between Japan and South Korea</td>
</tr>
</tbody>
</table>

# Exploring Religiosity: Autobiography, Homily, Choice & Education

Moderated by Prof. Ricardo Machón, Psychology

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:00-3:20</td>
<td>3218</td>
<td>Troy Kassien</td>
<td>&quot;Christian Autobiography: A Perfect Tool for Evangelization, Theological Discourse, and Spiritual Inspiration&quot;</td>
</tr>
<tr>
<td>3:20-3:40</td>
<td></td>
<td>Jaclyn Ross</td>
<td>Archbishop Oscar Romero: The Last Homily and the Plight of the Poor</td>
</tr>
<tr>
<td>3:40-4:00</td>
<td></td>
<td>Taylor Brewer</td>
<td>God's Obligations After Prayer: Is there a Choice Within Silence?</td>
</tr>
<tr>
<td>4:00-4:20</td>
<td></td>
<td>Melissa Gavilanes</td>
<td>Role of Religiosity in College Students' Value Orientation and Ethic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Skye Shodahl</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nicole Muldoon</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Samantha Leung</td>
<td></td>
</tr>
</tbody>
</table>
# POSTER SESSION I

10:30am – 12:00pm
2nd Floor Hallways

- Globalization • Graphic Design • Political Science – Urban Studies • Psychology • Sociology – Social Issues •

<table>
<thead>
<tr>
<th>Poster #</th>
<th>Student Presenter(s)</th>
<th>Title of Presentation</th>
<th>Faculty Mentor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Globalization</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 1 | **Samantha Burton**  
Classics and Archaeology; Film and Television Production | Greek Performance of Identity in Museums and Monuments | Katerina Zacharia  
Classics and Archaeology |
| 2 | **Jeffrey Walker**  
Accounting | Lights, Camera, Recognition: An Analysis of Recognition and Disclosure of Commitments for Film and Television Programming for Publicly Traded Companies | Laurel Franzen  
Accounting |
| 3 | **Michael James Lhuillier**  
Economics | Real Estate Development as a Tool for Sustainable Growth | Clark Taylor  
Sociology |
| **Graphic Design** | | | |
| 4 | **Fares Elwaary**  
Art and Art History  
Terry Dobson  
Art and Art History |
| 5 | **Aysha Larson**  
Studio Arts: Graphic Design | Baby Steps: Repealing the progress of Lactivism | Saeri Dobson  
Art and Art History  
Terry Dobson  
Art and Art History |
| 6 | **Catherine Lozano**  
Studio Arts: Graphic Design | Consumer Traffick: Revealing the Everyday Products Made by Modern-Day Slaves | Saeri Dobson  
Art and Art History  
Terry Dobson  
Art and Art History |
| 7 | **Sara Jensen**  
Studio Arts: Graphic Design | Dismantling the stigma surrounding the rhetoric of female sexuality | Saeri Dobson  
Art and Art History  
Terry Dobson  
Art and Art History |
| 8 | **Eliana Porcelli Jorgensen**  
Studio Arts: Graphic Design | Don’t Sugarcoat Diabetes | Saeri Dobson  
Art and Art History  
Terry Dobson  
Art and Art History |
<table>
<thead>
<tr>
<th>Poster #</th>
<th>Student Presenter(s)</th>
<th>Title of Presentation</th>
<th>Faculty Mentor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Heather Pilkington</td>
<td>The Elephant in the Womb: A Visual Critique About Planned Parenthood</td>
<td>Saeri Dobson</td>
</tr>
<tr>
<td></td>
<td><em>Studio Arts:</em> Graphic Design</td>
<td></td>
<td><em>Art and Art History</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Terry Dobson</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Art and Art History</em></td>
</tr>
<tr>
<td>10</td>
<td>Benjamin Katz</td>
<td>For Profit: Incarceration in America. Sponsored by You!</td>
<td>Saeri Dobson</td>
</tr>
<tr>
<td></td>
<td><em>Studio Arts:</em> Graphic Design</td>
<td></td>
<td><em>Art and Art History</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Terry Dobson</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Art and Art History</em></td>
</tr>
<tr>
<td>11</td>
<td>Rachel Rittwage</td>
<td>Hellthy Eating: How health becomes an unhealthy eating disorder</td>
<td>Saeri Dobson</td>
</tr>
<tr>
<td></td>
<td><em>Studio Arts:</em> Graphic Design</td>
<td></td>
<td><em>Art and Art History</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Terry Dobson</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Art and Art History</em></td>
</tr>
<tr>
<td>12</td>
<td>Michelle Castro Bastida</td>
<td>[I'm]migrate: The Transformed Lives of Undocumented Students</td>
<td>Saeri Dobson</td>
</tr>
<tr>
<td></td>
<td><em>Studio Arts:</em> Graphic Design</td>
<td></td>
<td><em>Art and Art History</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Terry Dobson</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Art and Art History</em></td>
</tr>
<tr>
<td>13</td>
<td>Frances Karrer</td>
<td>Invisible Ceilings: Exposing the Everyday Experiences that Hold Women Back</td>
<td>Saeri Dobson</td>
</tr>
<tr>
<td></td>
<td><em>Studio Arts:</em> Graphic Design</td>
<td></td>
<td><em>Art and Art History</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Terry Dobson</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Art and Art History</em></td>
</tr>
<tr>
<td>14</td>
<td>Thelma Levy</td>
<td>Keep the Beads Away: Ban Microbeads</td>
<td>Saeri Dobson</td>
</tr>
<tr>
<td></td>
<td><em>Studio Arts:</em> Graphic Design</td>
<td></td>
<td><em>Art and Art History</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Terry Dobson</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Art and Art History</em></td>
</tr>
<tr>
<td>15</td>
<td>Megan Wilton</td>
<td>Labeled: Erasing the Stigma Surrounding Mental Illness</td>
<td>Saeri Dobson</td>
</tr>
<tr>
<td></td>
<td><em>Studio Arts:</em> Graphic Design</td>
<td></td>
<td><em>Art and Art History</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Terry Dobson</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Art and Art History</em></td>
</tr>
<tr>
<td></td>
<td><em>Studio Arts:</em> Graphic Design</td>
<td></td>
<td><em>Art and Art History</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Terry Dobson</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Art and Art History</em></td>
</tr>
<tr>
<td>17</td>
<td>Madeline Mary</td>
<td>Perfect Poison: America's Sugar Addiction</td>
<td>Saeri Dobson</td>
</tr>
<tr>
<td></td>
<td><em>Studio Arts:</em> Graphic Design</td>
<td></td>
<td><em>Art and Art History</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Terry Dobson</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Art and Art History</em></td>
</tr>
<tr>
<td>18</td>
<td>Julia Biber</td>
<td>Plant Solutions: The Growing Environmental Impact Caused by the Meat Industry</td>
<td>Saeri Dobson</td>
</tr>
<tr>
<td></td>
<td><em>Studio Arts:</em> Graphic Design</td>
<td></td>
<td><em>Art and Art History</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Terry Dobson</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Art and Art History</em></td>
</tr>
<tr>
<td>Poster #</td>
<td>Student Presenter(s)</td>
<td>Title of Presentation</td>
<td>Faculty Mentor(s)</td>
</tr>
<tr>
<td>----------</td>
<td>----------------------</td>
<td>-----------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>19</td>
<td>Katherine Emery</td>
<td>Sew What</td>
<td>Saeri Dobson</td>
</tr>
<tr>
<td></td>
<td>Studio Arts:</td>
<td></td>
<td>Art and Art History</td>
</tr>
<tr>
<td></td>
<td>Graphic Design</td>
<td></td>
<td>Terry Dobson</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Art and Art History</td>
</tr>
<tr>
<td>20</td>
<td>Camille Kodama</td>
<td>To Go Pure - Plastic is not Convenient</td>
<td>Saeri Dobson</td>
</tr>
<tr>
<td></td>
<td>Studio Arts:</td>
<td></td>
<td>Art and Art History</td>
</tr>
<tr>
<td></td>
<td>Graphic Design</td>
<td></td>
<td>Terry Dobson</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Art and Art History</td>
</tr>
<tr>
<td>21</td>
<td>Xian Wong</td>
<td>UNFULFILLED. CONSUMED. HAPPINESS: Post-Truth Consumption</td>
<td>Saeri Dobson</td>
</tr>
<tr>
<td></td>
<td>Studio Arts:</td>
<td></td>
<td>Art and Art History</td>
</tr>
<tr>
<td></td>
<td>Graphic Design</td>
<td></td>
<td>Terry Dobson</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Art and Art History</td>
</tr>
</tbody>
</table>

**Political Science – Urban Studies**

<table>
<thead>
<tr>
<th>Poster #</th>
<th>Student Presenter(s)</th>
<th>Title of Presentation</th>
<th>Faculty Mentor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>Adrian Narayan</td>
<td>The Concentration of Quality Health Facilities throughout Los Angeles County</td>
<td>Brianne Gilbert</td>
</tr>
<tr>
<td></td>
<td>Political Science</td>
<td></td>
<td>Urban Studies; Political Science; Center for the Study of Los Angeles</td>
</tr>
<tr>
<td>23</td>
<td>Katherine Daw</td>
<td>Critical Race Theory as a Lens for Understanding Veteran Homelessness</td>
<td>Janie Steckenrider</td>
</tr>
<tr>
<td></td>
<td>Political Science;</td>
<td></td>
<td>Political Science</td>
</tr>
<tr>
<td></td>
<td>Philosophy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Brianna Medina</td>
<td>Evolution of Cuban-American Opinion</td>
<td>Brianne Gilbert</td>
</tr>
<tr>
<td></td>
<td>Political Science</td>
<td></td>
<td>Urban Studies; Political Science; Center for the Study of Los Angeles</td>
</tr>
<tr>
<td>25</td>
<td>Alfredo Hernandez</td>
<td>The Federal Funding of Cultural Institutions to Combat Recessions in post-2008 Greece</td>
<td>Katerina Zacharia</td>
</tr>
<tr>
<td></td>
<td>Political Science</td>
<td></td>
<td>Classics and Archaeology</td>
</tr>
<tr>
<td>26</td>
<td>Emily Simso</td>
<td>How Demographics Affect the Use of Urban Green Spaces</td>
<td>Michele Romolini</td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td>Center for Urban Resilience</td>
</tr>
<tr>
<td>27</td>
<td>Virginia Laskodi</td>
<td>Mitigating Urban Blight in Los Angeles</td>
<td>Brianne Gilbert</td>
</tr>
<tr>
<td></td>
<td>Political Science</td>
<td></td>
<td>Urban Studies; Political Science; Center for the Study of Los Angeles</td>
</tr>
<tr>
<td>28</td>
<td>Candace Yamanishi</td>
<td>Revisiting the 1976 LAUSD Desegregation Mandate</td>
<td>Brianne Gilbert</td>
</tr>
<tr>
<td></td>
<td>Political Science</td>
<td></td>
<td>Urban Studies; Political Science; Center for the Study of Los Angeles</td>
</tr>
<tr>
<td></td>
<td>Zachary Hayes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Political Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Sarah Markowitz</td>
<td>Terrorist Manipulation of Religious and Ethnic Identity: A Case Study of Hamas and Hezbollah</td>
<td>Kerstin Fisk</td>
</tr>
<tr>
<td></td>
<td>Political Science</td>
<td></td>
<td>Political Science</td>
</tr>
</tbody>
</table>

28
<table>
<thead>
<tr>
<th>Poster #</th>
<th>Student Presenter(s)</th>
<th>Title of Presentation</th>
<th>Faculty Mentor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>Kyle Hunter-Valls</td>
<td>The Value of Urban Parklands: A Park User Study of the Baldwin Hills</td>
<td>Peter Auger Environmental Science; Center for Urban Resilience Michele Romolini Center for Urban Resilience</td>
</tr>
<tr>
<td></td>
<td>Jorge Gamboa</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kaykay Scotto</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Isabella Dennis</td>
<td>Views of Millennials by Millennials</td>
<td>Brianne Gilbert Urban Studies; Political Science; Center for the Study of Los Angeles</td>
</tr>
<tr>
<td></td>
<td>Kat Siao</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Xavier Orozco</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jayna Ortiz</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maya Willis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Andrew Brown</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lesly Juarez</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Megan Takemodo</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Psychology**

<table>
<thead>
<tr>
<th>32</th>
<th>Victoria Hernandez</th>
<th>Attitudes, Perceptions, and Eating Choices</th>
<th>Nora Murphy Psychology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Psychology; Spanish</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>Cat Connors</td>
<td>Electroencephalogram (EEG) Shows Changes in Brain Activity During Cognitive Tasks</td>
<td>Michael Foy Psychology Judith Foy Psychology</td>
</tr>
<tr>
<td></td>
<td>Psychology</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>John Salinas</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Psychology; Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Victoria Hernandez</td>
<td>Individual Differences and Coping Strategies</td>
<td>Nora Murphy Psychology</td>
</tr>
<tr>
<td></td>
<td>Psychology; Spanish</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Alice Gavarrete Olvera</td>
<td>Mini Meta-Analysis: The Effect of Language Abilities on Boston Naming Test Performance</td>
<td>Nora Murphy Psychology</td>
</tr>
<tr>
<td></td>
<td>Psychology</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Carla Ventura</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Psychology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poster #</td>
<td>Student Presenter(s)</td>
<td>Title of Presentation</td>
<td>Faculty Mentor(s)</td>
</tr>
<tr>
<td>----------</td>
<td>---------------------</td>
<td>-----------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>36</td>
<td>Lauren Lo&lt;br&gt;Psychology&lt;br&gt;Natalie Pita&lt;br&gt;Psychology&lt;br&gt;Robert Wagner&lt;br&gt;Psychology; Economics</td>
<td>Paper or Plastic? A Mini Meta-Analysis on the Effects of Media Type on Reading Comprehension</td>
<td>Nora Murphy&lt;br&gt;Psychology</td>
</tr>
<tr>
<td>37</td>
<td>Mackenzie Whitfield&lt;br&gt;Psychology</td>
<td>Parental attachment style and cultural socialization practices in families with children adopted from China</td>
<td>Maire Ford&lt;br&gt;Psychology</td>
</tr>
<tr>
<td>38</td>
<td>Leah Willover&lt;br&gt;Psychology</td>
<td>Phoneme Awareness and Working Memory in Early Reading</td>
<td>Judith Foy&lt;br&gt;Psychology</td>
</tr>
<tr>
<td>39</td>
<td>Cassandra Yearwood&lt;br&gt;Psychology&lt;br&gt;Jesiree Session&lt;br&gt;Psychology</td>
<td>Sex Differences: Conformity and Individualism in Reproductive Strategies</td>
<td>Michael Mills&lt;br&gt;Psychology</td>
</tr>
<tr>
<td>40</td>
<td>Rachel Haik&lt;br&gt;Communication Studies; Film and Television Production&lt;br&gt;Justin Cintas&lt;br&gt;Psychology</td>
<td>Should You Make It Facebook Official?</td>
<td>Ricardo Machon&lt;br&gt;Psychology</td>
</tr>
</tbody>
</table>

**Sociology – Social Issues**

<table>
<thead>
<tr>
<th>Poster #</th>
<th>Student Presenter(s)</th>
<th>Title of Presentation</th>
<th>Faculty Mentor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Jorge Gamboa&lt;br&gt;Urban Studies; Sociology</td>
<td>Assessing Urban Parklands: Novel Use of Game Cameras to Study Park User Behavior in the Baldwin Hills</td>
<td>Peter Auger&lt;br&gt;Environmental Science; Center for Urban Resilience&lt;br&gt;Michele Romolini&lt;br&gt;Center for Urban Resilience</td>
</tr>
<tr>
<td>42</td>
<td>Kiana Gums&lt;br&gt;Economics; Political Science</td>
<td>Black Student Activism and LMU's Mission</td>
<td>Marne Campbell&lt;br&gt;African American Studies</td>
</tr>
<tr>
<td>43</td>
<td>Mary North&lt;br&gt;Spanish</td>
<td>Build a Miracle: Building Homes and Building Relationships - A Community Perspective</td>
<td>Susan McDaniel&lt;br&gt;Communication Studies</td>
</tr>
<tr>
<td>44</td>
<td>Leslie Ortega&lt;br&gt;Liberal Studies</td>
<td>Comparing Service Delivery Models of Speech Language Pathology Practices</td>
<td>Stephanie Goodman&lt;br&gt;Clinical Education</td>
</tr>
<tr>
<td>45</td>
<td>Kathryn Scotto&lt;br&gt;Sociology</td>
<td>Content Analysis of SFTV Produced Films, 2012-2015</td>
<td>Anna Muracó&lt;br&gt;Sociology</td>
</tr>
<tr>
<td>Poster #</td>
<td>Student Presenter(s)</td>
<td>Title of Presentation</td>
<td>Faculty Mentor(s)</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------------</td>
<td>---------------------------------------------------------------------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>46</td>
<td><strong>Caeli Koizumi</strong></td>
<td>Dancing at my Desk: Examining the Foundations of a Non-Profit Dance Education Organization</td>
<td>Kristen Smiarowski</td>
</tr>
<tr>
<td></td>
<td><strong>Dance</strong></td>
<td></td>
<td>Theatre Arts and Dance</td>
</tr>
<tr>
<td>47</td>
<td><strong>Clare Sitzer</strong></td>
<td>Dancing to Learn, Learning to Dance</td>
<td>Kristen Smiarowski</td>
</tr>
<tr>
<td></td>
<td><strong>Dance</strong></td>
<td></td>
<td>Theatre Arts and Dance</td>
</tr>
<tr>
<td>48</td>
<td><strong>Maraky Alemseged</strong></td>
<td>Ethiopian Jews: The Overlooked Minorities in Ethiopia and Israel</td>
<td>Holli Levitsky</td>
</tr>
<tr>
<td></td>
<td><strong>Sociology</strong></td>
<td></td>
<td>English; Jewish Studies</td>
</tr>
<tr>
<td>49</td>
<td><strong>Elizabeth Archer</strong></td>
<td>Film Production and Screenwriting - making a short film, Jail Bird</td>
<td>Richard Hadley</td>
</tr>
<tr>
<td></td>
<td><strong>Film and Television</strong></td>
<td></td>
<td>Film/TV Studies</td>
</tr>
<tr>
<td></td>
<td><strong>Production; Screenwriting</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td><strong>Cora Whalen</strong></td>
<td>The Framing of Female Hormone Treatments as Discussed in Historical Newspapers</td>
<td>Rachel Washburn</td>
</tr>
<tr>
<td></td>
<td><strong>Sociology</strong></td>
<td></td>
<td>Sociology</td>
</tr>
<tr>
<td>51</td>
<td><strong>Paige Petersen</strong></td>
<td>Gender Inequity Within Public Accounting</td>
<td>Meghna Singhvi</td>
</tr>
<tr>
<td></td>
<td><strong>Accounting</strong></td>
<td></td>
<td>Accounting</td>
</tr>
<tr>
<td>52</td>
<td><strong>Cielo Garat</strong></td>
<td>Health Outcomes for Single Midlife and Older LGBT Adults</td>
<td>Anna Muraco</td>
</tr>
<tr>
<td></td>
<td><strong>Psychology; Sociology</strong></td>
<td></td>
<td>Sociology</td>
</tr>
<tr>
<td>53</td>
<td><strong>Jessica Bedewi</strong></td>
<td>The Personal is Political: Newspaper Framings of Rape in Relation to the Anti-Rape Movement</td>
<td>Amanda Whidden</td>
</tr>
<tr>
<td></td>
<td><strong>Communication Studies; Sociology</strong></td>
<td></td>
<td>Communication Studies</td>
</tr>
<tr>
<td>54</td>
<td><strong>Micah Peay-Johnson</strong></td>
<td>Philosophy of Hope in Time</td>
<td>Brad Stone</td>
</tr>
<tr>
<td></td>
<td><strong>Philosophy</strong></td>
<td></td>
<td>Philosophy; African American Studies</td>
</tr>
<tr>
<td>55</td>
<td><strong>Alexa Garster</strong></td>
<td>Social Justice through Storytelling: the Function of Capital Punishment in Modern Society</td>
<td>Mark Schwartz</td>
</tr>
<tr>
<td></td>
<td><strong>Screenwriting</strong></td>
<td></td>
<td>Screenwriting</td>
</tr>
</tbody>
</table>
# POSTER SESSION II

**1:30pm – 3:00pm**

Atrium and 1st Floor Hallways

*Engineering – Computer Science • Health and Human Sciences • Mathematics – Physics •*

<table>
<thead>
<tr>
<th>Poster #</th>
<th>Student Presenter(s)</th>
<th>Title of Presentation</th>
<th>Faculty Mentor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Engineering – Computer Science</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 56 | Megan Blacet  
Civil Engineering  
Valeria Munoz  
Civil Engineering  
Jacquelin Plasencia  
Civil Engineering | Acelhuate River Restoration | Jeremy Pal  
Civil Engineering |
| 57 | Nicolas Breceda  
Mechanical Engineering | Airfoil Pressure Distribution through a Wind Tunnel | Nader Saniei  
Mechanical Engineering |
| 58 | Janessa Mendoza  
Civil Engineering  
Valeria Munoz  
Civil Engineering | Analysis of Societal Responses in Urban Landscape  
Irrigation due to the Recent California Drought Utilizing High Resolution Aerial NAIP Imagery | Jeremy Pal  
Civil Engineering |
| 59 | Mariana Alifa  
Civil Engineering | Climate Change Vulnerability in Southern California: A Tool to Provide Climate Resiliency Assessments for Local Stakeholders | Jeremy Pal  
Civil Engineering |
| 60 | Adrian Cheng  
Kelly Tovalin  
Mechanical Engineering  
Mechanical Engineering | Effect of Heat Treatment on Microstructure and Mechanical Properties of 15-5 PH Stainless Steel | Omar Es-Said  
Mechanical Engineering |
| 61 | Luis Enrique Guevara  
Salma Kamal  
Civil Engineering  
Luis Fernando Villagomez  
Engineering Undeclared | Effect of Large versus Small Grain Size on Fatigue Life of Aluminum Alloy 2016 | Omar Es-Said  
Mechanical Engineering |
| 62 | Kelly Tovalin  
Adrian Cheng  
Ricardo Martin Del Campo  
Mechanical Engineering  
Mechanical Engineering  
Mechanical Engineering | Evaluation of 4330M Steel for Fasteners Applications | Omar Es-Said  
Mechanical Engineering |
<table>
<thead>
<tr>
<th>Poster #</th>
<th>Student Presenter(s)</th>
<th>Title of Presentation</th>
<th>Faculty Mentor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>63</td>
<td>Zachary Fitzpatrick</td>
<td>Fallible AI</td>
<td>John Dionisio</td>
</tr>
<tr>
<td></td>
<td>Computer Science</td>
<td></td>
<td>Electrical Engineering and Computer Science</td>
</tr>
<tr>
<td></td>
<td>Ryan Taus</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Computer Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>64</td>
<td>Michael Schwarz</td>
<td>Fatigue Crack Growth Rate Testing of Ti-6Al-4V</td>
<td>Omar Es-Said</td>
</tr>
<tr>
<td></td>
<td>Mechanical Engineering</td>
<td></td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td></td>
<td>Evan Bates</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mechanical Engineering</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jacob Orlita</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mechanical Engineering</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Will Hohorst</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mechanical Engineering</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Matt Stein</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engineering Undeclared</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Harrison Leece</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mechanical Engineering</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Michael Allen</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mechanical Engineering</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jacob Buckhalter</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mechanical Engineering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65</td>
<td>Ally Davi</td>
<td>Healthy Beaches for a Climate Resilient Future: Site Suitability</td>
<td>Jeremy Pal</td>
</tr>
<tr>
<td></td>
<td>Civil Engineering</td>
<td></td>
<td>Civil Engineering</td>
</tr>
<tr>
<td></td>
<td>Elizabeth Horejsi</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Civil Engineering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>66</td>
<td>Sylvana Santos</td>
<td>Implementing a Webcam for Eye Tracking and Computer Cursor Control</td>
<td>Mohammadhossein Asghari</td>
</tr>
<tr>
<td></td>
<td>Electrical Engineering</td>
<td></td>
<td>Electrical Engineering and Computer Science</td>
</tr>
<tr>
<td></td>
<td>Andres Lazo Hernandez</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electrical Engineering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>67</td>
<td>Amy Weber</td>
<td>Improved Operational Amplifier to Boost the Output Current of an Arduino Microcontroller</td>
<td>Hossein Asghari</td>
</tr>
<tr>
<td></td>
<td>Electrical Engineering</td>
<td></td>
<td>Electrical Engineering and Computer Science</td>
</tr>
<tr>
<td></td>
<td>Tamara Jovanovic</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electrical Engineering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>68</td>
<td>Adam Betancourt</td>
<td>Modal Analysis of a Fixed-Fixed Beam with Intermediate Attached Mass</td>
<td>Pezhman Hassanpour</td>
</tr>
<tr>
<td></td>
<td>Mechanical Engineering</td>
<td></td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td></td>
<td>Keely Jones</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electrical Engineering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poster #</td>
<td>Student Presenter(s)</td>
<td>Title of Presentation</td>
<td>Faculty Mentor(s)</td>
</tr>
<tr>
<td>----------</td>
<td>----------------------</td>
<td>-----------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>69</td>
<td>Aaiyah Kelani</td>
<td>SAE AERO West Airplane Design Competition</td>
<td>Emin Issakhanian Mechanical Engineering</td>
</tr>
<tr>
<td></td>
<td>Carrie Deline</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Joanne Webb</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ye Thura Hein</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clayton Wikoff</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rad Guhit</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Greg Smith</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Madison Piechowski</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Konstantinos C. Kaplanis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>Raina Schuler</td>
<td>Shot Peening of 4340 Steel with 100%, 200%, and 300% Coverage</td>
<td>Omar Es-Said Mechanical Engineering</td>
</tr>
<tr>
<td></td>
<td>Arman Akhenaton</td>
<td></td>
<td></td>
</tr>
<tr>
<td>71</td>
<td>Vincent Bottita</td>
<td>Small-Scale Wind Turbine Power Analysis</td>
<td>Rachel Adams Civil Engineering; Environmental Science</td>
</tr>
<tr>
<td></td>
<td>Brandon Kim</td>
<td></td>
<td></td>
</tr>
<tr>
<td>72</td>
<td>Zachary Bates</td>
<td>Table Top Wind Tunnel</td>
<td>Emin Issakhanian Mechanical Engineering</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>73</td>
<td>Abdulaziz Alfozan</td>
<td>Testing the Effectiveness of a Water Treatment Device for Reducing Turbidity and Total Dissolved Solids in Recycled Wastewater</td>
<td>Jeremy Pal Civil Engineering</td>
</tr>
<tr>
<td></td>
<td>Muhanad Ghabban</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>74</td>
<td>Alexander Hendricks</td>
<td>The Low-Cost Redesign and 3D Printing of Structural Knee Orthotics for Athletic Knee Injury Patients</td>
<td>Rafiquel Noorani Mechanical Engineering</td>
</tr>
<tr>
<td></td>
<td>Sean Nevin</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poster #</td>
<td>Student Presenter(s)</td>
<td>Title of Presentation</td>
<td>Faculty Mentor(s)</td>
</tr>
<tr>
<td>----------</td>
<td>----------------------</td>
<td>-----------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>75</td>
<td>William Hohorst&lt;br&gt;<strong>Mechanical Engineering</strong>&lt;br&gt;Alfredo Gutierrez&lt;br&gt;<strong>Mechanical Engineering</strong>&lt;br&gt;Michael Schwarz&lt;br&gt;<strong>Mechanical Engineering</strong>&lt;br&gt;Jacob Orlita&lt;br&gt;<strong>Mechanical Engineering</strong>&lt;br&gt;Jacob Buckhalter&lt;br&gt;<strong>Mechanical Engineering</strong>&lt;br&gt;Matt Stein&lt;br&gt;<strong>Engineering Undeclared</strong>&lt;br&gt;Harrison Leece&lt;br&gt;<strong>Mechanical Engineering</strong>&lt;br&gt;Michael Allen&lt;br&gt;<strong>Mechanical Engineering</strong></td>
<td>Titanium 6-4 Fracture Toughness</td>
<td>Omar Es-Said&lt;br&gt;<strong>Mechanical Engineering</strong></td>
</tr>
<tr>
<td>76</td>
<td>Danielle Leong&lt;br&gt;<strong>Mechanical Engineering</strong>&lt;br&gt;Vincent Bottita&lt;br&gt;<strong>Civil Engineering</strong>&lt;br&gt;Brandon Kim&lt;br&gt;<strong>Electrical Engineering</strong>&lt;br&gt;Vaughn Hartling&lt;br&gt;<strong>Mechanical Engineering</strong></td>
<td>Wind Turbine Service Learning Project</td>
<td>Rachel Adams&lt;br&gt;<strong>Civil Engineering:</strong>&lt;br&gt;<strong>Environmental Science</strong></td>
</tr>
<tr>
<td>77</td>
<td>Mackenzie Tjogas&lt;br&gt;<strong>Computer Science</strong>&lt;br&gt;Megan Karbowski&lt;br&gt;<strong>Computer Science</strong>&lt;br&gt;Carleen Petrosian&lt;br&gt;<strong>Computer Science</strong></td>
<td>Young Women in Stem</td>
<td>Barbara Marino&lt;br&gt;<strong>Electrical Engineering and Computer Science</strong></td>
</tr>
<tr>
<td>78</td>
<td>Daniel Ramirez&lt;br&gt;<strong>Health and Human Sciences</strong></td>
<td>Consistency and Loading Patterns between Elite FTS Vulcanized and Regular Rubber Bands</td>
<td>Todd Shoepe&lt;br&gt;<strong>Health &amp; Human Sciences</strong></td>
</tr>
<tr>
<td>79</td>
<td>Allison Leggett&lt;br&gt;<strong>Health and Human Sciences</strong></td>
<td>Effects of Heavy Episodic Drinking on Muscle Quality in College Students</td>
<td>Todd Shoepe&lt;br&gt;<strong>Health &amp; Human Sciences</strong></td>
</tr>
<tr>
<td>80</td>
<td>Connor Smith&lt;br&gt;<strong>Athletic Training</strong>&lt;br&gt;Lizet Pacheco&lt;br&gt;<strong>Athletic Training</strong></td>
<td>The Effects of Short Wave Diathermy of the Gastrocnemius Complex on Balance, Ankle Dorsiflexion, and Agility</td>
<td>Sarah Strand&lt;br&gt;<strong>Health &amp; Human Sciences</strong>&lt;br&gt;Stephanie Perez&lt;br&gt;<strong>Health &amp; Human Sciences</strong></td>
</tr>
<tr>
<td>Poster #</td>
<td>Student Presenter(s)</td>
<td>Title of Presentation</td>
<td>Faculty Mentor(s)</td>
</tr>
<tr>
<td>----------</td>
<td>----------------------</td>
<td>-----------------------</td>
<td>-------------------</td>
</tr>
</tbody>
</table>
| 81       | Stephanie Lee        | Influence of Physical Activity and Heavy Episodic Drinking on Bone Mineral Density | Hawley Almstedt  
           | Health and Human Sciences | Health & Human Sciences  
           | Joseph LaBrie  
           | Psychology |           |
| 82       | Nhandi Scott         | The Longitudinal Study of Bone Health in Male Cross Country Runners | Hawley Almstedt  
           | Health and Human Sciences | Health & Human Sciences  
           | William McCormack  
           | Health & Human Sciences |           |
| 83       | Brooke Batcheller    | Muscle Quality and Endurance Training: A Cross-Sectional Examination in Collegiate Cross-Country Athletes | Todd Shoepe  
           | Applied Mathematics; Health and Human Sciences | Health & Human Sciences |           |
| 84       | Matthew Lemus        | Muscle Quality as Predictor of Self-Reported Fatigue in Cancer Survivors | Todd Shoepe  
           | Health and Human Sciences | Health & Human Sciences  
           | Heather Tarleton  
           | Health & Human Sciences |           |
| 85       | Naomi Sengal         | Neuropathy in Cancer Survivors | Heather Tarleton  
           | Health and Human Science | Health & Human Sciences |           |
| 86       | Sydnie Maltz         | Nutritional Status of Food Served at Residential Alcohol Rehabilitation Centers Across the United States | Hawley Almstedt  
           | Health and Human Sciences | Health & Human Sciences  
           | Andrew Earle  
           | Psychology |           |
| 87       | Amanda Neri          | A Pilot Study on the Efficacy of Breathing and Voicing (Phonation) Perturbations for Improvement of Postural Balance Measuring Center-of-Pressure | Veera Asher  
           | Health and Human Sciences; Music | Music |           |
| 88       | Caroline Gallagher   | Radiation and Exercise Training Effects on Muscle Strength and Quality in Female Cancer Survivors | Todd Shoepe  
           | Poehls  
           | Health and Human Sciences | Health & Human Sciences |           |
| 89       | Grant Mello          | Resistance Training History and Gender Differences in Muscle Quality of College Students | Todd Shoepe  
<pre><code>       | Psychology | Health &amp; Human Sciences |           |
</code></pre>
<table>
<thead>
<tr>
<th>Poster #</th>
<th>Student Presenter(s)</th>
<th>Title of Presentation</th>
<th>Faculty Mentor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td>Brooke Beermann&lt;br&gt;Health and Human Sciences&lt;br&gt;Ryan Bae&lt;br&gt;Health and Human Sciences&lt;br&gt;Sophia Deen&lt;br&gt;Health and Human Sciences&lt;br&gt;Malachi Green&lt;br&gt;Health and Human Sciences&lt;br&gt;Taylor Peterson&lt;br&gt;Health and Human Sciences</td>
<td>A Study of Leg Force Production in Collegiate Soccer Women</td>
<td>William McCormack&lt;br&gt;Health &amp; Human Sciences</td>
</tr>
</tbody>
</table>

**Mathematics – Physics**

<p>| 91       | Christopher Lorenzo&lt;br&gt;Physics&lt;br&gt;Randy Qafaiti&lt;br&gt;Engineering Physics | The Effects of Eddy Currents in Various Metal Rods | Jeff Sanny&lt;br&gt;Physics |
| 92       | Catherine Weiss&lt;br&gt;Applied Mathematics | Elliptic Curves in Post-Quantum Cryptography | Lily Khadjavi&lt;br&gt;Mathematics |
| 93       | Randy Qafaiti&lt;br&gt;Engineering Physics&lt;br&gt;Jingyuan Du&lt;br&gt;Applied Mathematics; Physics | Inertial Electrostatic Confinement Fusion Research Project | Anatol Hoemke&lt;br&gt;Physics |
| 94       | John Buda&lt;br&gt;Mathematics | Integrating Non-Euclidean Geometry into High School | Angela Gallegos&lt;br&gt;Mathematics |
| 95       | Nikolas Victoria&lt;br&gt;Biology | Mathematical Models of β-cell Cluster Dysfunction via IAPP-Induced Membrane Pores | Robert Rovetti&lt;br&gt;Mathematics |
| 96       | Natalia Dibbern&lt;br&gt;Civil Engineering; Applied Mathematics | A New Algorithm for Community Detection in Large Social Networks | Thomas Laurent&lt;br&gt;Mathematics |
| 97       | Joshua Bernardin&lt;br&gt;Mechanical Engineering&lt;br&gt;Daniel Pascoe&lt;br&gt;Physics | Tension on a Wheeled Cart Moving on an Irregular Surface | Vincent Coletta&lt;br&gt;Physics |</p>
<table>
<thead>
<tr>
<th>Poster #</th>
<th>Student Presenter(s)</th>
<th>Title of Presentation</th>
<th>Faculty Mentor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>98</td>
<td>Colin Wikholm, Daniel Pascoe</td>
<td>To Sleep or to Study: Knowledge of How Sleep Deprivation Diminishes Exam Performance Improves Students' Choices About Sleep vs. Study</td>
<td>Vincent Coletta, Physics</td>
</tr>
<tr>
<td>38</td>
<td>Isai Lopez, Colin Wikholm</td>
<td>California Horn Snail exhibit a bimodal size distribution and size-associated dispersal patterns</td>
<td>Victor Carmona, Biology</td>
</tr>
<tr>
<td>99</td>
<td>Yeon Jae Kim, Electrical Engineering</td>
<td>American Crow (Corvus brachyrhynchos) Family Groups at Loyola Marymount University and Venice Beach CA</td>
<td>Peter Auger, Environmental Science; Eric Strauss, Biology, Center for Urban Resilience</td>
</tr>
<tr>
<td>100</td>
<td>Alex Napior, Biology; Spanish</td>
<td>Analyzing the Role of Rhizobium pilA1, pilA2, and pilA3 Genes During Root Infection</td>
<td>Nancy Fujishige, Biology</td>
</tr>
<tr>
<td>101</td>
<td>Brandon Besharat, Brandon Litvak, Biology</td>
<td>Ant density and EFN gland morphology in castor bean plants</td>
<td>Victor Carmona, Biology</td>
</tr>
<tr>
<td>102</td>
<td>Ethan Flake, Matthew Allegretti, Biology</td>
<td>Caching Behavior in Corvids: Cognition and Pattern Recognition</td>
<td>Peter Auger, Environmental Science; Eric Strauss, Biology, Center for Urban Resilience</td>
</tr>
<tr>
<td>103</td>
<td>Isai Lopez, Colin Wikholm, Biology</td>
<td>California Horn Snail exhibit a bimodal size distribution and size-associated dispersal patterns</td>
<td>Victor Carmona, Biology</td>
</tr>
</tbody>
</table>

