<table>
<thead>
<tr>
<th>SSRD 2016 LOCATION</th>
<th>SESSION 1 9:30am-11:00 am</th>
<th>SESSION 2 11:10 am-12:40 pm</th>
<th>SESSION 3 12:50 pm-1:50 pm</th>
<th>SESSION 4 2:00pm-3:00pm</th>
<th>SESSION 5 3:10 pm-4:10pm</th>
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<tr>
<td>Collins 205</td>
<td>1.1 Environmental Science Theses KAREN ARABAS (9.30-11.30)</td>
<td>2.1 Environmental Science Theses KAREN ARABAS and KATJA MEYER (9.30-11.30)</td>
<td>4.1 Drug Effects on Fitness MICHAEL LOCKARD</td>
<td>5.2 Biology Senior Theses- Organizational Biology CHRIS SMITH</td>
<td>5.3 Physics Senior Theses DAVID ALTMAN</td>
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**Notes:**
- Sessions include a variety of academic and professional topics.
- Collisions and overlaps are possible depending on the specific sessions and their details.
- Some sessions are dedicated to environmental science, while others cover broader topics like clinical, social, and cultural studies.
The 15th Student Scholarship Recognition Day (SSRD) represents the variety of research and creative work conducted by students in what has become a valued part of Willamette University’s culture and history. Over the years, SSRD has featured over 3000 talks, performances and posters. This year more than 300 student participants from all cohorts across the full range of the liberal arts will present their work and ideas.

SSRD is a day to celebrate the exemplary scholarship and creativity of Willamette University students. It is held annually in the spring for students to share the fruits of their research, present musical, theatrical, and dance performances, and display works of art to members of the faculty, family, friends, and fellow students. Regular classes are not held on SSRD as a way of honoring the extraordinary accomplishments of our students and demonstrating Willamette University’s institutional commitment to student scholarship.

The students whose work is presented at SSRD have been supported in various ways. Some have worked directly with members of the faculty as research assistants or on student-faculty collaborative projects as part of the Science Collaborative Research Program (SCRP) and Liberal Arts Research Collaborative (LARC). Others have designed and conducted their own research as course projects, summer projects, or senior capstone research projects. Still others have created original works in fine and performing arts.

SSRD represents a rich array of thoughtful scholarship addressing long-standing philosophical debates, current social problems, environmental challenges, and scientific quandaries. It also offers an exciting spectrum of creative works. It is not only a time to demonstrate academic achievements, but also various performing arts and community service learning projects.

Join us in celebrating the intellectual achievements, Leadership and creative spirit of our extraordinary students!

*The 2016 SSRD Program cover was designed by Karya Schanilec ‘16*
Don’t Miss these wonderful opportunities!

Declaration of Major Celebration, Class of 2018
Cone Field House, 4:30 p.m.
Wednesday, April 20, 2016

All members of the Class of 2018 will gather at the end of Student Scholarship Recognition Day to celebrate the midway point of their college career. Halfway between the Matriculation Ceremony and the commencement exercises of Graduation, this event marks the passing from the lower division years of exploring what it means to be a liberally-educated college student to the concentrated work within a major discipline. Even sophomores who have not yet declared a major will participate in this formal event.

After enjoying live music and brief speeches, sophomores will move from one large Class of 2018 group in the bleachers to join representatives of their new major, or with other undeclared students and advisors who can help them continue that search.

MOHL RESEARCH AWARD

If you have written and researched an excellent paper this year, consider applying for the MOHL Research Award. This award recognizes and rewards Willamette undergraduate students in any discipline who demonstrate outstanding research using library and information resources in writing a paper. Up to two awards of $500 each are available.

Papers written in the sophomore or junior year as part of regular class work are eligible to be considered for this award. The paper must be 7 pages or more in length and written in the current academic year (fall 2015/spring 2016). Papers done as a senior project but in the junior year are excluded.

Papers and a one-page description of your research process need to be submitted by the last day of finals May 11, 2016 at 5:00 pm. For complete details and instructions see: http://library.willamette.edu/about/award/.
# 2016 SSRD PROGRAM

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Schedule of 2016 SSRD and Related Events

SSRD Student Presentations

Session 1  9:30 am - 11:00 am  
Session 2  11:10 am – 12:40 pm  
Session 3  12:50 am - 1:50 pm  
Session 4  2:00 pm – 3:00 pm  
Session 5  3:10 pm – 4:10 pm

Chemistry Poster Sessions  
Special Session 2.13 11:10 am -1:50 pm  
U.C. 2nd Floor Lobby and Cat Dining Rooms

Senior Art Major Exhibition  
10:00 am – 5:00 pm  
Hallie Ford Museum of Art

Willamette Music Presentations and Performances

Music Solos 11:10 am – 12:40 pm  
Music Ensembles 12:50 pm – 1:50 pm  
Rogers Rehearsal Hall

Music Ensembles 12:50 pm – 1:50 pm  
Willamette Theatre Presentations  
Pelton Theatre

Declaration of Major Celebration 4:30 pm  
Class of 2018  
Cone Field House

Chamber Jazz Ensembles in Concert 7:00 pm  
Rogers Rehearsal Hall
Schedule of SSRD Presentations

SESSION 1

Session 1.1, 9:30 am – 11:00 am, Collins 205
Moderator; Karen Arabas
Environmental Science Theses

Ecological Restoration in the Context of Climate Change: How are we managing our prairies in the Pacific Northwest?
McClelland, Madeline

Minding the Gap: NGOs and Marine Debris Policy in Oregon
Avila, Cristina

Controls on Weathering in the Ponil Creek Watershed, New Mexico
Hansen, Cassie

Impacts of Sea-Level Rise on Maui, Hawai`i
Kekiwi, Erika

What Makes a Garden Grow: A Comparative Study of Community Gardens in Salem, Oregon
Rossi, Lance

Deconstructing Willamette University Student Opinion of Genetically Modified Food
Munoz, Jessica

Session 1.5, 9:30 am-11:00 am, Eaton 106
Moderator; Laura Taylor
International Studies Major Theses - 1

Not All Migrants Are Equal: A Comparative Analysis of the Turkish and Polish Migration Experience in Germany
Daliana, Roxana

The Philippines Out-Migration Push and Pull Factors
Genena, Yasmine

Drowning in Apathy: International Inaction and Possible Solutions for Environmentally-Displaced People
Newman, Samuel

Session 1.6, 9:30 am-11:00 am, Eaton 209
Moderator; Allison Hobgood
Systemic Injustices through Space and Time

Friendship and Failure: Relational Power in Kafka’s The Trial
Cornwell, Ryan

On Cyborgs and Essentialism: Creating Communities on Paper and in Practice
Meza-Torres, Jessica

Cultural Fluidity and Resistance to Xenophobic Nationalism in Helen Oyeyemi’s White is for Witching
Orme, Cora

Remembering Trauma: Violence, Identity and Belonging in Precarious Times
Sealine-Smith, Lark

Navigating Neoliberalism and Empathy in Octavia Butler's Parables
Strandoo, Erik

Session 1.7, 9:30 am-11:00 am, Eaton 211
Moderator; Maegan Parker Brooks
Building Individual and Collective Identities

Not Even Once: Affective Appeals and Public Feeling in The Montana Meth Project
Gangstad, Erin

A Worthy Opponent: the Characterization of Spartacus in Plutarch’s Life of Crassus
Paulson, George

Feminist Activist Fandom: How Nerds are tackling the Big Issues
Alcalde, Jenna
The Feminist Avenger with the Dragon Tattoo: The Power of Violence Against Men in Stieg Larsson’s Novels
Sannes-Pond, Celine

Session 1.8, 9:30 am-11:00 am, Eaton 307
Moderator; Joyce Millen
Health and Society: From Lab to Clinic to Community

Measuring the Indirect Photolysis Rate of Brominated Estrogens
Bowton, Maya

Tackling Social Determinants of Health within a Portland Neighborhood Through Community Organizing
Carson, Mandy

The World of Medical Interpreters
Ewers, Veronica

The Non-Cancer Cluster of West Salem: Unanswered Questions
Johnson, Julianne

Session 1.9, 9:30 am-11:00 am, Ford 102
Moderator; Roy Perez
Media Messages and Interpretation

I Kissed a Girl and He Liked It: The Eroticization and Commodification of Female-Female Sexuality in Hip-Hop Music Videos
Pack, Morgen

Who Really Lives on Sesame Street?
Pyne, Katherine

The Problem with Translating Eastern Action Movies to Western Hollywood
Thornton, Joshua

Understanding Shounen Ai Through Translation
Werthmann, Nathan

Life and Development of Miyazaki Hayao
Yaginuma, Kevin

Mishima's Coup D'Etat
Peterman, Scout

Session 1.10, 9:30am-11:00 am, Ford 201
Moderator; Jeanne Clark
Unthinkable, Unspeakable Politics
The Mogul and the Tea: How the Tea Party Primed a Pro-Donald Electorate
Cusick, Meghan

Negligence in the Negev; A Documentarian Perspective of an Unrepresentable Atrocity
Easley, Isabel

Recidivism Variance in Oregon
Brownlee, Rebecca

Opportunists: Electronic Surveillance in the United States and France
Sheldon, Dylan

Session 1.12, 9:30 am-11:00 am, HFMA
Moderator; Ricardo DeMambro Santos
Art in Context

My Beautiful Witch: Salvator Rosa's Images of Sorcery and Witchcraft
Mercer, Jemma

Heads Will Roll: A Study of the Iconography of Beheadings in Art
Page, Karen

Purposefully Unfinished: Rethinking the Structural and Conceptual Boundaries of Artworks
Garrison, Kristin

Dissecting Thomas Eakins: An Investigation of Art and Anatomy in The Gross Clinic
Jones, Julia

SESSION 2

Session 2.1, 11:10 am – 12:40 pm, Collins 205
Moderator; Karen Arabas and Katja Meyer
Environmental Science Theses and Posters

The Significance of Paleogeography as a Forcing for the Onset of Snowball Earth
Avila, Cristina
Marquez, Monique
Regional Climate Impacts of Future Warming in Western North America to Western Europe  
Zimmer, Anelise

Comparative Modeling of CH4 and CO2 Positive Feedbacks  
Guimond, Austin

Evaluating Changes in Aridity Due to Climate Change in the American Southwest and Middle East  
Hansen, Cassandra

Eccentricity and Climate Change  
Malvey, Makenzi  
Knight, Anastasis

Effects of Climate Change on Coral Reef Mortality  
Walin, Noah  
Kekiwi,Erika

Session 2.4, 11:10 am-12:40 pm, Eaton 105  
Moderator; Don Negri  
Environmental Policy Making

The Failure of the Western Climate Initiative in Oregon and Beyond  
Caplan, Jack

“Turning out the Grassroots”: Refining Public Engagement in Environmental Policy Making  
Gill, Elizabeth

Conserving the Economic Benefits of Coastal and Marine Ecosystems in the Puget Sound Region  
Samora, Diego

Session 2.5, 11:10 am-12:40 pm, Eaton 106  
Moderator; Laura Taylor  
International Studies Major Theses-2

Racism in Revolutionary Cuba  
Falvey, Will

Is China Doing Good? Their Role in Foreign Aid  
Fujiwara, Trisha

Food Insecurity Among Immigrant Populations: How Local Food Shares Can Improve Practices  
Siegle, Liberty

Session 2.7, 11:10 am - 12:40 pm, Eaton 211  
Moderator; Joyce Millen & Barbara Stebbins-Boaz  
Sex and Safety in Public Health, Participants & Perceptions

An Ethnography of Unpreparedness  
Farr, Jaide

The Center for Hope and Safety: An Evaluative Ethnography  
Linden, Cassidy

Marion County Maternity Case Management: An Analysis of Subjectivity and Subversion  
Morgan, Naomi

Does One Size Fit All? An Analysis of ¡Cuidate! Sex Education Curriculum in Marion County, Oregon  
Rogala, Anya

Session 2.8, 11:10 am - 12:40 pm, Eaton 307  
Moderator; Gaetano DeLeonibus  
Madame Bovary

Madame Bovary  
Elchinoff, Alexandra

Reading Between the Lines: Phenomenology and Madame Bovary  
Ervin, Jamie

Mimicry and Masculinity in Flaubert's Madame Bovary  
Moag, Athena

Madame Bovary  
Ouellette, Stefan

Session 2.9, 11:10 am - 12:40 pm, Ford 102  
Moderator; Monique Bourque  
College Colloquium

Preserving What is Already Gone: Ghost Towns of the Southwest  
Buchi, Emily

Modeling Sustainability Movements in Fine Dining
Humphreys, Thelonious

Exploring Creativity
Jacobsen, Daphne

Sending Back to the Samoas: A Comparative Study of American Samoa and Samoa’s Relationship with Transnationalism
Tupuola, Jared

College Colloquium Grant
Oropeza, Erendira

It Ain’t Over Till The Fat Lady Sings: Combating Fat Shaming and Its Repercussions
Zhang, Natalie

Session 2.10, 11:10 am - 12:40 pm, Ford 201
Moderator; Richard Ellis
Inclusion and Exclusion - Voting and Economic Participation

Money Wins Out: The Death of Public Financing in the U.S. Presidential Election
Beery, Paul

The Demise of a Representative Democracy: The United States’ Failure to Federalize Universal Voter Register
Hladick, Bethany

Immigration and the Labor Market
Immer, Lucas

American Indians and the Voting Rights Act
Jackson, Hadley

Session 2.12, 11:10 am - 12:40 pm, HFMA
Moderator; Ricardo DeMambro Santos
The Identities of Art

For Loathe or Love?
Asexuality as a Critical Paradigm in Degas’ Depictions of Women
Brown, Stephanie

Local Looks:
Photographic Portraits and the Question of the Paulus Studio in Salem
Edgerton, Elizabeth

The Oregon State Capitol:
Building a New American Iconography

Sandell, Erik

Shaping Japanese Artistic Identity:
Intertextuality in Kurosawa’s 夢 (Dreams)
Arnold, Emily

SESSION 2.13 POSTER SESSIONS
Session 2.13, 11:10 am – 1:50 pm, UC 2nd Floor
POSTER SESSIONS (Continued through Session 3)
Moderator; Brandy Fox

Acid Rain
Fong, Amanda
Higa, Kaylen
Nagata, Michelle
Webster, Morgan

Aderall
Marquez, Juan
Montoya, Henry
Vasquez, Olivia
Willems, Jameson

An Overview of Microbial Fuel Cells
Aubert-Vasquez, Diego
Diego, Aubert-Vasquez
Foster, Lana
Power, Mark
Penning, Morgan

Carbon Nanotubes
Gul, Yasmin
Louangrath, Jonny
Reutin, Kenya
Ryer, Michael

Chemical Detection of Performance Enhancing Drugs
Gray, Tanner
Harvill, Rachel
Holt, Alida
Kong, Rachel

CO Poisoning and its Effect in the Modern Society O2
Dewson, Gabrielle
Habicht, Elizabeth
Lankford, Jamila
Haky, Lauren

Crazy as a Painter
Axtell, Maeve
Cook, Elizabeth
Redfern, James
Tjaarda, Madeleine

Cryo Creamery: Cryogenics in Modern Culinary Arts
Coleman, Samantha
Garcia Servin, Brenda
Hiatt, Kyly
Vega, Yesenia

DDT: Chemical Significance and Historical Background
Fredenburg, Peter
Huber, Daniel
Ready, Hannah
Williams, Angus

Easy, Breezy, Beautiful: Chemicals
Abend-Goldfarb, Ariana
Carr, Hazel
Lilly, Isabelle
Stacy, Alex

Ethics of Chemistry: Sarin Gas and the Biochemical Effects of Chirality
Fawcett, Carli
Mihalovich, Amanda
Williams, Rachelle

Fireworks
Robinson, Ian
Ortega, Katie
Phan, Chi
Towata, Dayton

Gold Nanoparticles in Cancer Thermal Therapy
Nakama-Fukuhara, Tiffany
O'Shea, Elena
Ruano, Kricia
Sloper, Mary

How MDMA Changes the Neurochemistry of the Brain
Anderson, Richard
Carriere, Joseph
Fletcher, Darren
Wilson, Sydney

Meth: Easy to Make, Easy to Abuse
Dueñas, Samantha
Gwilym Tso, Alana
Payton, Julia
Simonovich, Elisabeth

Methotrexate in Biochemical Pharmacology
Ayala, Anna
Cuesta-Torres, Elle
Meng, Ying
Peery, Sarah

Mustard Gas
Bulloch, Drew
Hartnell, Gabriel
Koester, Michael
Nakata, Devin

Ocean Acidification
Meier, Erica
Jorgensen, Claire
Vital Torres, Angelina

Ozone in the Troposphere: “Good up high, bad nearby”
Moore, Cheyenne
Signor, Hannah
Silva Mendez, Elizabeth
Vuong, Milton

Rounding Up Glyphosate
Cummins, Anthony
Janitz, Tyler
Nance, Keeton
Sydeman, Claire

Silicon: You "Si" it All Around
Barnum, Collin
Bresnahan, Erin
Lea, Hannah
Pierson, Kaitlyn

SSRIs: The Chemistry Behind the Most Prescribed Antidepressants
Castro, Justin
Herrera, Nathan
Reimann, Zoe
Rizzo, Zoey