**POSTER SESSION III**

3:00pm – 4:30pm

Atrium and 1st Floor Hallways

- Biology - Chemistry - Biochemistry -
<table>
<thead>
<tr>
<th>Poster #</th>
<th>Student Presenter(s)</th>
<th>Title of Presentation</th>
<th>Faculty Mentor(s)</th>
</tr>
</thead>
</table>
| 104      | **John Waggoner**  
*Biology* | Changes in hematocrit in response to potential migratory cues in facultative migrants | **Heather Watts**  
*Biology*                               |
| 105      | **Morgan Mutch**  
**Marisa Carino**  
**Kevin Nguyen**  
*Biography*                               | Characterization of Aim32p                                                             | **Deepa Dabir**  
*Biology*                               |
| 106      | **Kyle Hunter-Valls**  
*Urban Studies*  
**Giovanni Di Franco**  
*Environmental Science; Spanish* | City of Colton Urban Forest Management Project                                         | **Peter Auger**  
*Environmental Science; Center for Urban Resilience*  
**Michele Romolini**  
*Center for Urban Resilience* |
| 107      | **Alejandra Garcia**  
*Environmental Science*  
**Luis Mendez**  
*Mechanical Engineering* | Conservation Enhancements for a Remote Biological Field Station in Mexico's Western Sierra Madre | **Victor Carmona**  
*Biology*                               |
| 108      | **Zachary Calilung**  
**Thomas Ashton**  
*Biochemistry*                           | Construction of Edible Varicella Zoster Vaccine in Transgenic Tomato                   | **Nancy Fujishige**  
*Biology*                               |
| 109      | **Hayley Hart**  
**Nicole Infantino**  
**Stephen Gloudman**  
**Christopher Jaime**  
*Biography*                               | Coyote/Human Interactions in the City of Long Beach, CA                                | **Peter Auger**  
*Environmental Science; Center for Urban Resilience*  
**Eric Strauss**  
*Biology; Center for Urban Resilience* |
| 110      | **Brandon Klein**  
*Biography*                           | Dynamical systems modeling of six related small gene regulatory networks suggests that the transcription factors Cin5, Gln3, Hmo1, and Yhp1 play a role in controlling the cold shock response in Saccharomyces cerevisiae | **Kam Dahlquist**  
*Biology*  
**Ben Fitzpatrick**  
*Mathematics*                              |
| 111      | **Kendall Johnson**  
*Biography*                           | Ecological Diversity of Mycobacteriohages                                              | **Victor Carmona**  
*Biology*                               |
<table>
<thead>
<tr>
<th>Poster #</th>
<th>Student Presenter(s)</th>
<th>Title of Presentation</th>
<th>Faculty Mentor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>112</td>
<td>Monica Hong</td>
<td>The Effects of Abiotic Factors on the Biotic Defense of Castor Bean (Ricinus communis)</td>
<td>Victor Carmona (Biology)</td>
</tr>
<tr>
<td></td>
<td>Matthew McPherson</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alexandra Heck</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Courtney Merriam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>113</td>
<td>Chase Dugay</td>
<td>Effects of acclimation temperature and salinity on salinity tolerance in Tigriopus californicus</td>
<td>Wes Dowd (Biology)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lani Gleason (Biology)</td>
</tr>
<tr>
<td>114</td>
<td>Brendan Angelo</td>
<td>Exopolysaccharide and nodulation phenotype of four mutant strains of Burkholderia tuberum</td>
<td>Michelle Lum (Biology)</td>
</tr>
<tr>
<td>115</td>
<td>Mitchell Braun</td>
<td>Exploring the effects of leaf water absorption on recovery from desiccation in Xerophyta elegans</td>
<td>Philippa Drennan (Biology)</td>
</tr>
<tr>
<td>116</td>
<td>Karina Alvarez</td>
<td>Flavonoid Content and Pollinator Visitation in Rhaphiolepis indica</td>
<td>Victor Carmona (Biology)</td>
</tr>
<tr>
<td></td>
<td>Environmental Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>117</td>
<td>Ashley Arnell</td>
<td>Generation and Characterization of Burkholderia tuberum nod mutants</td>
<td>Michelle Lum (Biology)</td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>118</td>
<td>Caroline Fukawa</td>
<td>Genetic Variation and Biogeography of the Silver Garden Spider Argiope argentata (Araneae: Araneidae)</td>
<td>Martina Ramirez (Biology)</td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>119</td>
<td>Karina Alvarez</td>
<td>GIS as a Tool for Evaluating Ecological Relationships</td>
<td>Victor Carmona (Biology)</td>
</tr>
<tr>
<td></td>
<td>Environmental Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yu-Sam Ting</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nikki Orban</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Biochemistry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>120</td>
<td>Michael Gloudeman</td>
<td>Hummingbird Response to Decoys at Artificial Feeders</td>
<td>Peter Auger (Environmental Science)</td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td>Center for Urban Resilience</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eric Strauss (Biology)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Center for Urban Resilience</td>
</tr>
<tr>
<td>121</td>
<td>Yu-Sam Ting</td>
<td>The Impact of Cattle on the Population Dynamics of a High-Elevation Thorn-woodland Clonal Oak (Quercus potosina) in the Sierra Fria Mountains of Aguascalientes, Mexico</td>
<td>Victor Carmona (Biology)</td>
</tr>
<tr>
<td>Poster #</td>
<td>Student Presenter(s)</td>
<td>Title of Presentation</td>
<td>Faculty Mentor(s)</td>
</tr>
<tr>
<td>----------</td>
<td>----------------------</td>
<td>---------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------</td>
</tr>
<tr>
<td>122</td>
<td>Eileen Choe</td>
<td>Improved data interoperability for GRNsight: a web application for visualizing models of gene regulatory networks</td>
<td>Kam Dahlquist Biology</td>
</tr>
<tr>
<td></td>
<td>Computer Science</td>
<td></td>
<td>John Dionisio Biology</td>
</tr>
<tr>
<td></td>
<td>Mihir Samdarshi</td>
<td></td>
<td>Electrical Engineering and Computer Science</td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yeon-Soo Shin</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Computer Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Edward Bachoura</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Computer Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>123</td>
<td>Michelle Laiolo</td>
<td>Influence of a Social Partner on Activity Patterns in the Facultative Migrant the pine siskin</td>
<td>Heather Watts Biology</td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td>Ashley Robart Biology</td>
</tr>
<tr>
<td>124</td>
<td>Kaitlyn Yee</td>
<td>Integration of Hummingbird Research into Public School Science Curriculum</td>
<td>Peter Auger Environmental Science; Center for Urban Resilience</td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td>Eric Strauss Biology</td>
</tr>
<tr>
<td></td>
<td>Melissa Morado</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>125</td>
<td>Colin Wikholm</td>
<td>Investigating the Role of Heavy Metals on Interspecies and Intraspecies Interactions of Invertebrates and Vertebrates</td>
<td>Victor Carmona Biology</td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>126</td>
<td>Nicholas Diaz</td>
<td>Isolating the Regions of the Drosophila X Chromosome Capable of Conferring Heavy Metal Resistance in Drosophila melanogaster</td>
<td>Mary McElwain Biology</td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leanne Kuwahara</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>127</td>
<td>Brenda Dimaya</td>
<td>Isolation and characterization of transposon-induced motility mutants of Burkholderia tuberum</td>
<td>Michelle Lum Biology</td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>128</td>
<td>Jacqueelyn Galvez</td>
<td>Linking climate and seed germination rate for the threatened California black walnut tree (Juglans Californica)</td>
<td>Demian Willette Biology</td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>129</td>
<td>Rebeccca Bremer</td>
<td>Modeling Temperature Variation using Drones to Inform Tropical Forest Management Strategies</td>
<td>Victor Carmona Biology</td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mekleit Dix</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>English; Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>130</td>
<td>Armaan Zare</td>
<td>Modifications and Expansions to a Novel Predator Aversion System Intended to Protect Nesting Endangered Least Terns Sternula antillarum browni at Venice Beach, CA</td>
<td>Peter Auger Environmental Science; Center for Urban Resilience</td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alex Isaev</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>131</td>
<td>Melissa Morado</td>
<td>Nocturnal vocalization behavior associated with photoperiod-induced migratory restlessness in pine siskins (Spinus pinus)</td>
<td>Heather Watts Biology</td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td>Ashley Robart Biology</td>
</tr>
<tr>
<td>Poster #</td>
<td>Student Presenter(s)</td>
<td>Title of Presentation</td>
<td>Faculty Mentor(s)</td>
</tr>
<tr>
<td>----------</td>
<td>----------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>132</td>
<td>Amy Weber</td>
<td>Patterns of Urban Hummingbird Nest Distribution on the LMU Campus</td>
<td>Peter Auger Environmental Science; Center for Urban Resilience Eric Strauss Biology; Center for Urban Resilience</td>
</tr>
<tr>
<td></td>
<td>Electrical Engineering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>133</td>
<td>Claudia Aliman</td>
<td>Phosphate Concentration Impacts the Mutant Phenotype of Burkholderia tuberum Phosphate Transport Mutants</td>
<td>Michelle Lum Biology</td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>134</td>
<td>Emma Strand</td>
<td>Plasticity of thermal tolerance and growth rates in juvenile mussels</td>
<td>Wes Dowd Biology</td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td>Lani Gleason Biology</td>
</tr>
<tr>
<td>135</td>
<td>Carolyn Egekeze</td>
<td>Potential Impacts of Artificial Feeders on Hummingbird Behavior</td>
<td>Peter Auger Environmental Science; Center for Urban Resilience Eric Strauss Biology; Center for Urban Resilience</td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alyssa Weisblatt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>136</td>
<td>Mali McGuire</td>
<td>Quantifying pectoralis muscle color to investigate premigratory fattening in pine siskins</td>
<td>Heather Watts Biology</td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td>Ashley Robart Biology</td>
</tr>
<tr>
<td>137</td>
<td>Trixie Anne Roque</td>
<td>Restructuring the Data Architecture of GRNmap, a Gene Regulatory Network Modeling Application</td>
<td>Kam Dahlquist Biology</td>
</tr>
<tr>
<td></td>
<td>Computer Science</td>
<td></td>
<td>Ben Fitzpatrick Mathematics</td>
</tr>
<tr>
<td></td>
<td>Chukwuemeka Azinge</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Computer Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Justin Kyle Torres</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Computer Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>138</td>
<td>Melissa Morado</td>
<td>Sociobiology of Loyola Marymount University's Red-Tailed Hawk (Buteo jamaicensis) Reproductive Group</td>
<td>Peter Auger Environmental Science; Center for Urban Resilience Eric Strauss Biology; Center for Urban Resilience</td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Caitlin Shafer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>139</td>
<td>Gabriel Huacuja</td>
<td>Streptomyces sps. Secondary Metabolite Characterization and Applications</td>
<td>Michelle Lum Biology</td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>140</td>
<td>Lauren Pennington</td>
<td>Symbiosis between Chamaecrista fasciculata and nitrogen-fixing bacteria</td>
<td>Nancy Fujishige Biology</td>
</tr>
<tr>
<td></td>
<td>Biology; Spanish</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poster #</td>
<td>Student Presenter(s)</td>
<td>Title of Presentation</td>
<td>Faculty Mentor(s)</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------------------------------</td>
<td>---------------------------------------------------------------------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>141</td>
<td><strong>Nika Vafadari</strong>&lt;br&gt;Biology&lt;br&gt;Katherine Scheker&lt;br&gt;Biology</td>
<td>Targeted reverse genetic screen in <em>Saccharomyces cerevisiae</em> identifies transcription factor deletion strains that are impaired for growth at cold temperatures</td>
<td>Kam Dahlquist&lt;br&gt;Biology</td>
</tr>
<tr>
<td>142</td>
<td><strong>Ashwarya Sharma</strong>&lt;br&gt;Biology</td>
<td>Testing Competition and Relationships in Rhizobia-Legume Mutualisms</td>
<td>Michelle Lum&lt;br&gt;Biology</td>
</tr>
<tr>
<td>143</td>
<td><strong>Sarah Kodama</strong>&lt;br&gt;Biology&lt;br&gt;Nikolas Victoria&lt;br&gt;Biology</td>
<td>Unmanned aerial vehicles as a quantitative tool for evaluating population-level seedling dynamics</td>
<td>Victor Carmona&lt;br&gt;Biology</td>
</tr>
<tr>
<td>144</td>
<td><strong>Margaret ONeil</strong>&lt;br&gt;Biology</td>
<td>Using Graph Statistics to Investigate the Properties of Six Candidate Gene Regulatory Networks for Controlling the Cold Shock Response in <em>Saccharomyces cerevisiae</em></td>
<td>Kam Dahlquist&lt;br&gt;Biology&lt;br&gt;Ben Fitzpatrick&lt;br&gt;Mathematics</td>
</tr>
<tr>
<td>145</td>
<td><strong>Sophia Deen</strong>&lt;br&gt;Health and Human Sciences</td>
<td>Utilizing 3D printing technology and the plasmodial slime mold <em>Physarum polycephalum</em> to approximate efficient transit networks of Los Angeles</td>
<td>Demian Willette&lt;br&gt;Biology</td>
</tr>
</tbody>
</table>

**Chemistry - Biochemistry**

<table>
<thead>
<tr>
<th>Poster #</th>
<th>Student Presenter(s)</th>
<th>Title of Presentation</th>
<th>Faculty Mentor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>146</td>
<td><strong>Daniel Moghtader</strong>&lt;br&gt;Chemistry&lt;br&gt;Dileen Lao&lt;br&gt;Biochemistry</td>
<td>Atmospheric Emission Analysis of Sunshine Canyon Landfill</td>
<td>Lambert Doezema&lt;br&gt;Chemistry and Biochemistry</td>
</tr>
<tr>
<td>147</td>
<td><strong>Jacqueline El-Sokkary</strong>&lt;br&gt;Biochemistry&lt;br&gt;Yzabella Tabirara&lt;br&gt;Biochemistry</td>
<td>Community-Based Network of VOC Samplers to Determine Air Quality throughout Los Angeles Basin</td>
<td>Nicole Bouvier-Brown&lt;br&gt;Chemistry</td>
</tr>
<tr>
<td>148</td>
<td><strong>Samir Seshadri</strong>&lt;br&gt;Biology&lt;br&gt;David Parks&lt;br&gt;Computer Science&lt;br&gt;Alec Baktamian&lt;br&gt;Biochemistry&lt;br&gt;Lucas Almeida&lt;br&gt;Computer Science</td>
<td>Creation of a Los Angeles Air Quality Network Using Low-Cost Sensors</td>
<td>James Landry&lt;br&gt;Chemistry and Biochemistry</td>
</tr>
<tr>
<td>Poster #</td>
<td>Student Presenter(s)</td>
<td>Title of Presentation</td>
<td>Faculty Mentor(s)</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------</td>
<td>-----------------------</td>
<td>------------------</td>
</tr>
</tbody>
</table>
| 149     | **Dillon Rinauro**  
*Biochemistry*  
**Shannon Pilcher**  
*Biology*  
**Larry Palato**  
*Biology*  
**Kate Menefee**  
*Biology*  
**Edward Njoo**  
*Biology*  
**Ben Johnstone**  
*Biology*  
**Angela Tun**  
*Biology* | Determining Amyloidogenicity of Islet Amyloid Polypeptide IAPP) in Type II Diabetes for Animal Species | **David Moffet**  
*Chemistry and Biochemistry* |
| 150     | **Marcio Ortez**  
*Biochemistry*  
**Natalie Wilkie**  
*Biology* | Emission of Light Alkane Gasses from the La Brea Tar Pits | **Lambert Doezema**  
*Chemistry and Biochemistry* |
| 151     | **Scott Fraser**  
*Biochemistry*  
**Douglas Kitchen**  
*Biology*  
**Eric Carles**  
*Biology* | Imd3-mRNA Binding Analysis | **Sarah Mitchell**  
*Chemistry and Biochemistry* |
| 152     | **Casey Sederman**  
*Biochemistry; Applied Mathematics; Economics*  
**Gabriel Huacuja**  
*Biology*  
**Morgan Mutch**  
*Biology* | Misregulation of stress granule formation as a potential pathogenic mechanism in Charcot-Marie-Tooth neuropathy | **Sarah Mitchell**  
*Chemistry and Biochemistry* |
| 153     | **Kevin Ray Calvelo**  
*Biochemistry* | Molecular Structure and Electronic Properties of Anthocyanidins for use as Photosensitizers | **Emily Jarvis**  
*Chemistry and Biochemistry* |
| 154     | **Zachary Goldstein**  
*Biology* | Peroxide decomposition from Tryptophan-derived hydroperoxide | **Jeremy McCallum**  
*Chemistry and Biochemistry* |
| 155     | **K. Grace Johnson**  
*Biochemistry* | Photocatalytic implications from ab initio characterization of oxygen depletion localized on TiO2 brookite nanoparticle surfaces | **Emily Jarvis**  
*Chemistry and Biochemistry* |
<table>
<thead>
<tr>
<th>Poster #</th>
<th>Student Presenter(s)</th>
<th>Title of Presentation</th>
<th>Faculty Mentor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>156</td>
<td>Ryan Elson</td>
<td>Synthesis and evaluation of novel G-quadruplex-stabilizing compounds</td>
<td>Jeremy McCallum Chemistry and Biochemistry</td>
</tr>
<tr>
<td></td>
<td>Jillian Dawley</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nick Ventigan</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Biochemistry</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Health and Human Sciences</td>
<td></td>
<td></td>
</tr>
<tr>
<td>157</td>
<td>Sarah Roa</td>
<td>Synthesis and screening of novel polyphenol compounds targeted to inhibit IAPP amyloid aggregation</td>
<td>Jeremy McCallum Chemistry and Biochemistry</td>
</tr>
<tr>
<td></td>
<td>Biochemistry</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vincent Hayward</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environmental Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>158</td>
<td>Paolo Gonzalez</td>
<td>Water and Terpene Content in Plants</td>
<td>Nicole Bouvier-Brown Chemistry</td>
</tr>
<tr>
<td></td>
<td>Biochemistry</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nick Vanstrum</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environmental Science</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Acelhuate River Restoration
Megan Blacet, Valeria Munoz, Jacquelin Plasencia

The Acelhuate River watershed in El Salvador is the largest in Central America. The river is extremely polluted due to industrial waste as well as human waste. A river restoration for the Acelhuate is the long term goal for the models created in this study. Datasets containing DEM (Digital Elevation Model), land cover, and soil were used in generating the first phase model. This model was created in ArcMap 10.3 by delineating a watershed. The watershed delineation provides flow accumulation, flow direction, and pourpoint location which will be the basis for the final model. Using the watershed delineation, precipitation data can be analyzed once the ArcMap model is imported into HEC-HMS. Before importing the watershed into HEC-HMS for the phase 2 model, the soil data requires analyzing. To start analyzing the soil data a CN (curve number) is required. This categorizes the amount of runoff based on soil type, soil use, and percentage of soil types. The soil use and type was classified by the standards of the United States Department of Agriculture (USDA). With this data it is expected to merge the attribute tables into one and create the CNLookUp Table. These are the phase 1 preliminary steps to creating the phase 2 model in HEC-HMS. Once the model is complete, simulations can begin with the given precipitation data from the Ministry of The Environment in El Salvador. These simulation models are the preliminary steps for a restoration project, which can take up to ten years to complete.

Achieving Diversity in the Los Angeles Unified School District
Candace Yamanishi

The Los Angeles Unified School District (LAUSD) is the second largest school district in the nation. It currently remains on court order to desegregate. LAUSD has responded to the order with various methods and programs aimed at integrating its schools to alleviate the harms of racial isolation. Existing data and literature do not identify where diversity exists in LAUSD, or how it is being achieved or maintained. This study investigates if there is correlation between school type, level, and diversity by examining which types of schools: traditional public, charter, and magnet schools have the most racial and socioeconomic diversity.

Demographic data on all schools in LAUSD listed under the previously mentioned school types will be collected from the California Department of Education’s database. Factors that contribute to each school’s level of diversity will be evaluated. Data will be aggregated to control for school type and evaluated in terms of ethnic diversity averages and average numbers of students on free and reduced priced lunches. Demographic information on the general population derived from the Census Bureau will be compared with LAUSD student demographics. Geographic
coordinates of each school will be entered into a geographic information system, which will be utilized to create visual trends of school and neighborhood demographics. The reflection of the school’s racial and socioeconomic diversity makeup to that of the boundaries/neighborhood’s makeup will be examined and analyzed.

**The Aesthetic and Historical Integration of Parkour and Post Modern Dance**
Rhett Spongberg

Much like modern dance in the early-1900s, parkour (a physical and mental discipline that uses the immediate environment to train in the smooth and efficient navigation of obstacles) has recently taken the urban extreme sports world by storm. Parkour and modern dance share common aesthetic characteristics. This research paper concisely discusses parkour, parkour and modern dance’s common inceptions, parallels in their development, and their similar philosophies and aesthetics. Analysis of each was conducted by examination of documentaries, interviews, journal articles, and personal experiences with the two movement forms. The results included surprisingly similar development trends between parkour and modern dance and even more pronounced resemblances between their philosophies and aesthetics. This research sheds light on the foundations and the spirit of the movement forms, and could encourage traceurs (parkour practitioners) and modern and contemporary dancers to cross-train by participating in each other’s practice. This paper opens the door for discussion and encourages additional research into why these movement forms are similar and how the two might help each other in their current and future existence.

**Airfoil Pressure Distribution through a Wind Tunnel**
Nicolas Breceda

Bernoulli’s Principle states that the pressure of a fluid decreases at points where the speed of the fluid increases. Bernoulli’s Principle is applied in generating lift for the airfoils of aircrafts. An airfoil is a structure with curved surfaces, used as the basic form of wings and as the horizontal stabilizer of most aircrafts. It is designed to give the most favorable lift to drag ratio during flight. The development of airfoils began in the late 1800’s with the idea that adding curvature on blades would efficiently produce more lift than without curvature. Airfoils were designed to increase the velocity of the airflow on the top surface, thus decreasing pressure. Simultaneously, the impact of the air on the lower surface of the airfoil increases the pressure. The combination of pressure decrease above and pressure increase below produces lift. Airfoils are tested in wind tunnels, which are tools used in aerodynamic research to study the effects of air moving past solid objects. The following research seeks to calibrate a wind tunnel relating the wind speed to the frequency, and analyze various points for pressure differences over a low speed airfoil.
American Crow (*Corvus brachyrhynchos*) Family Groups at Loyola Marymount University and Venice Beach CA
Yeon Jae Kim

Ratio of Juveniles and Adults of American Crow *Corvus brachyrhynchos* in Family Groups at Loyola Marymount University and Venice Beach, Los Angeles, CA

American crows are highly social animals and display cooperative breeding, where nonbreeding offspring help their breeding parents care for juveniles. In order to gain a better understanding of the role of these nonbreeding offspring in raising nestlings and juveniles, crow nests and breeding groups were closely observed on the campus of Loyola Marymount University and at Venice Beach during the early summer of 2016. In each group, juveniles were usually closely associated with a single adult, however, the apparent roles of the adults within the group varied. In these apparent family groups one or two crows simply watched and supervised while the adults closely associated with each juvenile fed the juveniles. These differing apparent roles adopted by adults may ensure juvenile safety while in the process of feeding. Confirmation of these apparent roles would be best determined in future study by color banding resident birds.

Analysis of Societal Responses in Urban Landscape Irrigation due to the Recent California Drought Utilizing High Resolution Aerial NAIP Imagery
Janessa Mendoza, Valeria Munoz

Until this year, California has been in the most severe drought on modern record for the past few years. Consequently water agencies along with the Governor of California urged residents to conserve water. Water conservation messaging generally targets outdoor consumption including the promotion of turf removal and limiting outdoor irrigation. The effectiveness of these conservation campaigns and subsequent impacts on landscapes in large urban areas like Los Angeles is difficult to quantify due to a lack of metering data separating indoor and outdoor use. Here we calculate the Normalized Difference Vegetation Index (NDVI) using high-resolution one-meter National Agriculture Imagery Program (NAIP) data from the United States Department of Agriculture to 1) quantify changes in vegetation health between non-drought and drought years 2) examine the roles of various socio-demographics throughout Los Angeles County. Our analysis suggests that disparities in plant greenness, an indication of plant health, and total vegetated area exist between poor, primarily minority and wealthy, primarily white communities regardless of drought conditions. Vegetation health overwhelmingly declined throughout Los Angeles during the drought. Race was not a good indicator of these changes. However, wealthier communities had smaller declines in vegetation health compared to lower income regions. This indicates little to no changes in irrigation patterns or turf area in wealthier communities as a response to the drought. Understanding the influence of socio-demographics
on outdoor water usage during drought and non-drought periods can greatly improve conservation program development and public communication for water managers.

Archbishop Oscar Romero: The Last Homily and the Plight of the Poor
Jaclyn Ross

This paper aims to shed light on the civil war in El Salvador, which ravaged the country from 1980-1992. The armed combat officially took place between the Salvadoran government military - which was supported by the United States - and the guerilla rebels who self-organized and were on some front supported by countries like Cuba. There are many layers to this topic, oftentimes with both sides claiming a different reality. However, the reality being examined here deals directly with the words of Archbishop Oscar Arnulfo Romero, who held the position of Archbishop of El Salvador from 1977 until 1980 when he was assassinated by the Salvadoran government. Using the Pentadic rhetorical criticism, this paper seeks to better understand the multi-faceted situation in which Archbishop Romero gave this homily - the last one he delivered before his assassination. Included within the analysis is a testimony given by a Salvadoran campesino who survived the Rio Sumpul Massacre as a child in 1980. By utilizing this form of criticism and the lens of dramatism, this paper will explain the many components within this one scene, and hopefully illuminate a very dark time in human history.

Assessing Baseline Avian Biodiversity and Threatened Species in Ascot Hills Park
Sarah Shapiro, Jacquelyn Galvez

As Los Angeles becomes more urbanized and expansive, preservation of the city’s remaining natural habitats is crucial to maintain their rich ecological importance and contributions to Californian biodiversity. Ascot Hills Park (34°04'10.8"N 118°11'23.1"W), located near downtown Los Angeles, is home to a wide array of native, introduced, and invasive animals, including a wide array of different birds. During May-June 2016, this research study surveyed, analyzed, and characterized the avian biodiversity within the park using camera footage, roving surveys, and bird identification walks. Three hours of camera footage from the riparian, meadow, and chaparral habitats revealed interesting avian behaviors used to understand social and food-source interactions. Nine hours of bird identification walks found 19 species of birds residing in the park, including two invasive species (the Eurasian Collared Dove and the Brown-Headed Cowbird), one introduced but now established species (the House Sparrow) and three species listed as threatened on the 2016 State of North America birds status (the Red-Headed Woodpecker, Allen’s Woodpecker, and Wrentit). Additionally, a Shannon-Weiner biodiversity index found a diversity level of 2.03, which indicates a moderate level of avian biodiversity. A Simpson’s Diversity index found a diversity (D) of 0.217, which indicates a moderately high level of biodiversity. Overall, my data suggest that the park has thriving avian biodiversity;
however, the presence of invasive and threatened bird species poses a threat to the sustainability of Ascot Hill’s natural ecological niches.

Assessing baseline native and invasive plant biodiversity of Ascot Hills Park
Jacquelyn Galvez, Sarah Shapiro

Ascot Hills Park is a 93-acre urban park located in the El Sereno and Hillside Village neighborhoods of Los Angeles. Over the past century, the park’s land has been dominated by invasive plant species which have displaced natives that would otherwise thrive in the area. To monitor restoration efforts and obtain baseline biodiversity data, this study surveyed 1,225 0.5 m² quadrats at strategic locations around Ascot Hills to quantify the vegetation cover, species richness, and proportion of native and invasive plants within the park. Data was collected over the span of 11 days in May to June 2016; 24 transects were placed on the east bluff, six were placed along the riparian, and 19 were placed on the west bluff, capturing the park’s major habitats. Preliminary data analysis found an average of 72.5% dead vegetation cover, 10.5% live vegetation cover, and 17.5% soil cover. Mean dead plant height was 63% taller than live plant height (35.9 cm versus 21.9 cm, respectively). Eleven native plant species (including California narrowleaf milkweed and doveweed) as well as nine invasive plant species (including brome grass and tumbleweed) were identified, with invasives consisting of 94.45% of the plant cover in the quadrats surveyed. Large-scale planting restoration efforts, including an increase of California narrowleaf milkweed populations among the park’s grassland habitats, could help diminish the impact of invasives and restore California native species to the area.

Assessing Urban Parklands: Novel Use of Game Cameras to Study Park User Behavior in the Baldwin Hills
Jorge Gamboa

Efforts to create more sustainable cities are evident in the growing number of sustainability policies in cities worldwide. It has become widely proposed that the success of these urban sustainability initiatives will require city agencies to partner with, and even cede authority to, organizations from other sectors and levels of government. Yet the resulting collaborative networks are often poorly understood. We believe that a better understanding of citywide environmental governance networks can inform evaluations of their effectiveness, thus contributing to improved environmental management. The Los Angeles Stewardship Mapping & Assessment Project (STEW-MAP) builds on comparable research in seven U.S. cities. Through a citywide survey, we collected data on the attributes of environmental stewardship organizations, their network relationships, and the geographic location of their work. The preliminary inventory revealed a large network of 715 organizations conducting stewardship in Los Angeles. Statistical, spatial, and social network analyses are underway to better understand the city’s stewardship network. In this presentation, we will discuss the project, our early findings, and potential implications of network research for urban sustainability governance.
Atmospheric Emission Analysis of Sunshine Canyon Landfill
Daniel Moghtader, Dillen Lao

Emissions from the Sunshine Canyon Landfill in Grenada Hills were investigated. The landfill has received a lot of attention regarding various odors in recent years. Over 9300 complaints have been filed by residents, elementary schools, and commuters. The landfill is currently under a lot of legal scrutiny as some citizens’ health have supposedly been compromised. The purpose of this project is to see the effect that the landfill has on local air quality. This will be carried out by collecting ambient air samples and analyzing them for methane and C2-C10 hydrocarbons. Additionally, potential sulfur-containing compounds that lead to odors will be analyzed with the use of GC-MS with specialized columns. Preliminary samples indicate that certain downwind samples contain as much as 2.291 ppm of methane compared to upwind concentrations of 1.868 ppm.

Attitudes, Perceptions, and Eating Choices
Victoria Hernandez

This project investigates the psychology of vegetarianism and eating meat. Of interest are the characteristics of the eaters (vegetarians vs. meat eaters) and the perceptions of the eaten (animals). In Study 1, relevant predictors and motivators for being a vegetarian or meat eater will be explored, including participant animal empathy, feminist views, social dominance orientation, and social desirability. In addition, meat eaters’ coping with the “meat paradox” will be explored: the “meat paradox” proposes that most meat eaters care about animals nor want them harmed, but engage in meat eating that is a result of animal death and suffering (Loughnan, Bastian & Haslam, 2014). Research demonstrates that meat eaters minimize the cognitive dissonance related to eating meat through tactics such as justification, dissociation, and speciesism (Loughnan, Haslam & Bastian, 2010). Study 2, explores the effect of descriptive language on perceptions of mind and edibility of an animal. Participants will be presented with a positively negatively charged description of an animal. Participants will then be asked to rate the animal on mind attribution (mental capacity) and edibility. Research demonstrates that animals portrayed as appropriate for consumption are regarded as having less mental capacity and rated as less deserving of moral treatment (Bastian, Loughnan, Haslam & Radke, 2012). Therefore, the type of language used to describe an animal may have an effect on individual’s perceptions of its edibility. It is predicted that administration of the negatively charged description will be associated with lower ratings of mental capacity and higher ratings of edibility.
Authenticity or Threat?: YG's "Meet the Flockers" and Cultivation Theory
Dominick Divine III

In 2014 rapper YG released “Meet the Flockers,” which references, and some critics argue, encourages burglaries in Chinese neighborhoods. The accompanying music video portrays teenage boys burglarizing a Chinese home. Audiences and news outlets suggested the song encouraged listeners to target and victimize a specific ethnicity. The controversy spread, including a White House petition to ban “Meet the Flockers” and to investigate the rapper’s “legal responsibilities” for recent burglaries. This paper analyzes how some audience segments decoded YG’s music through what Cultivation theorists call “Mean World Syndrome,” which led them to hold YG responsible for unrelated criminal acts, as well as the larger African American communities he supposedly represents.

Audience reception data was collected from Twitter and user comment sections in online news sites and YouTube. Textual analysis indicates those members who were more distant from African American cultures and communities were more likely to be outraged and frightened by the song, while those who suggested it was relatable read it as an authentic and critical artistic work. Distance is argued to make “out-group”audiences more susceptible to Mean World Syndrome, which suggests exposure to violent content in media leads audiences to view the world as more dangerous than it is. YG’s work is thus read as threatening and representative of the values of African Americans. While YG’s music does involve crime and violence, out-group audience members have internalized a Mean World perspective, which causes them to misunderstand the song as a threat, rather than an expression of his reality.

The Awareness of California's Government Health Insurance Marketplace
Adrian Narayan

Healthcare knowledge, as defined by the National Institutes of Health requires the ability to efficiently inform individuals about insurance services across a provider network. Considering the state tax penalty fee for uninsured Californians, proper healthcare knowledge can increase the likelihood of uninsured California citizens to register for health insurance. This study examines the progression of Californian’s knowledge about Covered California (the state government’s health insurance marketplace) by analyzing annual surveys conducted by NORC at the University of Chicago. Each annual survey conducted between the years of 2013 and 2016 includes a random sample of Californians ranging from 2,100-2,300 persons (insured under Covered California, privately insured, or uninsured) that provides data on awareness of Covered California. Two measures are used to quantify knowledge about Covered California: (1) positively identifying a Covered California Television advertisement and (2) have seen or heard about Covered California through news platforms (digital and non-digital). The demographic metric for this analysis derives from the American Community Survey to measure the state’s (1)
racial/ethnic population (2) age groups (18-34, 35-49, 50-64) and (3) income levels (incomes 400% greater than the Federal Poverty Level [FPL], 251-399% greater than the FPL, and 138-250% greater than the FPL). These data on Californians awareness of Covered California in relation to the state’s demographics will be used to document, interpret, and analyze what type of Californians are more and/or less aware of Covered California. Discoverable patterns will assist the marketing department of Covered California to better understand where healthcare knowledge inequity remains.

**B**

**Black Student Activism and LMU’s Mission**

Kiana Gums

Decades of research have primarily focused on the impact of black student activism on college campuses. Nevertheless, very seldom does this research illustrate the relationship between these students’ efforts and the mission statement of their respective institutions. In my research, I examined the engagement of black students at Loyola Marymount University (LMU) throughout history, highlighting the ways in which their actions exemplify key elements of the university’s 3-part mission. Thus far, my research has focused on the third aspect “the service of faith and the promotion of justice.” In conducting my research, I first reviewed the work of Bradley (2006), Joseph (2006), and Murch (2010) to gain contextual background of the activism black students during the black power era, arguably the pinnacle of black student engagement nationwide. I then collected and analyze documents (loyolan clippings, meeting notes, etc) pertaining to black student activism at LMU, with the goal of creating an archive of the information I gathered for future application. In conclusion, I found that LMU has a rich history of black student activism, including the 1992 sit-in that led to the creation of the studies of American diversity core.

**Build a Miracle: Building Homes and Building Relationships - A Community Perspective**

Mary North

The purpose of this research is to look at how community support can facilitate the transformation of an impoverished neighborhood, through the case study of the nonprofit Build A Miracle (BAM) in the community of El Florido in Tijuana, Mexico. Mexico is a country that has long struggled with income inequality and high poverty rates. There are many organizations that are involved with charitable work in Mexico, each with its own goals and approaches. BAM is a San Diego-based nonprofit organization that has built over 250 homes and provided hundreds of educational scholarships for people living in poverty in Tijuana. Two to three times a month, BAM takes a group of volunteers from the United States to a small neighborhood called El Florido in Tijuana to build homes and build relationships with community members. Through
the narrative of eleven women from El Florido, I examined the effects that BAM has had on an economically struggling community and investigated which components of BAM’s model has made it successful. This involved interviewing various women about their experiences working with BAM and their outlook on how their lives and community have changed since BAM’s arrival. This investigation brought to light that one of the integral components of BAM’s model is the fostering of relationships between the American volunteers and the Mexican families in addition to traditional monetary support. The data also suggest that the strong Mexican female leaders have played a crucial role in the operation of the organization.

Caching Behavior in Corvids: Cognition and Pattern Recognition
Ethan Flake, Matthew Allegretti

Caching behavior in two corvids, American crow (Corvus brachyrhynchos) and western scrub jay (Aphelocoma californica) were recorded using motion-activated cameras and direct observations in order to compare behavioral differences between the two species. Investigating bird caching behavior is important in determining the cognitive capacity of each bird species and displaying how these avian species may have adapted to living successfully in urban ecosystems with highly variable food sources. Both species were baited using peanuts. We video recorded how birds selected peanuts to examine potential size or weight preferences specific to either species. After initial observations of caching behavior with untreated peanuts, food dye was applied to peanuts with a mass greater than 2.5g. contained within a group of undyed peanuts with a mass below 1.5g. By varying which group the dye was applied to, it was possible to examine the extent to which corvids were capable of recognizing patterns associated with their food source in order to optimize caching productivity. The ability to rapidly recognize changes and patterns associated with their food sources could allow for rapid adaptation in feeding that provides corvids with a significant selective advantage in urban environments.

California Horn Snail exhibit a bimodal size distribution and size-associated dispersal patterns
Isai Lopez, Colin Wikholm

The California Horn Snail (Cerithideopsis californica) is an important primary intermediate host in the life cycle of a variety of parasitic species that have extensive effects on ecological food webs. As such, parasite load in the California Horn Snail can serve as an important tool in assessing the effectiveness of restoration projects. The goal of the study was to investigate the population dynamics of the California Horn Snail in Ballona Wetlands, California, the only major coastal salt marsh in Los Angeles County. This study evaluated the spatial dispersion, size distribution, and density of C. californica collected from the Ballona Wetlands Ecological
Preserve. The results showed that the population of *C. californica* in the preserve exhibited a bimodal distribution of size, with the large and small cohorts exhibiting significantly different patterns of dispersion. The study suggests that both bimodal size distribution and size-associated behavior of *C. californica* may be important for understanding this ecologically important snail.

**Changes in hematocrit in response to potential migratory cues in facultative migrants**

John Waggoner

Obligate migrants, which make predictable to-and-fro migrations undergo physiological changes in preparation for migration. One of these preparations is an increase in erythrocyte production, reflected as an increase in red blood cell volume, or hematocrit. Unlike obligate migrants, the movements of facultative migrants occur less predictably both spatially and temporally. The extent to which facultative migrants undergo physiological preparations for migration, such as changes in hematocrit, remains poorly understood. Using the pine siskin (*Spinus pinus*), a facultative migrant, this study examines whether birds show preparatory changes in hematocrit in response to two environmental triggers of facultative migration: declining food availability, and lengthening photoperiod (i.e., day length). For the declining food experiment, birds experienced a reduction in both the quality and quantity of food available as compared to control birds, which experienced no decline. For the photoperiod experiment, wild caught birds were kept either at a naturally increasing day length or on short winter solstice day length (as a control). For both experiments, blood samples were collected at regular intervals and hematocrit was quantified. We found that declining food availability led to a significant decrease in hematocrit compared to the control birds. This suggests an absence of physiological preparation for migration in response to declining food. On the other hand, increasing day length led to a significant increase in hematocrit compared to short day birds. Indicating that facultative migrants show a physiological preparation for migration as a response to lengthening days, similar to the responses found in obligate migrants.

**Changing Attitudes: Cultural and Educational Exchanges as a Form of Public Diplomacy**

Erisa Takeda

To what extent do public diplomacy initiatives, specifically cultural and educational exchanges, change participants’ attitudes of the host country? Public diplomacy is imperative in gaining public support to facilitate foreign relations. However, without influences and motivations that gather and build bridges at the public level between states, the formation and execution of foreign policies at the elite level would be difficult. Cultural and educational exchanges are one of the tools used in public diplomacy to ameliorate relations among people and galvanize public support. Existing theoretical literature addresses the significant role of cultural and educational exchanges in public diplomacy, but there is lack of literature that empirically and methodologically frames the effectiveness of public diplomacy. What this research aims to do is
empirically find the efficacy of the influence that builds bridges between people of two nations. Therefore, this research will be examining one type of cultural and educational exchange at Loyola Marymount University - the BCLA Global Immersion trip. I will be conducting a pre-trip and post-trip survey, polling approximately 90 students who have participated in the trips. The point is to inquire about changes in attitudes about the host country before the trip and after the trip. Based on existing literature, the findings from the surveys will show students’ positive change in attitudes of the host country.

Characterization of a DC SQUID with Observed Shapiro Steps
Ivan Jelic

Since the discovery of superconductivity by Heike Kamerlingh Onnes in 1911 research into superconductivity has become widespread with special devices made specifically for observing these peculiar effects. The first materials discovered to be superconductive only exhibited this trait of zero resistivity at very low temperatures, a few Kelvin or less. Now, with the advent of the high temperature superconductive film, YBCO, it has allowed general superconductivity experiments to become more widespread. This is because only liquid nitrogen is required to achieve the required low temperatures to establish superconductivity in the material and perform relevant experimentation. In this thesis, characterization of a YBCO DC SQUID (Superconducting Quantum Interference Device) is presented. This SQUID works through the use of two Josephson junctions in parallel; Josephson junctions are two superconductors coupled through a weak link that allows the quantum phenomenon of superconductivity to be observed. Values of the normal resistance, critical current, characteristic voltage, modulation depth, and inductance characteristics were performed at 90 Kelvin with calculation of beta parameters derived from inductance and modulation depth values. The SQUID was also exposed to the presence of a microwave frequency (MF) signal via a stripped wire attached to an MF generator. Results were obtained in the range of tens of GHz and the characteristic Shapiro step spacing was observed.

Characterization of Aim32p
Morgan Mutch, Marisa Carino, Kevin Nguyen

The cell mitochondrion performs ATP synthesis, oxidative damage prevention, and cell death regulation, all of which are important for organisms to function. Aim32p is an uncharacterized mitochondrial intermembrane space protein. In previous studies we demonstrate that it interacts with Erv1, a key member of the MIA import pathway. This pathway is redox-regulated and crucial for the import of nuclear encoded cysteine-rich proteins into the mitochondrion. Structural homology modeling studies revealed that Aim32p possesses a thioredoxin-like ferredoxin domain; cysteine residues 202 and 213 present within this domain may be important for redox reactions. The purpose of this study was to understand the biological function/s of
Aim32p. We generated a yeast strain deleted for AIM32 for in vivo studies, as well as cloned and expressed full length wild-type, and mutant (Cysteine 202, 213 -> serine) Aim32p for generation of recombinant protein for in vitro reconstitution studies Test inductions of mutated Aim32p under the control of either the IPTG promoter (BL21 cells) or arabinose promoter (C43 cells), under different temperatures (28°C and 32°C) reveal that the protein expresses well under the different conditions tested. Interestingly, we find that deletion of AIM32 results in severe sensitivity to DNA damaging agents such as hydroxyurea, and ethidium bromide, but not camptothecin. Thus, Aim32p may function to participate in electron transfer reactions with Erv1, and also have a novel yet unexplored function in DNA damage stress response.

**Children's Literature and Young Adult Novels: Reflections on the Complexity of Representation of the Immigration**

Mariajose Gomez

As immigration rates increase in the United States, the discussion has become extremely polarized; therefore, it is important to adopt a modern pedagogical framework that values intercultural competence. The way schools address topics related to the immigration experience plays a crucial role in student development because it determines students’ success, motivation, and identity. In this paper, I focus on the domain of children’s literature, which offers reflection and analysis of real-life experiences in a social and cultural context, by bringing to light culturally specific and interconnected themes common to the immigration experience. The role of the teacher is to acknowledge that the events that occur in the interstitial spaces are crucial to every student. In the school context, it is important to teach children’s literature that effectively portrays immigrant experiences by challenging conformity and addressing the complexities of the social constructions of immigration. By bringing immigration into conversation with select texts through a theoretical and research-based framework, educators can address these complexities in an intersubjective way, by challenging the role stereotypes play in notions of immigration and by recognizing the moral lessons that are centered on the interconnection of immigration, language, acceptance, and social relationships. Lastly, I argue that the content should be addressed in a way that gives the nature of immigration a positive connotation, one of learning, acceptance, and perseverance when faced with adversity, which will help break down socially constructed barriers and make room for humility, forgiveness, and the value of one’s identity.

**Christian Autobiography: A Perfect Tool for Evangelization, Theological Discourse, and Spiritual Inspiration**

Troy Kassien

Beginning with Augustine, countless Christian writers and spiritual masters have made their mark on the rich tradition of Christian writing through their autobiographies. The aim of this
The Christianization of Rome
Facundo Gonzalez-Icardi

The Christianization of Rome was an ongoing process that, although it began early in the first century with the apostle Paul, did not start its official expansion until the fourth century. Under the reign of Constantine, later to be known as the first Christian Emperor, the city of Rome began to develop acceptance and toleration towards the practitioners of a religion that, until then, suffered sporadic persecution. In this paper, I will provide a better understanding of the way in which a majorly pagan metropolis rose to become the capital of Christianity in the world today. Supported by historians and theologians such as Eusebius and John Baldovin, I intend to provide the foundations of a process of expansion that commenced in the fourth century under extremely unfavorable circumstances. The effects of practicing Christianity prior to the toleration laws issued by Constantine in 313CE ranged from apostasy to execution. Therefore, the abolition of the persecution was a major step towards the expansion of the Christian religion, and an event that marked the beginning of a new era to the early Christian people. Furthermore, I will analyze the art, architecture, and sculpture mainly from the fourth century, with supporting evidence from pieces dated much later, e.g. the sixteenth century; these artistic creations reflect the product of the history of the expansion of Christianity, as well as the struggles of the first Christians who, by adapting different structures and techniques from the pagan communities, slowly and subtly established their presence in Rome.

City of Colton Urban Forest Management Project
Kyle Hunter-Valls, Giovanni Di Franco

As population growth continues in our urban centers, urban forest management becomes an important priority. Trees are an essential component of resilient and healthy urban communities, providing benefits including mediating the urban heat island effect, storm water management, and energy and water efficiency, carbon sequestration, and city beautification. In order to assess
the current status of Colton’s urban forest, interdisciplinary teams of students and scientists from the Center for Urban Resilience (CURes) at Loyola Marymount University (LMU) have assisted Jack Sal & Associates with an extensive inventory of the tree resources within the City. In gathering data describing the size, distribution, age, health, and energy efficiency benefits of the City’s trees, this study seeks to provide recommendations for best management practices of Colton’s urban forest in the City’s 20 year plan. As part of the process in formulating the City’s 20-year plan, Colton has strived to engage the public in an open dialogue about this project. Colton is the first city to deal with the task of conducting an inventory of all the trees located within the public domain, in the future the strategies used here will be improved upon by other cities.

**Climate Change Vulnerability in Southern California: A Tool to Provide Climate Resiliency Assessments for Local Stakeholders**

Mariana Alifa

Recent inaction in climate change mitigation has shifted emphasis to assessing and understanding climate change risks and resiliencies of our populations. In this project, we propose a powerful climate change assessment and projection tool, called Climate Resiliency Assessment Technologies or CReATe. The tool aims to provide a better understanding of how climate change may affect different areas in Southern California in order to prepare local stakeholders in climate change related decision making. CReATe will ultimately be a graphical webtool that the public can access to make these assessments at a local scale. This study takes advantage of a 4-km resolution 10-member ensemble of climate model simulations, which to date provides the most advanced and most comprehensive climate change projections for the US. Greenhouse gas concentrations are prescribed according to the IPCC Representative Concentration Pathway 8.5 for the present-day (1976-2005) and the future (2021-2050). Initial analysis is focused on monthly averages as well as extremes in temperature and precipitation. Special focus is placed on assessing changes in extreme events and determining local regions of vulnerability. More specifically, the occurrence and intensity of extreme precipitation events are projected to increase over most of Southern California. Heat waves are also projected to increase in intensity and frequency, with the most severe effects in inland regions. These changes increase the vulnerability of our urban populations and ecosystems, which in the absence of climate change mitigation, suggest the need for adaptation strategies by our policy makers.

**Community-Based Network of VOC Samplers to Determine Air Quality throughout Los Angeles Basin**

Jacqueline El-Sokkary, Yzabella Tabirara

The goal was to set up a community-based network of air quality samplers at local high schools that would be maintained over many years by our research team. This air sampling device is
composed of a pump, filter, cartridge and flowmeter. All pieces of the device were calibrated to a specific flow rate and the assembly was used to sample areas of the Los Angeles Basin for 2 hours. The cartridges were then analyzed in the GCMS to identify and quantify the volatile organic compounds found in each neighborhood. A calibration curve corresponding to each analyzed compound was utilized to determine ambient concentrations. The dominant anthropogenic compound in the pilot study was o-cymene and the dominant biogenic compound was camphor. Sampling setups will continue to be distributed, while the growing network brings a better understanding of air quality in the Los Angeles Basin.

**Comparing Flexibility Rates Between Homeless Young Adults and University Students**

Makda Medhanie, Marina Marmolejo

Proper musculoskeletal health is dependent on the efficient inner workings of muscles, tendons, ligaments, joints, and bones. The homeless experience can be physically debilitating to these tissues and anatomical structures. This research study aims to satisfy the overarching question: do the lived experiences of homeless young adults negatively affect musculoskeletal health? This research study consisted of survey assessment of the demographics, physical activity and nutrition behaviors, and sleep patterns of 40 homeless young adults and 45 university students. Participants also completed five stretch tests to assess musculoskeletal flexibility. Findings indicate that homeless young adults experienced less flexibility which could be attributed to sleeping patterns. Those participants who sleep indoors have higher sit-and-reach flexibility rates (24.96 cm) than those who sleep outdoors (15.43 cm). Participants who slept indoors also experienced greater flexibility with the butterfly stretch (23.13 cm) than those who slept outdoors (18.43 cm). Additional findings on the relationship between physical activity, health behaviors, nutrition, and flexibility will be presented. Preliminary data suggests that musculoskeletal health is adversely affected by the homeless experience. Additional services such as yoga or Pilates at homeless drop-in centers may reduce the likelihood of long-term physical disability.

**Comparing Service Delivery Models of Speech Language Pathology Practices**

Leslie Ortega

The education system in the United States has continued to improve the educational access of all students, including students with special needs. Through the implementation of laws and developments of evidence-based programs such as IDEA and FAPE, more and more school districts are beginning to provide beneficial programs and accommodations in order to ensure the success and integration of students with disabilities. However, even though mandates are set in place to ensure that students with disabilities receive a free and appropriate education, there is still much controversy on which environment is best for them to receive their education and related services. Therefore, it is important to analyze the different service delivery models in order to continue improving their school-wide implementation for the success of all students.
The purpose of my analysis was to explore whether there is a statistically significant difference in SLP practice treatments provided in the classroom versus in the speech room on children’s IEP goals. I executed my research by comparing and contrasting the effectiveness of the direct pull out SLP therapy model at Thurgood Marshall Elementary school versus the indirect push in SLP therapy model at WISH Elementary school. At each school I monitored the IEP speech goal progress of a third-grade student with intellectual and orthopedic disabilities. I collected data through informal observations, parent, teacher, and speech pathologist interviews, and informal student testing. Overall, I found that the third grade student receiving their SLP therapy through the indirect push in model at WISH Elementary school was able to make more rapid progress in her IEP speech goals due to the high levels of collaboration between the SLP, general education teacher, special education teacher, paraprofessional, and parents that was facilitated and required through the implementation of the indirect push in SLP therapy model.

Comparison of the regulatory dynamics of related small gene regulatory networks that control the cold shock response in *Saccharomyces cerevisiae*

Natalie Williams

The Dahlquist lab has investigated the global, transcriptional response of *Saccharomyces cerevisiae*, baker’s yeast, to the environmental stress of cold shock using DNA microarrays in the wild type strain and five strains deleted for a particular regulatory transcription factor. Gene regulatory networks (GRNs) consist of transcription factors, genes, and the regulatory connections between them that control the resulting mRNA and protein expression levels. A family of six related GRNs were derived from the YEASTRACT database which ranged in size from 15 to 20 genes and 27 to 36 edges. We used mathematical modeling to determine the dynamics of these GRNs to determine the relative influence of each transcription factor in the network. We then compared the modeling results from the database-derived network to random networks with the same number of genes and edges. An initial sample of ten random networks were generated. After performing parameter estimation, we found that the database-derived networks performed better with smaller least-squares error values than seven of the ten random networks. To perform a more robust analysis, a larger collection of random networks was generated. Comparisons made between the random networks and the database-derived networks consistently showed better modeling of the database-derived networks. These comparisons also revealed key network motifs in both the database-derived and random networks that correlated with better fits to the data.

The Concentration of Quality Health Facilities throughout Los Angeles County

Adrian Narayan

The purpose of the healthcare system as defined by the National Academy of Medicine is “to continually reduce the burden of illness, injury, and disability, and to improve the health and
functioning of the people of the United States.” California Hospital Compare quantifies the quality of healthcare in California using three measures: patient outcomes (avoiding infections, readmissions, mortality, and adverse events in patients), patient experience (communication about hospital discharge and drug information), and hospital practices (appropriate use of scanning and avoiding C-sections). The U.S. Department of Health and Human Services maps data on active health facilities (hospitals, medical centers, and federally qualified health centers) through Geographic Information Systems (GIS). This project will document the number of health facilities and their quality in census tract clusters in Los Angeles County and attempt to identify potential healthcare deserts. Demographic metrics for this analysis will derive from the American Community Survey; these include income level (median household income and population percentage below poverty line) and racial/ethnic (non-white %) population. These data will uncover patterns that may exist among certain racial/ethnic populations and/or household income levels in relation to the quality, number, and geographic location of health facilities in Los Angeles County. Discoverable patterns will then be used to document, interpret, and analyze healthcare inequities in the county and to assist non-profits and stakeholders in understanding where health inequity persists.

**Conservation Enhancements for a Remote Biological Field Station in Mexico's Western Sierra Madre**

Alejandra Garcia, Luis Mendez

Pena del Gato is a remote biological field-station 2,500 meters above sea level. It is a tropical premontane thorn-woodland located within the western Sierra Madre Mountains near Aguascalientes, Mexico. As a national effort to conserve habitats and wildlife populations, in 2015 it was certified by the Mexican government as an Unidad de Manejo, or a wildlife conservation center. The station occasionally hosts international and national students, professors, and researchers interested in conserving endemic animals and flora within the region. Research conducted within the station will ultimately inform short-term research priorities in-country and provide the baseline for long-term reforestation research in the western Sierra Madre Mountains. However, in order to continue hosting, the station needed help in improving their renewable energy source system. Therefore, the objective of this project was to improve two solar panel system configurations shared by four cabins. The systems were composed of two 24 volt solar panels, two 12 volt batteries, a 10 amp control charger, and a 600 watt/12 volt alternating current inverter. Each solar panel system provided power to two cabins at a time: 1 & 2 or 3 & 4. In addition, a system redundancy design was implemented in case of a system malfunction. Thus, a double pole double throw switch was connected between cabins 2 & 3, which allowed three cabins to be powered by one solar panel system at a time: 1, 2, &3 or 2, 3, & 4.
Consistency and Loading Patterns between Elite FTS Vulcanized and Regular Rubber Bands

Daniel Ramirez

Rubber resistance bands are used frequently to induce variable-loading schemes in strength and conditioning. The purpose of this study was to examine the differences in loading patterns and consistencies between purported higher-quality vulcanized rubber and regular rubber bands acquired online through Elite FTS. Methods: Regular rubber bands (n=20) and vulcanized bands (n=20) were compared across a spectrum of four similar widths (1.27, 2.86, 4.45, 6.25 cm). Five bands from each width were stretched in 5 centimeter increments from a resting position of 100 centimeters, to twice resting length (200 cm). Tensile resistance was measured using a load cell integrated with a digital controller (DBBP-500 and SVS 2000; Kistler-Morse; Spartanburg, SC). Tension reliability testing was performed on each band on non-consecutive days producing intraclass correlation coefficients (ICC) between 0.929-0.999 with a grand mean ICC across all repeated measures of 0.979. Reliability of cross-sectional areas measured for stiffness was completed on a sample of bands for thickness and width producing an ICC of 0.963 and 0.999 respectively. Results: Statistical differences were observed for mean stiffness in all widths except for 4.45 cm. There was no statistical interaction effect for band type by width observed in mean resistance at twice resting length except for the highest width (40.0 ± 2.8 kg vs. 44.5 ± 0.6 kg) (p<0.001). The absolute range of loading (in kilograms) at twice resting length was significantly higher (p=0.008) in vulcanized bands (1.3 ± 0.7 kg vs. 8.8 ± 5.5 kg). The range of loading expressed as a percentage was significantly higher (p=0.021) in vulcanized bands (8.8 ± 4.9% vs. 15.7±3.9%). Conclusions: While vulcanized bands were stiffer and displayed greater variability, there were no differences in resistance at twice resting length seen between band types except at the greatest width.

The Constitutionality of Race-based Law Enforcement Practices

Tealanie Baldwin

The use of race-based practices by law enforcement is a heavily contested issue that has a profound impact on communities of color. Scholarly debate on the use of racial profiling and other race-based measures tend to focus their attention to the micro-level transaction that occurs between the individual and the police. While this transaction is vital, and serves to be a catalyst to many of the consequences that follow, little consideration has focused on what this exchange means in a community context. The purpose of this research is to investigate the definition and constitutionality of race-based law enforcement practices and whether or not such practices should trigger strict scrutiny based on the impact that they have on the African American community. The court has set precedent, in affirmative action and other equal protection cases not involving law enforcement, that whenever race is used in consideration, it must trigger the most stringent standard of review. Findings illustrate a voluntary neglect to advance the interest
of African American individuals who are arbitrarily impacted by the system through the court’s unwillingness to apply a consistent strict standard of review. In conclusion, the court must narrowly tailor policing practices, so that they do not have an unduly burden on the African American community, in order for them to be deemed constitutional.

**Constructing the Modern: The Role and Development of Modern Architecture and Bauhaus Thought in Weimar Germany**
Dominic Budetti

This research examines the architecture of Weimar Germany within the broader context of the Republic’s social and economic changes. Beginning with the founding of the German Werkbund in 1907, I follow the birth, growth, and impact of the modern architectural movement in Germany, from the prewar period to the fall of the Weimar Republic in 1933. I utilize a variety of primary sources, including photographs and accounts from the architects themselves, and also situate my analysis in the historical literature on Weimar Germany. I argue that this architectural movement, characterized by the predominance of modern designs, was aimed primarily at addressing the social and economic developments in the rapidly changing Republic. Through their minimalistic designs and use of prefabricated constructions, as well as in their focus on projects such as department stores and housing complexes, architects such as Walter Gropius, Eric Mendelsohn, and Bruno Taut developed a new style of architecture that directly addressed the society in which they were living, with the goal of improving life through architecture. Furthermore, the founding of the Bauhaus in 1919, which neglected ornamentation and focused instead on the concept of function driving form, acted as another source of theoretical inspiration for each of these architects. In the end, the architectural movement of the Weimar Republic transformed both the Weimar Republic Itself and the field of modern architecture with revolutionary designs, many of which are still used today.

**Construction of Edible Varicella Zoster Vaccine in Transgenic Tomato**
Zachary Calilung, Thomas Ashton

Genetic engineering plants has been used in agriculture to increase yields and make them resistant to stress and disease. Recently there has been a jump towards biopharmaceuticals to utilize plants to grow pharmaceuticals that are cost-efficient and easy to produce and store in areas where these items are limiting factors. One such use of biopharmaceuticals is in the development of plant expressing vaccine antigens with the idea of edible vaccines. When consumed, plant derived antigens of specific diseases should elicit an adaptive immune response similar to that of a typical injection based vaccine. In this study, antigens from the Varicella zoster virus (chickenpox) are used to construct transgenic tomato plants that express the virus antigen systemically. The antigen is derived from the coat protein of the Varicella zoster virus (VZV). Sequencing is performed to validate the presence of the VZV coat protein transgene.
This construct containing the antigen is then electroporated into agrobacterium for the purpose of transforming tomato cells. PCR and marker gene expression are performed to select for transformed cells expressing the virus antigen. A full tomato plant will be regenerated from the transformed cells by tissue culture. The concentration of VZV coat protein antigen will be analyzed in the transgenic plant.

**Consumer Traffick: Revealing the EverydayProducts Made by Modern-Day Slaves**
Catherine Lozano

“Consumer Traffick” exposes the invisible industry undermining American cities. Unscrupulous predators run a masked industry of human trafficking that targets vulnerable individuals of all races, ages, and genders. Unassuming victims are branded as commodities for the illicit sex trade, organ trade, and forced labor. What most people don’t know, however, is that victims of human trafficking become modern-day slaves for major businesses that supply the food, clothes, and services we consume. My visual inquiry explores how graphic design can reveal the links between human trafficking and the everyday products that make up the average American’s life. By researching trafficking in the nearby communities of Inglewood, Hawthorne, and Compton in conjunction with online interviews of trafficked victims, my design will reveal the industry’s motivations through an art gallery installation, showing that we all unwillingly participate in this illegal “industry.” My research reimagines familiar brands by shedding light on the truth behind consumer production. The subversive advertising techniques of alternative journal Adbusters have inspired my poster campaign to bring awareness to the idea that American consumption is driving modern-day slavery. I will use guerrilla techniques and “subvertising” to appropriate brand packaging that captures America’s attention by pinpointing the major sources driving the “human trade industry.”

**Content Analysis of SFTV Produced Films, 2012-2015**
Kathryn Scotto

This study is a content analysis of award-winning student-produced films from the School of Film of Television at Loyola Marymount University’s Film Beyond the Frame Series in 2012, 2013, and 2015. A faculty member from SFTV requested that such a study be conducted because of LMU’s commitment to social justice and diversity; SFTV would like to see how their students’ films represent diverse perspectives and populations. My particular focus of analysis is on the films’ representations of race, gender, class, age, and other identity categories. Using a standard coding sheet, I compared my coding of the 26 films to the findings made by the 42 students in Dr. Anna Muraco’s SOCL 2000, Qualitative Research Methods course in Fall 2016. My ongoing analyses thus far show that the majority of the films produced by SFTV students portray a majority male leads and characters, white leads and characters, characters under the age of 65, as well as other trends that will be highlighted in the presentation of results. As this is
an ongoing analysis, my results are tentative and they have not yet been compared to the SOCL 2000 students’ findings.

The Cordoba Naming Test: Preliminary Findings in the USA
Carla Ventura, Alice Gavarrete Olvera, Janelle Crowther

Confrontation naming tests are commonly used to measure word-finding abilities in patients with potential brain damage. In the United States, confrontation naming tests are typically developed for native English speakers. These tests have been translated to Spanish. However, the translation produces cultural and linguistic obstacles which prevent the valid assessment of Spanish-speakers. For instance, in the Boston Naming Test, some words do not have an equivalent item in Spanish (e.g., pretzel) or are very unfamiliar for certain segments of Spanish-speaking populations (e.g., igloo). As a result, such tests measure Spanish-speakers’ general knowledge instead of naming abilities. The Cordoba Naming Test (CNT), developed in Argentina, was created to specifically address these obstacles found in standardized confrontation naming tests for Spanish-speakers. The CNT was administered to Spanish-speaking adults in the Los Angeles area with the purpose of determining performance differences between Spanish speaking test takers in the USA versus Argentinian test takers. Some differences were found. The two most difficult items for the USA sample included guadaña (sickle) and cresta (comb), while for the Argentina sample it was clave de fa (bass clef) and aljaba (quiver). The average score for the USA sample was somewhat smaller than the comparable age-wise Argentina sample. However, firm conclusions cannot be made at this early point in the validation study.

Coyote/Human Interactions in the City of Long Beach, CA
Hayley Hart, Nicole Infantino, Stephen Gloudman, Christopher Jaime

Coyotes (Canus latrans), while an integral part of a healthy ecosystem, have posed prominent problems across the United States in cities and residential areas, including the local neighborhoods of Westchester, Long Beach, and Playa Vista. The abundance of anthropogenic food sources in urban areas increases coyote density and causes more frequent interactions between coyotes and humans. Our study aims to accurately assess the benefits coyote populations bring to an ecosystem as well as their interactions with these communities while also properly managing the threat to their residents and promoting coexistence. We plan to educate residents in these communities on how to interact safely with coyotes. Through community reporting and education, we hope to ensure that wildlife feeding regulations will be enforced and the feeding will cease, vastly limiting the anthropogenic food sources available to coyotes and reducing the impetus for interactions between coyotes and humans in these communities. We hope to apply our refined methodologies in the future so that they can be applied on a more general level to mitigate similar coyote management problems in other urban areas, allowing
Creating the Look: 9th Undergraduate Research Symposium
Ralph Eurich Patacsil, Mikaela Ventura

In designing the branding system for this year’s 9th Undergraduate Research Symposium, we sought to create a cohesive look that conveyed a singular message that could be translated into different forms of design media. The design process began by generating a large amount of general explorations around the number 9. After a series of discussions largely concerning the overall aesthetics of each exploration and the visual metaphors behind them, we narrowed down our choices to a couple designs. We then refined the selected explorations into what could potentially serve as a logo; the logos that were developed had to be different in terms of conceptual direction. Upon achieving two desirable and distinct looks, our concepts were presented to a panel for final selection. The first design was a visual metaphor for “connecting the dots,” an image that spoke about the research process as a whole. The second, which evolved into the current Symposium’s mark, was an expression of the impacts of research. The panel felt that this design was overall more engaging in that it could be interpreted in multiple ways. Once the final logo was selected, we proceeded to refine it, establish the framework for logo and typography usage, and create the necessary promotional material for the Symposium itself. Each component was designed with regard to legibility and overall form, undergoing several rounds of review and revision by our advisors before settling on final designs. The end result of the process is the present design system for this year’s Undergraduate Research Symposium.

Critical Race Theory as a Lens for Understanding Veteran Homelessness
Katherine Daw

This research aims to create a theoretical framework that can be used to have a comprehensive and intersectional understanding of the issue of veteran homelessness in the United States. The prevailing wisdom is that substance abuse, physical disabilities, and mental health disorders are the primary causes of veteran homelessness. While these factors certainly contribute to the likelihood of veterans becoming homeless, they do not adequately explain the racial discrepancies amongst the homeless veteran population. It is estimated that over 43% of homeless veterans are black; however, only 14% of the veteran populations as whole is black. Existing research into veteran homelessness does not provide a sufficient explanation for these statistics, leading to the question: What factors explain the disproportionately high number of black veterans who are homeless? Some researchers speculate that black veterans suffer disproportionately from substance abuse, mental health disorders, and physical disabilities, but existing empirical evidence suggests that this is untrue. Previously, the history of systematic discrimination against black Americans, which has led to lasting racial and ethnic disparities in
socioeconomic status, has been largely unaccounted for in the discussion of black veteran homelessness. This project uses critical race theory as a means of understanding of the compounding factors that contribute to black veteran homelessness. In using the largely untapped resource of critical race theory in combination with traditional understandings of veteran homelessness, this project provides a theoretical framework to be used in future projects to explore and address the racial disparity among homeless veterans.

**Current and Future Value of Ecosystem Services Provided by Los Angeles’ Ascot Hills Park**
Kesterlyn Wilson

Rapid urbanization has stimulated interest in valuing ecological services and the possibility of incentivizing the restoration of damaged urban habitats. Ecosystem services are defined as the natural profits that a healthy, functioning ecosystem provides to humans, such as climate control, water filtration, and recreational benefits. Located in the highly urbanized neighborhood of El Sereno, Ascot Hills Park offers hiking trails and scenic views inclusive of the San Bernardino Mountains, Catalina Island, and iconic Hollywood sign. Threatened for decades with multiple plans to develop the land, the 37.5 hectare Ascot Hills Park was established in 2008 to provide adequate green space to this historically impoverished community in northeast Los Angeles. The purpose of this research is to quantify a dollar value on the natural benefits of the different habitats of Ascot Hills Park. The park consists of four primary habitat types: grassland (72.1%), woodland (8.5%), California sage scrub (5.8%), and riparian (5.5%), as well as roads and parking lots (8.1%). In its present condition, the value of park land is $10,943 per hectare, an overall value of $410,362, per year. We hypothesize that restoration efforts could significantly increase the value of the park’s ecosystem services, providing a long-lasting return on investment to the surrounding community and people of Los Angeles.

**Dancing at my Desk: Examining the Foundations of a Non-Profit Dance Education Organization**
Caeli Koizumi

The purpose of this project is to examine and analyze the prevalence, efficacy and methods of implementation of Arts Integration in Southern California. Though various organizations in Orange County and the greater Los Angeles area exist in various forms to bring dance to underprivileged communities, few exist with a direct focus on Arts Integration. Arts integration that utilizes dance is proven to improve students’ physical, cognitive and emotional abilities. Despite this evidence, the use of dance in classroom settings is uncommon. Through interviews and observations with three distinct dance education programs throughout Los Angeles and
Orange County, I will gather data regarding the process of starting a non-profit organization, the administrative necessities for maintaining a dance education program as well as effective methods of Arts Integration curriculum implementation in the dance classes. Through a comprehensive internship with one of the programs, I will study the inner-workings of the program over an extended period of application. The data gathered from each program will develop my understanding of both curriculum-based research and organization building research, though each program may differ in the amount of each type of research they offer. My study will also follow existing Arts Integration opportunities in Southern California to better understand how a new, unique non-profit will draw and connect with existing resources. I will analyze the data collected to select the most effective administrative and pedagogical practices for the foundations of, Dancing at My Desk, a new Arts Integration program in Southern California.

**Determining Amyloidogenicity of Islet Amyloid Polypeptide (IAPP) in Type II Diabetes for Animal Species**

Dillon Rinauro, Shannon Pilcher, Larry Palato, Kate Menefee, Edward Njoo, Ben Johnstone, Angela Tun

For nearly three decades it has been known that mouse and rat IAPP do not aggregate and that these two organisms do not develop type 2 diabetes; however, the IAPP of monkeys, humans, and cats do aggregate and these organisms do develop type 2 diabetes. While about six or eight other organisms have been studied as well, there have been no comprehensive studies to try to connect more data points in this fashion. In a partnership with the San Diego Zoo, we will begin a comprehensive study of animal IAPP aggregation in an effort to explore microbiological differences in DNA sequencing for the protein IAPP. The San Diego Zoo will be sending us the genetic material from several organisms not known to develop diabetes such as elephant, rhino, camel, and hippo. We will clone the IAPP gene from each of these organisms and have it sequenced. Simultaneously, we will generate a collection of animal IAPP-EGFP sequences to study for their ability to allow EGFP to fluoresce. Through funding from a $400,000 NIH R15 grant, the results of this experimentation can effectively prove the direct causation of type II diabetes from the aggregation of IAPP, a theory which several decades of amyloidogenic research have been based on.

**Dissent and Disloyalty: Media, Music and Protest during the Vietnam War**

Arriona Randazzo

The Vietnam War was the first war to be widely televised to the American people. Exposure to the devastation in Southeast Asia and the implementation of conscription forced many Americans to raise questions about the legitimacy of the conflict on both moral and pragmatic grounds. By 1964, the resistance against American involvement in Vietnam had grown into a powerful movement which continued to strengthen until 1973 through the use of nonviolent
protest, student activism, and intersectional participation with the Civil Rights and Women’s Liberation movements, among others. Media coverage played a key role in building the antiwar movement, as broadcasting was initially devoted to the military tactics being used without the reasoning behind their necessity, fueling the sense that the war was ill-conceived. However, after 1965, the media turned its attention towards the antiwar movement, and the debate about whether dissent meant disloyalty began to grow. While protesters became the subject of public discourse, protest music grew in popularity and would eventually gain mainstream success. This project examines the role the media played in shaping attitudes about the war and the nature of protest, while concurrently examining the role of popular culture through commercial consumption of antiwar music.

Ian Dizon

Japan is undoubtedly one of the most technologically advanced countries on Earth. However, as Japan embraces the future, it also embraces its past. The traditions of Shinto and Buddhism are still very much alive and well in Japan today, leading to an interesting convergence of past and future in Japan’s present. This begs the question: how do the distant worlds of hyper-modernism on one end and Shinto and Buddhism on the other, coexist? In addition, what aspects of Japanese lifestyle are affected by such convergence? In an effort to answer this, a 19-day research trip to Japan was conducted, specifically to religious and cultural sites (both modern and traditional) in Tokyo, Kyoto, Kamakura, and Hakone. Findings were observed first-hand and documented on camera in both still and video formats to be edited together into a short documentary. Shinto and Buddhism are so intertwined in modern Japanese lifestyle that it is difficult, if at all possible, to imagine a modern Japan without Shinto or Buddhist influences affecting much of an average Japanese person’s day. However, research to answer the above questions was only conducted in major Japanese cities, and an in-depth look into the lifestyles of those residing in more rural areas of Japan are worth considering before arriving at a more definitive conclusion.

Dividing Los Angeles
Catherine Tara Edwards

In postwar Los Angeles, land privatization, industrialization, slum clearance, contentious debates over public housing, and the development of suburbia divided communities on the basis of ethnicity and socioeconomic status. Not only did the infrastructural development of the city displace individuals under the name of urban renewal, but it also laid the foundations for further segregation. In this study, I investigate the history of urban planning in Los Angeles through an academic, artistic, and personal exploration of the physical structures, mainly freeways, which continue to divide communities while shaping the city’s visual and socio-political landscape. To
do so, my work combines a comprehensive literature review of sources in city planning, history, urban health, and environmental science with primary source analyses of photographs, maps, housing advertisements, and newspaper articles. I also examine public art to reinforce my understanding of how people react to the placement of concrete structures in their neighborhoods through muralism and graffiti. Additionally, I utilize direct observations and on-foot exploration to qualitatively measure the dividing impact of freeways, cemented rivers, and privatized areas and to experience these various development projects from a pedestrian’s perspective. Finally, I employ artistic methods throughout the research process, including photography, book making, and map creation, to visualize my findings and personally reflect on the system of freeways that bisects my childhood neighborhood and many others. This study uncovers the history and ongoing significance of the dividing structures that disproportionately affect low-income people of color by separating communities from each other and serving as manifestations of geographical dichotomies. More so, this research celebrates the reactions and adaptations of resilient citizens who pave their own paths in attempts to transcend physical and social boundaries.

**Don’t Sugarcoat Diabetes**  
Eliana Porcelli Jorgensen

Diabetes is a major global epidemic, rapidly expanding throughout the developed and developing world. Despite the explosive growth of the disease, public awareness remains low, which can lead to major complications among patients, including blindness, cardiovascular disease and amputation of limbs— in addition to enormous health care costs. The aim of my thesis therefore, is to communicate disease awareness of diabetes to help avoid the individual and societal costs of this devastating disease. “Don’t Sugarcoat Diabetes” draws inspiration and motivation from my own family history and aims to get people to pay attention to the symptoms before it is too late. My exploration is grounded in extensive research drawn from various diabetes resources and interviews with disease experts. The research focused on the question, “How can design create disease awareness and understanding in non-medical language to a broad cross-section of the population?” The answer involves a comparative analysis of various disease campaigns. My strategy has been to use a familiar image in a shocking way, with a clear and direct message. A simple and homely gingerbread man with a missing or “amputated” leg was created to intrigue viewers with its imperfection before explaining the message behind the symbolism: that sugar and diabetes— and denial— can kill. The piece contributes to the ongoing study in the field of impacting society and changing individual behaviors, and the larger implications of the project contribute to the power and value of graphic communication benefitting healthcare, particularly diabetes awareness and education, with the goal of easing the personal and societal burden of the disease.
Drone Autonomous Basketball
Huayang Zhang, Ethan Fujioka, Keola Ramierz

Quadcopter Drones require precise navigation systems and explicit safety measures to operate in air. The Global Position System (GPS) offers the accurate localization and navigation system for outdoor spaces. However, GPS precludes autonomous navigation in confined environments. The current GPS alternative solutions require expensive sensor system and excessive components. The primary goal for this research is to create a fully functional system to localize and navigate the drone in an indoor basketball court. The system requires three parts: the computer, the drone, and the camera. By examining the current state of the art solutions, our group has developed a solution using image processing algorithm with the on-board camera.

Dynamical systems modeling of six related small gene regulatory networks suggests that the transcription factors Cin5, Gln3, Hmo1, and Yhp1 play a role in controlling the cold shock response in *Saccharomyces cerevisiae*
Brandon Klein

A gene regulatory network (GRN) is a group of transcription factors that control the level of expression of genes encoding other transcription factors. Dynamics of GRNs illustrate how expression in the network changes over time. GRNmap, a MATLAB software package, uses differential equations to model the dynamics of medium-scale GRNs. The software estimates production rates, expression thresholds, and regulatory weights for each transcription factor in the network based on microarray data. Microarray data was obtained from a cold shock experiment where wild type budding yeast, *Saccharomyces cerevisiae*, and five strains from which the transcription factors Cin5, Gln3, Hap4, Hmo1, and Zap1 were deleted were subjected to cold shock at 13°C for 15, 30, and 60 minutes. Six related GRNs, which ranged from 15-20 genes and 27-36 edges, were constructed using data from the YEASTRACT database. GRNmap was then used to estimate production rates, expression thresholds, and regulatory weights for each of these GRNs. Forward simulation of the model showed a good fit to the experimental data, as compared to random networks with the same genes and number of edges. The transcription factors Cin5, Gln3, Hmo1, and Yhp1 comprised a regulatory chain that stood out because the weights were consistently conserved across five of the six GRNs. These transcription factors also had among the highest total degree (in- plus out-degree) and betweenness centrality values of all the genes in the networks, suggesting that they play an important role in regulating the cold shock response in yeast.
Ecological Diversity of Mycobacteriophages
Kendall Johnson

Bacteriophages are viruses that are capable of infecting bacteria and replicating by injecting their DNA into bacterial hosts. Phages are present in great abundance and as a result demonstrate the potential for considerable diversity on numerous levels. As phage diversity has largely been studied through a microbiological lens, the goal of this research project was to study phage diversity on an ecological level. Initial data was collected from an online database, consolidated and reconstructed into a functional spatial map layer. QGIS, a free geographical information system program, was used to overlay the phage data layer with a number of maps of different global ecological classifications including terrestrial biomes, terrestrial ecoregions, and soil type. The intersects between individual phages and the given classifications provided a new dataset where phages could be further organized and analyzed taking into account their respective ecologically and geographically defined areas. Multivariate analysis was used to organize the data into a tree of Euclidian distances based on the cross reference of the phage data and ecological classifications. The results of a preliminary cluster analysis with ecoregions as the variable indicated that 75% of the phage sub-clusters share a single branch. This suggests that at a sub-cluster level, the phages have a narrow range of ecoregions. Host range was chosen as another means by which to look at phage diversity. Based on BLAST analysis, it was determined that phage clusters with broader host ranges were found in “hot spots” or regions of higher soil diversity.