The Advantages and Disadvantages of Solid and Liquid Rocket Propellant
Bentley, Victoria
Cannady, Arianna
Hinton, Samuel
Wright, Adam

The Chemistry of CO Poisoning
Dell, Rachel
Lancaster, Reanna
Lehman, Suzannah
Maciag, Klaudia
Smith, McKenna

The Chemistry of Fireworks
Corpuz, Elizabeth
Dodd, Amanda
Krebs, Veronique
Logan, Cassie

The Contributions of Alchemy to Modern Chemistry
Alunan, Ashley
Espinoza, Karen
Washington, Rachel
Wei, Matthew

The Sun's the Limit
Deely, Jessica
Polkinghorn, Laura
Toledo, Kelly

Thermonuclear Fusion
Bevens, Milla
Davis, Owen
Peery, Jilliann
Pelayo, Maira

Vitamin C
Klug, Maia
Robles, Yasmine
Seyffert, Hannah
Stirton, KayLyn
Youtsey, Brett

Vitamin D
Perry, Wyatt
Sellner, Diana
Sterbenc, Michael

Session 2.14, 11:10 a – 12:40 pm
Music - Solo Recitals

Still by Dorothy Chang
Williams, Sara (oboe)

Fantasie by Philippe Gaubert
Todoki, Ariel (Flute)
Accompanist – Crystal Zimmerman

Five Bagatelles for Clarinet and Piano by Gerald Finzi
Cartales, Alexis (clarinet)
Accompanist – Crystal Zimmerman

Chrysalis Song Cycle by Dylan Librande
Hall, Madison (soprano)
Accompanist – Sherry Liang

Cello Concerto No. 1 in E-flat major, Op. 107, by Dmitri Shostakovich
Pegis, Jason (cello)
Accompanist – Arsen Gulua

Session 2.15, 11:20 am – to 12:40 am, Pelton Theatre, Putnam Studio
Moderator: Chris Harris
Theater Presentations

Three Times a Lady
Hart, Kiah

SESSION 3

Session 3.2, 12:50 pm – 1:50 pm, Collins 318
Moderator; Chris Smith
Biology Senior Thesis: Microbiology and Molecular Biology

Out on a Limb: TonB Dependent Transporters in Caulobacter crescentus.
Doan, Xengie

The Mystery of Mucoidy: The Caulobacter crescentus EPS layer provides bacteriophage resistance.
Herr, Kathryn

A Bioassay for Hormonal Contaminants in the Water: Oocyte Maturation in the Frog Xenopus Laevis
Matsuura, Stephanie

The Effects of Diethylhexyl Phthalate on Xenopus laevis Oocyte Maturation
Sia, Whitney

Session 3.3, 12:50 pm - 1:50 pm, Collins 320
Moderator; David Altman
Physics Senior Theses
Observing the Effect of Quantum Weak Measurements on Single Photon Interference
Aiona, Jade

Modelling Pulsating Stars: How Non-Linear Coupled Oscillators Can Help to Understand Modes of Stellar Pulsation
Clarke, Joseph

Characterizing Pulsation Modes in Variable Stars Using a Multi-color Analysis
Hagarty, Austin

Session 3.6, 12:50 pm - 1:50 pm, Eaton 209
Moderator; Scott Nadelson
Wordplay: Senior Creative Writing Thesis Readings

I Had a Dream about You
Huomo, Linnea

Things That Never Can Come Back
Kuhn, Lyra

Expanding our World’s Issues: Readings of Visionary Fiction
Lantz, Nicholas

Readings from Penumbra, A Dark Fantasy Novel
LeFebvre, Crystal

Dust
Lenhard, Brent

Session 3.8, 12:50 pm - 1:50 pm, Eaton 307
Moderator; Gaetano DeLeonibus
French and Francophone Intellectual Voices of the 20th Century

Postcolonial Politics in the Plays of Aimé Césaire
Remmel, Jacqueline

Césaire and the Colonizer: The Evolution of Cahier d’un Retour au Pays Natal over 60 Years and Its Confrontation of Colonialism
Rohrbach, Christa

Session 3.9, 12:50 pm - 1:50 pm, Ford 102
Moderator; Emma Coddington
Presidential Scholarship Panel

Cervix and Society: Exploring Hormonal Regulation of Cervical Regulation of Cervical Mucoproteins and Their Role in Contraceptive Efficacy
Becquart, Ninon

(de)Constructing the ‘Gayborhood’: How LGBTQ Portlaiders Imagine Community Outside the Gayborhood
Whitney, Daniel

Session 3.11, 12:50 pm - 1:50 pm, Ford 204
Moderator; Huike Wen
Gender, Race, Class and Power

Lesbians in Japan: Identity, Language, and Community
Bedolla, Rachel

Caitlyn Jenner as an Oxymoronic Persona
Nord, Hannah

Washed Out: Water Resources, Environmental Racism, and Queer Policing in the Greater Palm Springs, CA Region
Sanchez, Jesse

Session 3.13, 12:50 pm – 1:50 pm, UC 2nd Floor
POSTER SESSIONS CONTINUED
Moderator; Brandy Fox

Session 3.14, 12:50 pm – 1:50 pm, Rogers Rehearsal Hall
Ensemble Concert

The Autumn Wind by Derek Sup
Earth Song by Frank Ticheli
University Chamber Choir
Conductors: Nick Newman and Will Helgeson

Free Improvisation
Lianne, Sherry
Pegis, Jason,
Ramirez, Brenden

Nepal Trio
Mell, Andrew
Tuckman, Alex
Ramirez, Brenden
**Session 3.15, 12:50 pm – to 1:50 pm, Pelton Theatre, Putnam Studio**

**Theater Presentations**

Lipstick (A "Feminist" Play)
Manoucheri, Abb
Alive and Well
Haddad, Jihan

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**SESSION 4**

**Session 4.1, 2:00 pm - 3:00 pm, Collins 205**
Moderator; Michael Lockard

**Effects on Fitness**

The Effects of Marijuana Smoking on Aerobic Fitness
McKenzie, Andringa

Physiological Effects of Caffeine on Performance During Aerobic-Based Exercise
Parra, Jacob

Angular Proprioception in the Absence of Sensory Feedback (Poster Presentation)
Ostrander, Taylor

**Session 4.2, 2:00 pm - 3:00 pm, Collins 318**

Moderator; Chris Smith

**Biology Senior Theses-Evolutionary Biology**

Pollination and Oviposition Behaviors in Yucca Moth
Pollinator of Joshua Tree
Cole, William

Variations in Style Length and its effect on Seed Survival in Joshua trees (Yucca spp)
Kobayashi, Brandon

Reproductive Success and Visitation Patterns of Yucca Moths in a Joshua Tree Hybrid Zone
Waite-Himmelwright, Jackson

Sequencing and Analysis of the Joshua Tree (Yucca brevifolia s.l.) Chloroplast Genome
Guimond, Austin

**Session 4.3, 2:00 pm - 3:00 pm, Collins 320**

Moderator; David Altman

**Physics Senior Theses**

Characterization and Optimization of a Rubidium Magneto-Optical Trap for the Photoassociation of Rubidium Calcium Dimers
Hallsted, Jonathan

Calculating Variation in the Hubble Constant Using Galaxy Distance and Redshift Data
Hamer, Wil

Using An All Sky Camera to Observe Fireballs and Characterize Near-Earth Meteoroids
McSwain, Kyle

**Session 4.4, 2:00 pm - 3:00 pm, Eaton 105**

Moderator; Sammy Basu

**Mind and Meaning**

Human Treatment Towards Animals – From Ethical Theory to Societal Reality
Chen, Jianing

What Could It Mean? Intentionality, Communication, and the World Beyond the Mind
Shinkle, Collin

**Session 4.5, 2:00 pm - 3:00 pm, Eaton 106**

Moderator; Erik Noftle

**Psychology Symposium**

An Evaluation of Scientific Reasoning and Critical Thinking Modules for Introductory Psychology (Oral Presentation)
Smelt, Brenna

Personality Change and Ideal-Current Discrepancies Across the Study Abroad Experience (Poster Presentation)
Bresnahan, Erin
Hochstetler, Clara
Withy-Berry, Bryce

Sexual Dysfunction Moderates the Association Between Sexual and Relationship Satisfaction (Poster Presentation)
Kerth, Jonathan

The Willamette Experience: How Academic and Social Factors Influence Well-Being (Poster Presentation)
Whitby, Allison
Cohen, Lucan
Hansen, Jeremy
Montemayor, Madison

Longitudinal Relations Between Personality Traits and Social Adjustment in College (Poster Presentation)
Zurschmeide, Kate

Session 4.6, 2:00 pm – 3:00 pm, Eaton 209
Moderator; Scott Nadelson
Wordplay: Senior Creative Writing Thesis Readings

The Threshold: Fantastical Transformations
Monical, Olivia

Intimate?: A Collage
Palmgren, Emily

Seeking a Fictionalized Version of Myself
Rohrbach, Christa

Pseudo Time Traveling and Glorified Fortune Telling
Singer, Joshua

Sandy Jenkins
Straube, Lindsay

Short Prose and Poems Explore Mind and Body
Zuckerman, Evann

Session 4.9, 2:00 pm - 3:00 pm, Ford 102
Moderator; Ellen Eisenberg
Buried in the Past: Muffled Voices from the Archives

Chinese Doctors in Oregon
Cook, Gabriel

Dining in Valhalla: an Analysis of Norwegian Immigrants' Ethnic Identity in Oregon, 1880-1945
Jacoby, Kelci

Hearing Chinese Voices of Salem Under the 1882 Exclusion Act
Major-McDowall, Ivy

Creating the Queer: Searching for Sexuality in the Early Oregon State Hospital
Sanchez, Jesse

The Campaign of Julius Meier
Tachiyama, Vincent

Shell Shock: A Historical Look at PTSD In Oregonian World War I Veterans
Wagener, Nick

SESSION 5

Session 5.2, 3:10 pm – 4:10 pm, Collins 318
Moderator; Chris Smith
Biology Senior Thesis: Organismal Biology

From Currents to Clasping: Characterizing the Neurons of Taricha Granulosa
Galligar, Ian

Determining the Genetic Differentiation Between Populations of Great Bustards (Otis tarda) in Europe and Asia
Santos, Malia

Genetic Structure of Camassia Species in the Snake River Watershed of Northeastern Oregon and Adjacent Western Idaho
Mortimer, Sebastian

Session 5.3
Moderator; David Altman
Physics Senior Theses

Observing Changes in Force Dependent Kinetics for Myosin VI in a Mutant Associated with Heart Disease
Shafi, Jacob

Analysis of Phagosome Trafficking Data to Examine the Role of Myosin VI in Phagocytosis
McCarthy, Marika

Optimization of Laser Parameters for Ablation and Surface Micro Structuring
Jenkins, Shelbi

The Use of a Nanosecond Pulsed Laser to Conduct Laser-Induced Breakdown Spectroscopy
Warrick, Peter

Session 5.9, 3:10 pm - 4:10 pm, Ford 102
Moderator; Ellen Eisenberg
Buried in the Past: Muffled Voices from the Archives (Continuation of Session 4.9 if needed)
Session 5.10, 3:10 pm - 4:10 pm, Ford 201
Moderator; Don Negri or Pam Moro TBD
Education Policies & Programs

Intangibles: Identifying the Non-quantifiable Outcomes in AVID at a Salem Area High School
Healey, Graham

Cultural Competency Continuing Education Legislation
Khan, Sumaiya

Tough to Swallow: An Investigation of the Variance Encountered When Implementing the Healthy, Hunger-Free Kids Act in a Decentralized School Structure
Saiki, Jacob
**ABSTRACTS**

**Arnold, Emily**  
Session 2.12, 11:10 am - 12:40 pm, HFMA  
**Shaping Japanese Artistic Identity: Intertextuality in Kurosawa's 夢 (Dreams)**  
This presentation focuses on the episode entitled “Crows” in Dreams, a movie by Japanese director, Akira Kurosawa (1910-1998). After providing a brief summary of the film and the “Crows” episode, I will explore Kurosawa’s connections with Vincent van Gogh in order to examine the problematic issue of how “Western” art styles may have influenced the director’s preliminary drawings for this film. To this end, I will interpret the complex intertextuality that informs this episode as a critical commentary offered by Kurosawa on the role played by European art in the shaping of what could be called “Japanese artistic identity.”

**Abend-Goldfarb, Ariana**  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
**Easy, Breezy, Beautiful: Chemicals**  
The variety of chemical ingredients in liquid foundation make-up differs depending on the brand. Therefore, it is important to be aware of the potential hazards of the ingredients we are exposed to by this route. This poster examines key ingredients in three cosmetic brands, including their hazards. The specific foundations presented are Neutrogena, Cover Girl, and Maybelline, which all possess key ingredients that may be harmful to the consumer.

**Aiona, Jade**  
Session 3.3, 12:50 pm - 1:50 pm, Collins 320  
**Observing the Effect of Quantum Weak Measurements on Single Photon Interference**  
The wave-particle duality of light is effective proof of the fundamental assumptions in quantum physics. In examining it, we can further our understanding of theories of quantum mechanics, like Heisenberg’s uncertainty principle. This study examines the effect of weak quantum measurements on single photon interference. A weak measurement is when a quantum phenomenon is measured in such a way that the system does not collapse to a single state. Measurements were taken on single photons that traverse an interferometer to create interference. The effect of the weak measurement on the resulting interference was then analyzed.

**Alcalde, Jenna**  
Session 1.7, 9:30 am -11:00 am, Eaton 211  
**Feminist Activist Fandom: How Nerds are tackling the Big Issues**  
This project examines the Fandom community that has built around TV shows, movies, and other forms of media. I examine how Fandom began through interest around the 1960’s TV program Star Trek and its evolution into today’s large and diverse online community. I also examine the ways in which Fandom’s evolution has resulted in its use of Feminist methodology and has opened up the community as a space of activism.

**Alunan, Ashley**  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
**The Contributions of Alchemy to Modern Chemistry**  
Alchemy, which is the predecessor to chemistry, focused primarily on the transmutation of metals and the attainment of the Philosopher’s stone. Our poster focuses primarily on the contributions alchemy has made to modern chemistry. These contributions include the identification of several elements, the production of acids, the creation of tools and the utilization of several basic chemical processes. Furthermore, we discuss how modern chemists are influenced by the objectives alchemists aimed to accomplish.

**Anderson, Richard**  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
**How MDMA changes the Nuerochemistry of the Brain**  
This poster examines 3,4-methylenedioxy-methamphetamine (MDMA), a psycho-stimulant drug first synthesized by Merck via the bromination of safrole, creating 1(3,4-methylenedioxyphenyl)-2-bromopropane, followed by a reaction with methylamine. MDMA consists of a secondary amine attached to a benzene ring (methamphetamine) with a methylenedioxy group attached. MDMA binds to receptor proteins on brain neurons, inhibiting the reuptake of serotonin and stimulating excess serotonin release. MDMA has also been found to inhibit the metabolism of the neurotransmitters serotonin and dopamine. Excessive long-term use can cause negative effects on the brain and body, yet new studies show that MDMA could be used therapeutically for patients with social anxiety.
Aubert-Vasquez, Diego  
**Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor**  
**An overview of Microbial Fuel Cells**  
Alternative energy sources are in high demand. This poster examines Microbial Fuel Cells (MFC), which are gaining popularity as an emerging technology. MFCs are different from other fuel cells because it uses wastewater from water treatment facilities. Naturally occurring bacteria grown on anodes are used to convert organics found in wastewater into carbon dioxide and water while producing electricity. Traditional fuel cells use expensive and rare metals, such as platinum. This technology is also cheap, which makes it very appealing to many communities who lack the funds to generate clear water and electricity.

Avila, Cristina  
**Session 1.1, 9:30 am - 11:00 am, Collins 205**  
**Minding the Gap: NGOs and Marine Debris Policy in Oregon**  
Marine debris has been accumulating along the Oregon coast, causing the state government to become reliant on nongovernmental organizations (NGOs) to assist with raising awareness and cleaning debris. Three NGOs (Surfrider, Washed Ashore, and SOLVE) were interviewed and analyzed using a modified measure of organizational effectiveness while also applying the Downs Issue Attention Cycle framework to understand marine debris salience in the media. This analysis led to additional insights regarding the development of a “niche theory” of interest group mobilization and support. I conclude that the existence of a variety of NGOs is essential to the salience of marine debris as well as appealing to a variety of individuals.

Avila, Cristina  
**Session 2.1, 11:10 am - 12:40 pm, Collins 205**  
**The Significance of Paleogeography as a Forcing for the Onset of Snowball Earth**  
Abstract: Evidence suggests that glaciation events, during the Neoproterozoic (1000Ma – 540Ma), encompassed the Earth resulting in global glaciation or a Snowball Earth (SBE). The cause of these events are hotly debated, attributing the glaciation to lower concentrations of greenhouse gases such as CO2, methane, and CFC’s (Hoffman and Schragg, et al. 2002). Some literature focuses on Milankovitch cycles and lower solar luminosity (Chandler and Sohl, 2000). For the purpose of this study the significance of paleogeography as a forcing for the SBE was investigated. Using EdGCM and EVA we created maps that explored the initiation of a SBE with modern geography. After inputting SBE climate conditions into a climate modeling simulation that contained modern geography we found that a SBE event could not be initiated. Indicating that paleogeography was a necessary forcing in the initiation of a SBE.