Effect of Heat Treatment on Microstructure and Mechanical Properties of 15-5 PH Stainless Steel
Adrian Cheng, Kelly Tovalin

The objective of this project was to evaluate the mechanical and microstructural properties of 15-5 PH stainless steel at varying heat treatments. There was a need to optimize the strength and ductility of the 15-5 PH stainless steel, which were affected by heat treatment, in order to avoid material failure in different applications. The steel was provided by two different vendors - Gloria Material Technology Corp. (GMTC) and Dunkrik Specialty Steel, LLC – as tensile test bars. There were 38 different heat treatments conducted on these specimens, plus as-received samples. Four tests were performed in order to analyze their mechanical properties and microstructure including tensile test, hardness test, optical microscopy, and Scanning ElectronMicroscope (SEM), according to ASTM standards. The results showed that as heat treatment temperature increased, the ultimate and yield strengths decreased, but percent elongation and percent reduction in area increased. There was a linear correlation between hardness values and ultimate and yield strength values. The optical microscope showed
martensitic structure with very fine grains in all of the tested samples. The Scanning Electron Microscope (SEM) images showed ductile fracture in all samples.

The effects of abiotic factors on the biotic defense of castor bean (*Ricinus communis*)
Monica Hong, Matthew McPherson, Alexandra Heck, Courtney Merriam

*Ricinus communis* has evolved to develop biotic defense factors. However, more studies are needed to determine the impact of abiotic factors on biotic defense in *R. communis*. In this study, we evaluated the effects of sunlight exposure, soil moisture percent, and soil pH on the redness of petioles, the number of extrafloral nectary glands, and the size of extrafloral nectary glands on *R. communis* growing in the Ballona Wetlands and Temescal Canyon. Results show a significant difference in percent soil moisture and canopy openness between the Ballona Wetlands and Temescal Canyon. In addition, both the number and size of extrafloral nectary glands correlated positively with soil moisture and canopy openness, and the average red and green intensities also correlated positively with percent moisture and canopy openness.

Effects of acclimation temperature and salinity on salinity tolerance in the intertidal copepod *Tigriopus californicus*
Chase Dugay

The intertidal zone is a harsh, variable environment characterized by wide fluctuations of abiotic factors. The copepod *Tigriopus californicus* inhabits tidepools that experience drastic changes in salinity and temperature. Previous work has demonstrated that these two factors interactively affect physiological tolerances. We examined survival following transfer to a range of salinities in *T. californicus* held under two thermal conditions to further investigate the relationship between temperature and salinity tolerance. Animals were collected from a protected tidepool at Hopkins Marine Station (HMS) in Central California and from a similar habitat in Palos Verdes in Southern California. For each population, 120 females with egg masses were isolated and split between two salinity acclimation treatments (30 parts per thousand [ppt] and 60ppt). Each salinity group was further split between a warm (23°C) and a cool (15°C) constant temperature treatment. After acclimating for 2 weeks, organisms from each salinity and temperature combination were exposed to 1) an acute drop in salinity to 15ppt, 2) a gradual increase (over one week) in salinity to 90ppt, or 3) a gradual increase in salinity to 120ppt. Survival was determined at 1 week post-transfer. The data from Palos Verdes suggest temperature, acclimation salinity, and treatment salinity affect survival of *T. californicus*. Although there appeared to be an interaction between these variables, they were insignificant. Specifically, survival was highest at 15ppt at both 15 and 23°C and in general, survival was higher for 15°C. Future work will examine how dynamic changes in salinity and temperature affect survival.
The Effects of Eddy Currents in Various Metal Rods
Christopher Lorenzo, Randy Qafaiti

Eddy currents are loops of current induced by moving magnetic fields, and therefore, a result of Faraday’s Law of Induction. According to Lenz’s Law, the Eddy current creates a magnetic field in the direction opposite of the magnetic field that induced it, which results in an induced drag force on the moving magnet opposite of the direction of the magnet’s motion. If a magnet moves down a conductor, it will create a moving magnetic field that will induce an Eddy current, which in turn creates a magnetic field in the opposite direction of the initial magnetic field as well as a drag force opposite the direction of the magnet’s motion. By varying the material of the conductor used or the thickness of the aforementioned conductor, we managed to manipulate the drag force induced by the moving magnetic fields and, by extension, the Eddy current. The main objectives of this project were to study the difference in drag force on the magnet when the material or the thickness of the conductor is varied.

Effects of Heavy Episodic Drinking on Muscle Quality in College Students
Allison Leggett

College is a critical time in peak muscle mass development and evidence suggests higher consumption of alcohol may inhibit acute and chronic muscle remodeling. Muscle quality (MQ), defined as strength per lean body mass, acts as an indicator of muscle performance and reflects the physiological, functional and structural composition of muscle tissue. The purpose of this study was to examine the effects of heavy episodic drinking on strength, body composition, and MQ in college students. Methods: A total of 90 females (18.7±0.6 yrs; BMI 22.9±3.3 kg/m2) and 89 males (18.7±0.7 yrs; BMI 22.8±2.5 kg/m2) volunteered for the study. Regional body composition was assessed with dual-energy x-ray absorptiometry and MQ was determined by summing the maximal right and left handgrip strength divided by non-mineral lean mass of both arms. Acute effects were assessed on participants who self-reported a binge episode in the 4-days prior to strength testing. Results: At baseline, females bingeing prior to the second trial demonstrated significantly higher MQ (14.8±2.0 vs. 13.6±2.3 kg) than non-bingers. Males exhibited significantly greater lean body mass (57.4±0.7 vs. 59.6±1.2 kg) and lean arm mass (6.6±0.1 vs. 7.1±0.2 kg) in the bingeing group compared to non-bingers. Conclusions: Preliminary findings suggest that an instance of heavy episodic drinking is associated with lower MQ in females and higher muscle mass in males. A longer longitudinal investigation with an emphasis on increased patterns of episodic drinking is necessary to further examine its effects.
The Effects of Short Wave Diathermy of the Gastrocnemius Complex on Balance, Ankle Dorsiflexion, and Agility
Connor Smith, Lizet Pacheco

The Effects of Short Wave Diathermy of the Gastrocnemius Complex on Balance, Ankle Dorsiflexion, and Agility Short wave diathermy is a deep heating modality that may be available to athletic trainers. However, clinical research on this modality and its effects on human performance is limited. Two studies conducted on the effects of shortwave diathermy on the gastrocnemius complex found that the deep heating modality increased the extensibility of muscle tissues as shown through increased ankle ROM (Peres et al. 2002; Robertson et al. 2005).

**Purpose:** In this study, we will be assessing short wave diathermy and how it affects a participant’s balance, ankle dorsiflexion and agility. **Methods:** The study was approved by the Loyola Marymount University (LMU) Institutional Review Board. A total of ## active college students (# males, # females, # + # years, height # + # cm, weight # + # kg) volunteered for this study. Each participant was their own control and was randomly assigned which test session they would receive the diathermy treatment. The measurements were taken on 3 separate days, only baseline measurements were taken on the first day. Balance was measured using the NeuroCom® Balance Manager force plate, ankle dorsiflexion was measured using a goniometer and agility was measured using a Pro Agility Test. **Results:** Conclusion and discussion will be completed when data collection is completed on 3/2/17.

Electroencephalogram (EEG) Shows Changes in Brain Activity During Cognitive Tasks
Cat Connors, John Salinas

An electroencephalogram (EEG) is used to measure changes in brain electrical activity recorded at the scalp. The purpose of this study was to identify EEG changes while participants completed recently standardized, brief and challenging cognitive tasks (NIH Toolbox, 2014). EEG recordings corresponding to frequency band amplitudes of brain activity were obtained from 9 undergraduate volunteers (6 females, 3 males). Each participant completed three standardized executive function tasks on an iPad while wearing a wireless 9-channel B-Alert X10 EEG headset (BIOPAC). EEG recordings were processed and analyzed using AcqKnowledge 4.4 and B-Alert software. Power spectral densities (PSD) for alpha, beta, delta, gamma, sigma, and theta activity for each participant were computed following artifact decontamination and data smoothing. In several participants, PSD for gamma activity (25-40 Hz) and beta activity (13-30 Hz) was found to be greater at the right frontal electrode site (F4) compared to all other sites during the cognitive tasks. Prior research has shown that the frontal lobe is associated with working memory and inhibitory control (Bell et al, 2001). Also, increased gamma activity is associated with attention and memory demands (Jensen et al, 2007) and increased beta activity is associated with active thinking, focus and attention (Baker, 2007). Our results show that brain activity is increased within gamma and beta frequency bands during the standardized cognitive...
tasks used in this study. Furthermore, the EEG activity that we recorded appears to be localized to a specific brain region previously linked with other tasks involving cognition.

**Emission of Light Alkane Gasses from the La Brea Tar Pits**
Marcio Ortez, Natalie Wilkie

Previous studies have suggested the La Brea Tar Pits are a significant local source of methane and light alkane gases. Methane is an important greenhouse gas, while other light alkanes contribute to the production of ozone in the troposphere. The purpose of this study was to determine how geologic seepage from the La Brea Tar Pits affects ambient air quality in the Los Angeles area. Samples were collected from active seeps, as well as upwind and downwind from the tar pits. Stainless steel canisters were used to collect the ambient air. The concentrations of the hydrocarbons present on the sample were analyzed using gas chromatography. On average, samples collected around active seepages, and downwind of the La Brea Tar Pits showed elevated levels of methane, and an elevated ratio of i-butane to n-butane. The data showed methane levels up to 519.27 ppm (parts per million) next to active seeps. Additionally, downwind samples exhibited higher concentrations of methane than the samples from the upwind locations, which where close to the atmospheric concentration of 1.84 ppm. Additionally, light alkane gas ratios like i-butane to n-butane also showed higher than usual (0.69) levels in active seeps (2.34 and 4.30), and downwind of the La Brea Tar Pits (0.89 and 1.83), which suggest that the La Brea Tar Pits are a major contributor to ambient air hydrocarbon signatures in the region.

**Ethiopian Jews: The Overlooked Minorities in Ethiopia and Israel**
Maraky Alemseged

The strong historical connection between Ethiopia and the land of Israel is evident in the Falasha (Ethiopian Jewish) communities within Israel and Ethiopia. A concern in both countries is that Falashas do not have vocal representation. This study attempts to analyze the historic, current, and systemic social conditions the Falashas have and continue to experience in Israel and Ethiopia. Based on three months of ethnographic field research (two weeks in Israel and six weeks in Ethiopia) - including on-site field research in Israeli, Ethiopian, and Ethiopian-Israeli Jewish communities; formal and informal face-to-face interviews with Falashas and community members; informative dialogue and correspondence with Falasha researchers; and substantial textual research - the study finds that while Falashas have achieved a level of autonomy, they are still likely to feel displaced and voiceless in Ethiopian and Israeli society. While relations with their respective home countries have greatly improved over the past several years, this research reveals the Falashas’ continued struggle in areas of social justice, social identity, economic mobility, and visibility. Israel currently faces criticism for the unequal treatment of Ethiopian-Israelis, similar to that of the U.S. Black Lives Matter movement. In Ethiopia, where Judaism is
not a predominant religion, Falashas are accepted yet highly underrepresented in society, with some still “in hiding” while others hope to make aliya (immigration of Jews to the Holy Land). This study seeks to identify ways in which this minority population might seek stronger connections to and empowerment from both its religious traditions and its home country.

**Ethno-Religious Conflicts in Nigeria: How Political Forces Have Exacerbated Violence**
Megan Behar

In previous research conducted on religious conflicts in Nigeria, scholars seldom explore how political forces have fostered ethno-religious violence. This paper uses a qualitative approach to investigate the causes of violence among ethno-religious groups in Nigeria and what role political forces play. The main aim of this paper is to examine how politicization of ethnic and religious platforms has exacerbated violence between these groups. The paper analyzes two case-studies: first, the implementation of Sharia law in northern Nigeria, and second, the role of the O’odua People’s Congress (OPC) in Nigeria. It finds that the conflicts between ethno-religious groups in Nigeria, particularly those immersed in Islam and Christianity, occur due to tensions that derive from fears of domination and marginalization. In the north, political figures often use their platforms to homogenize the population. By enforcing Sharia law, northern political figures are undermining non-Muslims, and through this, they are politicizing the divide between ethno-religious groups. The OPC, an ethnic militia in Nigeria, has felt marginalized by the government, and the struggle for resources and survival has provoked ethnic clashes between these groups. The formation of these groups derives from fears of domination from political instability and lack of protection of their rights. This study supplements our understanding of why Nigeria is plagued by protracted conflict. Peace is achievable among these groups; however, it will require greater efforts from the government to be more inclusive and ensure the rights of all people.

**Evaluation of 4330M Steel for fasteners applications**
Kelly Tovalin, Adrian Cheng, Ricardo Martin Del Campo

4330M Steel is a vanadium modified steel alloy used in high strength applications, such as fasteners. The objective of this study is to investigate and evaluate the effect of various temperatures and heat rates on the mechanical properties of 4330M steel. The mechanical properties were determined and assessed through the use of tensile testing and hardness testing. Mechanical properties identified in this experiment include ultimate tensile strength, yield strength, percent elongation, and percent reduction in area. The microstructural analysis are obtained from an optical microscope and scanning electron microscope (SEM). The alloy was provided by two vendors; Progressive alloys or vendor H and Friend Metals Company or vendor S. The results showed that by increasing the tempering temperatures strength values decreases, while ductility values remain unchanged. However, by increasing the duration to reach the
desired temperatures the strength and ductility values increased. Vendor H samples had higher
strength values and much finer grain structure.

**Exopolysaccharide and nodulation phenotype of four mutant strains of *Burkholderia
tuberum***

Brendan Angelo

This study looks at *Burkholderia tuberum*, which is capable of a nodulating symbiosis with
legumes. The plant root nodules contain bacteria that are able to convert unusable atmospheric
nitrogen into usable forms such as ammonia, thus providing plants with a source of nitrogen. The
bacteria in return get protection and sugars. I am interested in determining the role of bacterial
exopolysaccharide in the nodulating symbiosis. Transposon mutagenesis was carried out and
four mutants with a dry colony phenotype were identified. Molecular methods identified the
mutations to be in two different glycosyltransferases (BA115 and BACQ07), the gene encoding
the LptE assembly protein (BA117), and in a Tyrosine protein kinase (BA71). To test the effect
of these mutations, EPS and nodulation assays were carried out. Each of the mutants had a non-
mucoidy EPS phenotype, indicating that EPS production is decreased when compared to
wildtype B. tuberum. Hydroponic plant nodulation assays with Phaseolus vulgaris (Black Bean)
showed that all the mutants developed tiny, white, ineffective nodules in contrast to the pink and
large nodules developed in response to wildtype bacteria. Nodulation assays in soil are being
done to confirm these results. Future tests will quantify the EPS from each of the mutants and
track how the infection pathway is affected by the different mutations. The results thus far
indicate that EPS is critical for the ability of B. tuberum to establish an effective symbiosis with
legumes.

**Exploring the AIDS crisis of the 80's and how the disease affected diverse communities
within our society.**

Tabitha Mitchell

Joe Pintauro's Raft of The Medusa explores the AIDS crisis of the 1980’s and how the disease
affected diverse communities within our society. The play demonstrates the invalidity of the
misconception that AIDS affected only the gay community with characters from diverse socio-
cultural backgrounds. I played Nairobi, a complex female character representing multiple
minority communities. Nairobi is homeless, an intravenous drug user, who is also hearing and
speech impaired, has swollen legs, a fungal infection in her spine, and is also infected with
HIV/AIDS. I began exploring the complexities of this character by getting to know her physical
ailments, starting with AIDS, then moving to opioid addiction, and so forth. After researching
her various conditions, I began working with an American Sign Language coach while
researching and communicating with people within the deaf community to understand the lives
of those within this group. Once I was through with my research, I worked with the director Neno Pervan to relate the physical ailments to the realities of my character.

This piece allowed me to learn about and engage others in the lives of communities that often get overlooked in our society. Having the opportunity to play Nairobi turned out to be both a rewarding and enlightening experience, which challenged me to grow both as an artist and as a person.

**Exploring the effects of leaf water absorption on recovery from desiccation in *Xerophyta elegans***  
Mitchell Braun

Desiccation tolerance is the ability to survive through periods of extreme cellular water loss. Most seeds commonly exhibit a degree of desiccation tolerance while vegetative bodies of plants rarely show this characteristic. Desiccation tolerant vascular plants, in particular, are a rarity. Although this phenomenon may have potential benefits in crop populations worldwide, there are still many gaps in our scientific understanding. While the science behind the process of desiccating has been widely researched, the process of recovering from this state of stress, especially in restoring xylem activity after cavitation is still relatively unknown. Although plants normally gain water through their roots, this influx of water may not provide enough pressure to refill the entire plant’s vasculature, raising question to the role of leaf water absorption in the refilling process. This study will first provide a brief overview of the desiccation tolerant angiosperm *Xerophyta elegans*. Data comparing desiccated and hydrated states will then be presented to add to the body of literature as a foundation for investigating the role of leaf water absorption on rehydration. Specifically, changes in length and width of the leaf, scanning electron microscopy of the leaf surface, and hydrophobicity measurements will be used to examine surface structures and morphology to characterize water relations on the leaf surface. Comparisons between histochemical staining at the tip, middle, and bottom of the leaves in desiccated and hydrated cross sections provides information on internal biochemical changes that may enhance water absorption along the leaf surface.

**Factors that explain Security Cooperation Between Japan and South Korea***  
Joseph Young

This presentation will examine causes for success and failure in joint-security ventures between Japan and the Republic of Korea. The strained relationship between Japan and the Republic of Korea has presented a theoretical conundrum to most International Relations theorists. While Realist and Liberalist expect security cooperation between both countries due to the shared threat of
North Korea, Constructivists argue that relations are strained and difficult to manage due to colonial history. By examining case studies of intelligence sharing agreements, and joint-military exercises, I will attempt to identify explanatory factors for successful ventures and give a clear metric for determining success of failure. This paper will assert that Two-Level Games framework is an adequate way in which to examine the interaction of domestic politics with international negotiation. It will argue that success in joint security ventures are determined by degree of political autonomy a central government has from its domestic constituents.

**Fallible AI**  
Zachary Fitzpatrick, Ryan Taus

Our research focused on the creation of a fallible artificial intelligence that could play through turn-based strategy games via implementing human-like strategies in video games. Our experiments began with programming the games Tic Tac Toe and Connect Four. Afterwards, we designed an AI using Q-Learning, a type of reinforcement learning, to play Tic Tac Toe. In the end, the AI was able to determine good piece placement, like a human, but still utilized random piece placement to represent human error or curiosity. We encountered difficulty with Connect Four, because this game had a substantially larger number of board states than Tic Tac Toe. We used Genetic Algorithms to have our AI weigh performing one move versus another. Using the results from our first two attempts with simpler games we then created our own turn based strategy game. In our game, we implemented an AI, combining our knowledge from the previous experiments, with promising results. We compared our AI’s play style and strategies for beating levels to human testers and found that both completed the levels in similar and effective ways. Although our AI played similarly to human testers, it focused on specific tactics determined by its learning process, therefore it cannot consider every variable a human can. Despite this, we have concluded that with more data and by narrowing down how players decide their moves, creating learning AI for video games could become a viable practice in the gaming industry.

**Fatigue Crack Growth Rate Testing of Ti-6Al-4V**  
Michael Schwarz, Evan Bates, Jacob Orlita, Will Hohorst, Matt Stein, Harrison Leece, Michael Allen, Jacob Buckhalter

This study will investigate the effects of different Ti-6Al-4V heat treatment methods on anisotropic fatigue crack growth rate in Ti-6Al-4V. Plates of wrought Ti-6Al-4V alloy with the same heat treatment will be machined to the appropriate dimensions utilizing the electro-discharge machine (EDM) in accordance with ASTM E647, heat treated and subjected to cyclic fatigue crack growth testing on an MTS machine utilizing a linear-elastic fracture mechanics approach. Nine samples are to be taken in three separate orientations-the Longitudinal-Transverse (L-T), Transverse-Longitudinal (T-L), and Short Transverse-Transverse (S-T) orientations. The fractured surface of the tested specimens will be evaluated under scanning.
electron microscopy (SEM). The fatigue crack growth rate will be identified in all studied orientations and compared to theoretical values and a curve will be obtained.

Fantasy in A: Composing a work for Viola and Piano Inspired by French Impressionist, Claude Debussy
Daniel Schniepp

This past Fall, I wrote and rehearsed a piece for viola and piano. The piece draws inspiration from French Impressionist composers, in particular Claude Debussy. Debussy’s music ingeniously transfers impressionism in visual art to music by breaking conventions of harmony and rhythm to create the effect of “blurred lines,” such as can be seen in the paintings of the period. His harmonies are very modern in the sense that they seem to take the listener into a dream-like state in which melodic lines are not clearly defined. The Impressionist artists began with representational ideas of what they intended to paint, however the principles of composition as realized were less clear.

I went about composing my piece, “Fantasy in A.” in a similar way. I let the harmonies and compound meter propel the composition. Like Debussy, I wanted the melody to dance over chord progressions that create an impression of flowing unconventional harmony. I also utilized asymmetrical meters built on fluctuations of 3’s and 2’s to establish a fluid hemiola pulse. Overall, I was glad to have taken my first steps into the world of Impressionism through this composition, and I’m pleased to present it through a performance by my friends and fellow musicians.

The Federal Funding of Cultural Institutions to Combat Recessions in post-2008 Greece
Alfredo Hernandez

This research looks at how the Greek government has utilized cultural institutions (which I define as museums, archaeological and natural sites) to combat the 2008 Global Crisis. According to previous analyses of the Greek economy, government investments and spending in the area of cultural institutions should result in sizable, federal increases, given how cultural tourism accounts for roughly 18.5% of Greece's Gross Domestic Product (GDP) (Dritsakis & Adamopoulos, 2006; OECD, 2016). Through a combination of qualitative (interviews with museum curators and government advisors and reviews of domestic and international law) and quantitative (GDP and government spending shifts) methods, this research found that the Greek government was unable to enact the necessary fiscal policies to promote growth. This inability to grow was the result of spending restrictions imposed the European Monetary Fund, and to an extent the International Monetary Fund (Navarra & Chrysoloras, 2016; The New York Times, 2016). As a result, the Greek government has encouraged private investment from wealthy Greek citizens, breaking with traditional exclusions of private investment in public goods. This has
resulted in uneven funding of public institutions, with new privately-funded sites being better maintained and more taxed than publicly funded sites. A preliminary look at resultant revenue shows that private funding is working, but the long-term impact is still to be seen. If Greece can fully utilize available funding in both private and public spheres in order to reinvest in domestic cultural institutions, it would result in positive financial growth for the country.

**Flavonoid Content and Pollinator Visitation in *Rhaphiolepis indica***
Karina Alvarez

Flavonoids are polyphenolic plant secondary metabolites that are responsible for a wide range of plant functions including coloration, attraction of pollinators, pollen fertility, pathogen defense, and UV protection, among many others. This study examines if there is a relationship between the diversity of flavonoids and pollinator visitation in *Rhaphiolepis indica* in different light conditions. Male flowers were visited significantly more often than female flowers in shade conditions, whereas female flowers were visited more than males in sun conditions (p<0.05). Flavonoids were significantly more diverse in sun-treatment flowers than shade-treatment flowers (p<0.05), while there was no difference found between the two sexes of the flowers (p>0.05). These findings suggest that flavonoid diversity is not responsible for the difference in attraction between male and female flowers, and that at least one other factors is at play. Furthermore, *R.* indica in sun conditions may produce more flavonoids for protection from UV radiation, thereby increasing diversity of flavonoids in the flower petals. Further studies should investigate the factors responsible for differential response to male and female flowers and the types of flavonoids produced by flowers of the same species in different conditions.

**For Profit: Incarceration in America. Sponsored by You!**
Benjamin Katz

This project dissects the nature of incarceration in America and the related systems of segregation. It will ultimately illustrate how racially biased Jim Crow legislation led to the eventual formation of private prisons and immigration detention centers. My visual inquiry examines how design can shed light on the American companies directly taking advantage of the prison system, that is, how can I graphically expose the politics and corporations involved in capitalizing on the newest source of profit: immigrants. As a second generation American of Jewish heritage, I have become an advocate for justice with any form of discrimination and exploitation. My design work will be an exposé of complicit companies by visualizing the political entities responsible through infographics and social media. By highlighting the companies involved, I prompt viewers to make their own political decisions, and to consider divesting. After thoroughly researching various sources and interviews, I have compiled data showing the deliberate incarceration of minorities. By leveraging brand subversion, I will “brandalize” recognizable identities and design ads to expose those companies directlycomplicit
with the for-profit prison industry. This research led me to a visual language that will make the call to action clear. By creating an art gallery installation and social media campaign, my design work should reach out to as many people as possible. From there I will develop a grassroots initiative to start a petition to end this blatant corruption and racism.

The Framing of Female Hormone Treatments as Discussed in Historical Newspapers
Cora Whalen

The uses of female hormones have not only changed over time, but the ways newspaper articles discuss and frame this usage has varied greatly. Drawing on the processes of medicalization and pharmaceuticalization, this work examines historical social opinions regarding female hormones and their uses. I analyze newspaper articles from 1946 to 2002 in order to determine how the articles and their authors frame female hormone treatments. This textual analysis yields four different framings of female hormone treatments; as “successful cancer treatments”, as “offering various other benefits”, which then evolves into a “skepticism of these benefits” and finally as a “cause of cancer.” I gather newspaper articles from the New York and Los Angeles Times using the ProQuest database of historical newspapers. I then divide the selected articles into the aforementioned categories based on the articles’ depiction of female hormones and analyze the frameworks put forth by their authors. Altogether, the analysis shows changing views over time, of not only hormone treatments, but of women overall. Examination of newspaper articles framings of gender issues offer insight into society’s views of women and the medicalization of “female” problems.

The Francisco Homes the Story of Ples Cross
Oscar Orozco

In the fall semester of 2016 I participated in the Voice of Justice class that aimed to shed light on the social issues of restorative justice. Restorative justice is a system of criminal justice that focuses on the rehabilitation of offenders through reconciliation with victims and the community at large. I particular focused on the representation of male individuals who were once sentenced to life in prison.

Through my experience in the class, I worked with The Francisco Homes, a nonprofit transition housing for male lifers. They have a vision of acknowledging the worth and dignity in all people, by opening their doors to help these individuals by building a society in which the re-entry process becomes restorative. We first participated in a story circle with the men who were interested in being interviewed, and then each student was paired off with a “lifer” who story they wanted to tell. In my instance, I gravitated towards an individual called, Ples. I conducted a following interview, asking questions about his family and his experience being in jail. I let Ples
talk about what he thought was important for others to know about him because it was his story that needed to be heard.

My experience has highlighted the continual need for our society to understand the negative biases these men upon re-entry into society. Having served their sentence, they are humbling trying to move forward from their past.

G

Gender Inequity Within Public Accounting
Paige Petersen

Traditionally a male-dominated field, the public accounting industry has seen recent progress in the presence and advancement of women in the profession. Today, women comprise half of accounting students, Certified Public Accountant test-takers, and employees at public accounting firms. However, women in public accounting face an invisible barrier when it comes to reaching the level of partner, where they represent only nineteen percent of partners. Uneven distribution of female representation should be of concern to public accounting firms seeking to maximize the potential of their talent pool and gain the benefits of diverse leadership. Traditional viewpoints on this issue promote the idea of the work-family narrative, which suggests that women leave the industry prior to partner level due to conflicts with family life; however, current research has shown family conflict tends to be a secondary reason for female departure from the field. Primary reasons for departure tend to be associated with stress resulting from work culture elements. My research examines the effect of the public accounting work culture on gender inequity within leadership, exploring how long working hours, the concentration of deadlines into a “busy season,” and an “up-or-out” promotion system that places high pressure on career advancement contribute to the lack of female representation at the partner level. Through analysis of existing literature in the fields of business and accounting, I draw conclusions about the ways in which the public accounting profession would benefit from work culture alterations in order to encourage and improve female representation in leadership.

Generation and Characterization of Burkholderia tuberum nod mutants
Ashley Arnell

Nitrogen is the most limiting macronutrient for plant growth. Rhizobia engage in a symbiotic relationship with legumes and trigger the formation of nodules within which the bacteria are housed and nitrogen fixation occurs. The bacterial nod genes are induced by flavonoids secreted by plants experiencing nitrogen stress, which results in the production of Nod factor (NF), a critical signal triggering nodule formation. In α-rhizobia, nodD encodes a constitutively expressed regulatory protein sensitive to these flavonoids and induces the expression of the nod
Genes. It is thus far believed that β-rhizobia function similarly to α-rhizobia, however few studies have addressed the regulatory mechanisms in β-rhizobia. To understand the nodulation pathway in B. tuberum (a β-rhizobium), I am investigating the role and regulation of the bacterial nod genes by looking at nod gene mutants. B. tuberum deletion mutants were made in nodD1, nodD2, nodD1nodD2, and nodC. The ΔnodD1, ΔnodD2, and ΔnodD1nodD2 mutants are still able to nodulate. However, the ΔnodC mutant, which encodes the backbone of NF, forms no nodules. This implies that other regulatory factors are managing the expression of nod genes, which are required for nodulation. The nod genes have also been implicated in attachment, and preliminary biofilm assays indicate that the all of the deletion mutants have significantly more biofilm formation than the wildtype. This analysis shows that there is conservation between the nodulation pathway in α- and β-rhizobia.

**Genetic Variation and Biogeography of the Silver Garden Spider Argiope argentata (Araneae: Araneidae)**
Caroline Fukawa, Marissa Cheng

In a study of the phylogeny and biogeography of the fossorial coastal dune spider Lutica, Ramirez & Beckwitt (1995) found that the mainland populations of new species A and B are only about 57 km. apart at their southern and northern boundaries respectively [between La Jolla Beach, Ventura County and the Ballona Wetlands, Los Angeles County], yet spiders from these regions are members of different taxa. To determine if this north-south disjunction is also seen in other southern California spiders, this study is investigating the genetic differentiation and biogeography of silver garden spiders (Argiope argentata), a species whose distribution includes coastal populations both north and south of the Ballona Wetlands. This is being accomplished by the genetic characterization of spider samples from A. argentata populations from Ventura County to San Diego County, using allozyme electrophoresis as the molecular assessment technique, given its cost-effectiveness for large samples. During 2016, we sampled 550 A. argentata at 13 sites, ranging from Leo Carrillo State Park, Ventura Co. to Sunset Cliffs Natural Park, San Diego Co. We also tested for optimal enzyme-buffer combinations for electrophoretic gel runs, which thus far has yielded activity for nine enzyme loci (AAT-1,-2; FUM; G-3-PDH; GPI; IDH; LDH; PEP; PGM) on four gel buffers (HC, REG, TC1, TMA). During 2017, we will be processing the 550 spiders for genotypic analysis for these nine loci.

**Geometric Correlation and Dosimetric Quality Evaluation of Contours Produced by Automatic Atlas-Based Segmentation**
Brad Stiehl

Radiation treatment planning requires accurate and efficient ways to generate image contours of anatomical structures. However, this often extends beyond the capacity of manual segmentation (MS) methods, in which this image contouring process is performed by hand. Automatic
segmentation (AS) offers potential as a tool to supplement manual efforts. Studies comparing the geometric accuracy of contours produced by AS and MS methods are useful but do not directly reflect the effect of utilizing AS contours in the evaluation of clinically accepted radiotherapy plan quality measurements. AS was performed on 15 prostate and 15 head and neck patient CT image sets using commercial software. Metrics were then employed to determine the geometric correlation between AS contours and their corresponding MS contours. The associated dose file, a map of dosage accumulation by region, was applied and the results were compared to plan quality constraints. The geometric similarity values for both prostate and head/neck patients were consistent with findings reported in other publications. The majority of dosimetric evaluation results for both sites failed to reject the null hypothesis during paired t-tests, suggesting that a definite conclusion cannot be drawn solely from this study. Relatively large differences in dosimetric impact were observed for relatively smaller organs, while larger structures experienced more similar dosage distribution. These results encourage a differential approach of utilizing automatic segmentation on a subset of the structures and focusing manual segmentation on the remaining subset to maximize the efficiency gain from AS while maintaining high confidence in contour accuracy.

GIS as a Tool for Evaluating Ecological Relationships
Karina Alvarez, Yu-Sam Ting, Nikki Orban

A geographical information system (GIS) is a tool for mapping, presenting, and analyzing spatial data on multiple planes. GIS is often used to create predictive models that can pinpoint locations of certain criteria, but it can also be used to understand the relationships between points on these planes. As ecology is the study of interactions between biotic and abiotic factors, GIS is a valuable instrument for studying the interactions within ecological systems with respect to space, time, and scale. For example, the chemical ecology of ant-homoptera mutualisms was mapped using GIS. Diversity of sugars was found to vary widely between specific locations within the study site using HPLC-RID (High Performance Liquid Chromatography -Refractive Index Detector), suggesting varying types of interactions within the same species. A visual geographic mosaic of coevolution was then generated using GIS. In the future, GIS will be applied to the ecology of vector diseases. A detected sexual dimorphism of the Chagas-carrying triatomine bug will be analyzed in the spatial context of several biotic and abiotic factors. Understanding where this dimorphism does and does not exist will allow for a more comprehensive understanding of this organism’s life history strategy and, therefore, control of the disease. Thus, GIS is a powerful tool for evaluating dynamic and varied relationships within an ecosystem.
Greek Performance of Identity in Museums and Monuments
Samantha Burton

Museums play a crucial part in the tourism sector of Greece due to their international prominence and outstanding collections of antiquities. Greece has a special place in the western world, as it is considered the cradle of western civilization, and hence western tourists flock to Greece as they consider it their own classical heritage, to the point where Greece is often seen by visitors as a living museum. I travelled to Greece with the intention of studying cultural institutions (museums, monuments, and cultural centers) following the financial crisis of 2008. My goal was to study specific tourism initiatives such institutions enforced in an attempt to mitigate the dire consequences of the crisis. I expected to find that government spending would go into museums in order to play up their antiquities exhibits to attract tourists. Instead, I quickly learned that the state is spending close to nothing on cultural affairs, because it can’t. Museums, like almost every other institution in Greece, have faced such financial cuts that they have been forced to reduce staff significantly, decrease operational hours, and cancel possible exhibits or renovations. Thus, a rather nebulous question emerges: how can spending money on cultural initiatives be justified when basic necessities cannot be funded? In fact, cultural initiatives in Greece come from private funding, such as the Onassis and Niarchos foundations. I will highlight how private cultural institutions are not solely focusing on the country’s classical roots, but are rather creating vibrant cultural programs, turning museums into political vehicles that actively display the changing face of Greece for the world to see.

Health Outcomes for Single Midlife and Older LGBT Adults
Cielo Garat

The goal of the present study was to examine mental and physical health outcomes in interview data from a sample of single midlife and older LGBT adults. Previous research has found that LGBT older adults in the U.S. have poorer mental health outcomes and physical health outcomes than their heterosexual counterparts (Hoy-Ellis & Fredriksen-Goldsen, 2016). This study addresses factors that influence physical and mental health problems; specifically, it explores role of sexual identity, relationship status and age on participants’ discussion of physical and mental health conditions. HIV and AIDS also affected the physical and mental health of this population in recent decades. For this study, I analyzed interview data previously collected from the Caring and Aging with Pride and Aging Under the Radar projects. Through a process of open coding I identified several themes and patterns related to physical and mental health in the interview data. The sample consisted of 59 adults, 50 years and older. Due to their historical marginalization, there is an urgent need to understand the ways that LGBT older adults
experiences their physical and mental health conditions, as well as their risk factors to reach a comprehensive understanding of how to support them in later life.

**Healthy Beaches for a Climate Resilient Future: Site Suitability**

Ally Davi, Elizabeth Horejsi

One of the effects of climate change is sea level rise and its threat to coastal infrastructure. Heavy beach grooming has played a major role in destroying the natural barrier against the sea and the discontinuation of this process would help to combat climate change and reverse the negative effects of human involvement in the environment. By fencing off a selected beach site so that no grooming could occur, a natural habitat would be restored. The Bay Foundation is currently involved with the execution of a pilot project in Santa Monica to assess the effects of discontinuing heavy grooming. Three acres of beach were fenced off and allowed to return to its natural state. Ultimately, this project will be expanded to other beaches. In order to do so, a method to determine site suitability is needed. To develop this method, two different locations from Playa Del Rey and Dockweiler were chosen for analysis. The beaches were surveyed, mapped in GIS, and analyzed. Suitability for each site was calculated based on criteria determined through research and literature reviews. Although further investigation and collection of data will occur in spring 2017, it is predicted that the Playa Del Rey site will be the most suitable site for a beach restoration project due its compatibility with the outlined criteria. This research provides a method for determining the suitability of beach locations to undergo a restoration in order to combat climate change while still allowing for a heavy recreational use of the area.

**Heavy Episodic Drinking and Skeletal Health in Young Adults**

Alejandra Silva

Osteoporosis, affects approximately 54 million Americans, is diagnosed when bone deposition does not occur and or resorption increases, which leads to weak and brittle bones. Building optimal bone mineral density (BMD) during growth years results in high peak bone mass (PBM) which, reduces the risk of osteoporosis. Data suggests that excessive alcohol consumption negatively effects BMD among older adults. However, it is unknown whether heavy episodic drinking (HED) earlier in life negatively affects BMD or PBM. PURPOSE: This study addresses the lack of research concerning the potential effects of HED on BMD in adolescents. HED, is defined as 4 or more consecutive drinks for females and 5 or more for males, is prevalent in this population and could influence bone health. METHODS: 175 full-time college students (87 females and 88 males) completed the 2014 Block Food Frequency Questionnaire to assess calcium intake, a physical activity questionnaire to assess MET-hours/week of physical activity, and an alcohol survey which estimated lifetime HED frequency. Further, dual energy x-ray absorptiometry (Hologic, Discovery A) measured BMD of the lumbar spine and lean body mass.
RESULTS: Sex-stratified linear regression models controlling for participants’ calcium intake, lean body mass, and physical activity revealed lumbar BMD to be significantly lower among students who reported lifetime HED frequency ≥ 80 percent. CONCLUSION: These cross-sectional findings suggest that lower BMD may be another serious negative outcome of HED among college students. Future research should examine the influence of frequent HED on longitudinal changes in BMD and PBM in this population.

High Level of Seafood Fraud Persists Year-to-Year in Los Angeles Sushi Restaurants
Sofia Esteves, Nicholas Pilaud

Seafood mislabeling is a common problem in both domestic and international markets. Previous studies on seafood fraud often report high rates of mislabeling (e.g. >70%). However, these studies are limited to one year of data, making it difficult to assess the impact of governmental truth-in-labeling regulations. In comparison, this study uses DNA barcoding to assess seafood mislabeling in Los Angeles sushi restaurants over a four-year period. DNA barcoding results displayed a consistently high percentage of mislabeling (47%) from 2012 to 2015 in sushi restaurants. Mislabeling was not, however, homogenous across species. Menu-listed halibut and red snapper had a consistently high incidence rate of fraud across sampling years, whereas other fish such as salmon and mackerel were far less likely to be mislabeled. All sampled sushi restaurants had at least one case of mislabeling. Mislabeling of sushi-grade fish from high-end grocers was also identified in red snapper, yellowfin tuna, and yellowtail, but at a slightly lower frequency (42%) than sushi restaurants. This study not only identifies high levels of seafood mislabeling in Los Angeles’ sushi restaurants, but also shows that these rates have remain relatively constant year-to-year despite increased regulatory and media attention to the problem.

Horizon Wavefunction of Generalized Uncertainty Principle Black Holes
Luciano Manfredi Console

We study the Horizon Wavefunction (HWF) description of a Generalized Uncertainty Principle inspired metric that admits sub-Planckian black holes. Considering the case of a wave-packet shaped by a Gaussian distribution, we compute the HWF and the probability PBH that the source is a (quantum) black hole, that is, that it lies within its horizon radius. The case is β <0 qualitatively similar to the standard Schwarzschild case, and the general shape of PBH is maintained when decreasing the free parameter but shifted to reduce the probability for the particle to be a black hole accordingly. The probability grows with increasing mass slowly for more negative βand drops to 0 for a minimum mass value. The scenario differs significantly for increasing β <0, where a minimum in PBH is encountered, thus meaning that every particle has some probability of decaying to a black hole. Furthermore, for sufficiently large β <0 we find that every particle is a quantum black hole, in agreement with the intuitive effect of increasing β, which creates larger M and RH and M and RH terms. This is likely due to a “dimensional
reduction” feature of the model, where the black hole characteristics for sub-Planckian black holes mimic those in (1+1) dimensions and the horizon size grows as RH ~ M-1.

How Demographics Affect the Use of Urban Green Spaces
Emily Simso

Urban ecology is the study of how humans interact with their built surroundings, particularly in cities, which have high population densities and significantly altered natural environments. A subset of this field looks specifically at urban green spaces, which are vital areas for community health and environmental benefits. In this study, residents from Inglewood, Santa Monica, and Culver City, California were surveyed to determine how demographics affect their use and understanding of green spaces in their neighborhood. Data was collected from 98 individuals over the three cities at parks, libraries, and farmers’ markets to best represent the city’s known demographics. Statistical analysis is currently being done to determine the differences between these cities and the measured demographic variables of gender, race or ethnicity, income, and education level. Work will be done to determine which of these variables is the best measure for urban green space satisfaction. Based upon the results of the study, it can be determined if cities have adequately accounted for the specific needs of the communities present within the region.

How Should Wealth Factor into America’s Constitutional Republic?
Dylan Ramos

To allow wealth significantly more access to legislatures and matters of jurisprudence than it ought to have is to disregard the rule of law, meant to apply potential legal consequences and social benefits equitably to all citizens. Due to the multifaceted nature of wealth’s hold on American politics, this paper presents an analysis of wealth’s influence through direct contributions, independent expenditures, and corporate media. Despite rights to political expression which are vital to democracy, such spending deteriorates the right to fair elections and democratic representation of other citizens. Solutions regarding congressional, campaign finance, and electoral reform will thus accompany each discussed factor of wealth’s political sway. These solutions are among a wide variety of legislative and judicial options which the public can consider pursuing, each having, of course, a different likelihood of success, both in catching on within the two-party system as it is, and in bringing about the reform desired. They include publicly-financed elections, lowered requirements for third-party debaters, ranked-choice voting and the Coombs rule, semi-open primaries, and a district-based, population-proportional Electoral College system. Such solutions are akin to existing policies in comparably stable democracies and have the goal of improving both representation and issues with congressional deadlock. Implemented solutions will curtail the effects of those aforementioned methods of unacceptable political influence, as well as make for a more trustworthy and productive government that works for the benefit of all people, not just a select, wealthy few.
Hummingbird Response to Decoys at Artificial Feeders
Michael Gloudeman

Hummingbirds act as important pollinator species. In an urban environment, artificial feeders have become an important food resource. Without artificial feeders, hummingbirds would be forced to move around to different flowers locations to find nectar and thus be less predictable to a predator. However, as feeders provide abundant food, hummingbirds often habitually return to the same feeder. This provides a unique opportunity to predators. If hummingbirds are not able to properly identify or respond to threats near a feeder, they are likely more susceptible to predation. This may significantly affect hummingbird demographics in urban areas and/or apply selective pressure towards behaviors that minimize predation. In this study, various predators and threats are presented at established feeder sites using both artificial predator decoys and vocalizations, then analyzed and interpreted. This investigation aims to result in better understanding of the broader impacts of artificial hummingbird feeders within the urban environment.

I

Illuminating the Unseen: How Ingmar Bergman Changed Cinema
Timothy Vassallo

Ingmar Bergman’s use of light in film presents a milestone within the history of visual literacy. Ranging from naturalistic to deeply chromatic imagery, Bergman’s films are often self-reflective and focused on the internal struggle of a character amidst the natural world. Not in opposition, but distinct of color, Bergman developed a form of cinema reliant on light as a guide for audiences to witness the soul of a character on screen. In this way, film is capable of exploring two worlds: the external (natural) environment, and the internal (existential) conflict of a character against themselves. This compelling form of visual narrative has inspired generations of filmmakers since, but as the modern medium has advanced - contributing to greater resolution on screen - the value of Bergman’s dynamic lighting has lost its worth. Thus, as today’s world moves quickly towards the zenith of perfect “pictures,” the deeper nuances of narrative and performance are negated to the second tier. The goal of this paper, is to examine how Ingmar Bergman’s stylistic genius has influenced the development of modern cinematic technique. Therefore, in a diverse visual and critical analysis of Bergman’s films, writings, plays, and supplementary articles from various filmmakers who have emerged in the decades following Bergman’s success, his position at the forefront of visual theory and technical skill is proven unparalleled.
The Impact of Cattle on the Population Dynamics of a High-Elevation Thorn-woodland Clonal Oak (*Quercus potosina*) in the Sierra Fria Mountains of Aguascalientes, Mexico

Yu-Sam Ting

The tropical forests of Mexico’s western Sierra Madre have a long history of anthropogenic exploitation. The objective of our study was to model the cohort structure of *Quercus* potosina trees and measure the impact of cattle grazing on the dynamics of a high-elevation forest in Aguascalientes, Mexico. We sampled 2,151 *Q.* potosina trees across two habitats: cattle present and absent. At sites with cattle present, we found that 70% of the *Q.* potosina trees had a bole diameter (DBH) <5 cm and that 30% of the trees had a DBH >5 cm. At sites with cattle absent, we found that 40% of the *Q.* potosina trees had a DBH <5 cm and that 60% of the trees had a DBH >5 cm. The cohort structure at both sites differed significantly from an expected homogenous distribution (p < 0.05). Our cohort model estimated that at sites with cattle present, 50% of the *Q.* potosina population was missing, specifically 74% of the trees with a DBH <5 cm and 15% of the trees with a DBH >5 cm. The cohort model also estimated that at sites cattle absent 45% of the *Q.* potosina population was missing, specifically 64.4% of the trees with a DBH <5 cm and 20% of the trees with a DBH >5 cm. Our study quantitatively measures the effect of overgrazing on a unique high-elevation tropical ecosystem and uses the intermediate disturbance hypothesis to make recommendations on how to manage the impact of cattle grazing to optimize forest diversity.

Implementing a Webcam for Eye Tracking and Computer Cursor Control

Sylvana Santos, Andres Lazo Hernandez

According to the World Report on Disabilities conducted by the World Health Organization in 2011, around 975 million people aged 15 years or older suffer from some form of disability. Many of these impairments, such as Lou Gehrig’s or cerebral palsy, render the individuals unable to perform commonplace tasks such as operating a computer. These issues have encouraged researchers and companies alike to engineer systems that simplify human-computer interactions for persons with motor disabilities. One approach is to implement eye movement for the control of a computer monitor. Thus, the objective of this project is to develop a system that will track the user’s pupil using data from a webcam and utilize the data to move the computer cursor accordingly. The eye tracking program has been developed on MATLAB which relies on the Viola-Jones algorithm to detect faces in an image. This function provides the basis for the program, and image processing techniques have been used to refine the algorithm for eye tracking. An interface has been developed for visualization of the image processing, and it demonstrates the speed and accuracy of the eye detection. Project development is currently at the testing and optimizing stage of the eye tracking program. Although not yet complete, the final product will result in an easy to use, intuitive and cheap solution for those who have access to a personal computer but have difficulty using it on their own due to motor disabilities.
Improved Operational Amplifier to Boost the Output Current of an Arduino Microcontroller
Amy Weber, Tamara Jovanovic

Arduinos and other popular microcontroller kits are extremely versatile for creating digital devices or any interface between a computer and external sensors and controllers. However, the load that the Arduino can drive is limited by the current the Arduino can supply. Recently, the LMU rocket team circumvented this limitation by using bulky relay switches to deploy the rocket’s parachutes, but an add-on board for the Arduino could have been a more convenient solution. We propose to design and build a board to boost the current of the Arduino by an arrangement of multiple operational amplifiers (op-amps).

The LM747 op-amp is a standard, general purpose, low-power dual operational amplifier that can be found in the campus lab, but this technology is over 30 years old. While the LM747 operational amplifier is widely used for various experiments and projects, technology is moving forward fast and there is always a better way to implement such hardware. We propose to design and build an op-amp with better gain, input voltage, and input and output impedances by studying the characteristics of the LM747, updating the internal hardware components, and redesigning the topology of the circuits. Most importantly, we intend to improve the high-frequency response of the op-amp using MOS transistors, as the frequency response affects the overall operating speed of the op-amp and most modern circuits operate at high frequencies.

This improved op-amp will be the key component of the current-boosting board, a design with the potential to unlock more project possibilities with the Arduino.

Individual Differences and Coping Strategies
Victoria Hernandez

Past research has shown that individual differences, such as extraversion and hardiness, can play a significant role in predicting the use of emotional coping strategies (Carver et al., 1989). Coping strategies refers to psychological and behavioral efforts that people employ to minimize stress during specific events (Parkes, 1986). To study the possible contributions of individual differences, the present study examined individual differences including IQ, neuroticism, depression, anxiety, and negative and positive affect for their potential relationship to two types of coping strategies: problem-focused coping and emotion-focused coping. It was hypothesized that high IQ scores, low depression scores, and high neuroticism scores would be associated with the use of problem-focused coping, while low IQ scores, high depression scores, and high anxiety scores would be associated with the use of emotion-focused coping. Data was collected from 61 participants (M_{age} = 18.68, SD_{age} = 1.08) who completed a battery of measures assessing...
personality traits, affect, and coping strategies. Results indicated a significant relationship between neuroticism and the use of emotion-focused coping, r(59) = .42, p < .01. In addition, two regression models were run with coping strategies as the outcome variables and various individual differences as predictor variables. The results indicate that coping styles can be predicted by individual differences such as neuroticism and affect. Knowledge regarding individual differences and coping strategies has important implications for individual well-being and can be a helpful tool in treatment and understanding general coping styles.

**Inertial Electrostatic Confinement Fusion Research Project**
Randy Qafaiti, Jingyuan Du

Nuclear fusion is a promising source of clean energy that can power the world endlessly because it has unbounded limits to its efficiency and runs on the inexhaustible gases of our world. This principle is demonstrated here through the construction of a Farnsworth-Hirsch Inertial Electrostatic Confinement fusor. Fusion is incited by using a large electrical potential difference between an outer vacuum chamber and an inner grid to ionize deuterium (an isotope of hydrogen) and accelerate these ions toward a central point. If two ions strike each other with enough energy and at the right orientation, they have the potential to fuse together to create either He-3 and a neutron or tritium and a proton. By precisely controlling the voltage applied to the central grid and the pressure within the chamber, we have succeeded in achieving detectable levels of fusion, verified by a nuclear instrumentation module (NIM) led by a Boron lined neutron counter next to the chamber. The main goals of the project are to calibrate the NIM to precisely quantize and analyze neutron emission rates and to advance neutron shielding design to a more safe and effective spherical design. We hope to gain useful insights into the construction of large-scale fusion reactors for future projects.

**Influence of a Social Partner on Activity Patterns in the Facultative Migrant the pine siskin**
Michelle Laiolo

The individual decisions of animals can be heavily impacted by the behavioral cues of others. For example, individuals may acquire information from conspecifics that aids in protection against predators, increases foraging efficiency, and/or helps to find a mate. Information from conspecifics is likely to be important in migratory decision-making, particularly in species that have relatively unpredictable migratory patterns. Here, we explore the potential influence of social interactions on migratory behavior in pine siskins (*Spinus pinus*), an irruptive and nomadic migrant. Birds were video-recorded for two hours in the morning and two hours during the night when housed alone, in the first 24 hours after being paired with another bird, and fourteen days after pairing. Activity behavior of birds was scored as this is an established indicator of migratory behavior in captive pine siskins. The experiment was conducted in the late spring, around the time that birds were nearing termination of migratory behavior. Birds had a
significant change in both daytime and nighttime activity after pairing. Nighttime activity significantly declined on the first night after pairing and remained low, whereas daytime activity significantly increased two weeks after pairing. Our data suggest that the addition of a social partner significantly changes both daytime and nighttime behavior. Moreover, the pattern of change is consistent with birds terminating migration in response to pairing. While our results suggest that social cues play an important role in migratory timing, additional external and internal factors are likely to also contribute to the termination of migration.

**Influence of physical activity and heavy episodic drinking on bone mineral density**
Stephanie Lee

The prevalence of heavy episodic drinking (HED) among college students has led to an interest in its effect on bone mineral density (BMD). HED is defined as the consumption of >4 drinks for women and >5 drinks for men during a single occasion. The American College of Sports Medicine recommends a minimum of 16.6 met-hours per week of physical activity for health benefits. In this study, achieving >16.6 met-hours per week was considered physically active. Purpose: The purpose of this study was to analyze the influence of physical activity and HED on BMD. Methods: HED criteria were met for 46 female and 32 male participants. Physical activity was measured in met-hours per week via the Physical Activity Questionnaire (PAQ). BMD was measured using the dual energy x-ray absorptiometry (Hologic). Results: T-tests showed no significant differences in BMD between the active and inactive women, however, there were significant differences between the men. For the active and inactive men, the results presented a mean BMD of 1.06±0.11g/cm2 and 0.94±0.06g/cm2 at the anterior-posterior spine (p=0.008), 0.85±0.09g/cm2 and 0.76±0.06g/cm2 at the lateral spine (p=0.014), 1.01±0.13g/cm2 and 0.85±0.10g/cm2 at the femoral neck (p=0.004), and 1.07±0.09g/cm2 and 0.97±0.06g/cm2 for the whole body (p=0.007), respectively. Conclusion: The inactive men had significantly lower BMD at several bone sites than the active men, despite HED. This was not the case for the women who may have already reached peak bone mass.

**Investigating the Role of Heavy Metals on Interspecies and Intraspecies Interactions of Invertebrates and Vertebrates**
Colin Wikholm

The effects of heavy metal accumulation in ecosystems has increasingly become a topic of discussion as industry continues to invade natural habitats. In this study the heavy metal content of insects and the western fence lizards (*Sceloporus occidentalis*) in Ballona Wetlands, Los Angeles, CA were analyzed. In insects, we hypothesized that there would be a significant differences in heavy metal concentrations among sites, morphospecies, and guilds. We also expected a correlation between heavy metals and both wing hue intensity in insects and belly hue intensity of lizard. Two moth morphospecies, one membracid morphospecies, and the lizard
species were collected from Ballona Wetlands and tested for heavy metal content using Inductively-Coupled Plasma-Mass Spectrometry (ICP-MS). Hues of some species were also analyzed using Digital Imaging Analysis. A significant difference was found between heavy metal concentrations in insects and among sites, morphospecies, and guilds. A correlation was found between moth hue and several metals. In the western fence lizards belly, but not snout, several hues correlated with heavy metal concentrations. The results from the insects suggest that the metals may reach the wetlands by way of runoff from the Ballona Creek and may affect invertebrate and vertebrate intraspecies and interspecies interactions within ecosystems.

**Investigation of the water oxidation mechanism with mononuclear metal catalysts and their resulting energetics and intermolecular features**

Jose Alvarado, Kelly Hunter

Water oxidation produces protons that can be reduced for use as a source of clean and renewable carbon-free fuel. Ruthenium complexes can be effective water oxidation catalysts but are too costly for large-scale application. Iron displays similarities to ruthenium and is much more abundant but has not been shown to be effective as a catalyst following the water oxidation mechanism suggested for ruthenium. Accordingly, we employ density functional theory (DFT) calculations of eleven mononuclear ruthenium catalysts and compare these with analogous iron catalysts to investigate the energetic bottlenecks along the water oxidation mechanism. Using insights from these results, four novel catalysts with varying electron-donating and electron-withdrawing character are proposed and characterized. The bond length of the axial ligand was monitored along the reaction mechanism to qualitatively determine the stability of the catalyst. Further characterization was performed to investigate excitation energies of the electrons in the intermediates with time-dependent calculations. In the final mechanistic step, where O2 is released and replaced by water, intermolecular characterization was performed to determine the most stable coordination of the O2 along with appropriate spin assignment for the catalyst complex. Our results suggest that modification of the ligands subtly influences the intramolecular features of the catalyst and catalyst stability. Additionally, the novel catalysts display kinetic and thermodynamic performance similar to ruthenium catalysts. With appropriate ligand design, our results suggest that mononuclear iron catalysts designed with a bidentate and a tridentate ligand may serve as successful water oxidation catalysts.

**Isolation and characterization of transposon-induced motility mutants of Burkholderia tuberum**

Brenda Dimaya

Plant growth-promoting rhizobacteria (PGPR) are a group of bacteria that enhances plant growth and yield without the use of artificial fertilizers. In order for a symbiotic relationship to form, the bacteria must be able to colonize the plant’s roots. Colonization may be affected by flagellar
motility. To determine if motility plays a significant role in root colonization, transposon mutants were generated in *Burkholderia tuberum*, a beta-rhizobium capable of nodulating legumes and stimulating plant growth by nitrogen fixation. B. tuberum was mated with *Escherichia coli* carrying the pRL27 plasmids to introduce the TN5 transposon. Mutants were selected by their resistance to kanamycin and motility mutants screened on Luria Bertani media with 0.25% agar. Three motility mutants that display reduced swimming were identified from the 200 transposon mutants screened. Further analysis will involve using molecular methods to identify the genes mutated and the interaction these mutants have with plants. Overall, this study will shed light on the genes involved in motility in *B. tuberum* and the role of motility in this bacterium’s beneficial interaction with plants.

**L**

**Labeled: Erasing the Stigma Surrounding Mental Illness**
Megan Wilton

Approximately 1 in 5 adults in the U.S. experience mental illness in a year, yet many do not discuss their illnesses in order to avoid potentially negative judgment. It is common to hear derogatory terms concerning those affected by mental illness in various media outlets such as newspapers, television, and movies. Words such as “nuts”, “crazy”, and “psycho” are all escalating forms of discriminatory language that have been gradually normalized by society. Mental illnesses are often featured as the basis for figures of speech, such as “you’re being really bipolar.” Pervasive use of this language in schools, businesses, and even the healthcare system can often result in ignorance, prejudice, and stigma. Given the lack of positive dialogue surrounding mental illness, this project, "Labeled: Erasing the Stigma Surrounding Mental Illness," aims to address the question: how can graphic design be utilized to create a visual campaign that encourages productive public conversations regarding mental illness in order to combat current stigma and labels? As such, this work aims to demonstrate how design can confront negative language associated with mental illness and promote healthy dialogue through visual metaphors. Using graphic design, I intend to create a poster campaign that demonstrates the importance of discussing mental illness. Although such conversations can be uncomfortable, the outcomes of misinformation and labeling are more harmful. Larger implications include challenging viewers to confront social stigmas embedded in American society’s social framework, as well as internalized stigma present in the minds of many individuals with a mental illness.
LGBT Art In Context: Robert Rauschenberg and Cy Twombly's Romantic Relationship and Art Development
Mitchell Braun

During the Cold War era in the United States, political figures created pressures to conform to social norms in fear of severe discrimination. This societal context led to intense homophobia. The heteronormative art scene of the mid 20th century also displayed this homophobia, influencing gay artists to keep relationships secret and minimize self-expression in fear of discrimination. Robert Rauschenberg was one such artist. Because of the social context in which he produced his art, the influence of his romantic relationships was never truly acknowledged. Current analyses of his works still often strip them of the context of a gay relationship. Liberal discourses by scholars, such as Jonathan Katz, have revealed significant insights into Rauschenberg’s artistic choices and general art development when placing his works in the context of his long-term relationship with Jasper Johns, indicating the importance of this type of inquiry. In order to explore the less researched relationship with Cy Twombly and answer if their relationship can help explain their art development, I will first describe the heteronormative methods of art history as seen in academic articles, textbooks, and exhibitions that have led to the subtle silencing of the relationship. I will investigate the homophobia of the 1950s and the censorship they faced in expressing their sexualities by examining primary and secondary documents from the time period that exhibit aspects of their culture. Finally, I will revisit their works to analyze their art in their artistic milieu to attempt to answer questions about their artistic development and choices.

The Life and Legacy of Gertrude Bell
Shannon Hayes, Elizabeth McLaughlin

From her birth in 1868 to her death in 1926, Gertrude Bell lived at a crossroads in British history. In adulthood she traveled independently through the deserts of the Middle East, where she developed an interest in archaeology, and eventually chose to live as a full-time political officer and advocate for the preservation of Iraqi culture and cultural heritage. While Bell has been largely overlooked in recent years due to modern accusations that she was an imperialist figure seeking to assert British dominion over the Middle East, her numerous private diaries and official publications clearly expressed a hope to see the creation of independent Arab nations following the fall of the Ottoman Empire, rather than a desert full of British satellites. Gertrude Bell’s accomplishments included fluency in six languages, published translations of Sufi poetry, five years of Alpine mountaineering, archaeological research that is still a standard in the discipline, map-making, Red Cross service during the First World War, and later work on the politics of the Middle East, primarily through the Arab Bureau in Cairo and her role as "Oriental Secretary” in Baghdad. This talk will provide an overview of Bell's intrepid life and will particularly focus on her archaeological work at Binbirkilisse and Ukhaidir, as well as on her
involvement in the creation of the Baghdad archaeological museum, later renamed the Iraqi Museum. Finally, the talk will discuss how her career sheds great light on the early politics of cultural heritage as they developed in the Victorian Era.

**Lights, Camera, Recognition: An Analysis of Recognition and Disclosure of Commitments for Film and Television Programming for Publicly Traded Companies**

Jeffrey Walker

The question of recognition versus disclosure of financial information has become a topic of discussion by regulators and standard setters in recent years. To the seasoned investor, a company’s financial statements present a wealth of knowledge regarding the viability of future investments, but the average investor often limits his/her research to items recognized in the financial statements and barely glances at disclosure notes before making his/her decision. According to Generally Accepted Accounting Principles (GAAP), entertainment broadcasters are only required to disclose commitments for license agreements if the criteria for recognition have not been met. Many of these license agreements relate to film programming, sports programming, and streamed content that have surged in popularity in this digital age. As a result, many of these companies have billions of dollars of new obligations that are not required to be recognized on the balance sheet. Would formal recognition of these programming rights more accurately represent these companies’ financial positions to their investors? Through the utilization of the SEC’s online EDGAR database, I looked at specific account balances and disclosure notes related to programming commitments for a sample of publicly-traded entertainment broadcaster. I analyzed the trend in amounts spent on acquiring programming rights and assessed the informativeness and adequacy of the disclosures regarding these commitments. My findings regarding the magnitude of these commitments and the nature of these disclosures should help to inform the debate on whether disclosed items should be formally recognized in financial statements.

**Linking climate and seed germination rate for the threatened California black walnut tree (Juglans californica)**

Jacquelyn Galvez

The California black walnut, Juglans californica, is a foundational species and a hardwood tree endemic to Southern California. It is listed as vulnerable on the IUCN Red list, meaning it has a high risk of becoming endangered unless action is taken to protect its habitat and ability to reproduce. Ongoing changes in the climate may threaten the survivorship of this already vulnerable plant species. Warmer seasonal temperatures, due to climate change, have been show to negatively impact key life-history stages in multiple plant species, including foundational species that provide habitat and food for a wide range of associated flora and fauna. Despite its ecological role and limited geographic range, the early life-history of *J. californica* is poorly
studied. Seed germination guidance recommends a 3-month cold stratification treatment at 5°C before plantation; however, this constant low temperature is atypical in Southern California. In this study, we aim to identify the optimum germination temperature for *J. californica* seeds, hypothesizing a link between colder temperatures and higher rates of germination. Groups of 100 seeds were cold stratified at five different temperatures (5°C, 22°C, 23°C, 30°C, ambient) for up to three months. Every two weeks, 20 seeds were removed, measured, and planted in trays to assess germination by looking for radicle and cotyledon growth. Data were examined for relationships between temperature treatment and germination rate. These findings will aid in restoration of *J. californica* to Ascot Hills Park in Los Angeles, guiding placement of trees based on temperature to increase survivorship.

The Longitudinal Study of Bone Health in Male Cross Country Runners
Nhandi Scott

Distance runners are predisposed to stress fractures and can suffer from Relative Energy Deficiency in Sport (RED-S). RED-S alters metabolic rate, circulating hormones and may affect bone health. We chose to study males because, to date, they are studied less frequently than females. Purpose: Our goal was to investigate changes in bone mineral density (BMD) of male runners before and after training seasons. Methods: Male collegiate runners (*n*=14, age=19.8±1.2 years) had BMD measurements using the dual energy x-ray absorptiometry before the cross-country season, 3.8 months later before track season and 11.2 months later before the next cross country season. A food frequency questionnaire was used to assess dietary intake. A repeated measures ANCOVA, controlling for calcium intake, evaluated changes in BMD over time. Results: There was no change in BMD at the anterior-posterior spine. Whole body BMD decreased after visit 1 (1.198±0.069g/cm², 1.171±0.070g/cm² *p*<.05) and remained lower than baseline at visit 3 (1.175±0.066g/cm²). After visit 2, BMD increased at the forearm (0.598±0.034g/cm², 0.607±0.032g/cm², *p*<0.05) and lateral spine (0.827±0.054g/cm², 0.849±0.54g/cm², *p*<0.05). The hip decreased after visit 1(1.141±0.88g/cm², 1.132±0.089g/cm², *p*<0.05) but then increased after visit 2 (1.144±0.079g/cm², *p*<0.05). Conclusions: Forearm BMD increased 1.7% after visit 2 and the lateral spine increased 2.7% after visit 2. BMD at the hip did not change from baseline to 11.2 months while whole body BMD decreased 2.3% after visit 1. Future analysis of seasonal changes in training and sun exposure may provide insight into BMD changes in runners.

The Low-Cost Redesign and 3D Printing of Structural Knee Orthotics for Athletic Knee Injury Patients
Alexander Hendricks, Sean Nevin

Knee orthotics play an important role in aiding in the recovery of those with knee injuries, especially athletes. However, structural knee orthotics are often very expensive, ranging between
$300 and $800. The primary reason for this project is answer the question: can 3D printed orthotics represent a viable and cost-effective alternative to present structural knee orthotics?

The primary objective for this research project is to design a knee orthotic for athletes with knee injuries for a low-cost under $100 and evaluate its effectiveness. The initial design for the orthotic will be done in SolidWorks, a computer-aided design (CAD) software available at Loyola Marymount University. After this design is finished, finite element analysis (FEA) will be utilized to understand how normal stresses placed upon the knee will affect the orthotic. The knee orthotic will then be adjusted and redesigned to meet a specified factor-of-safety based on the data gathered during FEA.

Once the FEA is completed and the orthotic is redesigned based from the data gathered, the next step will be to move on to 3D-printing the first design of the knee brace. Subsequently, physical therapy movement trials will be used to evaluate physical performance. Using the data from these movement trials, the CAD design of the brace will be refined to accommodate the design requirements. The final goal of this research means to explore the possibility of replacing high-cost, outsourced knee orthotics with a readily available low-cost alternative.

Mathematical models of β-cell cluster dysfunction via IAPP-induced membrane pores
Nikolas Victoria

The primary function of pancreatic Î²-cells is to release insulin to control blood glucose levels. When Î²-cells synchronize their electrochemical bursting patterns via gap junctions that physically connect the cells into a cluster, insulin release is enhanced. Diabetes mellitus is an endocrine disorder characterized by poor insulin release which may arise from electrochemical desynchronization between cells due to cellular dysfunction. A byproduct of insulin secretion, islet amyloid polypeptide (IAPP) is thought to be a source of this dysfunction. One possible mechanism by which IAPP acts is membrane disruption via pore formation; but how do these pores affect the electrical activity and overall function of cell clusters? We developed a mathematical model -based on a Hodgkin-Huxley-type equations model for a single cell - which simulates Î²-cells islets, to answer this question. The model is comprised of multiple electrically coupled cells and of differential equations which are primarily dependent on \([\text{Ca}^{2+}], [\text{K}^+],\) and voltage. Synchrony among cells was measured using a synchronization index: a minimum average correlation between bursting patterns of neighboring cells in the cluster. With this model we showed (1) bursting patterns of neighboring cells can be synchronized via electrical coupling with a coupling conductance of 0.4 S in a three-cell model; (2) bursting could be induced in non-bursting cells by neighbor cells; and (3) leak currents with a conductance of 3.5 S in only 10% of
cells can drastically reduce synchrony throughout the cluster. Given these results, pore formation can be a viable mechanism by which IAPP contributes to diabetes.

**Measuring Long Term Variation of Magnetosphere Plasma Mass Density**

Joe Arra

The concentration of this research is to analyze the variation of plasma mass density in the earth’s magnetosphere over the period of one solar cycle. Humans are becoming increasingly dependent on satellite technology which gives us cell phone service, GPS, and the Internet. Because of this, having the ability to accurately model the earth’s plasma density of the magnetosphere, where many satellites orbit, is a valuable skill. The magnetosphere is made up of plasma, or highly ionized gas, which can lodge itself into the electronics of satellites and damage electronics or in very dense areas can cause plasma drag and change an orbiting satellite’s path. Satellites sometimes have radiation shielding to protect them from these high-energy particles but it is very expensive so having an accurate model would decrease costs of satellites. I calculated the field line resonance (FLR) frequencies using measurements from ground magnetometers in the Mid-continent MAagnetoseismic Chain (McMAC) and applying the cross-phase method. The FLRs are related to the plasma density analogously to the frequencies of a standing wave on a string and the string’s density. Utilizing this relationship and FLR observations I calculated the plasma mass density. The results will be presented on how the mass density varies with certain factors including the solar cycle, seasons, and year.

**Mini Meta-Analysis: The Effect of Language Abilities on Boston Naming Test Performance**

Alice Gavarrete Olvera, Carla Ventura

Verbal memory is typically assessed through the use of confrontation naming tests, like the Boston Naming Test (BNT; Soble, Marceaux, Galindo, Sordahl, Highsmith, O’Rourke... & McCoy, 2016). The BNT is also a common method of assessing language abilities in neuropsychological assessments. The BNT consists of 60 line drawings that are arranged in order of increasing difficulty, and can be given in several languages. Past research has demonstrated that bilingualism often contributes to a disadvantage on language tasks, due to smaller vocabularies and difficulties with lexical access (Kalousi, Sheppard, Lemieux, Monetta, Taler, 2014). Despite this trend, few studies have investigated the use of the BNT specifically among bilingual adults. In our mini meta-analysis (a quantitative analyze of a set of findings from multiple studies), we analyzed five studies that: a) used the BNT to assess verbal memory, b) provided performance mean and standard deviation or standard error of scores on the BNT, c) compared group means between monolingual and bilingual groups, and d) were published in peer-reviewed journals. We found a large effect size, \(d= 1.03\) in which bilingual groups exhibited lower scores than monolingual groups on the BNT. This large effect suggests that clinicians cannot rely heavily on the BNT when assessing verbal memory in bilinguals, and
support the need for the development of a confrontation naming test that is specifically for bilingual populations.

**Misregulation of stress granule formation as a potential pathogenic mechanism in Charcot-Marie-Tooth neuropathy**
Casey Sederman, Gabriel Huacuja, Morgan Mutch

Dominant mutations in regions encoding Histidyl-tRNA synthetase (HARS) enzymes are associated with hereditary Charcot-Marie-Tooth (CMT) peripheral neuropathy, a neurodegenerative disease characterized by degeneration of the peripheral neurons. While HARS functions primarily in the aminoacylation of Histidine-tRNA, recent evidence indicates that many of these pathogenic variants are not associated with significant loss of aminoacylation activity. Recent mRNA binding assays in yeast models have demonstrated a previously unknown mRNA binding activity of HARS. Like many mRNA binding proteins, during stress HARS is found in large assemblies of protein and RNA called stress granules. The existence of this secondary function of Histidyl-tRNA synthetase informs a new direction in the investigation of the pathogenic mechanism for these mutations. Plasmids containing mutations in the yeast Histidyl-tRNA synthetase gene (Hts1) associated with the development of CMT in human analogs were obtained from the Antonellis Lab at the University of Michigan Medical School. These plasmids were transformed into yeast strains in which the genomic copy of Histidyl-tRNA synthetase had been deleted. The resulting strains were transformed with plasmids encoding a fluorescently labeled stress granule marker protein for microscopic analysis. Stress granule formation will be analyzed in these Hts1 mutants, as abnormalities in granule formation are commonly associated with the misregulation of translation and neurodegenerative diseases. This work will inform the hypothesis that misregulation of translation or stress granule formation by HARS could lead to the development of CMT in individuals with these deleterious mutations.

**Mitigating Urban Blight in Los Angeles**
Virginia Laskodi

Urban blight continues to be a major problem for cities around the country. In Los Angeles alone, there are over 600 abandoned homes, constituting a major component of urban blight while driving down property values, breeding crime, and creating an unsightly nuisance for neighbors. I will use content analysis to code and theme articles inductively to examine how cities handle these vacated properties. I will collect approximately thirty reputable online and newspaper articles describing different case studies from the past fifteen years. From these sources, I will discuss the various methods used in other parts of the nation to address this particular area of urban blight. This will allow me to describe a generalized approach for addressing abandoned homes. In determining an approach for Los Angeles, I will outline what has been successful for cities, what are the costs associated with these efforts, community
evaluation on success, the feasibility of these projects, and government regulation of vacated properties. This research will inform my set of suggestions for tackling abandoned properties in the City of Los Angeles and mitigating this form of urban blight.

Modal Analysis of a Fixed-Fixed Beam with Intermediate Attached Mass
Adam Betancourt, Keely Jones

In this paper, an experimental procedure is proposed for determining the resonance frequencies and mode shapes of vibration of a fixed-fixed beam. Since the beam is fixed at both ends, the beam may sustain an axial force due to several factors including the fasteners and/or change of temperature. The analytical governing equations of motion, frequency equation, and mode shapes of vibration are presented. The analytical model is used to justify the experimental approach as well as interpretation of the experiment data. In this study, a hammer is used to excite the beam, and then the vibration of the beam is observed and recorded at two different points on the beam using two laser Doppler vibrometers. The data from the vibrometers are used to extract the resonance frequencies and mode shapes of vibrations. Using the analytical model, the axial force in the beam are estimated.

Modeling Temperature Variation using Drones to Inform Tropical Forest Management Strategies
Rebecca Bremer, Mekleit Dix

Deforestation and forest fragmentation is detrimental to the ecological systems and biodiversity of the area. Unsustainable forest management strategies further forest fragmentation and edge effects. In order to address this problem drone imagery was used to get quantitative data on population level dynamics in the high elevation tropical thorn woodland of Western Sierra Madre, in Sierra Fría of La Congoja of Aguascalientes, Mexico. Furthermore, there is little to no information on temperature dynamics in this area of Mexico. Links between population-level and landscape element variables were used to create a preliminary model using drone images to inform reforestation strategies. The model links four variables; canopy area, maximum 12 hour nocturnal temp, variance 12 hour diurnal, and seedling population \(y=0.00002x + 167.8\). The model is designed to help identify and optimize seedling planting in the Western Sierra Madre. Drone images can be used to optimize planting and highlight the specific areas that may be in need of assistance. Planting trees along the fringe of canopies can help buffer effects and promote seedling growth for more successful reforestation and the decrease of forest fragmentation.
Molecular Structure and Electronic Properties of Anthocyanidins for use as Photosensitizers
Kevin Ray Calvelo

We investigate anthocyanidins via ab initio calculations to gain insight into the impact of chemical modifications of the structure on the UV-vis absorption properties for use in dye-sensitized solar cells (DSSCs). Structural and electronic characteristics are examined using Density-Functional Theory (DFT) with the B3LYP exchange-correlation functional and the 6-31G (d, p) and 6-311G++ (d, p) basis sets. Time-Dependent Density Functional Theory (TD-DFT) employing the integral equation formalism of the polarizable continuum model (IEFPCM) for solvent effects is invoked to predict the electron excitation energy and maximal absorption wavelength. Calculated spectra show sensitivity to the inclusion of water via implicit solvent effects, resulting in a blue shift in absorption spectra. Electronic character of these molecules are evaluated and discussed in terms of Molecular Orbital (MO) theory and thermodynamic calculations allow trends in pH effects to be projected and explored. Understanding the relationship between molecular structure and the calculated electronic properties of these molecules could aid the predictive optimization of their UV-vis absorption properties for use as photosensitizers.

Morphological Asymmetry as an Indicator of Stress in Rodents, a Comparative Study of Rodent Species in Southern California
Joshua Ramsey, Rachel Para

Vertebrates generally develop in a bilaterally symmetrical manner, but it is hypothesized that this pattern may be disrupted by stressors, one of which is pollutants in their environments. Pollutants, absorbed during nutrient uptake, can make their way into the food chain through plants, and may be concentrated in higher trophic levels-omnivores, for example. As they develop, vertebrates exposed to pollutants may be unable to develop symmetrically, and fluctuating asymmetry (FA) may be introduced. FA is a random deviation from bilateral symmetry toward either the right or left side. While a variety of methods to measure bilateral symmetry have previously been used including rulers and calipers, more modern equipment may gather higher quality data. A three-dimensional digitizer accurately collects points in a three-plane coordinate system. This tool was used to collect measurements from rodent skulls to compare the degree of bilateral symmetry of the specimens. By measuring distances between landmarks-identifiable locations on the skull (e.g. sutures)-and between endpoints on the limbs, differences between left and right sides were calculated, and differences within and between species were compared. Preliminary results were inconclusive but with larger sample sizes, correlations between pollution levels and symmetry may emerge. This data will then be compared to individuals from less polluted regions to determine the difference in degree of asymmetry between rodents due to environmental pollutants.
**Muscle Quality and Endurance Training: A Cross-Sectional Examination in Collegiate Cross-Country Athletes**
Brooke Batcheller

Purpose: Muscle force is directly related to muscle size, but muscle quality determines how efficiently a muscle works. Muscle quality (MQ) is strength divided by muscle size, allowing for an equivalent comparison of muscle function. The purpose of this study was to determine whether gender or endurance training has an effect on muscle quality. Methods: Collegiate cross-country runners (males=18, females=17) and normally healthy college student controls (males=89, females=90) participated (8.9±0.9yrs). Non-mineral lean mass of the arms was assessed via DXA and combined grip strength was determined from the best of three trials for each hand. Combined grip strength divided by the combined lean mass of the arms determined MQ. Results: As expected, males were significantly higher in height and weight (178.5±7.5 cm, 72.0±8.9 kg; 163.9±6.4 cm, 60.6±10.1 kg), and the non-athletes demonstrated higher weight and BMI (67.3±11.1 kg, 22.9±2.9 kg/m2; 60.3±9.0 kg, 20.9±1.5 kg/m2). In total, males were significantly stronger (83.5±15.0 kg vs. 56.7±8.8 kg), however, the female’s MQ was significantly higher than the males’ (12.8±2.1 vs. 14.6±2.1). The MQ of athletes was significantly higher than that of non-athletes (13.6±2.3 vs.14.5±1.8). There was no significant group-gender effect. Conclusion: The difference between the athlete and non-athlete groups implies a positive relationship between elite-level endurance training and MQ. The causation could go either way, with training causing the MQ increase, or individuals with inherently higher MQ being more likely to pursue elite-level sports. The lack of a group-gender effect implies training does not affect MQ of males and females differently.