Axtell, Maeve  
**Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor**  
**Crazy as a Painter**  
In history, lead was a product found in many items meant for everyday use, including, but not limited to, makeup, paint, kitchenware, coins, and plumbing pipes. In this poster, we examine the discovery, made in the second half of the twentieth century, that lead was a cause of heavy metal poisoning, which leads to permanent mental and physical damages such as reduced learning abilities in children, high blood pressure, miscarriages, and in extreme cases, death. Products containing lead can still be found today in the United States, specifically in paint and piping in buildings constructed prior to the discovery of the harmful nature of lead.

Ayala, Anna  
**Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor**  
**Methotrexate in Biochemical Pharmacology**  
Methotrexate (C20H22N8O5), is a compound used in chemotherapy, abortions, and the treatment of rheumatoid arthritis and other diseases. It is useful because it is an immunosuppressant and an antimetabolite. It works by inhibiting reactions with folic acid, which are important for DNA and RNA synthesis. This results in cell apoptosis, especially in short lived cells like skin and cancer cells and bone marrow. This poster focuses on how Methotrexates structure influences its interactions within the cell, and how its properties are used in pharmacology.

Barnum, Collin  
**Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor**  
**Silicon: You “Si” it All Around**  
Silicon has a long and rich history and is the second most abundant element in the earth’s crust. Silicon’s abundance and ability to form many different compounds allows it to be relatively cheap and versatile in use. This poster reviews silicon’s many modern
applications, such as its use in electronics, photovoltaic arrays, and other items essential to today’s society. The chemical properties of silicon, such as its semiconductivity, are also discussed. These chemical properties contribute to silicon’s applications in technology, and have helped create the world we live in today.

Becquart, Ninon
Session 3.9, 12:50 pm - 1:50 pm, Ford 102
Cervix and Society: Exploring Hormonal Regulation of Cervical Mucoproteins and Their Role in Contraceptive Efficacy
Progestin, a synthetic hormone found in most contraceptives, partly prevents pregnancy by changing cervical mucus. To better study cervical mucus protein, and subsequently, better determine both contraceptive efficacy and the biochemical changes that occur with hormones, this pilot study aimed to develop human cervical cell cultures to test the working hypothesis that cultured cells are capable of producing mucins in vitro, and that these mucins are hormonally regulated. We present compelling evidence that cervical cell lines are culturable and do produce mucins under these conditions. These findings will lead to further studies developing our in vitro system and enhancing our understanding of the biochemical changes of the cervix that occur with hormones.

Bedolla, Rachel
Session 3.11, 12:50 pm - 1:50 pm, Ford 204
Lesbians in Japan: Identity, Language, and Community
This presentation looks at the use of language choices of gay women in Japan, and what those choices can tell us about identity, power, and community.

Beery, Paul
Session 2.10, 11:10 am - 12:40 pm, Ford 201
Money Wins Out: The Death of Public Financing in the U.S. Presidential Election
The United States has been on a path toward deregulation of campaign finance for nearly 30 years. One of the effects of this movement has been the destruction of public financing in the presidential election, specifically in the past 20 years. I will be examining the causes of the dramatic decline in election subsidies in the U.S., including the increasing role of technology, the polarization of party politics, and an entrenched judicial body. Overall, the death of public financing has ushered in a new era of American politics, one based on financial innovation and mass media appeal.

Bentley, Victoria
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Advantages and Disadvantages of Solid and Liquid Rocket Propellant
We report on differences between solid and liquid rocket propellants, including ammonium nitrate, cyclotrimethylene-trinitramine (RDX), liquid oxygen, and hydrazine. Liquid propellants undergo combustion, followed by decomposition; whereas solid propellants undergo oxidation-reduction reactions, followed by combustion to produce energy. Liquid propellants are more efficient, but also more expensive than solid propellants. In addition, the by-products of liquid propellants are less detrimental to the environment. The similarities and differences, efficiency, environmental impact, and chemical properties of the four selected propellants will be discussed in the context of modern day space delivery vehicles.

Bevens, Milla
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Thermonuclear Fusion
Our presentation aims to educate viewers about the chemistry and potential benefits of thermonuclear fusion. This type of reaction involves the fusion of two hydrogen isotopes to form a helium atom, which in turn produces a substantial amount of usable energy. Currently, magnetic field and laser technologies aim to accomplish fusion in a more efficient manner, to an end of developing a more renewable energy resource. If accomplished, thermonuclear fusion has the potential to become a limitless, cost-effective source of sustainable energy.

Bowton, Maya
Session 1.8, 9:30 am-11:00 am, Eaton 307
Measuring the indirect photolysis rate of brominated estrogens
Halogenated estrogens are a new form of endocrine disrupting chemical that are discharged to natural waters from wastewater treatment plants (WWTPs). Yet their environmental fate is poorly understood. This study examined the removal rate of 17β-
estradiol (E2) and its mono- and di-brominated derivatives (monoBrE2 and diBrE2) by indirect photodegradation. Estrogens in water containing humic acid (5 mg/L) were exposed to natural sunlight, and solar irradiance was tracked using a p-nitroanisole-pyridine (PNA-PYR) actinometer. Our data suggest that the half-life of diBrE2 due to indirect photodegradation (138 min) is 27 times faster than for direct photodegradation.

Bremer, William
Wretched, The Fruit Tart
This is the performance of a play written for the Playwriting class, exploring shock value, the quandary of torture, and the jaded nature of the average audience in relation to modern media and pop culture. I have written the play, Kiah will direct it, Dylan and Sean are actors. The goal is to explore what the play is like on its feet, with blocking, then to take these elements and improve the writing and expand the play further.

Bresnahan, Erin
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Silicon: You “Si” it All Around
Silicon, the second most abundant element in the earth’s crust, has a long and rich history of use. Silicon’s abundance and ability to form many different compounds allows it to be relatively cheap and versatile in use. We review silicon’s many modern applications, such as its use in electronics, photovoltaic arrays, and other items essential to today’s society. We also discuss chemical properties of silicon, such as its semiconductivity. These chemical properties contribute to silicon’s applications in technology, and have helped create the world we live in today.

Bresnahan, Erin
Session 4.5, 2:00 pm - 3:00 pm, Eaton 106
Personality Change and Ideal-Current Discrepancies Across the Study Abroad Experience
Previous research has examined personality change in young adulthood, but little research has investigated the change and interplay of well-being and personality throughout a study abroad period. We collected data from American Studies Program (ASP) students in order to document their perceived and actual change over the course of the ASP. We assessed ASP students in Japan just prior to study abroad and twice during their year at Willamette University. We explored how well-being is related to the discrepancy between ideal and current personality traits. We also examined how these discrepancies change over the course of the study abroad experience.

Brown, Stephanie
Session 2.12, 11:10 am - 12:40 pm, HFMA
For Loathe or Love?
Asexuality as a Critical Paradigm in Degas’ Depictions of Women
The personality of Edgar Degas (1834-1917) has presented a puzzle to art historians for years, especially in regard to his representations of women in intimate attitudes. Are these images a cruel act of hatred against their sex or could they be taken as a sign of sympathy for the early feminist movements of 19th-century France? Degas was obsessed with the female form, but never took a wife. This presentation argues that the recently surfaced cultural acknowledgement of “asexuality” as a behavioral paradigm may bring illuminating insights to the ongoing discussion on Degas’ creative agenda.

Brownlee, Rebecca
Session 1.10, 9:30 am - 11:00 am, Ford 201
Recidivism Variance in Oregon
Nearly 700,000 people are released from American prisons each year. Recidivism rates remain staggeringly high, with 43.3% of those released returning to prison or facing rearrest before they have been out of custody for three years. Prison populations are growing, funding for prison programming is dwindling, and policy makers and politicians are searching for solutions. My research examines this variation in recidivism rates. Why do institutions within Oregon have such different recidivism numbers and why aren’t we learning from best practices?

Buchi, Emily
Session 2.9, 11:10 am - 12:40 pm, Ford 102
Preserving What is Already Gone: Ghost Towns of the Southwest
ABSTRACTS

This project explores the transient nature of resource-dependent communities through black and white photography and ink drawings. It exemplifies through photographs the idea of representational or symbolic space by showing the beauty of past civilizations. I focus on mining towns and cities due to their relatively short life spans. These towns in particular display the power of finite resources in moving communities and shaping human connection with place.

Bulloch, Drew  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
Mustard Gas  
Mustard gas is a chemical weapon that terrorized soldiers during WWI with its ability to destroy DNA in living cells. The development and use of the weapon revolutionized cancer treatment and led to the invention of chemotherapy. The process to make mustard gas from sulfur dichloride and ethylene gas involves four separate chemical reactions. Mustard gas released into the air sinks to the ground causing severe burning of the eyes, skin, and respiratory tract of exposed victims. Improper disposal of the chemical creates problems as it does not naturally occur and the decomposition may take years after disposal.

Cannady, Arianna  
Session 2.13, 11:10 am – 12:40 pm, UC 2nd Floor  
The Advantages and Disadvantages of Solid and Liquid Rocket Propellant  
We report on differences between solid and liquid rocket propellants, including ammonium nitrate, cyclotrimethylene-trinitramine (RDX), liquid oxygen, and hydrazine. Liquid propellants undergo combustion, followed by decomposition; whereas solid propellants undergo oxidation-reduction reactions, followed by combustion to produce energy. Liquid propellants are more efficient, but also more expensive than solid propellants. In addition, the by-products of liquid propellants are less detrimental to the environment. The similarities and differences, efficiency, environmental impact, and chemical properties of the four selected propellants will be discussed in the context of modern day space delivery vehicles.

Caplan, Jack  
Session 2.4, 11:10 am-12:40 pm, Eaton 105  
The Failure of the Western Climate Initiative in Oregon and Beyond  
The Western Climate Initiative of 2007 was designed to implement a cap-and-trade carbon emissions reduction plan across 7 US states along the West Coast and 4 Canadian provinces. The Initiative, carefully put together by the governors of each member state, collapsed just before it could go into effect everywhere but California and Quebec. I examine research and interviews with local lawmakers in the attempt to understand the reasons why such a widely supported environmental effort failed so suddenly. I focus, more specifically, on the problems faced in Oregon and the possibilities developed in California, while exploring more recent efforts to achieve the same goal.

Carr, Hazel  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
Easy, Breezy, Beautiful: CHEMICALS  
The variety of chemical ingredients in liquid foundation make-up differs depending on the brand. Therefore, it is important to be aware of the potential hazards of the ingredients we are exposed to by this route. This poster examines key ingredients in three cosmetic brands, including their hazards. The specific foundations presented are Neutrogena, Cover Girl, and Maybelline, which all possess key ingredients that may be harmful to the consumer.

Carriere, Joseph  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
How MDMA Changes the Neurochemistry of the Brain  
3,4-methylenedioxy-methamphetamine (MDMA) is a psycho-stimulant drug first synthesized by Merck via the bromination of safrole, creating 1(3,4-methylenedioxyphenyl)-2-bromopropane, followed by a reaction with methylamine. MDMA consists of a secondary amine attached to a benzene ring (methamphetamine) with a methylenedioxy group attached. MDMA binds to receptor proteins on brain neurons, inhibiting the reuptake of serotonin and stimulating excess serotonin release. MDMA has also been found to inhibit the metabolism of the neurotransmitters serotonin and dopamine. Excessive long-term use of MDMA can cause negative effects on the brain and body, yet new studies show that MDMA could be used therapeutically for patients with social anxiety.
ABSTRACTS

Carson, Mandy
Session 1.8, 9:30 am - 11:00 am, Eaton 307
Tackling Social Determinants of Health within a Portland Neighborhood Through Community Organizing
An individual’s health is influenced by a combination of the social and economic environment in which they live, the physical environment, and their own individual characteristics and behaviors. We present an analysis of the social determinants of health affecting a neighborhood community surrounding the OHSU Richmond Clinic in Portland, Oregon. Data was gathered via relational meetings with clinic patients, staff, and key community members. It has been established that the lack of affordable housing and the predominance of homelessness are negatively affecting Richmond community members. Short and long term strategies to approach these issues will be explored.

Cartales, Alexis
Session 2.14, 11:10 am - 12:40 pm, Rogers Rehearsal Hall
Five Bagatelles for Clarinet and Piano by Gerald Finzi (clarinet)

Castro, Justin
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
SSRI's: The Chemistry Behind the Most Prescribed Antidepressants
Currently prescribed to 40 million Americans, Selective Serotonin Uptake Inhibitor’s (SSRI's) are the leading treatment for depression. By blocking serotonin reuptake in the nerve synapse, SSRI’s create large responses of serotonin. Though not as potent as other antidepressants, SSRI’s provide fewer side effects than their highly toxic counterparts. By researching the chemical structures of the SSRI’s we can learn about how chemical structure influences chemical properties and effectiveness. This is the case with Escitalopram (Lexapro) and Citalopram (Celexa), which are stereoisomers each with their own unique characteristics. In addition, we discuss the chemical interactions between SSRI’s and other medications.

Chen, Jianing
Session 4.4, 2:00 pm - 3:00 pm, Eaton 105
Human Treatment Towards Animals – From Ethical Theory to Societal Reality
This presentation focuses on animal rights and protection: what do humans owe animals? To what extent do humans have ethical obligations to animals? I consider five ethical theories and four testing methods and analyze current cases from China and the United States.

Clarke, Joseph
Session 3.3, 12:50 pm - 1:50 pm, Collins 320
Modelling Pulsating Stars: How non-linear coupled oscillators can help to understand modes of stellar pulsation
Pulsating variable stars are stars which change in brightness by expanding and contracting. For my research, I modeled pulsating variable stars as coupled, non-linear oscillators. I did this by writing a program which used numerical approximation techniques to solve and plot the differential equations representing the modes of pulsation for the star. In this presentation, I discuss background information of variable stars, how they were modeled, the results of the research and any conclusions which can be drawn from those results.

Cohen, Lucas
Session 4.5, 2:00 pm - 3:00 pm, Eaton 106
The Willamette Experience: How Academic and Social Factors Influence Well-Being
Social involvement and academic achievement have been independently examined in relation to the well-being of college students. However, little research has explored the relationship of their combined influence on well-being. In this study, we examined how social and academic factors correlated to the well-being of college students across two years, analyzing both institutional data and self-reports. Multiple regression was utilized to examine these factors individually and in combination on well-being. Our questions were: How strongly related are the social and academic factors? Do these factors combine to predict well-being? Is perceived or actual academic performance a better predictor?

Cole, William
Session 4.2, 2:00 pm - 3:00 pm, Collins 318
Pollination and oviposition behaviors in Yucca Moth pollinator of Joshua Tree
Joshua Trees are pollinated exclusively by tiny moths, which deliberately pollinate the trees in order to produce seeds for their larvae to eat. The moths’ pollination behavior was first described in 1893, but no observations have been published since. In 2003, it was discovered that Joshua trees are pollinated by two species of moths, Tegeticula antithetica and T. synthetica. I produced the first recorded observations of pollination and oviposition behaviors of T. antithetica, and compared these to the original 1893 account of T. synthetica. I find that the behavior of T. antithetica differs noticeably from its sister species.

Coleman, Samantha
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Cryo Creamery: Cryogenics in Modern Culinary Arts
We describe how liquid nitrogen ice cream is made and focus on the benefits of this process over the typical freezing process. We also review the molecular aspects of freezing and what impacts a substance’s freezing temperature. We also discuss how liquid nitrogen is formed, how liquid nitrogen impacts society, and provide additional facts on its characteristics and structure. Lastly, we explain the history of liquid nitrogen. The use of liquid nitrogen contributes to higher quality ice cream, less power usage during the freezing process, and faster service for ice cream vendors.

Cook, Elizabeth
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Crazy as a Painter
Historically, lead was a product found in many daily use items, including, but not limited to, makeup, paint, kitchenware, coins, and plumbing pipes. In the second half of the twentieth century it was discovered that lead exposure caused heavy metal poisoning. Lead poisoning causes permanent mental and physical damage, including reduced learning ability in children, high blood pressure, miscarriages, and in extreme cases, death. Products containing lead can still be found today in the United States, specifically in paint and piping in buildings constructed prior to the discovery of the harmful nature of lead.

Cook, Gabriel
Session 4.9, 2:00 pm - 3:00 pm, Ford 102
Chinese Doctors in Oregon
I examine original primary sources from the archives concerning Chinese doctors and the development of Chinese Medicine in Oregon in the late 1800s/early 1900s.

Cornwell, Ryan
Session 1.6, 9:30 am - 11:00 am, Eaton 209
Friendship and Failure: Relational Power in Kafka’s The Trial
My project interprets Franz Kafka’s early twentieth century novel The Trial (in English translation) while drawing on the work of French theorist Michel Foucault and his notion of power structuring a “carceral archipelago.” Focusing specifically on interpersonal relationships, friendship and social structure in the text, I seek to explore how the development of industrial capitalism and the resulting flows of modern power function to produce and discipline individualized subjects. Fueled by this line of questioning, I pursue the possibilities of resistance present in the form of Kafka’s novel.