**Muscle Quality as a Predictor Of Self-Reported Fatigue in Cancer Survivors**
Matthew Lemus

Purpose: The IMPAACT Study (Improving Physical Activity After Cancer Treatment) investigates the effects of physical activity on cancer survivors. The purpose of this substudy was to determine the predictive value of muscular performance variables in order to better understand self-reported fatigue. Methods: Female gynecologic cancer survivors from the (n=36; 64.6±7.6 yrs; 163±5.2 cm; 79.5±18.7 kgs; 43.0±7.4% body fat) were evaluated using the NIH PROMIS Fatigue Scale (SRF) at baseline and following 26 weeks of combined aerobic and resistance training. Maximal voluntary isometric torque (MVIT) was assessed by measuring performance on an isokinetic dynamometer (HUMAC NORM) where participants completed a 30-repetition isokinetic exercise, followed by three MVIT trials with one minute of rest in between each trial. Regional lean mass was measured using dual-energy x-ray absorptiometry. Muscle quality (MQ) was calculated by dividing combined HG strength or MVIT by respective regional lean mass. A stepwise linear regression predicted the relationship of muscle performance variables on the self-
reported fatigue scores at each time point. Results: Leg MQ at baseline was the best predictor of the SRF at the beginning of the study ($r=0.38$). A significant model was also generated for combined leg MQ and MVIT at baseline ($r=0.49$). In addition, at post-testing, torque fatigue percent was found to be the only predictor of SRF ($r=0.39$). Conclusion: Leg MQ and MVIT are useful predictors for future SRF in female cancer survivors prior to beginning an exercise program. However, after training torque declines during fatiguing exercise become more correlated to SRF.

Neuropathy in Cancer Survivors
Naomi Sengal

Background. One of the common effects of cancer, that can occur at any phase, is neuropathy. Neuropathy is an incurable condition that causes nerve damage directed towards the hands and feet; which reduces sensation and feeling, while creating numbness and weakness for the person affected. This is an huge issue especially for cancer patients and survivors, because it increases the risk of more potential physical pain and damage, such as falling.

Methods. The IMPAACT research project examines the results derived from various tests given to cancer survivors. This particular study is concerned with the effects of exercise on neuropathy among 54 different survivors, all through a 26-week exercise program. The study provided a 40-second timed vibration test to assess the level of numbness on two separate occasions, one before the 26-week program (August 2015) and after (April 2016). Before the study began, participants were given a physical health survey in which they self-reported if they were diagnosed and/or aware of having neuropathy.

Results. (August 2015). The following table displays those participants that are aware of their neuropathy and indicated so on their survey.

However, the threshold with the timed vibration tests are set that any number $\leq 10$ is a low value and displays neuropathy. The following shows how many participants fell below or at the lower extremity in most of their tested areas of their hands/arms/legs and feet, without reporting it on the survey.

Conclusion. The rest of the study shows improvements across the patients after the exercise program.
A New Algorithm for Community Detection in Large Social Networks
Natalia Dibbern

Networks provide a useful representation for the investigation of complex systems, and makes it possible to examine the intermediate-scale structure of such systems. Consequently, networks have attracted considerable attention in sociology, biology, computer science, and many other disciplines. The majority of intermediate-scale structure investigations have focused on community structure, where one decomposes the network into cohesive groups of nodes referred to as communities, which have a higher density of connections within than between them. With the rise of social media (e.g Facebook and Twitter), algorithms for community detection in large social networks have become increasingly important. In this work we propose a new algorithm for community detection. The algorithm proceeds by alternating three simple routines in an iterative fashion: diffusion, thresholding, and random sampling. We use our algorithm to detect communities in a large social network of 4.8 million users known as the LiveJournal Network. We compare the performance of our algorithm with a state of the art algorithm developed by Facebook. We also conduct a thorough study of the mathematical properties of the proposed algorithm. We show that the algorithm monotonically increases some quality function describing how good is the partition of the network.

No Pay for Play: The NCAA’s Commodification of Student-Athletes
Ricky Sherer

This essay functions as a rhetorical criticism of the National Collegiate Athletic Association’s (NCAA) exploitation of student-athletes through the theoretical lens of commodification. As a renowned multi-billion dollar enterprise, the NCAA refuses to allow financial rewards extending beyond the scholarships afforded to a small fraction of athletes who help to generate mass revenue for their institutions as well as the NCAA. This essay rhetorically analyzes statements as well as mandates given by the NCAA and its high ranking representatives that support the organization’s long disputed stance to prohibit financial benefits from being awarded to student-athletes. Specifically, the responses from the NCAA’s president and chief legal advisor based on the cases of O’Bannon v. NCAA and Northwestern University football team’s unionization efforts come into focus. Particular attention is paid to arguments that advance the NCAA’s commodification of athletes and this includes justifications for the denial of payment, profiteering from athletes’ images, monopolization of amateur sport and reliance on amateurism, and the importance of education as a rhetorical defense against paying college athletes. Based upon the analysis of the institution’s actions, the NCAA has shown that its intentions prioritize financial prospects over the concerns of athletes which is apparent due to their unwavering support of the amateurism model prohibiting extended benefits for college athletes. Additionally, the findings of this research extend the understandings of commodification through a lense of
exploitation highlighting how the NCAA takes advantage of student-athletes’ skills and popularity for the association’s benefit.

**Nocturnal vocalization behavior associated with photoperiod-induced migratory restlessness in pine siskins (Spinus pinus)**
Melissa Morado

Although many bird species are known to vocalize during migration, the role and use of vocalizations by facultative migrants, migrants that make relatively unpredictable and irregular movements, is poorly studied. This study examines changes in vocalization behavior in association with spring migratory behavior in the pine siskin, a known facultative migrant. Pine siskins were housed either on naturally increasing day lengths or on constant short winter days as a control. To quantify vocalization behavior, birds were audio recorded from 12am-2am on 5 different nights between May and June, as pine siskins are known to vocalize during nocturnal migration. During the sampling period, birds housed on naturally increasing day lengths exhibited greater levels of migratory behavior compared to control birds. Vocalizations were scored by simultaneous aural assessment and visual examination of the spectrogram of the recordings. We found that the natural day length birds produced significantly more vocalizations than the short day birds. These nocturnal vocalizations consisted entirely of various types of calls; no song was recorded. Our results suggest that increasing photoperiod stimulates nocturnal calling behavior in pine siskins, in addition to other behaviors associated with migration. Furthermore, these results suggest that vocal cues may be important in gathering information or coordinating among conspecifics during migration in this species.

**Nutrient Value of Invasive Seagrass, Halophila stipulacea, and Analysis of its Ability to Meet the Dietary Needs of Green Sea Turtles in the Caribbean**
Candice Cross

Seagrass habitats serve as one of the most valuable marine ecosystems and provide shelter, nursery, and food to a diverse range of tropical marine animals. Within the Caribbean, Thalassia testudinum, commonly known as “turtle grass,” comprises the majority of green sea turtle diet along with other native seagrass species, Syringodium filiforme and Halodule wrightii. Surveys from 2002 to 2017 report the increasing expansion of invasive seagrass, Halophila stipulacea, in addition to its ability to outcompete and replace native beds along the shorelines of various Caribbean islands. The abundance of H. stipulacea in comparison to native species has caused an inevitable shift in the dietary pattern of green sea turtles. The study focuses on H. stipulacea’s ability to satisfy the nutritional requirements of the green sea turtle and the corresponding impact the invasive grass will have on growth and development. Samples of H. stipulacea, T. testudinum, S. filiforme, and H. wrightii were collected from waters around St. John, one of the U.S. Virgin Islands, for comparative dry matter, ash, and phenol analysis. Previous studies
suggest a richer nutrient composition of H. stipulacea due to its higher epiphyte content compared to native seagrasses, although, said epiphytic growth may act as a deterrent for feeding turtles. Collaboration with National Park Service in monitoring the effects of the invasive species and its trophic disruption will offer more insight into the necessary protocol regarding seagrass biodiversity conservation.

**Nutritional Status of Food Served at Residential Alcohol Rehabilitation Centers Across the United States**

Sydnie Maltz

Nutritional intake, and specifically consumption of omega-3 polyunsaturated fatty acids (n-3 PUFAs) and vitamin D, may be related to successful recovery from alcohol use disorder (AUD). These nutrients have been shown to be important to the brain and nervous system, and therefore mental health. Little is known about the dietary quality of foods served at alcohol rehabilitation centers. PURPOSE: To determine whether residential rehabilitation centers are serving clients foods high in n-3 PUFAs and vitamin D, two nutrients that are implicated in recovery from AUD. METHODS: The Substance Abuse and Mental Health Services Administration (SAMHSA) substance abuse treatment facility locator was used to identify residential alcohol rehabilitation centers in the United States. Multiple centers in each state were randomly selected and contacted via email and/or phone. Of the 117 centers contacted, 16 agreed to provide typical weekly menus of the foods served to clients at their facility. Menus for 58 weeks were obtained and were analyzed for n-3 PUFAs and vitamin D content by summing the number of times foods high in these nutrients, such as fish and milk were offered. RESULTS: Our survey showed that fish was offered at only 3% of the meals with 25% of the centers lacking any opportunity to consume this high PUFA food. Access to foods high in vitamin D, i.e. milk, was frequent, with 47% of the meals containing dairy products. Additionally, no centers reported providing PUFA or vitamin D supplements. CONCLUSION: While residential centers provide opportunities for clients to consume vitamin D at half of eating occasions, access to foods high in n-3 PUFAs is limited. Given these findings, there may be an opportunity to improve treatment outcomes by providing more fish or PUFA supplements to individuals in recovery.

**The Papacy and the Cult of Relics in Rome: From the Early Christian Period Through the Early Middle Ages**

Mariana Alifa

The veneration of relics has been, and remains today, an important tradition of the Christian religion. Relics are the physical remains or personal effects of Saints and Martyrs preserved by the Church as an object of reverence and as a tangible memorial of them. This admiration stems
from the belief that relics contain both the presence of the holy and the power to perform miraculous deeds. Christianity in general and the cult of relics in particular have seen a significant ritual, artistic, and architectural evolution since Christianity’s growing acceptance throughout the Roman Empire, beginning with the legalization of Christianity under Constantine the Great in 313 CE. The city of Rome itself provides a notable example of how these changes have left physical and spiritual testimonies in the Christian cities of the West. This work follows the development of the veneration of relics in the city of Rome from the early Christian church through the early Middle Ages, mainly through its role in papal artistic programs. Such analysis will reveal that changes in the cult of relics were at times both a cause and a consequence of the changing dynamics in the politics, rituals, art, and architecture of Rome. However, it is to be noted that Christendom's admiration for their “very special dead”, and the belief in the sacredness of their remains, were always the underlying inspiration that breathed life into the cult of relics, since its start at the catacombs through its apogee with the pilgrimage era.

**Paper or Plastic? A Mini Meta-Analysis on the Effects of Media Type on Reading Comprehension**
Lauren Lo, Natalie Pita, Robert Wagner

One major impact of technology on students is the shift from reading text on paper to reading text on electronic media. Thus, it is important to examine the effectiveness of different media on reading comprehension. Current research has yielded mixed results. For example, Pomplun et al. (2002) reported higher comprehension scores when reading text on an electronic source, whereas Ackerman et al. (2012) found that comprehension scores were higher when reading text on a hard-copy source. Psychology researchers have yet to conduct a meta-analysis on this topic, which involves combining all available findings on media and reading comprehension and publishing the collated data. The current project was a mini meta-analysis where five studies were included. Inclusion criteria for qualification was that the studies had to be published in peer-reviewed sources, published in English, available in full through the LMU library, and consisted of healthy participants. The studies were also included if they compared reading comprehension scores of at least one hard-copy source and one electronic source reading comprehension was assessed, and if an effect size could be calculated. Across the five studies, there were 443 participants ranging in age from elementary-school age to 40 years old. Overall, we found that reading on a screen versus reading on paper did not affect reading comprehension \((d = 0.06)\). This indicates that if the medium by which text is presented does not affect comprehension, educators and students can adopt new teaching strategies that utilize technology, thus potentially making education more cost-effective and efficient.
Parental attachment style and cultural socialization practices in families with children adopted from China
Mackenzie Whitfield

This study is part of an Honors thesis project examining adult attachment style as a predictor of parents’ cultural socialization practices in U.S. families with children adopted from China. Cultural socialization refers to the process by which parents teach children about their ethnicity or culture, which can subsequently promote children’s exploration of their own ethnic identity. Thus, it is important to understand factors that might influence parents’ ability to engage in appropriate cultural socialization practices. My study will investigate adult attachment style as a potential factor. According to attachment theory, parents have a certain pattern of behaving in parent-child relationships. Generally, parents with a secure attachment style tend to be more responsive to a child’s needs than parents with an insecure attachment style. Subsequently, children of secure parents experience a variety of positive outcomes. However, little work has been done to investigate the potential role that a parent’s attachment style might play in shaping appropriate cultural socialization behaviors. Thus, I predicted that adoptive parents with a secure attachment style would be more sensitive to their child’s needs for cultural socialization and more likely to teach their child about his/her birth culture. To explore this hypothesis, I am currently conducting an online questionnaire study in which adoptive parents are being recruited from the organization, Families with Children from China, to participate in a survey measuring cultural socialization behaviors. I plan to present preliminary findings from this study and discuss practical applications concerning transracial adoption outcomes.

Patterns of Urban Hummingbird Nest Distribution on the LMU Campus
Amy Weber

Hummingbirds are among the most beautiful, acrobatic and mysterious animals in urban ecosystems, where these synanthropic species provide important benefits to humans such as pollination and biophilia. We plan to evaluate how various abiotic and biotic factors found in urban environments such as the LMU campus may affect hummingbird nesting patterns. Thorough nest searching throughout campus has revealed an apparent clustered distribution of nests, as well as patterns within the microhabitats of individual nests. We plan to complete a detailed inventory through standardized habitat evaluation and nest searching at Von Der Ahe, where a large number of currently active (2) and previously used (20) nests have been located (as of 2/9/2017). We predict variables such as shelter from rain and wind, vegetation density, and the proximity of flowers may increase the likelihood of nest site selection in a particular area. Determining where hummingbirds may preferentially nest in an urban environment will facilitate the location of active nests for investigation into hummingbird nesting behavior and physiology and also define landscape habitat attributes that will enhance hummingbird presence.
Peace and Reconciliation Through the Outlet of Film
Victoria Artaza

Why has there been a lack of government involvement in grassroots organizations that use film as a tool for peace building in Northern Ireland? In this paper, I examine whether grassroots organizations in Northern Ireland have been successful as well as whether there have been hindrances as a result of a lack of government presence. In order to obtain information on these programs, I utilized qualitative research as well as conducted semi-structured interviews. The positive reactions I received through interviewing both filmmakers and film experts from Northern Ireland and the United States have demonstrated that grassroots programs have been successful in building peace across communities. I concluded that a lack of government involvement could be attributed to the suspicion over government motives from within the communities as well as the idea that the government has failed to agree on how to address the conflict through this medium. However, government involvement within these programs are essential, as it will provide official recognition, promotion, as well as steady funding for the grassroots peace movements in place. This research is significant as it provides evidence for the continuance of these programs, which provide an important role in the peace-building process between the divided communities in Northern Ireland.

Peroxide formation from Tryptophan-derived hydroperoxide
Zachary Goldstein

Antibodies have been shown to produce hydrogen peroxide catalytically when exposed to UV light. The exact mechanism of this process is disputed but evidence suggests activity is associated with the amino acid tryptophan. Our research project focuses on understanding this mechanism of action by studying the decomposition of oxidized tryptophan derivatives and identifying intermediates formed by this process. A tryptophan derivative, N-acetyl-2-tert-butyl-tryptamine, was synthesized in a five-step sequence. Photooxidation of N-acetyl-2-tert-butyl-tryptamine with singlet oxygen produced the desired tryptophan hydroperoxide derivative in excellent yields. This compound was characterized by NMR which confirmed formation of a hydrogen-bond stabilized six-membered ring, critical for subsequent reactivity. Degradation studies of the tryptophan hydroperoxide are currently being investigated in a variety of solvents to facilitate the desired pathway of hydrogen peroxide formation.

Philosophy of Hope in Time
Micah Peay-Johnson

Hope for the human being is inescapable. Whether one is unjustly prosecuted and hoping that one day they will be released, or simply hoping that they will receive a pay raise at their job, hope in its essence relates to the concept of the future. The research that has been conducted over
the last three months has centered around hope in its relation to time, and whether or not, as an institutionally promoted concept, is valid in its existence as simply relating to the abstract concept of time, and if hope as a vehicle of expectation is beneficial for the individual. Varying sources (academic journals, published research books, historic speeches, and beloved movies), have been consulted that looked into, or involved the propagation of other-oriented hope, institutional hope, Immanuel Kant's philosophy of hope, hope in its history of institutional consistency, hope in the economy, and self-oriented hope. From the conducted research so far, hope seems to only exist in the realm of the future, and its subsequent benefits are varying (sometimes beneficial to the purveyor of hope and sometimes not), but always relate to the individual's perception of benefiting the self, in the future, whether directly or indirectly. Although this conclusion is promising, more research is continually being done, in order to reach the goal of an all-encompassing and universal definition for hope, and determining if the application of hope is universally beneficial to humankind.

**Phoneme Awareness and Working Memory in Early Reading**  
Leah Willover

Executive functions are a set of cognitive processes, including working memory, that are associated with control of cognition and are strongly linked with academic success. It is known that phoneme awareness, the ability to isolate and manipulate individual speech sounds in words, is a prerequisite for learning to read, but little is known about the role of executive functions in beginning reading. My research project consisted of examining the relations between working memory, phoneme awareness and word reading in kindergarteners (N = 179) in Los Angeles schools. Based on prior research on older children, I hypothesized that working memory, phoneme awareness and reading would be significantly interrelated. I also aimed to determine whether these relationships are independent of other cognitive abilities such as short-term memory and vocabulary. Scores for all measures were based on performance on reliable, valid, and standardized measures. As predicted, working memory, phoneme awareness, and reading were significantly intercorrelated (p < .01). Partial correlations controlling for short-term memory and vocabulary revealed statistically significant correlations between working memory and reading, and between phoneme awareness and reading, independent of the covariates (all p-values < .05). These results have implications in relation to The Mathew Effect, the idea that “the rich get richer and the poor get poorer”(Stanovich, 1986). In development this means that children’s early deficits compound over time. By identifying that phoneme awareness and working memory help improve the ability to read early on, interventions that focus on these skills can be given to children to maximize learning.
Phosphate Concentration Impacts the Mutant Phenotype of *Burkholderia tuberum*
Phosphate Transport Mutants
Claudia Aliman

*Burkholderia tuberum* is a species of Gram-negative bacteria capable of a nitrogen-fixing symbiosis with legumes such as black bean, cowpea, and siratro. We previously had generated transposon mutants in *phot* that are defective in exopolysaccharide production, including GG2-38 and JB03, both of which have mutations in the PstSCAB low-affinity phosphate transport system. GG2-38 also shows a defect in nodulation, resulting in small white nodules on black bean versus the pink nodules indicative of an effective symbiosis. The objective of this research was to determine if higher phosphate concentrations, which may result in the use of the alternative Pit high-affinity phosphate transport system, could restore the wildtype phenotype of exopolysaccharide and nodulation in the mutants. An exopolysaccharide assay was done, growing the mutants and wildtype on yeast mannitol agar with increasing phosphate concentrations. All strains, including the wildtype, showed increased exopolysaccharide production. A nodulation assay with increasing phosphate concentrations was also done. Pink nodules were found at 1 mM and 10 mM of phosphate concentration, suggesting that GG2-38 may have used the Pit system resulting in the development of pink nodules. A higher concentration of 100 mM phosphate resulted in no nodules being present at all. This may be due to high toxicity of phosphate to the plants. A repeat of the assays and genetic complementation of the mutations will be done in the future. The results suggest that phosphate is important in establishment of the rhizobia-legume symbiosis, which has implications agriculturally.

Photocatalytic implications from ab initio characterization of oxygen depletion localized on TiO2 brookite nanoparticle surfaces
K. Grace Johnson

Titanium dioxide (TiO2) is one of the most studied metal oxides due to its use in many fields, notably photocatalysis and solar energy conversion. Surface reactivity and thus the efficacy of TiO2 as a heterogeneous catalyst is greatly affected by stoichiometric deviations at the surface due to localized oxygen depletion. Two of the crystallographic forms of TiO2, anatase and rutile, have been extensively studied. Due to difficulty preparing macroscale samples, the third phase, brookite, has not been well characterized, though recent studies suggest brookite has increased photocatalytic ability compared to the other two forms. In this study TiO2 nanopowders consisting of mostly brookite were synthesized by laser evaporation and the extent of oxygen depletion was analyzed by nuclear reaction analysis. Density functional calculations are coupled with these experimental studies to examine the geometry and electronic structure of the oxygen-depleted brookite (210) surface, which represents the lowest energy termination likely present in a brookite sample. Geometry optimizations and density of states analyses revealed that Ti atoms present on oxygen-depleted surfaces tend to relax toward the interior oxide and approximate...
metallic geometry and electronic structure. In addition, both experimental and ab initio studies of hydrogen diffusion in TiO2 nanopowders indicate the surface of the synthesized TiO2 nanopowders is markedly metallic in character due to localized oxygen depletion. These results and the possibility of tunable surface stoichiometry hold significant implications for the use of brookite in surface chemistry applications of catalysis and solar materials.

**A Physics Analysis of the Effects of Dance Warm-Ups**
Rhett Spongberg

In order to identify the most effective warm-up practices for dancers, an experiment was conducted to compare the maximum physical power and muscular capability of dancers after no warm-up, static stretching warm-ups, and dynamic stretching warm-ups. This research studies dance warm-ups and their impact on three dance jumps: sauté and two grand jetes. A convenience sample of dance students from LMU were selected to participate in a three day experiment where they performed a variation of dance warm-up (no warm-up, static stretching, dynamic stretching) and then executed three dance jumps on a force plate to see which warm-up results in the maximum applied impulse. The results indicate which type of warm-up dancers should participate in for standard dance classes and performance. The significance of the project is the use of the principles of physics to study dance warm-ups, which have historically been studied subjectively and physiologically. The results presented at the Symposium will indicate what type of warm-up dancers should be utilizing before they begin class, rehearsal or some kind of performance.

**A Pilot Study on the Efficacy of Breathing and Voicing (Phonation) Perturbations for Improvement of Postural Balance Measuring Center-of-Pressure**
Amanda Neri

Background: There is a recent trend and need for bridging the gap between science and performance. For singers, not enough has been done to analyze their ideal physical positioning and how their proprioceptive system and center-of-pressure (COP) is actually affected when singing. Perturbations to the body, impact the proprioceptive system and alter postural balance and COP. The objective of this study is to determine whether breathing and phonation trigger the neural feedback system in a way that optimizes postural balance. Methods: Using pressure plate technology (NORAXON), the difference in postural balance during held breath, quiet (parasympathetic) breathing, forced expiration (sympathetic), and voicing, by measuring COP will be determined. The foot pressure (force) will also be measured. Results and conclusion: Non-singers and trained singers both improved postural balance and COP with voicing and forced expiration exercises with the exception of an exhale on “shh”. Using the straw, the non-singers showed a greater improvement in the ratio as compared to trained singers, therefore showing a greater effect on their proprioceptive system and COP. These results for non-singers
show a correlation between occluded vocal chords and optimizing the proprioceptive system. Trained singers versus non-singers, having already worked with this technique will show more improvement. The singers showed the best results in COP during the held breath (suspended state) exercise. Further research is recommended, repeating these exercises in a minimal recording time so that the breathing or voicing in which a subject uses in response to a perturbation could be standardized in a set protocol.

Plasticity of thermal tolerance and growth rates in juvenile mussels
Emma Strand

To determine whether thermal tolerance in the mussel *Mytilus californianus* is genetically determined or whether juveniles adjust to their environment through phenotypic plasticity, we analyzed acute thermal stress tolerance and growth rates of common-garden acclimated and reciprocally transplanted mussel recruits. Juvenile mussels were collected from two low intertidal sites at Hopkins Marine Station in central California, wave-protected (warm) and wave-exposed (cool). One group was immediately exposed to an acute heat ramp to 35.8, 37.7, or 38.6°C in air to determine baseline heat tolerance. A second group was placed in a common garden for one month before exposure to the same acute heat ramps. The remaining mussels were reciprocally relocated to the origin field sites for one month and then subjected to heat stress. These treatments were repeated for two high intertidal sites from protected and exposed locations. Although not significant, there was a trend for greater baseline thermal tolerance in juveniles from the protected site. After one month, juveniles outplanted to the protected site exhibited higher survival following thermal stress, regardless of the origin site. Thermal tolerance and growth rate were inversely correlated; mussels from all origin sites were more thermally tolerant but grew more slowly at the protected location. Both origin site and outplant location significantly influenced growth rate. There was also a significant interaction between origin and outplant site - high-site juvenile mussels grew faster than low-site mussels when placed at the exposed site, but low-site mussels grew faster at the protected site. Our results imply substantial, environmentally driven plasticity in both thermal tolerance and growth rate among recent mussel recruits.

The Politics of Self Interest: Am I My Brother's Keeper?
Allison Houston

The purpose of this research is to identify the role identity plays in voter alienation. In particular, the goal of the research is to provide a better and more nuanced understanding of race, gender, and sexuality in regards to statements made targeting different groups. The research is intended to highlight the impact of identity within the most recent 2016 Presidential election and attempts to examine why particular demographics chose to support one candidate over another. The research sets out to examine how people of voting age react to disparaging comments made
towards different groups. This is intended to investigate if there exists a correlation between one’s own personal identity and what one takes to be the most offensive and thus alienating. The research is keen on identifying whether there exists a type of politics of self-interest when choosing to support a candidate who makes inflammatory and discriminating statements targeting groups separate from one’s own.

To properly test for a correlation between identity and reaction to statements, a survey was administered to voting age individuals. Participants were provided a questionnaire that asked for personal information, such as, their race, gender, religious affiliation, citizenship status, and sexuality. Participants then read comments pertaining to different demographic groups. The participants were then asked to complete three tasks utilizing a feeling thermometer: reacting to comments made about various groups, their opinion on various groups in particular, and their response to policy statements. Lastly, participants were directed to select the one comment they found most offensive.

Post Utopia, Post Dystopia: Blade Runner's Los Angeles and the Future of Urban Identity
Brian Gilmartin

Ridley Scott’s 1982 film Blade Runner envisions a gloomy Los Angeles both endless and claustrophobic, seemingly overrun by crime, foreign influence, and industry. Blade Runner follows an ambiguously human detective as he hunts down replicants, humanoid robots gone rouge. This initial depiction touches on our perpetual fear of “the other” while conjuring up reactionary fears of “Japanification” that frightened both Angelinos and Americans during the 1980s. However, dismissing Blade Runner’s spatial conception of Los Angeles as derivative or simplistic ignores the complexity with which the film portrays its urban setting. A deeper symbolic exploration of the film’s visually and aurally arresting Los Angeles reveals a more neutral tone that shies away from providing answers, preferring questions. This paper focuses on Blade Runner’s vision of the future of our city, and how it offers up new channels of self-expression and independence to the urban working class while concurrently undermining them. The film’s Los Angeles, much like the real one, refuses to reveal whether it is a dystopia or utopia, remaining unsure of its soul and uncertain of its humanity.

Potential Impacts of Artificial Feeders on Hummingbird Behavior
Carolyn Egekeze, Alyssa Weisblatt

Hummingbirds act as important pollinator species in many Western Hemisphere ecosystems. In urban environments, artificial feeders have become an important food resource and may affect hummingbird behaviors that provide important ecosystem services such as pollination. Over the past four years, hummingbirds have been observed and video recorded at feeders on the campus of LMU in order to evaluate how the presence of artificial feeders affect hummingbird behavior
and distribution. Additionally, observations are now being recorded at a second Burbank, CA study site where hummingbirds have been consistently fed for the last 40 years and adjacent feeders often attract as many as one hundred birds at the same time. This present study, in part, serves to update and summarize observations from the LMU campus from various independent research projects. We plan to compare basic hummingbird behaviors on the LMU study site with the Burbank location by comparing behaviors and interactions of hummingbirds visiting feeders of varied levels of activity through the analysis of video footage and acoustic recordings. This investigation aims to enrich the understanding of the broader impacts artificial hummingbird feeders may have within the urban environment.

Predictors of White Individuals' Commitment to Racial Justice Work
Emma Hardy

In the fight for social justice and equality among groups, outgroup allies (i.e., individuals who do not belong to the marginalized group) have played a critical role. Despite this, little is known about the psychology of these individuals and what motivates them to pursue this work and keeps them committed to it over the long term. The research presented here looks specifically at White people who are allies in racial justice movements to investigate various psychological motivations and outcomes. The research borrows from a model created by Omoto and Snyder (1995) to examine sustained volunteering among AIDS volunteers. Their structural model of the volunteering process suggests that helping personality, motivation, and social support lead to satisfaction with volunteering and integration within a service-providing organization, which in turn lead to sustained participation. The current research extends this model to White racial justice allies and extends the context to a broader social cause as opposed to a specific volunteering setting. To test this model, White individuals involved in racial justice work completed an online survey assessing a variety of constructs including motivations, social justice orientation, norms and barriers to involvement, sense of community/integration, wellbeing, commitment, and level of involvement. Data are currently being collected, and results will be forthcoming. Results will help us better understand factors that may lead people to commit to sustained involvement which may have implications then for ways in which organizations and social movements can recruit outgroup allies and also nurture their participation.

Quantifying pectoralis muscle color to investigate pre-migratory fattening in pine siskins
Mali McGuire

Obligate migrants perform regular, predictable movements for which they undergo physiological preparations, including depositing fat in the pectoralis (flight) muscles. Facultative migrants, however, exhibit less predictable movements, and whether they undergo similar physiological
preparations is not known. We developed a non-invasive, objective measure of pectoralis fat deposition to evaluate whether pine siskins (Spinus pinus), facultative migrants, show preparatory changes in pectoralis fat deposition in response to increasing photoperiod (day length), a known migratory trigger. Changes in pectoralis color from dark maroon to light pink reflect increases in muscle lipid content. We quantified pectoralis color using a traditional technique of visually scoring color using color standards and with digital photographs. We analyzed photographs using Image Calibration and Analysis Toolbox software in ImageJ to measure luminance, red, blue and green color channel values of the pectoralis. We then used principal component analysis to analyze the relationship between luminance and all color combinations that included the red channel. We found color scored visually was significantly correlated with all principal components (PCs). The luminance and red hue PC had the strongest correlation with visually scored color. We then compared pectoralis color, using this PC, for birds on increasing photoperiod with control birds held on constant short days for 6 months. We found a significant treatment (photoperiod) by time interaction for the pectoralis PC, suggesting pectoralis fat deposition increased in birds exposed to increasing photoperiod, consistent with migratory preparations. These results suggest this new objective approach is a promising method to quantify muscle coloration.

Radiation and Exercise Training Effects on Muscle Strength and Quality in Female Cancer Survivors
Caroline Gallagher Poehls

Purpose: The IMPAACT study examines the effects of exercise on cancer survivors. Radiation is a common treatment using high-energy particles to kill or damage cancer cells. However, little is known about the potential effects of radiation treatment on muscle function. Our sub-study aimed to look at the effects of radiation on muscle quality. Methods: Female gynecological cancer survivors (n=26; 64.1±8.1 years; 163.7±6.4 cm; 41.1±7.3 body fat percent) attended tri-weekly exercise sessions for 24 weeks that consisted of aerobic and resistance training. Pre- and post-maximal isometric torques were assessed using an isokinetic dynamometer, and handgrip strength. Dual-energy x-ray absorptiometry were used to evaluate regional lean muscle mass. Muscle quality was calculated by dividing combined HG or MVIT by the respective regional lean mass. Percentage change scores were calculated for each of absolute strength and muscle quality variables for the HG and quadriceps. A two-way, multivariate ANOVA, with the number of exercise sessions attended and time-since cessation of cancer treatment assessed differences in muscular variables. Results: Participants who had been treated with radiation (n=16) saw significantly higher changes in absolute HG (-7.8±14.6% vs. +13.3±19.1%, p=0.003) and leg strength (-8.6±38.3% vs. +15.7±55.1%, p=0.048). Likewise, the radiation group showed significantly greater improvements in MQ of the HG (-9.6±14.6 vs. +13.3±18.0) and the
quadriceps (-29.4±48.7 vs. +4.9±26.2). No differences were seen for chemotherapy or surgery. Conclusion: A suppression of muscle strength and quality following radiation therapy during cancer treatment appears to be largely reversible following prolonged exercise programming.

(Re) Imagining Each Other
Diana Vedova, Elizabeth Burton, Yadira Enciso, Julia McArthur, Kaitlyn Morrisey-Braden, Alexandra Rosas-Maxemin

The 19th and 20th centuries were a period of great exploration that resulted in greater contact among peoples of the world, but also resulted in the colonization of foreign lands, mainly by Western empires. (Re) Imagining Each Other is an exhibition curated by art history seniors, which is currently on-view (January 30-May 12, 2017) at the Hannon Library’s Terrance L. Mahan, S.J. Archives and Special Collections gallery. The exhibition explores issues of race and culture through the examination of 19th-century illustrated texts, early 20th-century sculpture and postcards as well as contemporary ritual items from the permanent collections of the William H. Hannon Library’s Archives and Special Collections and the LMU Archaeology Museum.

The objects exhibited have been carefully selected in an attempt to broaden existing binary narratives of Colonized/Colonizer and East/West by focusing on the theme of curiosity. Our research relies heavily on discourses in cultural studies and post-colonial theory, leaning on authors such as Edward Said and Homi Bhabha in order to create a nuanced narrative within the exhibition. The curators very consciously chose to examine this material from points of intersection, which allowed us to consider how race and culture is imagined and redefined from differing localities and time periods. Specific objects were chosen and highlighted such as World’s Fair postcards and government sponsored texts to illustrate the active ways in which Japan and other nations sought to present themselves to the West in advertisements and at the World’s Fairs as places with distinct and valuable cultures.

Real Estate Development as a Tool for Sustainable Growth
Michael James Lhuillier

This thesis introduces the idea of incorporating the United Nations’ definition of sustainability into real estate development. This project is created to introduce the idea that developments should be more than a place to work and/or live but instead a tool that cities and communities can use to grow as an economy and community. Buildings and developments across the country are a major contributor of CO2 emissions every year. As cities grow and human populations continue to rise, these problems will only continue to grow. By analyzing the United Nations sustainability definition, modern innovations in the construction industry, and sustainable developments around the world, I will determine the benefits and setbacks of its application. To establish this, I will specifically analyze the economic, societal, and environmental aspects of
specific real estate developments and discuss their characteristics that incorporate sustainability. In my research, I learned that there are certain characteristics of a development, such as its ability to incorporate nature and increased natural light, have strong positive effects on worker productivity. However, I also learned that sustainability does not have a significant effect on prospective buyers. Hence, developing a sustainable project with the sole purpose of marketing is not a significant deal maker. Sustainable real estate development must be developed on the idea of improving all aspects of the development and its long-term financial and societal potential.

**Redefining and Reconceptualizing Parental and Family Engagement in a Low-income Elementary School**
Kendra Glenn

The importance of family and parental engagement in schooling is well recognized. However, more research and knowledge is needed to understand how best to engage families in Title I, economically disadvantaged schools, including what motivates parents to become involved and how they conceptualize their involvement. This study was conducted at a Catholic elementary school in South Los Angeles. Through qualitative research methods, including parent surveys, multiple principal interviews, and numerous observation sessions over a six-week period, data was collected. Analysis of data reveals parents and families are generally very involved in their children’s schooling, where parents or family members, on average, visit the school campus at least twice a week and regularly participate in events or contribute time or other resources to the school. Findings show that when parents and families feel there is an equal partnership between the school and the home, each supports the other’s roles in the academic and personal development of the student. This mutually respectful dynamic allows for better communication and promotes academic achievement. While there is often an assumption that lower SES parent and family involvement in schooling is minimal, this study helps to dispel this myth.

**The Relationship Between College Students' Socioeconomic Background and Future Expectations**
Nicole Muldoon, Samantha Leung, Melissa Gavilanes, Skye Shodahl

This study explored the relationship between expectations for the future amongst university students from different socioeconomic backgrounds. The sample for the study consisted of 204 first- and fourth-year university students who completed a questionnaire administered as a part of the International Federation of Catholic Universities’ Youth Cultures Survey, a worldwide study. To measure SES, a scale was constructed based on the Hollingshead Four-Factor Index of Social Status, focusing on mother and father income, as well as mother and father education (Hollingshead, 1975). We examined the distribution of the four-factor scores, then classified students’ families into categories of low (24.8%), medium (36.1%), and high (39.1%) SES. A
scale was also constructed to measure future expectations, consisting of questions such as, “I am certain that I will be able to fulfill most of my aims in life.” This future expectations scale was reliable and internally consistent with a Cronbach’s Alpha level of .684. An analysis of variance was performed testing whether the three levels of SES corresponded to different levels of positivity in regard to future expectations. Results showed that increasing SES level did correspond to a significant increase in positive outlook on the future. Low SES was associated with the lowest levels of positive future expectations. These results are interpreted in the context of the relatively lower sense of agency that may be experienced by college students of low socioeconomic families in potentially influencing their less positive future expectations and outlook. Limitations of the study design are discussed.

Resistance Training History and Gender Differences in Muscle Quality Of College Students.
Grant Mello

Purpose: Gender differences in absolute strength are largely due to differences in lean body mass (LBM). Muscle quality (MQ), defined as strength per kilogram of LBM, acts as an indicator of muscle performance and reflects both on the physiological function and structural composition of muscle tissue. The purpose of this study was to examine the effects of resistance training (RT) history on differences in MQ between male and female college students. Methods: Initially, 90 females (18.7±0.6 yrs; BMI 22.9±3.3 kg/m2) and 89 males (18.7±0.7 yrs; BMI 22.8±2.5 kg/m2) volunteered for the study. Regional body composition was assessed with dual-energy x-ray absorptiometry and MQ was determined by summing the maximal right and left handgrip (HG) strength divided by non-mineral lean mass of both arms. Results: Males demonstrated significantly (p<0.05) greater absolute HG (83.2±14.9 vs. 57.0±9.2 kg) and lower MQ (12.6±2.1 vs. 14.5±2.1 kg) than females. Although both genders revealed greater HG with a history of heavy RT, MQ was significantly lower in individuals who reported heavy RT (12.3±2.2) compared to their light (13.0±2.0) and non-lifting (14.3±2.3) counterparts. Conclusions: Preliminary findings suggest gender differences in MQ with long-term history of RT appearing to negatively impact MQ. These results contrast with previous work showing MQ increases following short-term resistance training and suggest duration of training could impact MQ inversely. A longitudinal examination of the potential effects of resistance training and physical activity on MQ is underway.

Restructuring the Data Architecture of GRNmap, a Gene Regulatory Network Modeling Application
Trixie Anne Roque, Chukwuemeka Azinge, Justin Kyle Torres

A gene regulatory network (GRN) consists of a set of transcription factors that regulate the level of expression of genes encoding other transcription factors. The dynamics of a GRN describe
how gene expression in the network changes over time. GRNmap is a complex MATLAB software package that uses ordinary differential equations to model the dynamics of small- to medium-scale GRNs. The program estimates production rates, expression thresholds, and regulatory weights for each transcription factor in the network based on DNA microarray data, using forward simulations of model dynamics. Since our last major release, we have focused on changes that have made GRNmap a much more robust application. We revisited the design, implemented new features, fixed bugs, added new cases to the test suite, and improved documentation. We localized extraneous global variables by grouping them into a single function call to limit their scope and prevent persistence between subsequent runs, which previously led to incorrect calculations. Additionally, we changed our simple two-dimensional matrix into a nested cell array of matrices to better handle inputs with missing values, which required a paradigm shift in how we constructed our data structure. We also implemented pre-allocation of arrays which makes the program run faster as MATLAB no longer needs to calculate matrix sizes at runtime and ensures matrix operations work smoothly as this method clears previously used data to prevent persistence between runs of differently-sized networks. The open source code and executable are available for download at http://kdahlquist.github.io/GRNmap/ under the BSD license.

**Revisiting the 1976 LAUSD Desegregation Mandate**  
Candace Yamanishi, Zachary Hayes

In 1970, the Los Angeles Superior Court ruled that the Los Angeles Unified School District (LAUSD) operated segregated schools and ordered it to integrate, or cease racial and ethnic discrimination in, its schools. LAUSD was required by this ruling to take “reasonable and feasible” steps to promote desegregation and to identify methods to help improve the negative consequences of racial isolation. In response, LAUSD submitted an integration plan to meet the terms of this mandate and since, it has served as a framework for integration.

This study examines the effectiveness of LAUSD’s desegregation efforts and, based upon the findings, makes a case for the lifting of the 1970 Court order. This study uses current data to determine whether LAUSD has improved its racial and ethnic school compositions. The LAUSD website, the Education Data Partnership, and the California Department of Education’s DataQuest serve as the sources of past and present demographic data on diversity. Policy and initiative efforts are researched through existing literature, LAUSD’s website, and phone interviews with LAUSD officials. This research consists of three steps: 1) aggregating schools by racial composition, 2) conducting comparative analysis between school and neighborhood demographic compositions, and 3) documenting consistencies and inconsistencies in these demographics. Through these processes, this study supports an argument to lift the mandate, creates a new narrative on the value and relevance of diversity in education today, and explains the current state of diversity in Los Angeles schools.
The role of beliefs in shaping low self-esteem individuals' health-related responses to social stress
Amy Aceto, Alisha Ginsberg, Mackenzie Whitfield

Individuals with low self-esteem are particularly vulnerable to the detrimental effects of social stress on health and well-being (Ford & Collins, 2010; Ford & Collins, 2013). However, little work has been done to identify interventions to help them cope effectively. In a series of studies we are examining low self-esteem individuals’ beliefs about social stress and whether changing these beliefs decreases their vulnerability for poor health outcomes. Specifically we are focusing on entity (vs growth) beliefs, and a view of stress as debilitating (vs enhancing) since these sets of beliefs have been associated with negative health outcomes in response to other types of stressors (Yeager, et al., 2014; Crum, Salovey, & Achor, 2013). We will present findings from the first study in our series, which provides evidence that low self-esteem individuals view their own social skills as fixed (and therefore difficult to improve upon) and view social stress as debilitating (as a negative event that should be avoided). We will also present preliminary data from our second study (data collection is ongoing), in which we are investigating whether changing implicit beliefs/mindset about social stress buffers low self-esteem individuals from the effects of social stress on cardiovascular reactivity.

Role of Religiosity in College Students' Value Orientation and Ethics
Melissa Gavilanes, Skye Shodahl, Nicole Muldoon, Samantha Leung

What role does religiosity play in an individual’s value orientation and ethics? Moreover, do their values and level of religiosity change between first and fourth year undergraduates? This study examined the potential role that higher education plays on an individual’s level of religiosity and value orientation. The research of McKay and Whitehouse (2015) showed that religious individuals are regarded as having higher morals and values as compared to those who do not consider themselves religious. In this study we explored the possible mediation of a college education on an individual’s level of religiosity and value orientation. The sample consisted of first (n=108) and fourth year (n=95) university students who completed a questionnaire administered as a part of the International Federation of Catholic Universities’ Youth Cultures Survey, a worldwide study. A value orientation scale was constructed based on ten items that asked students to consider scenarios from avoid paying a ticket when going on the bus or other transport to not paying taxes. The scale was found to be highly reliable and internally consistent (Cronbach's alpha = .884). The results showed that fourth year students reported significantly higher scores on value orientation while also reporting lower levels of religiosity as compared to first year students. These findings suggest that the college experience is associated with a significant increase in value orientation, despite a decrease in religiosity. The limitations of the design are discussed.
Every year, the Society of Automotive Engineers (SAE) hosts a competition designed to expose students to the types of engineering problems they may encounter and tackle in their future workplace. This competition allows students to engage in all phases of the engineering research and development process. It challenges students to research, design, build, test and compete a remote controlled aircraft, all while following the guidelines set by SAE design competition and restrictions naturally created by the task at hand. This competition requires that students step back and work together to look at the whole picture. Elements such as cost, manufacturing capabilities, materials, and time management must be taken into account. In addition, communication and presentation skills are vital to the competition, as students must work together to write a report of their findings and develop a presentation to give to a panel of judges.

This report details the design process, calculations and results of Loyola Marymount University’s (LMU) junior class aero design team for the Spring 2017 SAE Aero West Design competition. LMU’s junior class team set out to, through research and calculations, create an optimal aircraft. The optimal aircraft for the team is one that is cost efficient and fulfills the objectives of the competition. There were also several innovations that the team developed as a response to the periodic problems encountered during the design process.

The Saliency of Ethnicity in African Elections
Victoria Artaza

How does ethnic mobilization influence party affiliation in African politics? In this paper, I examine whether ethnic identity is the primary mobilizer that leads individuals to vote for a specific party or candidate in a general election, or whether there are other, more salient factors that influence voters. I argue that although other factors may play an important role in determining support for ruling parties, ethnicity is the primary mobilizer in African polities. In order to examine the saliency of ethnicity in African politics, I employ a qualitative analysis of exit polls following elections. I assess percentages of party support by ethnic group, views on parties, and policy by vote choice. In addition, I analyze the rhetoric, message, platform and appeals of the leading party and main opponent party’s platform in each country I have chosen. Through this project, I seek to contribute to a more fundamental understanding of the nuances of politics in African countries as well as the motivation and factors that influence individuals to vote in a particular way. This research can then be used as a model in order to enhance our
understanding of other political systems on a global scale. The purpose of my research is to not only enhance the understanding of this particular topic, but also to illuminate the dynamic between ethnicity and politics.

**Santa Maria Maggiore: Mary, the Theotokos, and the Council of Ephesus**
Troy Kassien

The historical significance of the basilica of Santa Maria Maggiore in Rome, as a basilica dedicated specifically to Mary the mother of Jesus cannot be understated. Of all the churches in Rome and around the world to be erected in honor of the mother of Jesus, Santa Maria Maggiore stands as one of the most important. The construction of this basilica originally dedicated to Pope Liberius in the fourth century and its subsequent rededication to Mary the mother of Jesus in the fifth century is the product of a very pointed and controversial period in Church history. It is the historical period surrounding the construction of the basilica, the Nestorian controversy concerning the two natures of Christ and Mary as the Theotokos at the Ecumenical Council at Ephesus in 431, and the rededication of the basilica in 432 that will be the subject of this paper and presentation. My purpose will be to demonstrate the interrelationship between the dedication, art, and architecture of the Basilica of Santa Maria Maggiore and the Christological controversies of the fourth and fifth centuries. The following project was inspired by an intense study of Christian architecture and art while abroad in Rome during the summer of 2016 under the direction of Fr. Marc Reeves, S.J. and Dr. Kirstin Noreen.

**Sew What**
Katherine Emery

Forced labor is a form of human trafficking that targets vulnerable populations globally. The garment industry hires victims for cheap labor, forcing them to work under inhumane conditions, otherwise known as “sweatshops.” Many of the largest companies exploiting sweatshops produce the apparel and products purchased everyday by the average American consumer. My visual inquiry explores how graphic design can inform unwitting consumers on the injustice of forced labor in sweatshops and potentially prompt them to alter their buying trends. In realizing I am part of a society that demands the products of cheap labor and its related issues of injustice, I am motivated to change my buying power, and influence society to do the same. Well-known brands selling in the United States including Urban Outfitters, Walmart, Nike, Zara, Forever 21, and Gap all use forced labor in a never-ending cycle of consumerism. I intend to use the same subversive advertising techniques used by Adbusters to unravel the injustice behind the sweatshop industry and expose the connection to human trafficking. Just as fashion apparel is a visual market, my art gallery installation will engage visual metaphors that appeal to the same eyes and minds in the same way as consumerism. In order for my poster to be successful, it must have an influence on those it reaches. I believe that the same people who choose to buy these
brands that are supporting the sweatshops have the power to “cut the threads” on this vicious cycle.

**Sex Differences: Conformity and Individualism in Reproductive Strategies**  
Cassandra Yearwood, Jesiree Session

Are there sex differences in group conforming versus more individualistic social styles? We hypothesize that males are generally more individualistic than females, due to evolved sexually dimorphic adaptations that are consequents of the reproductive opportunities and restraints of the sexes. Males generally assume greater risks due to their faster reproductive rates; females tend to rely more on assistance from kin due to higher confidence of genetic relatedness. Thus, females will generally demonstrate higher group conforming behavior while also preferring males who score lower on interpersonal dependency (including “bad boys”). To test this hypothesis, participants (100 females and 100 males) will complete surveys measuring their preferences for dating assertiveness, interpersonal dependency, and social relatedness. Females will complete the same surveys to describe their own dating behavior. A correlational analysis will examine women’s preference for males with low interpersonal dependency (“bad boys”), male preference for females with high interpersonal dependency, and females’ score on interpersonal dependency. Previous research supports differing theories that women prefer men exhibiting non-conforming behaviors (“bad boys”), while others claim women prefer men exhibiting conforming behavior. This study intends to examine the trend of females at the peak of reproductive fitness preferring males who exhibit low interpersonal dependency (“bad boys”). This study will further mate selection research about male preferences for high interpersonal dependency females, revealing these social behaviors are interconnected with evolved reproductive strategies. This research has implications for mate preferences and reproductive behaviors because it explores the role of evolution in modern mating selection and reproductive behaviors.

**Shakespearean Implications and Reflections on Immigration**  
MariaCarolina Gomez

Viewing Shakespeare’s Othello and Merchant of Venice through the lens of racism informs rhetoric on immigration in the United States today and highlights the dangerous implications of racism on individuals and society. I researched how Shakespeare depicts race relations by analyzing his protagonists who play the roles of outsiders and who have succeeded despite being outsiders in the society. The protagonists, Othello a black man in Othello and Shylock, a Jewish man in Merchant of Venice, embody immigrants who have “made it” despite the systematic structures of oppression in society. Through my research, I carefully note how Shakespeare’s work in these two plays depict the effects of repeated instances of racist rhetoric that reinforce stereotypes. Despite the many accomplishments of immigrants like Othello and Shylock, they do
not “fit in” with the society they immigrated to because of who they are. I show how the consequence of the explicit and implicit racism thrown their way turns tragic. A quality of timelessness make his plays relevant; issues embedded within them applicable today as when Shakespeare first wrote them. Viewing the controversial issue of U.S. immigration today through the lens of Shakespeare’s plays, is increasingly valuable to developing a more comprehensive view of the rhetoric in place that shapes U.S. immigration policy. This is because, like Othello and Shylock, immigrants today face similar challenges in a society where rhetoric heavily influences perspective.

Shot Peening of 4340 Steel with 100%, 200%, and 300% Coverage
Raina Schuler, Arman Akhenaton

Shot peening process has been widely used in improving the fatigue performance of a metal component. The process increases the fatigue life of a component with few detrimental side effects. The fatigue life of an Ultra-high strength material such as 4340 steel could be optimized by shot peening. To ensure the most optimum results, shot peening factors should be carefully analyzed. Shot peening factors are; peening media, peening intensity, and peening coverage. The objective of the study is to compare three different shot peening coverages (100%, 200%, and 300% coverage). Fatigue properties or number of cycles were obtained to compare the three coverages performance. Results showed that the optimum coverage for the 4340 steel is 200%. Scanning Electron Microscopy (SEM) was used to evaluate the microstructural properties, hence to know the crack nucleation sites. Residual stress measurements were conducted for each coverage to measure the depth of the dimples.

Should You Make It Facebook Official?
Rachel Haik, Justin Cintas

With the integration of social media into today’s world, people often create a profile for themselves on the internet. Facebook offers the option to post a relationship status. Whether or not a relationship is “Facebook official” has become a significant element of relationships in college. Recent literature suggests a greater overlap in a couple’s profile is correlated with higher levels of relationship closeness (Castaneda, Wendel, & Crockett, 2015). Another study found that people in relationships with high levels of authenticity are more motivated to post about it (Steers, Overup, Brunson, & Acitelli, 2015). The proposed study will address the following research questions: Does indicating that you are “in a relationship” on Facebook correlate with how satisfying your relationship is to you? Does the individual’s devotion to Facebook play any role in mediating this? I hypothesize that indicating that you are “in a relationship” on Facebook correlates with higher satisfaction of the relationship to the individual. However, if the individual’s devotion to Facebook is low, and they are not “in a relationship,” then their satisfaction of the relationship will not be correlated to whether or not they choose to
post about it. I will administer a questionnaire via Facebook to students at LMU between the ages of 18 and 23. This questionnaire will ask if the student is in a relationship, whether it is on Facebook, then assess personal satisfaction of the relationship using the Relationship Assessment Scale and the prevalence of Facebook using the Facebook Intensity Scale.

**Small-Scale Wind Turbine Power Analysis**  
Vincent Bottita, Brandon Kim

Wind power is one of the three most used types of renewable energy in the United States. Wind power currently accounts for 5% of the electricity production in the United States, but has the capacity to provide for the nation’s entire electrical demand. Improving wind turbine technology will help the U.S. to move toward a sustainable energy supply. Small-scale wind turbines with varying blades were assembled and tested. Two of the turbines used prefabricated blades and two used blades that were designed and built out of canvas and cardboard. In order to attach the fabricated blades to the turbine, a hub was designed using SolidWorks and printed using a 3D printer. The power production from each of the four wind turbines at three varying wind speeds of a floor fan was measured using a multimeter and a 3-ohm resistor. The measured power was compared to a kinetic energy power model and the efficiency for each wind turbine was calculated. The wind turbine with 6 canvas blades created the greatest power output of 26 watts, followed by the prefabricated 6-blade turbine at 8 watts. Efficiencies of all the turbines ranged from 3% to 50%. These findings were used to develop a wind turbine module for first year engineering students who will use the parts tested in this work to design and build their own wind turbines and test their performance.

**Sociobiology of Loyola Marymount University's Red-Tailed Hawk (Buteo jamaicensis) Reproductive Group**  
Melissa Morado, Caitlin Shafer

As urbanization increases, nesting habitat for avian predators will likely become limited and may cause them to be unsuccessful in exploiting urban areas. Red-tailed hawks (Buteo jamaicensis) are common synanthropic, top order predators that appear to thrive in urban environments. The Loyola Marymount University campus presents optimal nesting habitat due to tall trees and built other anthropogenic structures. Anecdotal reports indicate that a single breeding group has nested on the LMU campus for the past eight breeding seasons (years). Remote video monitoring of the nest began in 2015, and indicates continual usage of the area for several purposes including use of these areas for hunting and territorial defense. In addition, observations of raptor soaring behavior were taken throughout the 2016 fall season at the LMU bluff. Several behaviors observed included reproductive behavior, soaring on the bluff, migratory patterns and interspecific and intraspecific interactions. This study suggests further investigation in usage of updraft in different species of raptors and can contribute to landscape planning and how
urbanization affects flight, avian behavior, migratory patterns, courtship behavior, and nest site preference.

**The Sound of Existence**  
Klaus Shipman

More than anything else, the course of human history is defined by suffering. Accordingly, when thinking about suffering, there are universal aspects of suffering that everyone of us can understand. Suffering, then, for those of us fortunate to be largely insulated from this universal phenomena, remains a mystery. What does suffering look like? What does it sound like? How is it that we can depict suffering in a way that will communicate its universality?

Many great artists over the course of history have drawn on feelings of loneliness, anger, isolation, fear to indicate the trepidation that all of us have towards suffering, where my work differs is in the mediums through which suffering is expressed, and the process by which I create the sounds that indicate the chaos of characters emotions as they are forced to suffer in the grieving process.

In scoring two separate films about suffering, I researched different approaches to creating digital instruments and how aspects of digital instruments because of their constructive medium may be utilized to create new sounds, including blending analog instruments with complex digital effects. I also researched how to program synthesizers to create timbres that were necessary to evoke particular meanings through the modulation of purely scientific and non-artisanal physical terms. Finally, I additionally researched different techniques and methods to record and create "realistic" sound effects that enhance and augment the telling of a story which included recording sound effects using “decca trees” and other intensive microphone techniques. Further study was conducted as to how musical arrangement could be constructed to juxtapose chaos and disorder with concrete musical sense and diegetic treatment of "the sound of reality."

By participating in the construction of new music and sound effects, I learned more about the process of recording and mixing music in a way that showcases exactly how to shape the perception of an audience through creative work. Learning about the dramatic importance of syncing to a story, working with other creative people, as well as the intricacies of formalistic aspects of creative music work, it has made me more effective as an artist, and as a practitioner of my auditory craft.

The importance of showcasing films about suffering is that it not only encourages empathy in increasingly divisive times, but that it presents an alternate viewpoint of suffering that is not heavily represented in current creative expressions of artistic suffering. Fundamental to each of the films are the characters non-heteronormative sexual identities, and it is through the portrayal
of marginalized groups that makes these films, and their respective construction, highly important. I also hope that the work will show people that abstraction is not something to be afraid of, and that art can be enjoyable, even if it is not easy to sit through the consumption thereof.

**Strangers in Strange Lands: the Political Landscapes that Lead to the Rises of Reform and Hasidic Judaism**  
Alex Weisz

Within a little over 50 years, European Jewry created the two largest movements in Judaism today: Hasidic and Reform Judaism. While the Hasidic movement energized pious, uneducated Jews in Eastern Europe, German-Jewish intellectuals revolutionized Judaism in an increasingly modern world with the Reform movement. Polar opposites, the Hasidic movement (Hassidim means “pious person” in Hebrew) promoted emotion, mysticism, and a spiritual connection to the Divine through strict ritual observance, while the Reform movement rejected many of the legal obligations that had defined Rabbinic Judaism since the destruction of the Second Temple in 70 CE. Developed less than 1000 miles from each other, how could two radically different movements dominate the Ashkenazi diaspora? The rise of these respective movements is a direct reflection of European politics between the 18th and 19th centuries – in the West, a period of intellectualism lead to a greater acceptance of religious minorities; in the East, fierce empires suppressed and tormented isolated Jewish villages. Through my research into Jewish and European political history, I conclude that oppressive regimes seem to lead to higher observance of Jewish ritual traditions, while a lack of oppression leads to lower levels of this same observance. This finding is a critical consideration given the current state of Jews in the world, and of course, of the status of Judaism within the State of Israel. While history shows that inclusion of Jews in secular society has led to their increased assimilation, and even rejection of Judaism, my study analyzes the past to predict the future of both of these diverse Jewish movements.

**Streptomyces sps. Secondary Metabolite Characterization and Applications**  
Gabriel Huacuja

The genus Streptomyces is known to secrete antimicrobial products as secondary metabolites. These have been developed as some of the strongest antibiotics around today. Still, numerous Streptomyces sps. and their benefits have not been documented. By characterizing and further researching the advantages of their antimicrobial secretions, Streptomyces have the potential to benefit society in the battle against microbes. Antibacterial analysis of isolates 12NJLE2, 13GDBO4, S. subrutilus, and S. prunicolor, four Streptomyces strains obtained from plant roots, were carried out on Czapek Dox media and Tryptone Soy media. Antifungal analysis was carried out on Nutrient Yeast Dextrose Agar. The tested bacterial pathogens included Staphylococcus
Aureus, Escherichia coli, and Bacillus cereus. Fungal plant pathogens included Fusarium oxysporum and Rhizopus stolonifer. Studies were conducted in-vitro using standardized co-inoculation assays from liquid broths and top agar overlay co-inoculation assays. The four strains of Streptomyces were all found to inhibit the fungal and bacterial test strains. S. prunicolor showed the greatest inhibition of bacteria, but showed less fungal inhibition than the other strains. Looking forward, the differences in ability to fight off pathogens by these Streptomyces leaves questions. Can a single antimicrobial product be identified that inhibits both fungal and bacterial strains, or are there several products acting at once to produce the inhibition? Further research will consider what these antimicrobial secretions are and how they work in vivo, co-inoculated within live plant cultures to analyze their effectiveness in a real-world scenario.

**A Study of Leg Force Production in Collegiate Soccer Women**
Brooke Beermann, Ryan Bae, Sophia Deen, Malachi Green, Taylor Peterson

Introduction. Scientific evidence has demonstrated that bilateral asymmetries in leg force production can lead to an increased risk of anterior cruciate ligament (ACL) injuries, especially in women athletes. The purpose of the investigation was to examine the differences in leg force production of Division I women soccer athletes. Methods. Participants reported to the Applied Physiology Laboratory for one testing session. Participants warmed-up on an exercise cycle for five minutes followed by five minutes of self-paced stretching. Participants performed a total of five countermovement jumps with their hands on their hips. They were encouraged to give maximum effort in all jumps and were given one minute of rest between jumps. A paired t-test was used to determine if there was a difference in force production between dominant (DOM) and non-dominant (NDOM) legs. Results. Ten women (Wt: 66.04 ± 4.75 kg; Ht: 167.14 ± 6.92cm) volunteered for the investigation. Analysis revealed no difference (p=0.306) in jump force production between DOM and NDOM (DOM: 632.68 ± 79.57N; NDOM: 650.32 ± 92.57 N), with a mean difference in jump time of 0.0134 ± 0.019. Landing force data analysis showed significant difference (p=0.001) between legs (DOM: 1699.08 ± 605.19 N; NDOM: 1688.96 ± 448.32 N). Conclusion. In this group of collegiate soccer women, there was no significant difference in leg force production. Future testing should be utilized to determine whether seasonal changes affect the leg force production of collegiate soccer women.

**Symbiosis between Chamaecrista fasciculata and nitrogen-fixing bacteria**
Lauren Pennington

Legumes form mutualistic symbioses with rhizobia, nitrogen-fixing soil bacteria which can convert atmospheric nitrogen into nitrogenous compounds useful to the plant. In exchange, the rhizobia are fed carbohydrates and are housed in root nodules. Although most legumes are symbiotic with α-proteobacteria (α-rhizobia), some are nodulated by β-proteobacteria (β-rhizobia). *Chamaecrista fasciculata* is a primitive legume which forms symbioses with both α-
(Rhizobium tropici) and β−rhizobia (Burkholderia tuberum). Individually, neither species effectively nodulates the plant, however in combination, the two species together effectively fix nitrogen. This research project aims to determine which species is responsible for fixing nitrogen in Chamaecrista. Promoter-reporter gene assays will assess promoter activity of nifH, which encodes the nitrogen-fixation enzyme, nitrogenase. To generate the promoter-reporter gene fusion in R. tropici, genomic DNA was isolated from fresh cultures. The RtnifH promoter was amplified by PCR, gel purified, and ligated into a gfp reporter gene vector. Putative recombinant plasmids were transformed into E. coli; transformation was verified by colony PCR. E. coli was cultured to isolate large amounts of RtnifH promoter-reporter plasmid DNA. The plasmids were analyzed by restriction digest and DNA sequencing to verify that the nifH promoter was inserted. The RtnifH promoter-gfp reporter gene plasmid will be introduced to Rhizobium tropici; in Chamaecrista nodules, these bacteria should fluoresce green to indicate nifH activity. In the future, B. tuberum nifH-red fluorescent protein fusions also will be generated. Fluorescence patterns in Chamaecrista nodules that are co-inoculated with BtnifH-rfp and RtnifH-gfp should tell us which of the bacteria fixes nitrogen.

Synthesis and evaluation of novel G-quadruplex-stabilizing compounds
Ryan Elson, Jillian Dawley, Nick Ventigan

DNA G-quadruplexes represent a new, promising target of anticancer therapies. The G-quadruplex structure, found in telomeric DNA, is composed of a stack of four guanine nucleobases formed around a metal cation, strengthened through hydrogen bonds. G-Quadruplexes have been shown to stop unrestricted cell growth in cancerous cells by inhibiting the enzyme telomerase from extending DNA length. The goal of our research is to synthesize novel molecules that stabilize the G-quadruplex structure.

Through the derivatization of azo, indigo, and anthraquinone based dyes, the synthesis of a small library of novel organic compounds is underway. Key reactions include standard amidation and Pd-catalyzed coupling reactions from dye derivatives. Upon the successfully syntheses of the libraries, compounds are tested for G-quadruplex stabilizing abilities by measuring changes in melting point curves of quadruplex-forming DNA oligomers as measured by circular dichroism.

Synthesis and screening of novel polyphenol compounds targeted to inhibit IAPP amyloid aggregation
Sarah Roa, Vincent Hayward

Aggregation of the pancreatic protein Islet Amyloid Polypeptide (IAPP, amylin) into soluble toxic oligomers and insoluble amyloid appears to play a direct role in the progression of type 2 diabetes. While it remains unclear whether the formation of toxic oligomers and amyloid is a direct cause of this disease or merely a symptom, evidence is mounting that suggests that
inhibiting this aggregation may be a key step toward slowing or preventing the progression of this disease. A series of small polyphenol analogs were synthesized based on the structures of known amyloid inhibitors. Treatment of a variety of phenolic acids with tert-butyldimethylsilyl chloride and imidazole followed by hydrolysis of the silyl ester afforded the aryl silyl ethers in good yields. Esterification of several polyols (ethylene glycol, glycerol, and glucose) with protected phenolic acids was achieved using oxalyl chloride and dimethylformamide. Deprotection of the silyl ethers completed the syntheses of the polyphenol analogs in good yields. These compounds were assayed for their ability to inhibit IAPP amyloid formation using standard methods for detecting and quantitating amyloid. Specifically, thioflavin-T binding fluorescence and atomic force microscopy were used to assess the inhibitory potential of the select substances.

**Systems modeling and statistical analysis allows comparison in the response to cold shock in Saccharomyces cerevisiae between Hap4 and randomly generated networks**

Kristen Horstmann

A gene regulatory network (GRN) is a set of transcription factors which regulate the level of expression of genes encoding other transcription factors. The dynamics of a GRN show how gene expression in the network changes over time. A MATLAB software package called GRNmap uses ordinary differential equations to model the dynamics of medium-scale GRNs and estimates production rates, expression thresholds, and regulatory weights for each transcription factor in the network based on DNA microarray data. Microarray data were obtained from a Saccharomyces cerevisiae strain deleted for the Hap4 transcription factor and subjected to cold shock at 13°C for 15, 30, and 60 minutes. A modified ANOVA showed that 1794 genes had a log2 fold change significantly different than zero at any of the time points. These genes were submitted to the YEASTRACT database to determine which transcription factors regulated them. From this set, we generated a database-derived candidate GRN of 15 genes and 28 edges as well as random networks of similar size. GRNmap was used to estimate the production rates, expression thresholds, and regulatory weights for these networks. The Gephi software was used to analyze the networks’ structures in terms of the node in- and out-degrees, eccentricity, and betweenness centrality. We found that the random networks had different degree distributions than the database-derived network. Also, Hap4 had a different betweenness centrality value in the random networks, which affected the estimated parameter values, helping us further understand its role in the cold shock response in yeast.
Table Top Wind Tunnel
Zachary Bates

Use of 3D Printing for Custom Wind Tunnel Fabrication PAUL GAGORIK, ZACHARY BATES, EMIN ISSAKHANIAN, Loyola Marymount University - Small-scale wind tunnels for the most part are fairly simple to produce with standard building equipment. However, the intricate bell housing and inlet shape of an Eiffel type wind tunnel, as well as the transition from diffuser to fan in a rectangular tunnel can present design and construction obstacles. With the help of 3D printing, these shapes can be custom designed in CAD models and printed in the lab at very low cost. The undergraduate team at Loyola Marymount University has built a custom benchtop tunnel for gas turbine film cooling experiments. 3D printing is combined with conventional construction methods to build the tunnel. 3D printing is also used to build the custom tunnel floor and interchangeable experimental pieces for various experimental shapes. This simple and low-cost tunnel is a custom solution for specific engineering experiments for gas turbine technology research.

"Taming" Politics, Then and Now
Kayla Kaufman

In “The Taming,” Lauren Gunderson pits three modern-day political women against each other. They are stuck in their confident yet divisive ways and are almost entirely unable to listen to one another. The women travel back in time to the Constitutional Convention in 1787 where they become George Washington, James Madison, and Charles Pinckney. Gunderson shows these founding fathers to be more of idealistic-yet-flawed “frat bros” than the romanticized, immaculate men they are often portrayed to be. In my interpretation of “The Taming,” I do not intend to pervert their images, but rather represent them as they were: men doing the best they could under the circumstances. The founding fathers had doubts about what to put into the Constitution. They discussed, compromised, and made good and bad choices. In this scene, I emphasize that although the Constitution has been a wonderful guiding document, it is far from perfect. The scene further stresses that holding one another hostage with political power, refusing to discuss divisive issues, and confusing discourse on important topics helps no one. My intention is that this scene will help take down walls and encourage dialogue in the audience.
**Targeted reverse genetic screen in Saccharomyces cerevisiae identifies transcription factor deletion strains that are impaired for growth at cold temperatures**

Nika Vafadari, Katherine Scheker

Saccharomyces cerevisiae, budding yeast, is known to change its gene expression when exposed to cold temperatures. Regulatory transcription factors control gene expression by activating or repressing the transcription of genes. Unlike with other environmental stresses, the complete set of transcription factors that regulate the response to cold temperatures has not been identified. Yeast has approximately 250 regulatory transcription factors. The Dahlquist lab has been carrying out a targeted reverse genetic screen of strains deleted for particular transcription factors that we obtained from the systematic yeast gene deletion collection. Each deletion strain has been genotyped by PCR and barcode sequencing and then tested for impaired growth on solid media at four temperatures, 15°C and 20°C (cold shock), 30°C (optimum growth temperature), and 37°C (heat shock). Sixty-three strains have been screened in this way. Of these, we found that the Δash1, Δgln3, Δhap4, Δhmo1, and Δswi4 strains are impaired for growth at cold temperatures, and form a gene regulatory network that controls the cold shock response. Because the transcription factors Asf1 and Tec1 appear to be involved in the network with the aforementioned factors, we are currently testing the Δasf1 and Δtec1 strains. If either of these strains is impaired for growth at cold temperatures, we will follow up by measuring the gene expression changes due to cold shock in these strains using DNA microarrays, as the Dahlquist lab has done for the others. These data will give insights into the gene regulatory network that controls the cold shock response in yeast.

**Tartuffe**

Louie Enriquez, Tim Toole, Sam Pribyl, Alexa Walters

Molière’s 1669 classic play, Tartuffe, employs commedia dell’arte and symbolism to create a risqué political satire. Within the comically sexualized representation of the relationship between the Church and Louis XIV, the playwright foreshadows the evolution of political and religious exploitation that pervades American society today. This showcase is an attempt to demonstrate the correlation between Tartuffe and the vitality of contemporary theater. Along with the dialogue in the text and the form of raunchy commedia dell’arte, I intend to examine the process behind the development of Loyola Marymount University’s contemporary adaptation and how they remain relevant to each other. Tartuffe, Act III scenes 5-7 will be used as a demonstration. LMU’s interpretation of the text explores themes of power in political manipulation, the family dynamic, and the necessity for palpable truth. To effectively communicate these themes, the director, Katherine Noon, has implemented classic commedia techniques with realistic body language and plain contextualization.
This production’s ability to actively reflect social issues relevant to contemporary American culture illustrates the necessity for art and live theater today. Even with a strict form of theater that may be considered archaic in its language and execution, it brings to light subjects of contention that still have an impact on people. By maintaining the use of commedia dell’arte, this production realizes its author’s intentions, who had imagined an ideal of a fair and honest society.

**Terrorist Manipulation of Religious and Ethnic Identity: A Case Study of Hamas and Hezbollah**
Sarah Markowitz

Existing literature on the role of groups’ religious and ethnic identity in conflict fails to fully explain why a group may choose to appeal to one identity rather than, or more than, the other. This dearth extends to the content of a group’s rhetorical appeals to an audience and the extent to which a group adheres to its founding charter. My research is motivated by the current geopolitical realities of the Middle East, where radical Islamic militant groups are manipulating religion and ethno-nationalism to justify their use of violence against civilians, states, and other non-state actors. In the Gaza Strip and Lebanon, religious and ethnic identities are intertwined, and the leaders of Palestinian Hamas and Lebanese Hezbollah seem to appeal to both the audience’s ethnicity and religion. Through my research I attempt to identify 1) which identity is most central to an organization’s founding document and 2) how appeals to identity are expressed in its contemporary rhetoric. In a qualitative analysis of each organization’s founding document and a sampling of rhetoric, I find that each group’s rhetoric references both ethnic and religious identities, often in the context of nationalist goals. Furthermore, Hamas used religious language more often while Hezbollah’s rhetoric was mainly ethno-nationalist, which follows the same trends apparent in their founding documents. My research reveals the need to distinguish the differences in identity appeals so that counterterrorism efforts can more effectively work to delegitimize attempts to use religion to justify violent attacks in the name of secular goals.

**Testing Competition and Relationships in Rhizobia-Legume Mutualisms**
Ashwarya Sharma

Rhizobia bacteria provide leguminous plants useable nitrogen through their capability to fix atmospheric nitrogen (N2) into ammonia (NH3). This mutualism is reciprocally beneficial as rhizobia fixing nitrogen in root nodules get carbohydrates from the plants. Nitrogen fixation is energetically costly to the rhizobia as it uses resources that could be used towards growth and reproduction. Therefore, it is reasonable to assume that natural selection favors ‘cheaters’; rhizobia that live in nodules that fix less nitrogen. To maintain this mutualism, plants must favor rhizobia that fix the most nitrogen and/or use sanctions to penalize ‘cheaters’. I am investigating this relationship through isolating rhizobia and observing their interactions between each other.
and Pisum sativum. Five bacterial strains were isolated from nodules of Lupinus sp. and P. sativum, and 16S rDNA analysis identified four of the strains as Rhizobium leguminosarum and the other as R. rhizogenes. The co-inoculation of P. sativum in an axenic hydroponic setup with nodulating and non-nodulating bacteria showed white nodules and yellow coloration signifying stress in comparison to the healthier plants with pink nodules that had been inoculated with only a nodulating bacterium. Bacteria were found to be resistant to ampicillin and green fluorescent protein (GFP) and mCherry fluorescent markers were introduced into the bacteria. This fluorescence will be used to identify bacteria in co-inoculated P. sativum nodules to find occupancy patterns. Additionally, biofilm production is being tested. This study will increase our understanding of the interactions bacterial inoculum in agriculture may have with pre-existing rhizobia.

**Testing the effectiveness of a water treatment device for reducing turbidity and total dissolved solids in recycled wastewater**

Abdulaziz Alfozan, Muhanad Ghabban

One of the main causes of major health problems in rural communities in developing countries is lack of access to potable water. Water treatment systems powered by photovoltaic cells could be potential solutions to treat contaminated water sources in remote communities. This study reports on an experiment in which a water treatment device is designed to treat recycled wastewater through a reverse osmosis filtration system. An experiment was developed to test the effectiveness of reducing turbidity and total dissolved solids from the recycled wastewater. The results provided insight for the efficiency of a water treatment system to produce potable water that complied with national standards.

**That Tingling Sensation: Autonomous Sensory Meridian Response**

Elaina Harr

Autonomous Sensory Meridian Response (ASMR) is a sensory experience described as a static-like, tingling sensation that begins in the scalp and can travel down to the neck, spine, and/or limbs. This experience is associated with feelings of euphoria, relaxation, or other positive emotions, and is triggered by specific acoustic, visual, or digital media stimuli. Although multiple online ASMR communities have been established, little formal research has been conducted on this phenomenon. In addition to characterizing ASMR, because of the euphoric qualities of this experience, the present authors explored the possible anxiety-reducing role of ASMR. The present study examined a dataset provided by Barratt and Davis (2015). The data included 475 participants (245 men, 222 women, and 8 non-binary individuals) who self-reported they experience ASMR and who completed an online survey that investigated certain characteristics of the phenomenon. Our results showed the most popular ASMR triggers to be whispering (76%), personal attention (70%), crisp sounds (65%), and slow (53%) or repetitive
movements (36%), findings that were very similar to Barratt and Davis (2015). The number of ASMR triggers in an individual ranged from one to ten, with a median of four. A measure of total ASMR experience significantly correlated with an anxiety scale. Interestingly, over half of the participants reported watching ASMR videos to deal with their anxiety.

This Treatyse Concernynge the Fruitful Sayings of David the Kynge
Suzanne Swanson

My research examines treasonous statuses of texts during the split between the Catholic Church and Henry VIII. Specifically, this project involves a book written by the Catholic martyr St. John Fisher in 1519, titled This Treatyse Concernynge the Fruitful Sayings of David the Kynge {and} Prophet in the Seven Penytencyall Psalms. The book was printed by Wynkyn de Worde, apprentice to the first printer in England, known as “the Father of Fleet Street.” As a pre-Reformation book, it is remarkable for preserving what looks like an original, or at least extremely early, illustrated binding, and bears the ownership inscription of a woman. With that said, ownership of this book after 1535, when Fisher was executed by Henry VIII for rejecting his divorce from Catherine of Aragon and marriage to Anne Boleyn, may have been considered treasonous, especially if its binding celebrated Fisher as a martyr.