Corpuz, Elizabeth
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
The Chemistry of Fireworks
In this poster, we discuss how chemical processes affect the color of fireworks as well as the properties of common firework components. We use quantum mechanics and electron behavior to describe how fireworks function, compare the chemical properties of luminescence and incandescence, and explain why metallic compounds produce specific colors. We also discuss the chemical reactions of the combustion of explosive black powder and the emission of light. The modern applications and significance of fireworks are explored. Finally, we explore whether the chemical products given off by the fireworks affect human health and the environment.

Cuesta-Torres, Elle
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Methotrexate in Biochemical Pharmacology
Methotrexate (C20H22N8O5), is a compound used in chemotherapy, abortions, and the treatment of rheumatoid arthritis and other diseases. It is useful because it is an immunosuppressant, and an antimetabolite. It works by inhibiting reactions with folic acid,
which are important for DNA and RNA synthesis. This results in cell apoptosis, especially in short lived cells like skin and cancer cells, and bone marrow. This poster focuses on how Methotrexate's structure influences its interactions within the cell and how its properties are used in pharmacology.

Cummins, Anthony  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
Rounding Up Glyphosate  
This poster examines Glyphosate (Roundup), the most widely used herbicide in America which can be found in nearly every home. While glyphosate undoubtedly kills unwanted weeds and shrubs, it could also be killing the humans who use and are exposed to it. Glyphosate can be commercially synthesized via a Mannich Reaction between iminodiacetic acid and phosphoric acid, followed by oxidation. Recent studies have linked its phosphonic acid functional group to carcinogenic properties and cases of endocrine disruption. This news poses a dilemma for large corporations as consumers are confused about whether or not the product is safe to bring into their homes.

Cusick, Meghan  
Session 1.10, 9:30 am - 11:00 am, Ford 201  
The Mogul and the Tea: How the Tea Party Primed a Pro-Donald Electorate  
When real estate mogul Donald J. Trump announced his candidacy for the Republican nomination for President in June of 2015, it was widely considered a joke. Now, he’s leading among every major demographic group polled, and political scientists and analysts are scrambling in their attempts to explain how it happened. For many, the answer lies in the Tea Party, blaming them for creating a pipeline of momentum for Trump. I argue, instead, that the Tea Party is responsible for the political atmosphere in which an electorate is so dissatisfied with government, so ethnocentric, and so ready for radicalism.

Daliana, Roxana  
Session 1.5, 9:30 am - 11:00 am, Eaton 106  
Not All Migrants Are Equal: A Comparative Analysis of the Turkish and Polish Migration Experience in Germany  
Using Migration Systems Theory and the associated Four Stage Model, I compare the currently evolving migration experience of Polish laborers in Germany, beginning after the expansion of the European Union in 2004, with the Turkish migration experience in Germany after World War II. I will analyze differences between these two groups and their experiences to hypothesize the outcome of the Polish migration process in light of the marginalization of the Turkish ethnic minority in contemporary Germany.

Davis, Owen  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
Thermonuclear Fusion  
Our presentation aims to educate attendees about the chemistry and potential benefits of thermonuclear fusion. This type of reaction involves the fusion of two hydrogen isotopes to form a helium atom, which in turn produces a substantial amount of usable energy. Currently, magnetic field and laser technologies aim to accomplish fusion in a more efficient manner, to an end of developing a more renewable energy resource. If accomplished, thermonuclear fusion has the potential to become a limitless, cost-effective source of sustainable energy.

Deely, Jessica  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
The Sun’s the Limit  
Our planet is currently dependent on finite fossil fuels. Photoelectrochemical cells, while still in the developmental stage, are becoming an increasingly likely alternative to fossil fuels. Through electrohydrolysis, these cells split water into its constituent parts, and utilize the hydrogen atoms as a fuel source. In short, photoelectrochemical devices are a viable solution to our current dependence on fossil fuels.

Dell, Rachel  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
The Chemistry of CO Poisoning  
Carbon monoxide (CO), a chemical that bonds to hemoglobin 200 times as well as oxygen, kills up to 500 people per year, and leaves thousands of others in the hospital with severe side effects. CO is formed during combustion of carbon-containing fuels. Carbon monoxide can be hard to detect because it is colorless and odorless. Symptoms of CO poisoning include headache, dizziness, and
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nausea, and they are often confused with symptoms of the flu. When someone is exposed to CO, their levels of oxygen drop dangerously. While treatment of carbon monoxide poisoning is fairly simple, overexposure can have serious consequences.

Dewson, Gabrielle
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
CO poisoning and its effect in the modern society O2
In this presentation we will be examining the effects of carbon monoxide (CO) on the human body. An odorless, tasteless, and initially non-irritating gas, CO is highly undetectable, which is the primary reason it is so dangerous. When exposed to high contents, CO replaces gaseous oxygen (O2) in hemoglobin (a protein that binds to oxygen and distributes it throughout the body) and inhibits O2 from being distributed through the blood. We will also discuss the major impacts CO poisoning has on society and provide effective methods of raising awareness and prevention.

Diego, Aubert-Vasquez
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
An overview of Microbial Fuel Cells
Alternative energy sources are in high demand, and Microbial Fuel Cells (MFC) are gaining popularity as an emerging technology. MFCs are different from other fuel cells because it uses wastewater from water treatment facilities. Naturally occurring bacteria grown on anodes are used to convert organics found in wastewater into carbon dioxide and water while producing electricity. Traditional fuel cells use expensive and rare metals, such as platinum. This technology is also cheap, which makes it very appealing to many communities who lack the funds to generate clear water and electricity.

Doan, Xengie
Session 3.2, 12:50 pm - 1:50 pm, Collins 318
Out on a Limb: TonB Dependent Transporters in Caulobacter crescentus.
Acquisition and movement of nutrients and critical extracellular resources is essential for cellular survival. TonB Dependent Transporters (TBDT) are proteins that facilitate this process through the energy deficient intermembrane space to the cytoplasm in bacteria. In Caulobacter crescentus, different versions of two TBDT genes confer exponentially different survivorship, potentially due to altered substrate transport or specificity. To infer possible substrates, I mapped the genes onto known clusters of TBDTs. Both genes map to unique branches and may transport unique substrates. We are creating mutantations in these genes to empirically identify the substrates and further test the role of transport on survivorship.

Dodd, Amanda
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
The Chemistry of Fireworks
We discuss how chemical processes affect the color of fireworks as well as the properties of common firework components. We use quantum mechanics and electron behavior to describe how fireworks function, compare the chemical properties of luminescence and incandescence, and explain why metallic compounds produce specific colors. We also discuss the chemical reactions of the combustion of explosive black powder and the emission of light. The modern applications and significance of fireworks is also explored. Finally, we explore whether the chemical products given off by the fireworks affect human health and the environment.

Dueñas, Samantha
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Meth: Easy to Make, Easy to Abuse
In this poster, we discuss the availability of methamphetamines (meth), long-term implications of meth abuse, and the chemistry behind it. The main component in meth is pseudoephedrine, a common ingredient in cold medicines accessible at any drugstore. Meth is a very dangerous and extremely addictive substance. Meth can alter the abuser’s brain chemistry causing psychosis, impaired memory, and extreme paranoia. Meth abuse also results in loss of muscle, bone density, and decreased blood flow. The results of meth usage are very dangerous to the user and those around them.

Easley, Isabel
Session 1.10, 9:30 am - 11:00 am, Ford 201
Negligence in the Negev: A Documentarian Perspective of an Unrepresentable Atrocity
Land disputes between the Bedouin people and the state of Israel have been happening since the birth of Israel in 1948. In order to legally displace the Bedouin population, Israel devised legislation that would forcibly remove Bedouins from the Negev Desert. This
legislation was called the Prawer-Begin Plan. Due to the continued displacement of the Bedouin people as justified by the plan, the medium of documentary for digital activism has become a way to inform a western audience about atrocities overseas. In this study, I have selected three distinct artifacts that represent three main sources of digital activism; news, transnational non-profits and well-known film makers. The documentaries seek to establish a western audience and to inform them about the human rights violations occurring in the Negev Desert. While a noble effort, I critique the ways in which they silence the Bedouin population; an already marginalized

Edgerton, Elizabeth
Session 2.12, 11:10 am - 12:40 pm, HFMA
Local Looks:
Photographic Portraits and the Question of the Paulus Studio in Salem
This presentation focuses on the four major portraiture styles used by Otto Paulus in his Salem-based studio and compare them to existing portraiture types both in painting and photography. The talk also addresses an important matter related to the attribution of these photographs. Scholar Kurt Johnson previously attributed the large collection of studio portraits in the Paulus Collection to Otto Paulus. However, further research has shed significant doubt on this attribution, as Otto was one of six brothers, at least two of whom were also photographers. In re-examining the portraiture collection, an analysis of the portrait styles and subjects will be made in an attempt to re-attribute the portraits and to explore the techniques of the Paulus studio.

Elchinoff, Alexandra
Session 2.8, 11:10 am - 12:40 pm, Eaton 307
Madame Bovary Panel (working title)
My presentation analyzes Charles Bovary's perspective and his representation as a cuckold in Flaubert's Madame Bovary. I argue that Charles' reality and understanding of Emma and their marriage is opposite Emma's.

Ervin, Jamie
Session 2.8, 11:10 am - 12:40 pm, Eaton 307
Reading Between the Lines: Phenomenology and Madame Bovary
I discuss the intentional and successful structure of Flaubert classic work of realist literature, Madame Bovary. Through the intersection of semiology and phenomenology I evaluate the relationship between the artist and the individual experiencing the artwork.

Espinoza, Karen
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
The Contributions of Alchemy to Modern Chemistry
Alchemy is the predecessor to chemistry, focused primarily on the transmutation of metals and the attainment of the Philosopher's stone. This poster focuses primarily on the contributions alchemy has made to modern chemistry: the identification of several elements, the production of acids, the creation of tools, and the utilization of several basic chemical processes. Furthermore, we discuss how modern chemists are influenced by the objectives alchemists aimed to accomplish.

Ewers, Veronica
Session 1.8, 9:30 am - 11:00 am, Eaton 307
The World of Medical Interpreters
As the US receives a large influx of immigrants and refugees with limited English proficiency, the need for interpreters in any field are absolutely necessary. I focus specifically on medical interpretation, through participant observation in my training to become a certified interpreter and in job shadowing experienced interpreters. I examine medical interpreters' influence on doctor-patient relations, overall cultural competency, and professional formation.

Falvey, Will
Session 2.5, 11:10 am-12:40 pm, Eaton 106
Racism in Revolutionary Cuba
Modern Cuba hosts a form of racism far more complex than that which we see in the United States. In spite of its slave society status as of the turn of the 20th century, most Cubans (of all complexions) will tell you that racism does not exist on the island. Though academics often herald Cuba as a racial utopia, racism and racial discrimination persist today. I explore Cuba's post-colonial legacy,
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1958 Revolution, and reform following its Special Period in the '90s as building blocks for modern Cuba's socio-economic reality along racial lines.

Farr, Jaide
Session 2.7, 11:10 am - 12:40 pm, Eaton 211
An Ethnography of Unpreparedness
In the last two years, there has been increased attention given to the potential for a major earthquake and the potential devastating affects it could have on the Northwest. I conducted community-based ethnographic interviewing with pharmacists and Marion County employees working with emergency preparedness and emergency management to assess perceptions of emergency risks, emergency preparedness completed, and constraints preventing people from engaging in preparedness. I report on opportunities for both pharmacists and county workers to improve their preparedness, specifically including increased communication between parties to ensure that responsibilities during emergency situations are clearly delineated.

Fawcett, Carli
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Ethics of Chemistry: Sarin gas and the biochemical effects of chirality
This presentation investigates the physical and chemical properties of Sarin gas, its synthesis, and how it reacts in the human body. Sarin was originally developed as a pesticide by WWII Nazi Germany and was later utilized as a chemical weapon. The nerve agent is synthesized by reacting methylphosphonicdiflouride and isopropyl alcohol producing two chiral forms of Sarin that react differently in the human body; one that inhibits to acetylcholinesterase from stopping muscle contraction and one that has no effect. I further investigate how the chirality of Sarin influences biochemical processes, and how this nerve agent raises ethical questions in chemistry.

Fletcher, Darren
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
How MDMA Changes the Neurochemistry of the Brain
3,4-methylenedioxy-methamphetamine (MDMA) is a psycho-stimulant drug first synthesized by Merck via the bromination of safrole, creating 1(3,4-methylenedioxyphenyl)-2-bromopropane, followed by a reaction with methylamine. MDMA consists of a secondary amine attached to a benzene ring (methamphetamine) with a methylenedioxy group attached. MDMA binds to receptor proteins on brain neurons, inhibiting the reuptake of serotonin and stimulating excess serotonin release. MDMA has also been found to inhibit the metabolism of the neurotransmitters serotonin and dopamine. Excessive long-term use can cause negative effects on the brain and body, yet new studies show that MDMA could be used therapeutically for patients with social anxiety.

Fong, Amanda
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Sulfur Dioxide in Acid Rain
When Sulfur (S) is exposed to air through the combustion of fossil fuels, it reacts with Oxygen (O) to form sulfur dioxide (SO2). The SO2 oxidizes, forming a sulfate ion (SO42). SO42 reacts with water to form sulfuric acid (H2SO4), which falls to earth as acid rain. Because H2SO4 is a strong acid, it dissociates completely into H+ and SO42- ions, impacting the environment and damaging buildings. Acid rain also affects civilization and wildlife. For society’s health, these chemical findings will help us reduce damage done to respiratory systems and decrease health problems related to air pollution from acid rain.

Foster, Lana
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Microbial Fuel Cells
Alternative energy sources are in high demand, and Microbial Fuel Cells (MFC) are gaining popularity as an emerging technology. MFCs are different from other fuel cells because they use wastewater from water treatment facilities. Naturally occurring bacteria grown on anodes are used to convert organics found in wastewater into carbon dioxide and water while producing electricity. Traditional fuel cells use expensive and rare metals, such as platinum. This technology is also cheap, which makes it very appealing to many communities that lack the funds to generate clear water and electricity.

Fredenburg, Peter
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
DDT: Chemical Significance and Historical Background
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We present on 1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane (DDT), along with the historical significance, global issues, and environmental interactions of the chemical. DDT has been used in many applications: as an agricultural pesticide, fighting disease, and consumer use during the 1940’s and 50’s. We explore the synthesis of DDT and the interactions of its metabolites (DDD and DDE) with the environment. The chemistry of DDT identifies the chemical interactions with the environment and exposed organisms; along with exposing detrimental health and environmental effects that harmed the world after its prolonged use in the mid 20th century.

Fujwara, Trisha  
Session 2.5, 11:10 am-12:40 pm, Eaton 106  
Is China doing good? Their role in foreign aid  
In this project, I examine and analyze China’s increased role in giving foreign aid to developing countries and its impact on the global community. I look at China’s role in Africa and Latin America to determine whether or not its foreign aid is helpful or harmful to recipient countries as well as discuss if its foreign aid policies raise any concern for the global community, by applying the theories of realism, liberalism, and the concept of ‘soft power.’

Galligar, Ian  
Session 5.2, 3:10 pm - 4:10 pm, Collins 318  
From currents to clasping: characterizing the neurons of Taricha granulosa  
We are interested in how neurons and hormones mediate behavioral changes. Taricha are an ideal model system because much is known about hormonal control of behaviors, and the brain region involved, the rostromedial reticular formation (rmRf). Using electrophysiology, I investigated the intrinsic properties of rmRf neurons. This is part of a larger goal establishing the rmRf as a viable model system for investigating neurophysiological mechanisms contributing toward behaviors. With the patch-clamp method, I recorded excitatory post-synaptic currents of rmRf neurons before, during, and after the perfusion of a potassium channel blocker to assess the current response to a canonical drug stimulus.

Gangstad, Erin  
Session 1.7, 9:30 am - 11:00 am, Eaton 211  
Not Even Once: Affective Appeals and Public Feeling in The Montana Meth Project  
This project builds upon the interdisciplinary literature of affect to analyze four commercials produced by the Montana Meth Project in 2011. The visual rhetoric and narrative structures used in the commercials, which are notable for their graphic imagery, will be used to explore what affective appeals in persuasive media indicate about public feeling. Focusing on affects of fear and disgust, The Montana Meth Project others drug users and promotes a persuasive, emotional discourse of addiction. The significant barriers for addicts, produced by continued instances of othering and the proliferation of a dominant discourse, will be explained.

Garcia Servin, Brenda  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
Cryo Creamery: Cryogenics in Modern Culinary Arts  
We describe how liquid nitrogen ice cream is made and focus on the benefits of this process over the typical freezing process. We also review the molecular aspects of freezing and what impacts a substance’s freezing temperature. We also discuss how liquid nitrogen is formed, how liquid nitrogen impacts society, and its characteristics and structure. Lastly, we explain the history of liquid nitrogen. The use of liquid nitrogen contributes to higher quality ice cream, less power usage during the freezing process, and faster service for ice cream vendors.

Garrison, Kristin  
Session 1.12, 9:30 am - 11:00 am, HFMA  
Purposefully Unfinished: Rethinking the Structural and Conceptual Boundaries of Artworks  
What makes a work of art complete or incomplete? What about works that appear unfinished, yet have been deemed complete by their creators? Whether the reason is personal, political or based on aesthetic preferences, the unfinished aspects of many art pieces make them an important subject of study. This presentation aims to look at those works that could be considered “purposefully unfinished” in the attempt to better understand how this classification changes the ways in which these pieces are interpreted.
Genena, Yasmine  
Session 1.5, 9:30 am - 11:00 am, Eaton 106  
The Philippines Out-Migration Push and Pull Factors  
I examine the economic gains and social costs associated with the migration of labor in the Philippines. I explore the market forces of push and pull factors that imply benefits for sending and receiving countries. I also examine ways in which this extended out-migration of human capital interfered with social and human capital development. I will address the question, namely, how has this extended out-migration impacted the relative social position of these migrants when they return home, based on a critical application of the neoclassical economic theory.

Gill, Elizabeth  
Session 2.4, 11:10am-12:40pm, Eaton 105  
“Turning out the Grassroots”: Refining Public Engagement in Environmental Policy Making  
How can an average person influence environmental policy making? To answer this question we draw on 21 in-depth, semi-structured interviews with environmental activists, lobbyists, and legislative staff members at the state level. We find that public activism has a role to play in creating an environmental controversy. We discuss email activism effectiveness and also detail the continued importance of personal communication in lobbying beyond email templates generated by environmental groups. We argue that personal stories that indicate authentic motivations to address environmental problems are another aspect of the strategic avoidance of contentious politics.

Gray, Tanner  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
Testing for Performance Enhancing Drugs  
The use of Performance Enhancing Drugs (PEDS) is cause for controversy in the sports world. Doping is the administration of any substance foreign to the body taken with the intention of increasing an athlete’s performance competition in an artificial and unfair manner. There are a variety of methods to test for PEDS in an athlete’s system; our presentation will be focusing on the isotope method which is a test performed to determine if an abnormal steroid profile is due to administration of steroids. This information has a large impact on the sports community, ensures a fair playing field, and keeps athletes safe.

Guimond, Austin  
Session 2.1, 11:10 am - 12:40 pm, Collins 205  
Comparative Modeling of CH14 and CO2 Positive Feedbacks  
Significant studies have shown the impact that man-made emissions have on Earth’s climate. Apart from elevated temperatures, higher levels of CO2 create positive feedbacks including reduced ice albedo and increasing evaporation, both contributing to additional warming. However, CO2 is not the only greenhouse gas that has the potential to contribute to climate change. Methane is a potent greenhouse gas with 30% greater warming potential than CO2 (Howarth Et al 2011). Based on the potency of methane, we can predict that doubling or tripling methane would have a more noticeable effect than the same change of CO2. Using the modeling software EdGCM, global climate models were constructed examining the effects of doubling and tripling CO2 and CH4. The global temperature averages, planetary albedo and potential evaporation were measured. Using graphs and global distribution models, EdGCM showed that unlike our predictions, CO2 had a more significant impact on temperature and positive feedbacks compared to methane. This an unexpected finding based on the potency of methane. Future studies will be used that utilize modeling software that more accurately focuses on methane impacts instead of specifically climate change through CO2.

Guimond, Austin  
Session 4.2, 2:00 pm - 3:00 pm, Collins 318  
Sequencing and Analysis of the Joshua tree (Yucca brevifolia s.l.) Chloroplast Genome  
Yucca brevifolia and Yucca jaegariana are sister species of Joshua tree. Previous analyses have been unable to identify the age of their common ancestor to determine an accurate timeline for divergence. Using leaf tissue samples from across the range of both species, forty-eight samples were selected for genome sequencing based on the quality of the DNA extraction. These samples were analyzed using NextGen sequencing on an Illumina HiSeq2500 platform. Sequenced data was processed using a UNIX based pipeline generating 48 genome assemblies. Future studies can more accurately estimate the divergence time between these species using these constructed chloroplast sequences.
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Gul, Yasmin
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Carbon Nanotubes
Carbon nanotubes (CNTs) are cylinders of carbon atoms that have significant properties like mechanical strength, high thermal conductivity, and electrical conductivity. The exact process through which CNTs are formed is not yet understood, but methods of synthesis include chemical vapor deposition, arc discharge, and laser ablation. Chemical vapor deposition is the most popular way to produce CNTs efficiently. CNTs could have a fundamental impact on society due to their unique characteristics. Currently, CNTs are primarily used for structural reinforcement. In the future, CNTs can potentially be used to improve filtration, batteries, electronics, structural reinforcements, fabrics, or treatment of neurological disorders.

Gwilym Tso, Alana
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Meth: Easy to Make, Easy to Abuse
Our presentation will expand on how accessible methamphetamines (meth) are, the long-term results of using meth, and the chemistry behind it. Meth is a very dangerous and an extremely addictive substance, because how easily accessible it is. The main component in meth is pseudoephedrine, a common ingredient in cold medicine that is easy available at any drugstore. Results of meth usage are very dangerous to the user and those around them. Meth can alter the abuser’s brain chemistry causing psychosis, impaired memory, and extreme paranoia. It damages the abuser’s health causing serious conditions: loss of muscle, bone density, and low blood flow.

Habicht, Elizabeth
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
CO poisoning and its effect in the modern society
In this project, we will be examining the effects of carbon monoxide (CO) on the human body. An odorless, tasteless, and initially non-irritating gas, CO is highly undetectable, which is the primary reason it is so dangerous. When exposed to high contents, CO replaces gaseous oxygen (O2) in hemoglobin (a protein that binds to oxygen and distributes it throughout the body) and inhibits O2 from being distributed through the blood. Our project also seeks to both discuss the major impacts CO poisoning has on society and provide effective methods of raising awareness and prevention.

Haddad, Jihan
Session 3.15, 12:50 pm - 1:50 pm, Pelton Theatre, Acting Studio
Alive and Well
As performance artists, we tackle many controversial subjects dealing with race, gender, sentiment, relationships, and many others. Along with literature from other performance artists and scholars, much of the performance content is extrapolated from the artists themselves. In this presentation remounts and reworks a previous performance which explored grief through abstracted movement, verse, and sound. The presentation aims to explore how one can make personal experiences applicable to a wide range of audiences which will, in turn, reflect on the universality of theatre.

Hagarty, Austin
Session 3.3, 12:50 pm - 1:50 pm, Collins 320
Characterizing Pulsation Modes in Variable Stars Using a Multi-color Analysis
Variable stars are stars that change in brightness over time. Observations were collected in the summer of 2015 in an attempt to characterize the pulsation modes of the variable star GSC 04257-00471, or CephVar. The goal of this study was to classify the fundamental modes at which Cephvar oscillates by observing the star in different color filters. After analyzing the data, we were able to see that CephVar oscillates in two independent radial pulsation modes as well as one non-radial mode. Preliminary results indicate that this method is a viable way to characterize pulsation modes of a variable star.

Haky, Lauren
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
CO poisoning and its effect in the modern society O2
This poster examines the effects of carbon monoxide (CO) on the human body. An odorless, tasteless, and initially non-irritating gas, CO is highly undetectable, which is the primary reason it is so dangerous. When exposed to high contents, CO replaces gaseous oxygen (O2) in hemoglobin (a protein that binds to oxygen and distributes it throughout the body) and inhibits O2 from being
distributed through the blood. Our project also seeks to both discuss the major impacts CO poisoning has on society and provide effective methods of raising awareness and prevention.

**Hall, Madison**  
*Session 2.14, 11:10 am - 12:40 pm, Rogers Rehearsal Hall*  
*Chrysalis Song Cycle by Dylan Librande (soprano)*

**Hallsted, Jonathan**  
*Session 4.3, 2:00 pm - 3:00 pm, Collins 320*  
*Characterization and optimization of a rubidium magneto-optical trap for the photoassociation of rubidium calcium dimers*  
Our group is working toward the photoassociation of RbCa dimers inside an optical dipole trap which will be loaded from overlapping rubidium and calcium magneto-optical traps (MOTs). These dimers fall under the category of alkali metal/alkaline earth dimers, which have both permanent electric and magnetic dipole moments. I am currently setting up the electronics to optimize and characterize the rubidium MOT through fluorescence and absorption images. In this talk I give a brief introduction to cooling and trapping atoms and present our data on cooled rubidium atoms.

**Hamer, Wil**  
*Session 4.3, 2:00 pm - 3:00 pm, Collins 320*  
*Calculating Variation in the Hubble Constant Using Galaxy Distance and Redshift Data*  
The rate at which the universe is expanding is quantified through the value of the Hubble constant. Though the universe is modeled as homogeneous and isotropic, this simplification breaks down on smaller scales due to agglomeration of matter. The more mass a region of space contains, the stronger gravitational force it exerts, counteracting the expansion of the universe. Regions with mass densities above or below the universal average will expand at differing rates. By looking at galaxy data, we determined the rate of expansion of space in various regions, and thus the variation in the Hubble constant.

**Hansen, Cassandra**  
*Session 1.1, 9:30 am - 11:00 am, Collins 205*  
*Controls on Weathering in the Ponil Creek Watershed, New Mexico*  
The amount of carbon dioxide (CO2) in the atmosphere has exerted a primary control on climate over geologic time. Silicate weathering transfers CO2 from the atmosphere to rocks on geologic timescales, thereby influencing global climate. Here I quantify chemical weathering in the Ponil Creek watershed and determine the influence of lithology, hydrology, and natural disturbance on this flux. Chemical weathering fluxes, determined by alkalinity and discharge, were the greatest in areas disturbed by fire and flood. The amplitude of seasonal and decadal disturbance overpowered typical long-term controls on weathering such as lithology.

**Hansen, Cassandra**  
*Session 2.1, 11:10 am - 12:40 pm, Collins 205*  
*Evaluating Changes in Aridity Due to Climate Change in the American Southwest and Middle East*  
Two regions of particular interest to the climate change debate are the American Southwest and the Middle East, as they have a similar desert aridity and latitudinal location. Mapping the change in precipitation minus evaporation of initial and final model output data from the IPCC using EdGCM can provide predictions to the changes in aridity that might occur based on present and future anthropogenic emissions. The model predicted that aridity would decrease in the regions due to changes in extreme monsoon precipitation. This is in contrast to prior modeling and current observed drought climates showing the need for increased research.

**Hansen, Jeremy**  
*Session 4.5, 2:00 pm - 3:00 pm, Eaton 106*  
*The Willamette Experience: How Academic and Social Factors Influence Well-Being*  
Social involvement and academic achievement have been independently examined in relation to the well-being of college students. However, little research has explored the relationship of their combined influence on well-being. In this study, we examine how social and academic factors correlated to the well-being of college students across two years, analyzing both institutional data and self-reports. Multiple regression was utilized to examine these factors individually and in combination on well-being. Our questions were: How strongly related are the social and academic factors? Do these factors combine to predict well-being? Is perceived or actual academic performance a better predictor?
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Hart, Kiah
Session 2.15, 11:10 am - 12:40, Pelton Theatre, Putnam Studio
Three Times a Lady
Three Times a Lady is a short play that takes place in a heightened reality. Confined to the kitchen of the dysfunctional couple Linda and Jim depression, abuse, and the decisions we make in an attempt to heal are explored.

Hartnell, Gabriel
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Mustard Gas
Mustard gas is a chemical weapon that terrorized soldiers during WWI with its ability to destroy DNA in living cells. The development and use of this weapon also revolutionized cancer treatment and led to the invention of chemotherapy. The process to make mustard gas from sulfur dichloride and ethylene gas involves four separate chemical reactions. Mustard gas released into the air sinks to the ground causing severe burning of the eyes, skin, and respiratory tract of exposed victims. Improper disposal of the chemical creates problems as it does not naturally occur and the decomposition may take years after disposal.

Harvill, Rachel
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Testing for Performance Enhancing Drugs
Doping is the administration of any substance foreign to the body taken with the intention of unfairly increasing performance in competition. The use of Performance Enhancing Drugs (PEDS) is cause for controversy in the sports world. There are a variety of methods to test for PEDS in an athlete's system; we focus on the isotope method which is a test performed to determine whether an abnormal steroid profile is due to administration of steroids. This information has a large impact on the sports community, ensures a fair playing field, and keeps athletes safe.

Healey, Graham
Session 5.10, 3:10 pm - 4:10 pm, Ford 201
Intangibles: Identifying the Non-quantifiable Outcomes in AVID at a Salem Area High School
This project seeks to explore and evaluate AVID (Advancement Via Individual Determination) at a Salem area high school. AVID is a college readiness program designed to support first-generation prospective college students. I use ethnographic and qualitative methods in researching the roles of students, teachers, and administrators of AVID to understand where AVID succeeds in its goals and to discover areas where AVID may be improved or expanded. My ultimate goal is to share my research with AVID teachers, coordinators, and administrators so that they have the tools to improve upon this important program.

Helgeson, William
Session 3.14, 12:50 pm - 1:50 pm, Rogers Rehearsal Hall
Conducting Internship: Earth Song by Frank Ticheli
A performance of Frank Ticheli's 'Earth Song' by the Willamette University Chamber Choir, conducted by Will Helgeson. The performance will be preceded by a brief speech on the experience of the conducting internship as well as on the music during the presentation.

Hempleman, Julie
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Ethics of Chemistry: Sarin Gas and the Biochemical Effects of Chirality
We investigate the physical and chemical properties of Sarin gas, its synthesis, and how it reacts in the human body. Sarin was originally developed as a pesticide by WWII Nazi Germany and was later utilized as a chemical weapon. The nerve agent is synthesized by reacting methylphosphonicdifluoride and isopropyl alcohol producing two chiral forms of Sarin that react differently in the human body; one that inhibits acetylcholinesterase from stopping muscle contraction and one that has no effect. Further exploration will investigate how the chirality of Sarin influences biochemical processes, and how this nerve agent raises ethical questions in chemistry.

Herr, Kathryn
Session 3.2, 12:50 pm - 1:50 pm, Collins 318
The Mystery of Mucoidy: The Caulobacter crescentus EPS layer provides bacteriophage resistance.
ABSTRACTS

Viral infection of bacteria by bacteriophage is often lethal. Bacteria have evolved specific defense mechanisms against viral infection, such as the secretion of extracellular polysaccharides (EPS) by Caulobacter crescentus. We found that the snot-like layer of EPS gives cells a ‘mucoid’ phenotype which also provides resistance to infection by bacteriophage CR30. Even cells that produce a small amount of EPS appear to be resistant to infection. However, it is not yet clear what the minimal EPS requirement for this resistance is. Thus, we are quantifying EPS production in cells with various resistance phenotypes using negative stain fluorescent microscopy and dry mass analysis.

Herrera, Nathan  
**Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor**  
**SSRI's: The Chemistry Behind the Most Prescribed Antidepressants**  
Currently prescribed to 40 million Americans, Selective Serotonin Uptake Inhibitor’s (SSRI's) are the leading treatment for depression. By blocking serotonin reuptake in the nerve synapse, SSRI’s create large responses of serotonin. Though not as potent as other antidepressants, SSRI’s provide fewer side effects than their highly toxic counterparts. By researching the chemical structures of the SSRI’s, we can learn about how chemical structure influences chemical properties and effectiveness. This is the case with Escitalopram (Lexapro) and Citalopram (Celexa), which are stereoisomers each with their own unique characteristics. In addition, we discuss the chemical interactions between SSRI’s and other medications.

Hiatt, Kyly  
**Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor**  
**Cryo Creamery**  
We describe how liquid nitrogen ice cream is made and focus on the benefits of this process over the typical freezing process. We also review the molecular aspects of freezing and what impacts a substance’s freezing temperature. We also discuss how liquid nitrogen is formed, how liquid nitrogen impacts society, and provide additional facts on its characteristics and structure. Lastly, we explain the history of liquid nitrogen. The use of liquid nitrogen contributes to higher quality ice cream, less power usage during the freezing process, and faster service for ice cream vendors.

Higa, Kaylen  
**Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor**  
**Acid Rain**  
When Sulfur (S) is exposed to air through the combustion of fossil fuels, it reacts with Oxygen (O) to form sulfur dioxide (SO2). The SO2 oxidizes, forming a sulfate ion (SO42). SO42 reacts with water to form sulfuric acid (H2SO4), which falls to earth as acid rain. Because H2SO4 is a strong acid, it dissociates completely into H+ and SO42- ions, impacting the environment and damaging buildings. Acid rain also affects civilization and wildlife. For society’s health, these chemical findings will help us reduce damage done to respiratory systems and decrease health problems related to air pollution from acid rain.

Hinton, Samuel  
**Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor**  
**The Advantages and Disadvantages of Solid and Liquid Rocket Propellant**  
We report on differences between solid and liquid rocket propellants, including ammonium nitrate, cyclotrimethylene-trinitramine (RDX), liquid oxygen, and hydrazine. Liquid propellants undergo combustion, followed by decomposition; whereas solid propellants undergo oxidation-reduction reactions, followed by combustion to produce energy. Liquid propellants are more efficient, but also more expensive than solid propellants. In addition, the by-products of liquid propellants are less detrimental to the environment. The similarities and differences, efficiency, environmental impact, and chemical properties of the four selected propellants will be discussed in the context of modern day space delivery vehicles.