For my process, I will research the hagiographic iconography on the binding, and make some attempt to identify the individual named in the ownership inscription, “Thomas Andereus's wife.” I will also research other bindings known from the period, any evidence for ownership, readership, and finally, “treasonous” status of the text before and after Fisher’s execution while attempting to identify likely "Andrews" candidates. In doing so, I will analyze the relationship of the Catholic Church with the crown, and the effects it may have had on the literature/iconography of the time.

To Go Pure - Plastic is not Convenient
Camille Kodama

This project evaluates the effects of single-use plastics on the Earth’s waters over the past two decades. Governments and corporations focus on the specific agenda of profits from producing single-use plastics, while society favors their convenience. A plastic product may be used for two minutes before being disposed of, and then it will break down into microscopic pieces over the next 1,000 years. As production continues, more and more plastic accumulates as pollution, with substantial amounts in marine environments. Having grown up on the island of Oahu, I have witnessed numerous beaches covered in washed-up plastics. It is both saddening and motivating to see such a beautiful place tainted with debris, and to know that countless marine species are suffering as well. To emphasize the destructive and infinite “lives” of single-use plastics, I intend to create an experiential art gallery installation that playfully follows the journey of these
The purpose of this imagery is to educate viewers on the vital changes necessary in the way manufacturers produce plastic materials. These narrative illustrations will exhibit the importance of banning single-use plastics for the health of marine environments. I believe that America must follow in the footsteps of other countries like France in moving toward a plastic-free world.

**Top 100: The Shift in Political Representation**
Brenda Quintanilla, Elizabeth Guhl

This research explores the key structures, legislature, and representatives of Los Angeles politics. Specifically, it analyzes significant characteristics of the “Top 100” - the 100 most powerful elected officials in LA County. Members of the Top 100 are selected based on budget size, constituent size, and prestige of position. Such positions include the LA Mayor, LA City Council, LA County Supervisors, and state legislators. By collecting data such as the name, ethnicity, gender, and election year of each officeholder, the Top 100 reveals how minority political inclusion has shifted over the last several decades. In addition, by updating the database from 2009 to 2016, there is a comprehensive look at the upward mobility of representatives. Due to the recent federal election in June 2016 and the upcoming local election in March 2017, the research accounted for possible shifts in the political elite by identifying Top 100 officeholders eligible for reelection and potential candidates who may replace incumbents. In an attempt to better understand individual Top 100 members and the weight of their position, this research project also edited and, for some, created Wikipedia profiles for members of the 2016 Top 100. This initiative made data about leaders and their legislation more accessible to constituents and those interested in Los Angeles politics. In conclusion, our research created a more holistic account of local and state politics by displaying ways in which political representation has evolved over time.

**The transcription factors Hap4 and Swi4 contribute to the regulation of the transcriptional response to cold shock in Saccharomyces cerevisiae**
Monica Hong

Budding yeast, *S. cerevisiae*, responds to cold shock by changing gene expression. Which transcription factors control this response is unknown. We screened nine transcription factor deletion strains for impaired growth at different temperatures on solid media, and found that the Δphd1 and Δgcr2 strains were impaired for growth at all temperatures (15°C, 20°C, 30°C and 37°C), the Δnrg1 strain was impaired for growth at warm temperatures (30°C and 37°C) and enhanced for growth at cold temperatures (15°C and 20°C), and the Δash1, Δswi4, and Δhap4 strains were impaired for growth only at cold temperatures. Liquid cultures of the Δswi4 and Δhap4 strains were then subjected to cold shock at 13°C, followed by recovery at 30°C. Samples were collected before cold shock (t0), after 30 and 60 minutes of cold shock (t30, t60), and after
30 and 60 minutes (t90, t120) of recovery. DNA microarrays were used to measure global changes in gene expression for four replicates for each strain. An ANOVA test showed that 2233 out of 6189 (36%) genes had a significant change in gene expression at an adjusted p value < 0.05 for the Δswi4 strain, while 1749 genes (28%) were significantly changed in the Δhap4 strain. Both strains showed patterns of expression where genes were up-regulated during cold shock and down-regulated during recovery or vice versa. Genes showing these patterns of expression belong to the ribosome biogenesis and glycogen metabolic processes, respectively, processes used by the cell to survive cold shock.

Unmanned aerial vehicles as a quantitative tool for evaluating population-level seedling dynamics
Sarah Kodama, Nikolas Victoria

Forest disturbances leading to fragmentation result in increased vulnerability of tropical systems to climatic change due to decreased variability in seasonal temperatures. Assessment of vegetation patterns and population dynamics is usually performed with labor intensive field sampling methods. Unmanned aerial vehicles (UAV) provide a novel method for measuring spatially complex biological phenomena. The objective of this study is to determine the applicability of UAVs in monitoring and quantifying biologically significant data pertaining to fragmented and vulnerable oak and pine forests in the Western Sierra Madres. Aerial image analysis from a low flying UAV discovered correlations between landscape elements and population dynamics with quantitative measurements of population dynamics. The qualitative models produced through this study, provide a platform for a long term study based on determining optimal conditions for oak seedling recruitment that can be measured by landscape elements with a low flying UAV.

Using Graph Statistics to Investigate the Properties of Six Candidate Gene Regulatory Networks for Controlling the Cold Shock Response in Saccharomyces cerevisiae
Margaret ONeil

A gene regulatory network (GRN) is a set of transcription factors which regulate the level of expression of genes encoding other transcription factors. The dynamics of a GRN show how gene expression in the network changes over time. Microarray data were obtained from the wild type strain and five transcription factor deletion strains (Δcin5, Δgln3, Δhap4, Δhmo1, Δzap1) before cold shock at 30°C and after 15, 30, and 60 minutes of cold shock at 13°C. A modified ANOVA showed that for all networks a large number of genes had a log2 fold change significantly different than zero at any time point. These genes were submitted to the YEASTRACT database to determine which transcription factors regulated them. Data from each
strain were used to generate six candidate GRN’s of between 14 to 17 nodes and 25 to 36 edges, depending on the specific network. The open source software Gephi was used to analyze graph properties of each network. In particular, we computed in- and out-degree, betweenness centrality, eccentricity and closeness centrality. These centrality measures indicate which nodes are most easily accessed in each network, how central a node is in a network, and which nodes most frequently appear in the shortest paths of a network. From this analysis we have gained insight into role of different transcription factors. In particular, the high centralities of Cin5, Yhp1, and Hmo1 provide additional evidence of their potential importance in the gene regulatory network that controls the cold shock response in yeast.

**Using Thermal Imaging to Detect Torpor in Nesting Hummingbirds**
Melissa Morado

Hummingbirds use energy at extremely high rates due to their small size and high metabolism. They must conserve energy by going into nightly torpor when many types of food are unavailable, therefore dramatically reducing their metabolic rate and body temperature. We aim to quantify the energetics associated with nesting female hummingbirds using thermal imaging methodology. We predict that in order to incubate their eggs effectively, hummingbirds would logically be unable to enter torpor. But due to their continuing high energy demands it would seem that incubating female hummingbirds would consequently exhaust energy requirements. This project has important implications for understanding the physiology of how animals cope with extreme, and sometimes conflicting, energetic requirements. It also presents broad applications for citizen science and science education.

**Utilizing 3D printing technology and the plasmodial slime mold *Physarum polycephalum* to approximate efficient transit networks of Los Angeles**
Sophia Deen

The slime mold *Physarum polycephalum* is a single-celled, multinucleated organism that can be observed without the assistance of magnification. When cultivated under optimal dark and humid environmental conditions, the plasmodial slime mold aggregates towards its food source to create the most efficient pathway by using chemical cues in the environment, called chemotaxis. This study aims to assess the exploration of the slime mold’s foraging specifically on geographic locations of 3D printed maps of Los Angeles. The results from *P. polycephalum*’s exploration will be used to assess the slime mold’s ability to generate isomorphic solutions similar to Los Angeles’ Metro mass transit network system. The 3D printed maps, modeled from regional topographic maps, are used to create ‘real-world’ spatial obstacles, such as mountain ridges during foraging by the slime mold.
Our results thus far show that *P. polycephalum* can successfully forage on 3D printed maps when a 2% agar medium is brushed over the map’s surface prior to applying the slime mold. Furthermore, preliminary data has produced novel solutions to mass transit arrangements tested in lab. These and forthcoming data we be a timely perspective as Los Angeles’ Metro has created a new Mass Transit Expenditure Plan that will serve 210 million passengers and create 120 miles of light rail by 2040. The rapid, 3 days ability of *P. polycephalum* to generate possible transit solutions that can take engineers months to years to formulate, provides an innovative, biologically-inspired solution to Los Angeles’ persistent mass transit problem.

The Value of Urban Parklands: A Park User Study of the Baldwin Hills
Kyle Hunter-Valls, Jorge Gamboa, Kaykay Scotto

The preservation and conservation of public open spaces are essential in urban settings as they promote the growth and sustainability of local communities and surrounding environments. The Baldwin Hills Conservancy manages the Baldwin Hills Parks System, and aims to promote recreation, restoration and protection of urban parks. In order to inform significant improvements to the parks system, a longitudinal study of the attitudes and behaviors of park visitors is being conducted. As part of the CUREs (Center for Urban Resilience)/ TBF (The Bay Foundation) internship program, numerous LMU students administered a comprehensive survey over the course of 4 study seasons. This poster summarizes the findings of this survey. In the summer 2016 season, a total of 501 hours were spent in the park allowing for 416 surveys collected and 150 counts completed. Preliminary analyses on this data show several interesting findings, including a decrease in the number of users walking or cycling to the park throughout seasons, a decrease in knowledge of the Ballona creek or wetlands of users by season, and an increase in diversity amongst park users. Future efforts consist of fully analyzing the collected data, and applying this study to public green spaces in Los Angeles as well as internationally.

Views of Millennials by Millennials
Isabella Dennis, Kat Siao, Xavier Orozco, Jayna Ortiz, Maya Willis, Andrew Brown, Lesly Juarez, Megan Takemodo

Using data from StudyLA’s 2017 LA Public Opinion Survey, we will examine the views of millennial Angelenos as compared to other generations throughout the Los Angeles area. Data will be broken into three major subtopics, including economy, personal identity and quality of life. The subtopic of economy will include an analysis of five survey questions, which explore generational outlooks on the national, regional, and household economy, as well as perceptions of personal wealth and wealth disparity. Analysis within the subtopic of personal identity will examine generational preferences of sports teams and Angeleno identification across age
categories. The final of the three subtopics, quality of life, will include opinions on whether one’s neighborhood, city, and region is going in the right or wrong direction; it will also examine perceptions of service quality and the willingness to recommend one’s city to newcomers. The result will be a thorough analysis of millennial views, explaining the differences and similarities in opinion from the Silent Generation to Baby Boomers to Generation X.

Water and Terpene Content in Plants
Paolo Gonzales, Nick Vanstrum

Terpenes, a large class of organic compounds emitted by various plants, and water content have both been linked to flammability of plants. Leaves from three native (Baccharis pilularis, Heteromeles arbutilfolia, Rhus integrifolia) and two exotic (Magnolia grandiflora, Laurustinus viburnum) plants from the vicinity of the Loyola Marymount University campus were sampled approximately every month since July 2014. The leaves were freeze-dried and weighed to calculate leaf water content and were compared with meteorological data. Then terpenes were extracted using cyclohexane and underwent gas chromatography and mass spectrometry analysis for monoterpene and sesquiterpene quantification. The results highlight how seasonal changes can influence water and terpene content thus influencing the plant’s flammability.

Wind Turbine Service Learning Project
Danielle Leong, Vincent Bottita, Brandon Kim, Vaughn Hartling

The goal of the Wind Turbine Service Learning Project was to create an opportunity for LMU’s first-year engineering students to teach the next generation of scientists and engineers about engineering principles and renewable energy. These students demonstrated LMU’s core values of community and service to others. With support from a Seaver Course Development Grant, LMU’s engineering students teamed up with Farragut Elementary School of Culver City to teach 5th graders about renewable wind energy. The project involved two parts: the first in which the 5th graders learned how to design and construct wind turbine blades and the second in which 5th graders tested their blades on wind turbines at LMU. The service learning project was conducted as an extension of a summer research project. Over the course of the project, 5th graders learned about renewable energy, blade design, data collection, and the engineering design process. For many 5th graders, this was their first visit to a college campus, and delivering the idea of higher education as an attainable goal creates a huge impression in a child. The 5th graders could see the first-year students’ accomplishments as something that they could someday achieve. The service learning project emphasized the importance of human connections amid the world of engineering. Working with elementary students allowed first-year engineers to make a direct connection with students while teaching them about renewable energy. Experiences like the
service learning project demonstrate to engineering students the importance of working with and for others as an engineer.

You Are What You Read: How Political News Media Platforms Promulgate Engagement
Caitlin Pigott

Contemporary media sources have specific and unprecedented influence on consumers' everyday lives and identities. The pervasiveness of media sources combined with the constantly shifting political landscape has created a continually shifting definition of political participation. This study examines how the broad array of media sources in American society links to different types of active political participation. In thinking about the relationship between modern media and political participation, I test the following research question: Does information presented in separate mediums of news media generate different levels of political participation and engagement among citizens? Since political media and political participation, alike, do not have fixed meanings, this study seeks to develop a more holistic definition of what American citizens believe they mean. To answer these questions, this project has adopted a unique survey design. The survey has respondents react to the same news story in three different formats, (a newspaper article, an online news article and a Tweet) to understand how each medium influences political attitudes and participation. The results are expected to reaffirm that hypothesis that participants will react differently to the same content, simply based off the type of news they interact with. Ultimately I hope to be able to draw conclusions that will redirect the understanding of the unique influence that our news media sources have on the level of political participation in United States society.

Young Women in Stem
Mackenzie Tjogas, Megan Karbowski, Carleen Petrosian

Females made up only 19.9% of all Bachelor’s degrees awarded by engineering programs in 2015 (Yoder, 2015)\(^1\). There is ample research focused on answering why there are significantly less women than men in computer science and engineering, but less resources are dedicated to trying to fix the issue. Research shows that the most progress in teaching young women in the STEM fields comes from mentorship (Holmes, Redmond, Thomas, & High, 2012)\(^2\). Our research project sought to determine if small-group mentorship, alongside instruction of engineering and computer science activities, improved young girls’ interest in these fields. We explored this by leading eight female eighth graders from Palms Middle School through five different coding and engineering projects. I was responsible for leading three workshops on Alice, a program that provides an introduction to coding principles through the creation of a short animation. Alice allowed the girls to be creative, and to see the immediate effects of their
quasi-code. It was important to encourage a trial and error approach with Alice to enforce the idea that it is acceptable to be wrong. Pre and post anonymous surveys were used to gauge the girls’ interest before and after the day’s activities. The surveys showed that all participants had, at some point, been too embarrassed to ask a question in class. The fear of seeming less intelligent can cause young women to avoid asking questions. This anxiety is discouraging, and deters them from taking full advantage of their education. The surveys also showed that our day of activities did increase interest: six out of the eight girls reported they loved the activities and would do them again. This research shows that the gender discrepancy in engineering and computer science does not come from a lack of interest. Involvement in these fields is increased when young women are taught in an environment that is relaxed and encouraging. We hope to have the opportunity to continue this research and reach a supported conclusion.

<table>
<thead>
<tr>
<th>Name</th>
<th>Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amy Aceto</td>
<td>Psychology</td>
</tr>
<tr>
<td>Arman Akhenaton</td>
<td>Civil Engineering</td>
</tr>
<tr>
<td>Maraky Alemseged</td>
<td>Sociology</td>
</tr>
<tr>
<td>Abdulaziz Al Fozan</td>
<td>Civil Engineering</td>
</tr>
<tr>
<td>Mariana Alifa</td>
<td>Civil Engineering</td>
</tr>
<tr>
<td>Claudia Aliman</td>
<td>Biology</td>
</tr>
<tr>
<td>Matthew Allegretti</td>
<td>Biology</td>
</tr>
<tr>
<td>Michael Allen</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>Lucas Almeida</td>
<td>Computer Science</td>
</tr>
<tr>
<td>Jose Alvarado</td>
<td>Biochemistry</td>
</tr>
<tr>
<td>Karina Alvarez</td>
<td>Environmental Science</td>
</tr>
<tr>
<td>Brendan Angelo</td>
<td>Biology</td>
</tr>
<tr>
<td>Nicole Anguiano</td>
<td>Computer Science</td>
</tr>
<tr>
<td>Elizabeth Archer</td>
<td>Film and Television Production; Screenwriting</td>
</tr>
<tr>
<td>Ashley Arnell</td>
<td>Biology</td>
</tr>
<tr>
<td>Joe Arra</td>
<td>Physics</td>
</tr>
<tr>
<td>Victoria Artaza</td>
<td>Political Science; Spanish</td>
</tr>
<tr>
<td>Thomas Ashton</td>
<td>Biochemistry</td>
</tr>
<tr>
<td>Chukwuemeka Azinge</td>
<td>Computer Science</td>
</tr>
<tr>
<td>Edward Bachoura</td>
<td>Computer Science</td>
</tr>
<tr>
<td>Ryan Bae</td>
<td>Health and Human Sciences</td>
</tr>
<tr>
<td>Alec Baktamian</td>
<td>Biochemistry</td>
</tr>
<tr>
<td>Tealanie Baldwin</td>
<td>Political Science; African American Studies</td>
</tr>
<tr>
<td>Annie Barker</td>
<td>Theatre Arts; English</td>
</tr>
<tr>
<td>Brooke Batcheller</td>
<td>Applied Math; Health and Human Sciences</td>
</tr>
<tr>
<td>Zachary Bates</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>Jessica Bedewi</td>
<td>Communication Studies; Sociology</td>
</tr>
<tr>
<td>Brooke Beermann</td>
<td>Health and Human Sciences</td>
</tr>
<tr>
<td>Brittany Beery</td>
<td>Finance</td>
</tr>
<tr>
<td>Megan Behar</td>
<td>Political Science</td>
</tr>
<tr>
<td>Natasha Behnam</td>
<td>Film and Television Production; Theatre Arts</td>
</tr>
<tr>
<td>Joshua Bernardin</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>Brandon Besharat</td>
<td>Biology</td>
</tr>
<tr>
<td>Adam Betancourt</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>Julia Biber</td>
<td>Studio Arts: Graphic Design</td>
</tr>
<tr>
<td>Gisele Bitar</td>
<td>Political Science</td>
</tr>
<tr>
<td>Megan Blacet</td>
<td>Civil Engineering</td>
</tr>
<tr>
<td>Jordan Block</td>
<td>Theatre Arts</td>
</tr>
<tr>
<td>Vincent Bottita</td>
<td>Civil Engineering</td>
</tr>
<tr>
<td>Mitchell Braun</td>
<td>Biology</td>
</tr>
<tr>
<td>Nicolas Breceda</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>Rebecca Bremer</td>
<td>Biology</td>
</tr>
<tr>
<td>Sean Brennan</td>
<td>Screenwriting; Finance</td>
</tr>
<tr>
<td>Taylor Brewer</td>
<td>Sociology</td>
</tr>
<tr>
<td>Andrew Brown</td>
<td>Finance</td>
</tr>
<tr>
<td>Jacob Buckhalter</td>
<td>Mechanical Engineering</td>
</tr>
</tbody>
</table>
John Buda
Mathematics

Dominic Budetti
History; Political Science

Samantha Burton
Classics and Archaeology; Film and Television Production

Elizabeth Burton
Art History

Zachary Calilung
Biology

Kevin Ray Calvelo
Biochemistry

Marisa Carino
Biology

Eric Carles
Biochemistry

Michelle Castro Bastida
Studio Arts: Fine Arts

Melissa Cedillo
Theology

Adrian Cheng
Mechanical Engineering

Caroline Cordova
Political Science; Screenwriting

Candice Cross
Biology

Janelle Crowther
Psychology

Eva Crystal
Dance

Ally Davis
Civil Engineering

Katherine Daw
Political Science; Philosophy

Jilian Dawley
Biochemistry

Sophia Deen
Health and Human Sciences

Ricardo Martin Del Campo
Mechanical Engineering

Carrie Deline
Mechanical Engineering

Isabella Dennis
Political science; Chicana/o studies

Giovanni Di Franco
Environmental Science; Spanish

Nicholas Diaz
Biology

Natalia Dibbern
Civil Engineering; Applied Mathematics

Brenda Dimaya
Biology

Dominick Divine III
Psychology

Mekleit Dix
English; Biology

Ian Dizon
Film and Television Production

Justice Domingo
Dance; Communication Studies

Halie Donabedian
Dance

Jingyuan Du
Applied Mathematics; Physics

Chase Dugay
Biology

Cathering Tara Edwards
Studio Arts: Photography

Carolyn Egekeze
Biology

Jacqueline El-Sokkary
Biochemistry

Ryan Elson
Biochemistry

Fares Elwaary
Studio Arts: Graphic Design

Katherine Emery
Studio Arts: Graphic Design

Yadira Enciso
Art History

Louie Enriquez
English; Theater
Sofia Esteves  
Biochemistry

Tyler Faison  
Theatre Arts

Zachary Fitzpatrick  
Computer Science

Ethan Flake  
Biology

Christopher Franco  
Computer Science

Anders Frankenberger  
Physics

Scott Fraser  
Biochemistry

Ethan Fujioka  
Electrical Engineering

Caroline Fukawa  
Biology

Caroline Gallagher  
Poehls  
Health and Human Sciences

Jacquelyn Galvez  
Biology

Jorge Gamboa  
Urban Studies; Sociology

Cielo Garat  
Psychology; Sociology

Alejandra Garcia  
Environmental Science

Karly Garster  
Recording Arts

Alexa Garster  
Screenwriting

Alice Gavarrete Olvera  
Psychology

Melissa Gavilanes  
Psychology

Muhanad Ghabban  
Civil Engineering

Brian Gilmartin  
Liberal Arts Undeclared

Alisha Ginsberg  
Psychology

Kendra Glenn  
Liberal Studies

Michael Gloudeman  
Biology

Stephen Gloudeman  
Biology

Abigail Marie Goad  
History

Zachary Goldstein  
Biology

Maria Carolina Gomez  
English; Philosophy

Mariajose Gomez  
Liberal Studies; Bilingual

Paolo Gonzales  
Biochemistry

Facundo Gonzales-Icardi  
Theological Studies; Humanities

Malachi Green  
Health and Human Sciences

Isabelle Gremillion  
Theater Arts; Economics

Luis Guevara  
Mechanical Engineering

Rad Guhit  
Mechanical Engineering

Elizabeth Guhl  
Political Science

Eilise Guilfoyle  
Theatre Arts

Kiana Gums  
Economics; Political Science

Alfredo Gutierrez  
Mechanical Engineering

Rachel Haik  
Communication Studies; Film and Television Production

Emma Hardy  
Psychology; Philosophy

Elaina Harr  
Psychology

Alec Harrison  
Studio Arts: Multimedia Arts

Hayley Hart  
Biology

Vaughn Hartling  
Mechanical Engineering

Shannon Hayes  
Modern Languages; Classics and Archaeology

Zachary Hayes  
Political Science

Vincent Hayward  
Biochemistry
Alexandra Heck
Environmental Science

Ye Thura Hein
Mechanical Engineering

Alexander Hendricks
Mechanical Engineering

Alfredo Hernandez
Political Science

Victoria Hernandez
Psychology; Spanish

William Hohorst
Mechanical Engineering

Monica Hong
Biology

Elizabeth Horejsi
Civil Engineering

Kristen Horstmann
Individualized Studies

Allison Houston
Political Science; Philosophy

Gabriel Huacuja
Biology

Kelly Hunter
Biochemistry

Kyle Hunter-Valls
Urban Studies

Nicole Infantino
Biology

Alex Isaev
Biology

Christopher Jaime
Biology

Ivan Jelic
Economics; Physics

Sara Jensen
Studio Arts: Graphic Design

Katherine Grace Johnson
Biochemistry

Kendall Johnson
Biology

Carly Johnson
Communication Studies; Theatre Arts

Ben Johnstone
Biochemistry

Keely Jones
Electrical Engineering

Steven Jones
Music: Instrumental Studies

Tamara Jovanovic
Electrical Engineering

Lesly Juarez
Political Science

Salma Kamal
Civil Engineering

Konstantinos C. Kaplanis
Classics and Archaeology; Mechanical Engineering

Megan Karbowski
Computer Science

Frances Karrer
Studio Arts: Graphic Design

Troy Kassien
Theology; Philosophy

Benjamin Katz
Studio Arts: Graphic Design

Kayla Kaufman
Theatre Arts; Film and Television Production

Aishah Kelani
Mechanical Engineering

Yeon Jaw Kim
Electrical Engineering

Brandon Kim
Mechanical Engineering

Douglas Kitchen
Biochemistry

Brandon Klein
Biology

Sarah Kodama
Biology

Camille Kodama
Studio Arts: Graphic Design

Caeli Koizumi
Dance

Leanne Kuwahara
Biology

Michelle Laiolo
Biology

Dillen Lao
Biochemistry

Aysha Larson
Studio Arts: Graphic Design

Virginia Laskodi
Political Science
Andres Lazo Hernandez
Electrical Engineering

Stephanie Lee
Health and Human Sciences

Harrison Leece
Mechanical Engineering

Allison Leggett
Health and Human Sciences

Matthew Lemus
Health and Human Sciences

Janine Leano
Theater Arts

Danielle Leong
Mechanical Engineering

Samantha Leung
Psychology

Thelma Levy
Studio Arts: Graphic Design

Michael James Lhuillier
Economics

Ashley Lillegraven
Accounting

Brandon Litvak
Biology

Lauren Lo
Psychology

Isai Lopez
Biology

Christopher Lorenzo
Physics

Flanders Lorton
Computer Science

Catherine Lozano
Studio Arts: Graphic Design

Bryce Lutz
Political Science

Syndie Maltz
Health and Human Sciences

Luciano Manfredi
Console Physics; Pure Mathematics

Sarah Markowitz
Political Science

Marina Marmolejo
Health and Human Sciences

Madeline Mary
Studio Arts: Graphic Design

Brandon Mathis
Political Science: Graphic Design

Julia McArthur
Art History

Mali McGuire
Biology

Elizabeth McLaughlin
Classics and Archaeology

Kaya McMullen
Political Science

Matthew McPherson
Environmental Science

Makda Medhanie
Health and Human Sciences

Brianna Medina
Political Science

Grant Mello
Psychology

Luis Mendez
Mechanical Engineering

Janessa Mendoza
Civil Engineering

Kate Menefee
Biochemistry

Courtney Merriam
Biology

Tabitha Mitchell
Theatre Arts

Daniel Moghtader
Chemistry

Melissa Morado
Biology

Kaitlyn Morrissey-Braden
Art History

Nicole Muldoon
Psychology

Valeria Munoz
Civil Engineering

Morgan Mutch
Biology

Alex Napier
Biology; Spanish

Adrian Narayan
Political Science
Amanda Neri  
Health and Human Sciences; Music

Sean Nevin  
Mechanical Engineering; Applied Mathematics

Kevin Nguyen  
Biology

Edward Njoo  
Biochemistry

Mary North  
Spanish

Alice Gavarette Olvera  
Psychology

Margaret ONeil  
Biology

Nikki Orban  
Biochemistry

Jacob Orlita  
Mechanical Engineering

Oscar Orozco  
Accounting; Marketing

Xavier Orozco  
Management

Leslie Ortega  
Liberal Studies

Marcio Ortez  
Biochemistry

Jayna Ortiz  
Psychology; Political Science

Lizet Pacheco  
Athletic Training

Larry Palato  
Biochemistry

Rachel Para  
Biology

David Parks  
Computer science

Daniel Pascoe  
Physics

Justin Pasquale  
Accounting

Ralph Eurich Patacsil  
Studio Arts: Graphic Design

Micah Peay- Johnson  
Philosophy

Matthew Pendleton  
Recording Arts

Lauren Pennington  
Biology; Spanish

Paige Petersen  
Accounting

Jenna Peterson  
Communication Studies

Taylor Peterson  
Health and Human Sciences

Carleen Petrosian  
Computer Science

Madison Piechowski  
Mechanical Engineering

Caitlin Pigott  
Political Science

Nicholas Pilaud  
Environmental Science

Shannon Pilcher  
Biology

Heather Pilkington  
Studio Arts: Graphic Design

Natalie Pita  
Psychology

Jacquelin Plasencia  
Civil Engineering

Eliana Porcelli Jorgensen  
Studio Arts: Graphic Design

Sam Pribyl  
Film and Television Production

Randy Qafaiti  
Engineering Physics

Brenda Quintanilla  
Political Science; Chicana/o Studies

Keola Ramirez  
Electrical Engineering: Computer Engineering

Daniel Ramirez  
Health and Human Sciences

Dylan Ramos  
History

Joshua Ramsey  
Biology

Arriona Randazzo  
History

Dillon Rinauro  
Biochemistry

Rachel Rittwage  
Studio Arts: Graphic Design
Sarah Roa  
Biochemistry

Trixie Anne Roque  
Computer Science

Alexandra Rosas-Maxemin  
Art History

Jaclyn Ross  
Communication Studies; Theology

Ian Salazar  
Screenwriting

John Salinas  
Psychology; Biology

Mihir Samdarshi  
Biology

Sylvana Santos  
Electrical Engineering

Elliott Sauwerwald  
History

Katherine Scheker  
Biology

Daniel Schniepp  
Music

Raina Schuler  
Civil Engineering

Michael Schwarz  
Mechanical Engineering

Nhandi Scott  
Health and Human Sciences

Kathryn Scotto  
Sociology

Casey Sederman  
Biochemistry; Applied Mathematics; Economics

Naomi Sengal  
Health and Human Sciences

Samir Seshadri  
Biology

Jessiree Session  
Psychology

Caitlin Schafer  
Biology

Sarah Shapiro  
Biology

Ashwarya Sharma  
Biology

Ricky Sherer  
Communication Studies

Yeon-Soo Shin  
Computer Science

Klaus Shipman  
Recording Arts

Skye Shodahl  
Psychology

Jessica Shortley  
Music: Instrumental Studies

Kat Siao  
Political Science

Ekaterina Siciliano  
Theatre Arts

Alejandra Sliva  
Health and Human Sciences

Emily Simso  
Biology

Clare Sitzer  
Dance

Connor Smith  
Athletic Training

Greg Smith  
Mechanical Engineering

Chase Speicher  
English

Rhett Spongberg  
Physics

Matt Stein  
Engineering Undeclared

Brad Stiehl  
Physics

Emma Strand  
Biology

Suzanna Swanson  
English

Yzabella Tabirara  
Biochemistry

Erisa Takeda  
Political Science; French

Megan Takemodo  
Political Science; Women’s and Gender Studies

Ryan Taus  
Computer Science

Yu-Sam Ting  
Biology

Mackenzie Tjogas  
Computer Science

Timothy Toole  
Theatre Arts

Justin Kyle Torres  
Computer Science
Kelly Tovalin  
Mechanical Engineering

Angela Tun  
Biology

Katelin Urgo  
Communication Studies;  
Theatre Arts

Nika Vafadari  
Biology

Nick Vanstrum  
Environmental Science

Anindita Varshneya  
Biology

Timothy Vassallo  
Film and Television  
Production: History

Diana Vedova  
Art History

Nicholas Ventigan  
Health and Human  
Sciences

Carla Ventura  
Psychology

Mikaela Ventura  
Studio Arts: Graphic  
Design

Nikolas Victoria  
Biology

Luis Fernando  
Villagomez  
Engineering Underdeclared

John Waggoner  
Biology

Robert Wagner  
Psychology; Economics

Jeffrey Walker  
Accounting

Alexa Walters  
Theatre Arts

Joanne Webb  
Mechanical Engineering

Amy Weber  
Electrical Engineering

Alyssa Weisblatt  
Biology

Catherine Weiss  
Applied Mathematics

Alex Weisz  
Political Science

Cora Whalen  
Sociology

Mackenzie Whitfield  
Psychology

Colin Wikholm  
Biology

Natalie Wilkie  
Biochemistry

Natalie Williams  
Biology

Tiffani Williams  
Theatre Arts

Maya Willis  
Economics

Leah Willover  
Psychology

Kesterlyn Wilson  
Biology

Megan Wilton  
Studio Arts: Graphic  
Design

Alex Witter  
Communication Studies

Xian Wong  
Studio Arts: Graphic  
Design

Clayton Wikoff  
Mechanical Engineering

Candace Yamanishi  
Political Science

Cassandra Yearwood  
Psychology

Kaitlyn Yee  
Biology

Joseph Young  
Political Science;  
Screenwriting

Armaan Zare  
Biology

Huayang Zhang  
Computer Engineering
Acknowledgements

Thank you to the following faculty who mentored students in an undergraduate research project or creative activity and to those who served on the selection committees. The success of the LMU Undergraduate Research Symposium is very much a reflection of your unwavering dedication to academic excellence and to preparing students to contribute professionally to their chosen fields of study.

Jennifer Abe
Psychology

Rachel Adams
Civil Engineering; Environmental Science

Hawley Almstedt
Health and Human Sciences

Najwa Al-Qattan
History

Cara Anzilotti
History

Mohammadhossein Asghari
Electrical Engineering and Computer Science

Veera Asher
Music

Peter Auger
Environmental Science; Center for Urban Resilience

Arnab Banerji
Theatre Arts and Dance

Judy Battaglia
Communication Studies

Cynthia Becht
William H. Hannon Library

Bishop Gordon Bennett, S.J.
Catholic Studies

David Berube
Physics

Wendy Binder
Biology

Lance Blakesley
Political Science

Nicole Bouvier-Brown
Chemistry

John Bulman
Physics

James Bunker
Communication Studies

Marne Campbell
African American Studies

Victor Carmona
Biology; Ecology

Vincent Coletta
Physics

Daniel Cristopher-Smith
Theological Studies

Deepa Dabir
Biology

Kam Dahlquist
Biology

Theresa De Vroom
English

Charlotte D'Evelyn
Asian Pacific American Studies

Matthew Dillon
Classics and Archaeology

John Dionisio
Electrical Engineering and Computer Science

Saeri Dobson
Art and Art History

Terry Dobson
Art and Art History

Lambert Doezema
Chemistry and Biochemistry

Wes Dowd
Environmental Science

Wes Dowd
Biology

Philippa Drennan
Biology

Elizabeth Drummond
History

Andrew Earle
Psychology

Corey Eccles
Recording Arts

Omar Es-Said
Mechanical Engineering

Adam Fingerhut
Psychology

Christopher Finlay
Communication Studies

Kerstin Fisk
Political Science

Ben Fitzpatrick
Mathematics
Maire Ford  
Psychology  

Richard Fox  
Political Science  

Judith Foy  
Psychology  

Michael Foy  
Psychology  

Laurel Franzen  
Accounting  

James Fredericks  
Theological Studies  

Nancy Fujishige  
Biology  

Albert Gasser  
Recording Arts  

Michael Genovese  
Political Science  

Evan Gerstmann  
Political Science  

Brianne Gilbert  
Urban Studies; Political Science; Center for the Study of Los Angeles  

Richard Gilbert  
Psychology  

Lani Gleason  
Biology  

Teah Goldberg  
Core Curriculum  

Stephanie Goodman  
Clinical Education  

Fernando Guerra  
Political Science; Chicana/o Studies; Center for the Study of Los Angeles  

Richard Hadley  
Film/TV Studies  

David Hardy  
Psychology  

Pezhman Hassanpour  
Mechanical Engineering  

Teresa Heiland  
Theatre Arts and Dance  

Anatol Hoemke  
Physics  

Sr. MaryAnne Huepper  
Center for Reconciliation and Justice  

Paul Humphreys  
Music  

Emin Issakhanian  
Mechanical Engineering  

Emily Jarvis  
Chemistry  

Robert Johnson  
Electrical Engineering and Computer Science  

Lily Khadjavi  
Mathematics  

Daniel Krause  
English  

Joshua Kulmac Butler  
Core Curriculum  

Joseph LaBrie  
Psychology  

James Landry  
Chemistry and Biochemistry  

Thomas Laurent  
Mathematics  

Roz LeBlanc Loo  
Theatre Arts and Dance  

Nery Lemus  
Art and Art History  

Holli Levitsky  
English; Jewish Studies  

Michelle Lum  
Biology  

Ricardo Machón  
Psychology  

Sarah Maclay  
English  

Barbara Marino  
Electrical Engineering and Computer Science;  

Jeremy McCallum  
Chemistry and Biochemistry  

William McCormack  
Health and Human Sciences  

Susan McDaniel  
Communication Studies  

Mary McElwain  
Biology  

Diane Meyer  
Art and Art History  

Michael Mills  
Psychology
Sarah Mitchell
Chemistry and Biochemistry

David Moffet
Chemistry and Biochemistry

Anna Muraco
Sociology

Jonas Mureika
Physics

Nora Murphy
Psychology

Bernadette Musetti
Liberal Studies

Rafiqul Noorani
Mechanical Engineering

Kirstin Noreen
Art and Art History

David Offenberg
Finance and Computer Information Systems

Jeremy Pal
Civil Engineering

Gene Park
Political Science

Stephanie Perez
Health and Human Sciences

Nenad Pervan
Theatre Arts and Dance

Jeff Phillips
Physics

Martina Ramirez
Biology

Jennifer Ramos
Political Science

Fr. Marc Reeves
Theological Studies

Ashley Robart
Biology

Melody Rodari
Art and Art History

Michele Romolini
Biology; Center for Urban Resilience

Aimee Ross-Kilroy
English

Robert Rovetti
Mathematics

Sr. Judith Royer
Theatre Arts and Dance; Center for Reconciliation and Justice

Claudia Sandoval
Political Science

Nader Saniei
Mechanical Engineering

Jeff Sanny
Physics

Caroline Sauvage
Classics and Archaeology

Judith Scalin
Theatre Arts and Dance

Mark Schwartz
Screenwriting

Stephen Shepherd
English

Todd Shoepe
Health and Human Sciences

Stella Setka
Office of National and International Fellowships

Meghna Singhvi
Accounting

Kristen Smiarowski
Theatre Arts and Dance

Janie Steckenrider
Political Science

Matt Stefli
Marketing and Business Law

Brad Stone
Philosophy; African American Studies

Sarah Strand
Health and Human Sciences

Eric Strauss
Biology

Mairead Sullivan
Women's and Gender Studies

Heather Tarleton
Health and Human Sciences

Clark Taylor
Sociology

Shannon Taylor
Judicial Affairs; Ignatian Leadership Institute

Tracy Tiemeier
Theological Studies

Ray Toal
Electrical Engineering and Computer Science
Patrick Visconti  
Campus Ministry

Rachel Washburn  
Sociology

Heather Watts  
Biology

Amanda Whidden  
Communication Studies

Demian Willette  
Biology

Damon Willick  
Art and Art History

John Young  
Core Curriculum

Katerina Zacharia  
Classics and  
Archaeology