Hladick, Bethany  
**Session 2.10, 11:10 am - 12:40 pm, Ford 201**  
**The Demise of a Representative Democracy: The United States’ Failure to Federalize Universal Voter Register**  
This project analyzes the history of voter registration in the United States to explain why a system of universal voter registration has failed to be enacted at the federal level. If the right to vote is one of the most fundamental rights in a democracy, how is it the case that one in three voters are eligible yet unregistered? The intricacies of voter registration rarely take center stage in election debates, yet the opportunity to register is at the heart of whether or not individuals have the right to participate in politics.
Hochstetler, Clara  
Session 4.5, 2:00 pm - 3:00 pm, Eaton 106  
**Personality Change and Ideal-Current Discrepancies Across the Study Abroad Experience**  
Previous research has examined personality change in young adulthood, but little research has investigated the change and interplay of well-being and personality throughout study abroad experiences. We collected data from American Studies Program (ASP) students to document their perceived change over the course of the ASP. We assessed ASP students prior to their departure and twice during their year here at Willamette. We explore how well-being and self-esteem are related to the discrepancy between ideal and current personality traits. We also examine how this discrepancy changes over the course of the study abroad experience.

Holt, Alida  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
**Chemical Detection of Performance Enhancing Drugs**  
Doping is the administration of any substance foreign to the body taken with the intention of unfairly increasing performance in competition. The use of Performance Enhancing Drugs (PEDS) is cause for controversy in the sports world. There are a variety of methods to test for PEDS in an athlete's system; we focus on the isotope method which is a test performed to determine whether an abnormal steroid profile is due to administration of steroids. This information has a large impact on the sports community, ensures a fair playing field, and keeps athletes safe.

Huber, Daniel  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
**DDT: Chemical Significance and Historical Background**  
We present on 1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane (DDT), along with the historical significance, global issues, and environmental interactions of the chemical. DDT has been used in many applications: as an agricultural pesticide, fighting disease, and consumer use during the 1940's and 50's. We explore the synthesis of DDT and the interactions of its metabolites (DDD and DDE) with the environment. The chemistry of DDT identifies the chemical interactions with the environment and exposed organisms; along with exposing detrimental health and environmental effects that harmed the world after its prolonged use in the mid 20th century.

Humphreys, Thelonious  
Session 2.9, 11:10 am - 12:40 pm, Ford 102  
**Modeling Sustainability Movements in Fine Dining**  
I examine the means by which change is brought about in the fine-dining community and how these changes impact broader cultural, agricultural, and sustainability practices. Through observations, interviews, and examinations of the opinions of experts in the food industry, I will use the recent development of the New Nordic culinary movement as a case study to better understand the impacts elite restaurants have and how their ideas are spread. Specifically, I will look at the impacts of the Danish restaurant Noma and examine the spread of its ideas through the opening of elite restaurants by former Noma chefs. I will draw parallels between this method of bringing about change through the propagation of ideas by former chefs to the “school” analogy of communal activism developed by sociologist Jade Aguilar in order to better understand this phenomenon. Finally, by examining the state of fine dining and sustainability movements within elite restaurants, I will attempt to project future changes this model could bring about to society at large and the impacts these changes could have.

Huomo, Linnea  
Session 3.6, 12:50 pm - 1:50 pm, Eaton 209  
**I Had a Dream About You**  
Much of the work I have been creating is related to the body; to visceral experiences and how they affect the body, as well as the way dreams transverse that physical landscape and move the work into a psychological landscape. I hope to convey the dichotomy of the way the body responds to reality and the more abstract realm of the mind.

Immer, Lucas  
Session 2.10, 11:10 am - 12:40 pm, Ford 201  
**Immigration and the Labor Market**  
The United States is a nation of immigrants. However, our nation’s economic, social and political life is characterized by a persistent anti-immigrant sentiment. Much of the negativity directed at immigrants comes from economic anxiety: fears that an influx of immigrants limits opportunities for American workers. This research attempts to critique this narrative, examining the effects of
immigration on American workers who are particularly vulnerable to job loss from migrant competition. It concludes that immigration is a net economic benefit, and we must attempt to bolster employment opportunities in these vulnerable sectors, while maintaining a generally liberal and inclusive immigration policy.

Jackson, Hadley
Session 2.10, 11:10 am - 12:40 pm, Ford 201
American Indians and the Voting Rights Act
The Voting Rights Act of 1965 has been commended for its positive effect on African American turnout. Comparatively, little is known about its effect on the political engagement of American Indians. Voter turnout rates in counties with large Indian populations have continued to lag behind those of the general population since the passage of the Voting Rights Act. Through case studies of four Indian Reservations in Montana and South Dakota, I explore the possible explanations for low voter turnout among American Indians.

Jacobsen, Daphne
Session 2.9, 11:10 am - 12:40 pm, Ford 102
Exploring Creativity
College Colloquium Presentation

Jacoby, Kelci
Session 4.9, 2:00 pm - 3:00 pm, Ford 102
Dining in Valhalla: an analysis of Norwegian immigrants’ ethnic identity in Oregon, 1880-1945
In this presentation, I will examine original sources from the archives in relationship to the transformation of the ethnic identity of Norwegian immigrants and Norwegian-Americans from 1880-1945.

Janitz, Tyler
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Rounding Up Glyphosate
Glyphosate (Roundup) is the most widely used herbicide in America and can be found in nearly every home. While glyphosate undoubtedly kills unwanted weeds and shrubs, it could also be killing the humans who use and are exposed to it. Glyphosate can be commercially synthesized via a Mannich Reaction between iminodiacetic acid and phosphoric acid, followed by oxidation. Recent studies have linked its phosphonic acid functional group to carcinogenic properties and cases of endocrine disruption. This news poses a dilemma for large corporations as consumers are confused about whether or not the product is safe to bring into their homes.

Jenkins, Shelbi
Session 3.3, 12:50 pm – 1:50 pm, Collins 320
Optimization of laser parameters for ablation and surface micro structuring
In this study, laser parameters were optimized to create the cleanest ablation site in the shortest amount of time. The variable parameters were the polarization of the laser beam, the power of the beam, and the number of pulses hitting the surface of the material. The ablation process can be used to create microstructures in the surface of material that can alter frictional, optical, and hydrophobic properties. These microstructures can be used to further advancement in industry and research areas.

Johnson, Julianne
Session 1.8, 9:30 am - 11:00 am, Eaton 307
The Non-Cancer Cluster of West Salem: Unanswered Questions
A cancer cluster demonstrates a statistically unexpected number of cancer diagnoses over a geographical area and period of time. These concentrated pockets of cancer victims lead to the discussion of an environmental cause. Although some investigations have identified specific causes, a large majority of cluster sources remain unknown. In West Salem there has been an elevated number of children and teens diagnosed with osteosarcoma, a rare form of cancer. This has not been acknowledged as an official cluster by the health authorities. We evaluate the tensions and differences in perception associated with identifying and understanding cancer clusters in society.
ABSTRACTS

Jones, Julia
Session 1.12, 9:30 am - 11:00 am, HFMA
Dissecting Thomas Eakins: An Investigation of Art and Anatomy in The Gross Clinic
In 1876, Thomas Eakins produced his most famous work, The Gross Clinic, in Philadelphia, which exhibited unique medical subject matter incorporating Eakins' knowledge of both medicine and art. A relationship can be established between his emphasis on anatomical study and his construction of realistic figures. “The Anatomy of Thomas Eakins” demonstrates that Eakins’ dramatic realism can be attributed to his study of anatomy and medicine, specifically in The Gross Clinic. This presentation explores the many implications that The Gross Clinic has for the art world, medical community, political climate, and the city of Philadelphia toward the end of the nineteenth century.

Jorgensen, Claire
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Ocean Acidification
Since the start of the industrial revolution, anthropogenic carbon dioxide emissions have increased. Higher emissions of CO2 coincide with higher CO2 absorbance and increase ocean acidity. This chemical change in water prevents shell growth that is essential to survival for many organisms. It directly affects an organism's ability to form a calcium carbonate shell. We examine global historic CO2 emissions to quantify the total effect on oceans, and the rate at which the ocean is changing. We also analyze how these changes in the ocean’s chemistry have affected and could further affect large ecosystems and the human population.

Kekiwi, Erika
Session 1.1, 9:30 am - 11:00 am, Collins 205
Impacts of Sea-Level Rise on Maui, Hawai’i
Sea-level rise (SLR) scenarios were compared to quantify the effects of SLR on Maui, Hawai’i. Using ArcGIS, inundation maps were created for three scenarios. Layers were added to identify protected areas, agricultural land, and buildings within inundation zones. Animal husbandry was the most impacted agricultural land use. Urban areas were found to be at risk under the median scenario. Two protected areas, Kanaha Pond Wildlife Sanctuary and Kealia Pond Wildlife Refuge would be completely inundated under at least one scenario. This study identifies the negative impacts of SLR on both human and environmental systems on Maui.

Kekiwi, Erika
Session 2.1, 11:10 am - 12:40 pm, Collins 205
Effects of Climate Change on Coral Reef Mortality
Anthropogenic climate change is undoubtedly, the most prevalent issue facing our planet. Coral reefs provide, among other things, protection to coastlines, habitat for marine species, an abundant fishery, and income for people. However, climate change is putting coral reefs at risk. Increased ocean temperatures, ocean pollution from terrestrial runoff, and sea-level rise are major factors that affect coral reef mortality. This paper looks at future projections of ocean temperature, precipitation coupled with surface runoff, and sea-level rise and what that means for coral reefs. This paper uses the EdGCM database to run models that project future climate scenarios that directly affect coral reef mortality. It also uses data from the IPCC report on projected sea-level rise at the end of the century. Through synthesis of the data and relevant scientific literature, the results suggest that anthropogenic climate change will have adverse effects on coral reef mortality. These effects will filter throughout the ecosystem and economy that coral reefs are a centerpiece in. If business carries on as usual with respect to anthropogenic climate change, there will be a total collapse of near shore fisheries that are connected to coral reefs.

Kerth, Jonathan
Session 4.5, 2:00 pm - 3:00 pm, Eaton 106
Sexual Dysfunction Moderates the Association Between Sexual and Relationship Satisfaction
Numerous studies have examined the relationship between sexual and relational satisfaction, but most include either clinical samples (individuals with significant levels of sexual dysfunction), or non-clinical samples. Limited research is available that tests whether there may be a notably different strength of association between sexual and relational satisfaction depending on whether a clinical or non-clinical sample is used. The current analysis combines 5 previously collected data sets that include both clinical non-clinical samples. Results suggest that sexual satisfaction exhibited a stronger association with relational satisfaction when participants reported high levels of sexual function than when they reported low levels of sexual function.
ABSTRACTS

Khan, Sumaiya
Session 5.10, 3:10 pm - 4:10 pm, Ford 201
Cultural Competency Continuing Education Legislation
Cultural competency (CC) is the process by which individuals and systems respond respectfully and effectively to people of all cultures, languages, economic statuses, races, ethnic backgrounds, disabilities, religions, genders, sexual orientations and other characteristics in a manner that recognizes, affirms and values the worth of and preserves the dignity of individuals, families, and communities. I discuss the importance of healthcare professionals receiving cultural competency continuing education in order to provide the best possible care to diverse populations, and look into legislation in Oregon, California, and Washington regarding CC continuing education.

Klug, Maia
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Vitamin C
Vitamin C - ascorbic acid - serves as a fundamental supernutrient that can overcome, prevent, and improve a variety of illnesses. It primarily functions as an antioxidant that prevents free radicals, molecules with unpaired electrons, from altering biological structures. Too many free radicals can weaken cells making them vulnerable to pathogens and even cause cancer. With studies being released each year demonstrating its effectiveness in fighting disease, vitamin C proves that its chemical properties can play a major role in making it an effective antidote. Therefore, the purpose of this presentation is to summarize and discuss vitamin C pertaining to human health.

Knight, Anastasis
Session 2.1, 11:10 am - 12:40 pm, Collins 205
Eccentricity and Climate Change
Being able to understand Earth’s long-term climatic changes can help us understand the way the climate is changing today. Eccentricity is the longest of the three Milankovitch Cycles that determines the shape of Earth’s orbit around the sun. This study focuses on changes in eccentricity and whether or not it is responsible for the glacial interglacial periods over the past million years. EdGCM was used to model an eccentricity of 0.0 being completely circular, and 0.06 being completely orbital. Today’s eccentricity of 0.0167 was also run. Unfortunately, the models were not run long enough to see significant changes, but there is a slight warming trend for the elliptical orbit as opposed to the circular, pointing to the fact that the Earth was closer to the sun during its elliptical orbit. The increased warming points to increased solar radiation and hence close to the sun in its orbit. Milankovitch cycles change Earth’s orbit over long period of time, but are valuable in the understanding of both Earth’s Paleoclimatology and the future climate of Earth.

Kobayashi, Brandon
Session 4.2, 2:00 pm - 3:00 pm, Collins 318
Variations in Style Length and its effect on Seed Survival in Joshua trees (Yucca spp)
Joshua trees and Yucca moths share an unusual obligate pollination mutualism. T. synthetica, the moth with the longer ovipositor, primarily pollinates Yucca brevifolia the tree with the longer style. T. antithetica, the moth with shorter ovipositor, primarily pollinates Yucca jaegeriana the tree with the shorter style. Past research has shown that a weak positive correlation between style length and the number of fruit matured. I hypothesize that style length plays a role in determining the number of surviving seeds per fruit. I dissected fruit to assess seeds produced versus seeds eaten and compare this with variation in style length.

Koester, Michael
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Mustard Gas
Mustard gas is a chemical weapon that terrorized soldiers during WWI with its ability to destroy DNA in living cells. The development and use of the weapon revolutionized cancer treatment and led to the invention of chemotherapy. The process to make mustard gas from sulfur dichloride and ethylene gas involves four separate chemical reactions. Mustard gas released into the air sinks to the ground causing severe burning of the eyes, skin, and respiratory tract of exposed victims. Improper disposal of the chemical creates problems as it does not naturally occur and the decomposition may take years after disposal.

Kong, Rachel
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Chemical Detection of Performance Enhancing Drugs
The use of Performance Enhancing Drugs (PEDS) in the sports world is controversial. Doping is the administration of any foreign substance to the body taken with the intention of increasing, in an unfair manner, performance in competition. There are a variety of methods to test for PEDS in an athlete's system; we focus on the isotope method which is a test performed to determine if an abnormal steroid profile is due to administration of steroids. This information has a significant impact on the sports community, ensures a fair playing field, and keeps athletes safe.

Krebs, Veronique  
**Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor**  
**How Fireworks Work**  
We discuss how chemical processes affect the color of fireworks as well as the properties of common firework components. We use quantum mechanics and electron behavior to describe how fireworks function, compare the chemical properties of luminescence and incandescence, and explain why metallic compounds produce specific colors. We also discuss the chemical reactions of the combustion of explosive black powder and the emission of light. The modern applications and significance of fireworks is also explored. Finally, we explore whether the chemical products given off by the fireworks affect human health and the environment.

Kuhn, Lyra  
**Session 3.6, 12:50 pm - 1:50 pm, Eaton 209**  
**Things That Never Can Come Back**  
My novella takes the form of a cartography of a girl named Petra. She explores her identity through her friendship with another girl and through visionary dreams that include themes of female friendship, dislocation of the self, witchery, and illusion.

Lancaster, Reanna  
**Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor**  
**The Chemistry of Carbon Monoxide**  
Carbon monoxide (CO), a chemical that bonds to hemoglobin 200 times better than oxygen, kills up to 500 people per year, and leaves thousands of others in the hospital with severe side effects. CO is formed during combustion of carbon-containing fuels. Carbon monoxide can be hard to detect because it is colorless and odorless. Symptoms of CO poisoning include headache, dizziness, and nausea, and they are often confused with symptoms of the flu. When someone is exposed to CO, their levels of oxygen drop dangerously. While treatment of carbon monoxide poisoning is fairly simple, overexposure can have serious consequences.

Lankford, Jamila  
**Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor**  
**CO poisoning and its effect in the modern society**  
This poster examines the effects of carbon monoxide (CO) on the human body. An odorless, tasteless, and initially non-irritating gas, CO is highly undetectable, which is the primary reason it is so dangerous. When exposed to high contents, CO replaces gaseous oxygen (O2) in hemoglobin (a protein that binds to oxygen and distributes it throughout the body) and inhibits O2 from being distributed through the blood. Our project also seeks to both discuss the major impacts CO poisoning has on society and provide effective methods of raising awareness and prevention.

Lantz, Nicholas  
**Session 3.6, 12:50 pm - 1:50 pm, Eaton 209**  
**Expanding our World’s Issues: Readings of Visionary Fiction**  
Visionary Fiction, as defined by Walidah Imarisha, "pulls from real life experience, inequalities, and movement building to create innovative ways of understanding the world around us..." in the hopes of engaging what could be, what is, and what we can do to change it. Nicholas Lantz seeks to embody this in his work, seeking human consciousness and desire, along with exploitation and invasion, in the vastness of a fantastical multiverse.

Lea, Hannah  
**Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor**  
**Silicon: You “Si” it All Around**  
Silicon has a long and rich history and is the second most abundant element in the earth’s crust. Silicon’s abundance and ability to form many different compounds allows it to be relatively cheap and versatile in use. This poster reviews silicon’s many modern applications, such as its use in electronics, photovoltaic arrays, and other items essential to today’s society. The chemical properties
of silicon, such as its semiconductivity, are also discussed. These chemical properties contribute to silicon’s applications in technology, and have helped create the world we live in today.

LeFebvre, Crystal
Session 3.6, 12:50 pm - 1:50 pm, Eaton 209
Readings from Penumbra, a Dark Fantasy Novel
Readings from Penumbra, a dark fantasy novel that takes on themes of absolution, free will, and moral identity through an anti-heroine’s struggle to find rest and resolution with herself and her blood-wrought past. At its core, Penumbra is also an exploration of humanity, what comprises it and what it means to be human when immortality gets in the way. Is humanity a matter of blood or of values, or actions or thoughts, or is it an illusion all together? It all begins, and ends, with death.

Lehman, Suzannah
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
The Chemistry of CO Poisoning
Carbon monoxide (CO), a chemical that bonds to hemoglobin 200 times better than oxygen, kills up to 500 people per year, and leaves thousands of others in the hospital with severe side effects. CO is formed during combustion of carbon-containing fuels. Carbon monoxide can be hard to detect because it is colorless and odorless. Symptoms of CO poisoning include headache, dizziness, and nausea, and they are often confused with symptoms of the flu. When someone is exposed to CO, their levels of oxygen drop dangerously. While treatment of carbon monoxide poisoning is fairly simple, overexposure can have serious consequences.

Lenhard, Brent
Session 3.6, 12:50 pm – 1:50 pm, Eaton 209
Dust
A reading of a novel in progress, tentatively titled "Dust," which explores the relationship between the genres of fantasy, speculative fiction, and science fiction. The blend of genre helps blur the lines of probability and improbability, presenting the reader with a world that is both present and future, reality and fantasy. The novel focuses heavily on the function of technology and interpersonal power dynamics, social and spatial mobility, and perhaps most importantly, the struggle for survival.

Lilly, Isabelle
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Easy, Breezy, Beautiful: Chemicals
The variety of chemicals ingredients in liquid foundation make-up differs depending on the brand. Given this it is important to be aware of the potential hazards of the ingredients we are exposed to by this route. This poster will examine key ingredients in 3 cosmetic brands, including their hazards. The specific foundations presented will be Neutrogena, Cover Girl, and Maybelline, which all possess key ingredients that may be harmful to the consumer.

Linden, Cassidy
Session 2.7, 11:10 am - 12:40 pm, Eaton 211
The Center for Hope and Safety: An Evaluative Ethnography
The Center for Hope and Safety (CHS) is a women’s crisis center in Salem that provides services and support to victims and survivors of domestic violence and sexual assault. This presentation summarizes results of three months of ethnographic research at the CHS focused specifically on the stated aims and implementation of the Center’s volunteer advocate training program. The study examines how CHS advocates are taught specific styles of communication and choices of language to “empower” victims and survivors of domestic and sexual violence. The project also considers how CHS has adapted over time to changing social and legal demands and the need for greater professionalism and accountability.

Logan, Cassie
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
The Chemistry of Fireworks
We discuss how chemical processes affect the color of fireworks as well as the properties of common firework components. We use quantum mechanics and electron behavior to describe how fireworks function, compare the chemical properties of luminescence and incandescence, and explain why metallic compounds produce specific colors. We also discuss the chemical reactions of the combustion of explosive black powder and the emission of light. The modern applications and significance of fireworks is also explored. Finally, we explore whether the chemical products given off by the fireworks affect human health and the environment.
ABSTRACTS

Louangrath, Jonny
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Carbon Nanotubes
This poster examines carbon nanotubes (CNTs), which are cylinders of carbon atoms that have significant properties like mechanical strength, high thermal conductivity, and electrical conductivity. The exact process through which CNTs are formed is not yet understood, but methods of synthesis include chemical vapor deposition, arc discharge, and laser ablation. Chemical vapor deposition is the most popular way to produce CNTs efficiently. CNTs could have a fundamental impact on society due to their unique characteristics. Currently, CNTs are primarily used for structural reinforcement. In the future, CNTs can potentially be used to improve filtration, batteries, electronics, structural reinforcements, fabrics, or treatment of neurological disorders.

Maciag, Klaudia
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
The Chemistry of CO Poisoning
This poster examines carbon monoxide (CO), a chemical that bonds to hemoglobin 200 times as well as oxygen, kills up to 500 people per year, and leaves thousands of people in the hospital with severe side effects. CO is formed during combustion of carbon-containing fuels. Carbon monoxide can be hard to detect because it is colorless and odorless. Symptoms of CO poisoning include headache, dizziness, and nausea, and they are often confused with symptoms of the flu. When someone is exposed to CO, their levels of oxygen drop dangerously. While treatment of carbon monoxide poisoning is fairly simple, overexposure can have serious consequences.

Major-McDowall, Ivy
Session 4.9, 2:00 pm - 3:00 pm, Ford 102
Hearing Chinese Voices of Salem Under the 1882 Exclusion Act
In 1880, there were 89 people recorded as Chinese in Salem. However, by 1940 the number dropped to 23. This leads one to wonder about the lifestyle and treatment of Chinese people in the Salem area. The presentation focuses on the effects of the Chinese Exclusion Act on the Salem area and how the federal act impacted Chinese immigration, employment, housing, and lifestyle. It is based on many original sources from the archives, such as census, property/rental, employment, and income records, city directories, and newspaper articles dating between 1880 to 1920. From these sources, the presentation aims to examine whether the displacement of Chinese businesses and people from Liberty and Commercial Streets (thus resulting in the disappearance of Salem's Chinatown) was due to the Chinese Exclusion Act or from anti-Chinese sentiment. It will also reflect upon ways in which the Chinese community or individuals resisted the Exclusion Act and the racial discrimination in Salem.

Malvey, Makenzi
Session 2.1, 11:10 am - 12:40 pm, Collins 205
Eccentricity and Climate Change
Being able to understand Earth’s long-term climatic changes can help us understand the way the climate is changing today. Eccentricity is the longest of the three Milankovitch Cycles that determines the shape of Earth’s orbit around the sun. This study focuses on changes in eccentricity and whether or not it is responsible for the glacial interglacial periods over the past million years. EdGCM was used to model an eccentricity of 0.0 being completely circular, and 0.06 being completely orbital. Today’s eccentricity of 0.0167 was also run. Unfortunately, the models were not run long enough to see significant changes, but there is a slight warming trend for the elliptical orbit as opposed to the circular, pointing to the fact that the Earth was closer to the sun during its elliptical orbit. The increased warming points to increased solar radiation and hence close to the sun in its orbit. Milankovitch cycles change Earth’s orbit over long period of time, but are valuable in the understanding of both Earth’sPaleoclimatology and the future climate of Earth.

Manoucheri, Abbi
Session 3.15, 12:50 pm - 1:50 pm, Pelton Theatre, Acting Studio
Lipstick (A "Feminist" Play)
This presentation is a staged reading of a play previously composed for the course Introduction to Creative Writing: Playwriting taught by Prof. Andrea Stolowitz. The play started as an exploration of what it is like to be a struggling young, female artist, and turned into a Post-Modern, meta-theatrical experiment about the author's problems with modern feminism. The aim of this reading is to get audience feedback and further work on the play so it could be produced fully at a later date. Cooper Whittemore will act as director/artistic sounding board, Mary Rose Branick and Nickey Olsen will read.
Marquez, Juan
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Aderall presentation
Attention Deficit Hyperactivity Disorder (ADHD) affects many people in the United States and is an important societal issue. The prescription drug Adderall is one of the most common forms of treatment for this disorder. Adderall is both effective but also subject to abuse. We explain how Adderall is synthesized through the reductive amination of a ketone, direct displacement of a leaving group by an amine, and by nitro alkane addition followed by reduction of the nitro group. We have found that proper diagnosis is critical to Adderall abuse but is not the sole factor responsible.

Marquez, Monique
Session 2.1, 11:10 am - 12:40 pm, Collins 205
The Significance of Paleogeography as a Forcing for the Onset of Snowball Earth
Abstract: Evidence suggests that glaciation events, during the Neoproterozoic (1000Ma – 540Ma), encompassed the Earth resulting in global glaciation or a Snowball Earth (SBE). The cause of these events are hotly debated, attributing the glaciation to lower concentrations of greenhouse gases such as CO2, methane, and CFC’s (Hoffman and Schragg, et al. 2002). Some literature focuses on Milankovitch cycles and lower solar luminosity (Chandler and Sohl, 2000). For the purpose of this study the significance of paleogeography as a forcing for the SBE was investigated. Using EdGCM and EVA we created maps that explored the initiation of a SBE with modern geography. After inputting SBE climate conditions into a climate modeling simulation that contained modern geography we found that a SBE event could not be initiated. Indicating that paleogeography was a necessary forcing in the initiation of a SBE.

Matsuura, Stephanie
Session 3.2, 12:50 pm - 1:50 pm, Collins 318
A bioassay for hormonal contaminants in the water: oocyte maturation in the frog Xenopus laevis (italicize genus species)
Animal reproduction requires healthy fertilizable eggs. Egg formation occurs when steroid hormones, such as progesterone, bind to full grown oocytes to induce meiotic maturation. Many man-made chemicals used in pharmaceuticals have hormone-like properties. These enter water systems through wastewater treatment facilities and can disrupt normal hormone-regulated events of aquatic organisms. I examined the effects of two commonly used pharmaceuticals, levonorgestrel, a synthetic progesterone, and dexamethasone, an anti-inflammatory, on frog (Xenopus laevis) oocyte maturation. Oocytes were exposed to these chemicals and percentage maturation was determined. In addition proteins involved in maturation were examined by Western blot analysis. Results will be presented.

McCarthy, Marika
Session 3.3, 12:50 pm – 1:50 pm, Collins 320
Analysis of phagosome trafficking data to examine the role of myosin VI in phagocytosis
Retinal pigment epithelial (RPE) cells are responsible for the internalization and disposal of waste shed by rod and cone cells in the human eye. The molecular motor protein myosin VI is hypothesized to be involved in this process, due to the unique way it walks along the filamentous protein actin. Building on previous in vivo studies, we used new techniques like disrupting the actin network in order to confirm the conclusions previously reached regarding myosin VI and its capacity to traffic waste within cells.

McClelland, Madeline
Session 1.1, 9:30 am - 11:00 am, Collins 205
Ecological Restoration in the Context of Climate Change: How are we managing our prairies in the Pacific Northwest?
While climate change is discussed in the literature on prairie restoration, it is not clear that management plans address climate change. After reviewing 40 plans from the region, I found that most do not. I propose that they lack a discussion of climate change because 1) not enough is known about the impacts of climate change, 2) climate change is not viewed as an immediate threat, and 3) the public and policy do not connect climate change and restoration.

McKenzie, Andringa
Session 4.1, 2:00 pm - 3:00 pm, Collins 205
The Effects of Marijuana Smoking on Aerobic Fitness
Studies are inconclusive regarding effects of marijuana smoking on pulmonary function. Marijuana’s effect on aerobic fitness has not been researched. The purpose of this study was to assess effects of long term marijuana smoking on pulmonary ventilation and...
aerobic fitness. College age males (n=11) participated in this study. Spirometry was used to obtain ventilatory parameters and the YMCA cycle test to predict VO2Max. Results were compared across marijuana smokers and nonsmokers. No significant differences were found (p< .05). We conclude that recent legislation legalizing recreatonal marijuana throughout the United States warrants more research on its health effects.

McSwain, Kyle  
Session 4.3, 2:00 pm - 3:00 pm, Collins 320  
Title: Using An All Sky Camera to Observe Fireballs and Characterize Near-Earth Meteoroids  
Fireballs are bright events caused when meteoroids incinerate in the Earth’s atmosphere. Recently, all sky video cameras have become an effective and economical method for astronomers to gather and analyze fireball data. I worked on a project to construct and utilize such a setup in Salem. Few observations are currently being collected in Oregon, so each additional camera aids coverage. In this presentation, I discuss the pertinent hardware and construction of the camera housing as well as explain the controlling software. Furthermore, I present a summary of our observed fireballs and initial conclusions.

Meier, Erica  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
Ocean Acidification  
Since the start of the industrial revolution, anthropogenic carbon dioxide emissions have increased. Higher emissions of CO2 coincide with higher CO2 absorbance and increased ocean acidity. This chemical change in water prevents shell growth that’s essential to survival for many organisms. It directly affects an organism’s ability to form a calcium carbonate shell. We examine global historic CO2 emissions in order to quantify the total effect on oceans, and the rate at which the ocean is changing. We also analyze how these changes in the ocean’s chemistry have affected and could further affect large ecosystems and the human population.

Meng, Ying  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
Methotrexate in Biochemical Pharmacology  
Methotrexate (C20H22N8O5), is a compound used in chemotherapy, abortions, and the treatment of rheumatoid arthritis and other diseases. It is useful because it is an immunosuppressant, and an antimetabolite. It works by inhibiting reactions with folic acid, which are important for DNA and RNA synthesis. This results in cell apoptosis, especially in short lived cells like skin and cancer cells, and bone marrow. This project will focus on how Methotrexates structure influences its interactions within the cell, and how its properties are used in pharmacology.

Mercer, Jemma  
Session 1.12, 9:30 am - 11:00 am, HFMA  
My Beautiful Witch:  
Salvator Rosa’s Images of Sorcery and Witchcraft  
Salvator Rosa (1615-1673) has been recognized throughout history as a rebellious and ambitious artist, who repeatedly defied the norms of society with his behavior and his art. During his time in Florence, Rosa created several images of witches and sorcery, despite them being a rare subject matter for the time. This presentation examines specific paintings from this decade in Rosa’s life, in accordance with his contemporary poetry and satires, to understand the motivation behind his unusual artistic choices.

Meza-Torres, Jessica  
Session 1.6, 9:30 am - 11:00 am, Eaton 209  
On Cyborgs and Essentialism: Creating Communities on Paper and in Practice  
I analyze Octavia’s Brood: Science Fiction Stories from Social Justice Movements, an anthology edited by Marlee Brown and Walidah Imarisha. I am interested in this text’s use of science fiction as a vehicle for imagining a more just society, especially considering the long tradition of science fiction being a white male dominated genre. My project seeks to make explicit how literature shapes the political/social, and more specifically how science fiction can help in our efforts for liberation. The stories address topics like police brutality, gentrification, and representation, but through the use of sci-fi tropes like cyborgs, time-travel, and alternate universes, the contributors to this anthology are given more space and freedom to imagine what a just society looks like.
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Mihalovich, Amanda
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Ethics of Chemistry: Sarin gas and the biochemical effects of chirality
This presentation explores the physical and chemical properties of sarin nerve agent and its synthesis. Originally developed as a pesticide, this molecule was further developed in Nazi Germany and utilized as a chemical weapon by various countries. Sarin is synthesized by combining methylphosphonic difluoride and isopropanol alcohol, resulting in two alternate, chiral forms of the chemical. In the body, this compound inhibits muscle function by binding to acetylcholinesterase, the enzyme responsible for regulating muscle contraction. Sarin raises important questions on the ethics of chemistry.

Moag, Athena
Session 2.8, 11:10 am - 12:40 pm, Eaton 307
Mimicry and Masculinity in Flaubert’s Madame Bovary
This project discusses the text of Madame Bovary by Gustave Flaubert. The lack of a distinct narrator creates a unique take on Emma Bovary’s physical body that is a window into masculinity and the male gaze. Employing Homi Bhabha’s theory of mimicry, I examine how Emma’s masculine traits manifest themselves and how mimicry subverts the oppressive ideals of masculinity at the time.

Monical, Olivia
Session 4.6, 2:00 pm - 3:00 pm, Eaton 209
The Threshold: Fantastical Transformations
My strange short stories explore and seek to balance realism and dream-like surrealist writing. The stories display characters that undergo metamorphosis-like transformations as a result of the trauma that humans experience making life both treacherous and fantastically mysterious. At times we feel hopeless, and these stories are ways I seek to reconcile the paradoxes, challenges, and hidden things that change us. I hope they can be small reminders in this struggle— that beautiful things come from darkness.

Montemayor, Madison
Session 4.5, 2:00 pm - 3:00 pm, Eaton 106
The Willamette Experience: How Academic and Social Factors Influence Well-Being
Social involvement and academic achievement have been independently examined in relation to the well-being of college students. However, little research has explored the relationship of their combined influence on well-being. In this study, we examined how social and academic factors correlated to the well-being of college students across two years, analyzing both institutional data and self-reports. Multiple regression was utilized to examine these factors individually and in combination on well-being. Our questions were: How strongly related are the social and academic factors? Do these factors combine to predict well-being? Is perceived or actual academic performance a better predictor?

Montoya, Henry
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
ADHD
Attention Deficit Hyperactivity Disorder (ADHD) affects many people in the United States and is an important societal issue. The prescription drug Adderall is one of the most common forms of treatment for this disorder. Adderall is both effective and subject to abuse. We explain how Adderall is synthesized through the reductive amination of a ketone, direct displacement of a leaving group by an amine, and by nitro alkane addition followed by reduction of the nitro group. We find that proper diagnosis is critical to Adderall abuse but is not the sole factor responsible.

Moore, Cheyenne
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Ozone in the Troposphere: “Good up high, bad nearby”
Ozone is a highly reactive gas composed of three oxygen atoms (O3). Depending on where it is in the atmosphere, ozone affects life on Earth in either good or bad ways. Ozone in the stratosphere filters out and protects us from UV rays, but ground level ozone (ozone in the troposphere) is a harmful pollutant and can cause a variety of health issues as well as negatively affect vegetation and ecosystems. Due to the way ground level ozone is formed, it is of more concern during the summer months and in areas with high levels of human activity.
**Morgan, Naomi**  
**Session 2.7, 11:10 am - 12:40 pm, Eaton 211**  
Marion County Maternity Case Management: An Analysis of Subjectivity and Subversion  
This project aims to explore and evaluate the Marion County Health Department’s Maternity Case Management (MCM) program. It pays special attention to the role that maternal subjectivity plays in both client and nurse understandings of pregnancy and prenatal health. Qualitative research methods such as semi-structured interviews were used to prioritize participant understandings of health and pregnancy. Topics ranging from the biomedical construction of a mind-body dualism to the commodification of pre-natal health care will be discussed.

**Mortimer, Sebastain**  
**Session 5.2, 3:10 pm - 4:10 pm, Collins 318**  
Genetic Structure of Camassia Species in the Snake River Watershed of Northeastern Oregon and adjacent Western Idaho  
The genus Camassia, endemic to North America, has been problematic for systematists as many taxa are morphologically, ecologically, and genetically similar. Studies have resolved major clades within Camassia, but there remain contentious populations within the Snake River drainage. Some populations of whose placement within cpDNA and nrDNA phylogenies is inconsistent have also been independently identified as different taxa within Camassia. Microsatellite markers were used to determine the genetic structure of a troublesome subset of the genus Camassia to complement a morphological analysis ensuring a robust and biologically relevant species delimitation in northeastern Oregon and Western Idaho.

**Munoz, Jessica**  
**Session 1.1, 9:30 am - 11:00 am, Collins 205**  
Deconstructing Willamette University Student Opinion of Genetically Modified Food  
Following the release of genetically modified foods in the early 2000’s, many surveys examined public opinion of GMOs. However, little attention was paid to collegiate opinion. Early surveys also failed to reveal the thinking behind consumer fear. The current survey involved undergraduate students from Willamette University, to voice a forgotten population. One hundred and fifty students took an online survey about GMOs. A random sample of nine students participated in follow-up interviews. Gender and race strongly correlated with GMO stance. Overall, participants supported the science behind GMOs but were critical of Monsanto’s monopoly and control of the technology.

**Nagata, Michelle**  
**Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor**  
Sulfur Dioxide and Acid Rain  
When Sulfur (S) is exposed to air through the combustion of fossil fuels, it reacts with Oxygen (O) to form sulfur dioxide (SO2). The SO2 oxidizes, forming a sulfate ion (SO42). SO42 reacts with water to form sulfuric acid (H2SO4), which falls to earth as acid rain. Because H2SO4 is a strong acid, it dissociates completely into H+ and SO42- ions, impacting the environment and damaging buildings. Acid rain also affects civilization and wildlife. For society’s health, these chemical findings will help us reduce damage done to respiratory systems and decrease health problems related to air pollution from acid rain.

**Nakama-Fukuhara, Tiffany**  
**Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor**  
Gold nanoparticles in cancer thermal therapy  
Nanotechnology has become a powerful tool in cancer treatments. Due to their minuscule size, gold nanoparticles have been found to successfully attach to the EGFR proteins of cancer cells upon intravenous injection. Subsequently, thermal therapy can be used to excite the gold nanoparticles by infrared radiation and surface plasmon resonance. This results in thermal explosion, which causes damage and elimination of the cancer cells. Because non-invasive methods can be applied in heating the nanoparticles, risk factors surrounding cancer treatments are greatly minimized. Ultimately, gold nanoparticles provide the best defense against cancer cells and are continuously under research in clinical trials.

**Nakata, Devin**  
**Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor**  
Mustard Gas  
Mustard gas is a chemical weapon that terrorized soldiers during WWI with its ability to destroy DNA in living cells. The development and use of this weapon also revolutionized cancer treatment and led to the invention of chemotherapy. The process to make mustard gas from sulfur dichloride and ethylene gas involves four separate chemical reactions. Mustard gas released into the air
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sinks to the ground causing severe burning of the eyes, skin, and respiratory tract of exposed victims. Improper disposal of the chemical creates problems as it does not naturally occur and the decomposition may take years after disposal.

Nance, Keeton
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Rounding Up Glyphosate
Glyphosate (Roundup) is the most widely used herbicide in America and can be found in nearly every home. While glyphosate undoubtedly kills unwanted weeds and shrubs, it could also be killing the humans who use and are exposed to it. Glyphosate can be commercially synthesized via a Mannich Reaction between iminodiacetic acid and phosphoric acid, followed by oxidation. Recent studies have linked its phosphonic acid functional group to carcinogenic properties and cases of endocrine disruption. This news poses a dilemma for large corporations as consumers are confused about whether or not the product is safe to bring into their homes.

Newman, Nick
Session 3.14, 12:50 pm - 1:50 pm, Rogers Rehearsal Hall
The Autumn Wind
I taught the music and will be conducting "The Autumn Wind" a choral setting of a Steve Sabol poem, composed by Willamette alum Derek Sup. This piece was written for my senior conducting project.

Newman, Samuel
Session 1.5, 9:30am-11:00 am, Eaton 106
Drowning in Apathy: International Inaction and Possible Solutions for Environmentally-Displaced People
As time progresses climate change will further increase desertification of once fertile land, raise sea level, and intensify natural disaster, which will increase the amount of environmentally-displaced people. Currently, these individuals are not considered "refugees" and therefore not given international protection. Additionally, researchers unanimously agree that poorer nations will disproportionately bear higher amounts of environmentally-displaced people. This elicits the question, how should environmentally-displaced people be supported by the international community if they can’t fiscally be supported by their home countries? This paper will argue, within the theoretical framework of collective action, that finding solutions to the problem of environmentally-displaced population is in every country’s interests, not just those being affected, because people forced to relocate due to changes in the environment are projected to be in the majority of countries that have a coastline within the next 50 years.

Nord, Hannah
Session 3.11, 12:50 pm - 1:50 pm, Ford 204
Caitlyn Jenner as an oxymoronic persona
Caitlyn Jenner is currently regarded as the most famous transgender woman in the present-day. I will explore why her figure is also one of the most controversial in the media, using the rhetorical theories of persona and oxymoron. Using my research conducted for Senior Thesis, I will reveal how and why Jenner presents performative contradictions such as being a conservative transgender woman, privileged minority, and moreover, having the rhetorical power to be simultaneously empowering and disempowering.

Orme, Cora
Session 1.6, 9:30 am - 11:00 am, Eaton 209
Cultural Fluidity and Resistance to Xenophobic Nationalism in Helen Oyeyemi’s White is for Witching
My project contributes to the ongoing discourse surrounding postcolonial relations through a careful investigation of Helen Oyeyemi’s novel, White is for Witching. Using feminist and psychoanalytic theories, I examine how xenophobic narratives of English nationalism render Othered bodies uncanny in order to preserve an imposed sense of national identity and cultural purity. I analyze how these uncanny others navigate the politics of home on a hegemonic and personal level. I hope to reveal that even individuals that represent imposed Englishness fail to fit this unrealistic ideal of national identity, thus also rendering them uncanny.

Oropeza, Erendira
Session 2.9, 11:10 am - 12:40 pm, Ford 102
College Colloquium Grant
Summer research project presentation
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Ortega, Katie
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Fireworks
Fireworks are a source of entertainment for many generations. The creation of the firework is the result of several elements; each
giving off a specific quality that we have associated with fireworks: explosion, visual effects, and flying abilities. We open up the
firework and explore how the firework was created, what causes these effects of fireworks, as well as the effect of the firework itself
upon society and the environment. We hope to inform others of the mechanisms of fireworks every time one explodes, on all levels
effects: molecular, societally, and environmentally.

O’Shea, Elena
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Gold nanoparticles in cancer thermal therapy
Nanotechnology has become a powerful tool in cancer treatments. Due to their minuscule size, gold nanoparticles have been found
to successfully attach to the EGFR proteins of cancer cells upon intravenous injection. Subsequently, thermal therapy can be used to
excite the gold nanoparticles by infrared radiation and surface plasmon resonance. This results in thermal explosion, which causes
damage and elimination of the cancer cells. Because non-invasive methods can be applied in heating the nanoparticles, risk factors
surrounding cancer treatments are greatly minimized. Ultimately, gold nanoparticles provide the best defense against cancer cells
and are continuously under research in clinical trials.

Ostrander, Taylor
Session 4.1, 2:00 pm - 3:00 pm, Collins 205
Angular Proprioception in the Absence of Sensory Feedback
Proprioception describes self-awareness of limb position in space in the absence of visual feedback. Humans demonstrate improved
proprioception through 90° of elevation (Suprak, 2006). This angular influence on proprioceptive acuity has long been speculated to
be related to gravitational torque, which peaks in correspondence with proprioceptive acuity at 90° of elevation (Darling & Miller,
1995). However, more recent research from the Ettinger laboratory has indicated torques do not fully account for the observed
angular phenomenon, suggesting that there are alternative mechanisms contributing to angular proprioception (Ostrander &
Ettinger, 2015). Therefore, to further understand the underlying proprioceptive mechanisms, this study investigates angular
proprioceptive acuity in the absence of afferent signaling.

Ouellette, Stefan
Session 2.8, 11:10 am - 12:40 pm, Eaton 307
Madame Bovary
I discuss the cinematic elements of Flaubert’s writing style, and offer a comprehensive analysis of the film adaptations of Madame
Bovary, featuring criticism of both works in terms of style and form.

Pack, Morgen
Session 1.9, 9:30 am - 11:00 am, Ford 102
I Kissed a Girl and He Liked It: The Eroticization and Commodification of Female-Female Sexuality in Hip-Hop Music Videos
This presentation explores how dominant ideologies of masculinity and authenticity in hip-hop can be used to understand the
eroticization of female-female sexuality, or “pseudo lesbian sexual practices” portrayed in hip-hop music videos. Additionally, using a
queer theory known as disidentification, I explore how female artists, such as Nicki Minaj and Melyssa Ford, subvert these ideologies
and the tropes created with them such as the “video vixen/ho”, and use them instead as a mode of survival or resistance. I analyze
music videos ranging from "Make It Nasty” to "Monster."

Page, Karen
Session 1.12, 9:30 am - 11:00 am, HFMA
Heads Will Roll:
A Study of the Iconography of Beheadings in Art
Beheadings appear throughout mythology, religion, history, literature, and popular culture. Present and past societies have found
images depicting violent and gruesome scenes both repulsive and fascinating. Iconographies of beheaded figures, such as Medusa or
Judith slaying Holofernes, have been consistently depicted in certain periods and contexts. Why? What might have been the
functions performed by these gruesome, yet alluring images? What could have been their meanings and purposes?
Palmgren, Emily
Session 4.6, 2:00 pm - 3:00 pm, Eaton 209
Intimate?: A Collage
Weaving together lyric vignettes, this project is a narrative collage, a series of reflections on love, yearning, loss, intimacy, and growing into womanhood. How does the lyricism of love contrast the retrospective realizations of relationships? These vignettes home in on that contrast, the tipping point when the narrator finally sees a romanticized memory lucidly. Fundamentally, I seek to find an aesthetic balance between blunt and lyrical modes of story telling. I work with first-person narration, a raw voice that smudges the lines between memoir and fiction.

Parra, Jacob
Session 4.1, 2:00 pm - 3:00 pm, Collins 205
Physiological Effects of Caffeine on Performance During Aerobic-Based Exercise
Introduction: Caffeine is commonly consumed before exercise, but minimal research has studied the effects caffeine has on time to fatigue during aerobic exercise. Purpose: Highlight the effects of caffeine on time to fatigue and whether it is beneficial or detrimental to athletic performance. Methods: Blood lactate, blood glucose and heart rate were tested throughout a graded VO2peak test on a cycle ergometer. Results: Significance between the caffeine treatment and blood glucose levels, but no significance with caffeine and time to fatigue. Conclusion: Caffeine has no effect on time to fatigue when consumed approximately 30 minutes prior to exercise.

Paulson, George
Session 1.7, 9:30 am - 11:00 am, Eaton 211
A Worthy Opponent: the Characterization of Spartacus in Plutarch’s Life of Crassus
One of the most enigmatic figures described by the ancient historian Plutarch is Spartacus, the famous gladiator who led a bloody but ultimately unsuccessful slave revolt against the Romans from 73 to 71 B.C.E. This presentation shows how Plutarch’s positive characterization of Spartacus as a brave and noble leader, more civilized than his servile followers, is designed to present him as a worthy opponent of the Romans. This places him among the canonical enemies of Rome and provides an acceptable explanation to Plutarch’s Roman audience for how the rebel slaves under his command were able to be as successful as they were.

Payton, Julia
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Meth: Easy to Make, Easy to Abuse
Our presentation will expand on how accessible methamphetamines (meth) are, the long-term results of using meth, and the chemistry behind it. Meth is a very dangerous and an extremely addictive substance, because how easily accessible it is. The main component in meth is pseudoephedrine, a common ingredient in cold medicine that is easy available at any drugstore. Results of meth usage are very dangerous to the user and those around them. Meth can alter the abuser’s brain chemistry causing psychosis, impaired memory, and extreme paranoia. It damages the abuser’s health causing serious conditions: loss of muscle, bone density, and low blood flow.

Peery, Jilliann
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Thermonuclear Fusion
Our presentation aims to educate viewers about the chemistry and potential benefits of thermonuclear fusion. This type of reaction involves the fusion of two hydrogen isotopes to form a helium atom, which in turn produces a substantial amount of usable energy. Currently, magnetic field and laser technologies aim to accomplish fusion in a more efficient manner, to an end of developing a more renewable energy resource. If accomplished, thermonuclear fusion has the potential to become a limitless, cost-effective source of sustainable energy.

Peery, Sarah
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Methotrexate in Biochemical Pharmacology
Methotrexate (C20H22N8O5), is a compound used in chemotherapy, abortions, and the treatment of rheumatoid arthritis and other diseases. It is useful because it is an immunosuppressant, and an antimetabolite. It works by inhibiting reactions with folic acid, which are important for DNA and RNA synthesis. This results in cell apoptosis, especially in short lived cells like skin and cancer cells,
and bone marrow. This presentation will focus on how Methotrexates structure influences its interactions within the cell, and how its properties are used in pharmacology.

**Pegis, Jason**  
Session 2.14, 11:10 am - 12:40 pm, Rogers Rehearsal Hall  
*Cello Concerto No. 1 in E-flat major, Op. 107, by Dmitri Shostakovich* (cello)

**Pelayo, Maira**  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
*Thermonuclear fusion*  
Our presentation aims to educate viewers about the chemistry and potential benefits of thermonuclear fusion. This type of reaction involves the fusion of two hydrogen isotopes to form a helium atom, which in turn produces a substantial amount of usable energy. Currently, magnetic field and laser technologies aim to accomplish fusion in a more efficient manner, to an end of developing a more renewable energy resource. If accomplished, thermonuclear fusion has the potential to become a limitless, cost-effective source of sustainable energy.

**Penning, Morgan**  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
*Microbial Fuel Cells*  
Alternative energy sources are in high demand, and Microbial Fuel Cells (MFC) are gaining popularity as an emerging technology. MFCs are different from other fuel cells because it uses wastewater from water treatment facilities. Naturally occurring bacteria grown on anodes are used to convert organics found in wastewater into carbon dioxide and water while producing electricity. Traditional fuel cells use expensive and rare metals, such as platinum. This technology is also cheap, which makes it very appealing to many communities who lack the funds to generate clear water and electricity.

**Perry, Wyatt**  
Session 2.13, 11:10 am - 1:50 pm,  
*The Synthesis and Applications of Vitamin D*  
There are multiple types of vitamin D. We will discuss vitamin D2 and D3 which help in the absorption of calcium and in maintaining phosphate and calcium concentrations to enable mineralization of bone. The human body, along with some yeasts, fungi, and other animals, develop vitamin D3 through the absorption of ultraviolet B photons. The lack of vitamin D can cause cognitive impairment in adults, severe asthma in children, and various diseases and conditions. We also address the lack of vitamin D obtained through sunlight in the United States specifically, where there is a lack of dietary vitamin D.

**Peterman, Scout**  
Session 1.9, 9:30 am - 11:00 am, Ford 201  
*Mishima’s Coup D’etat*  
On November 25th, 1970, Yukio Mishima took an army general hostage at the military base of the Japan Ground Self-Defense Force and threatened to kill himself if his demands were not met. As the situation spiraled out of Mishima’s control, he unbuttoned his shirt and sliced open his abdomen, disemboweling himself and ending his life in a display of public seppuku. Within a matter of hours, Mishima’s reputation as the best postwar writer of Japan decayed into one of public embarrassment. How did such an acclaimed and significant author in Japanese history decide to lead a coup on the government? [Incomplete abstract]

**Phan, Chi**  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
*Fire Works*  
Fireworks are a source of entertainment for many generations. The creation of the firework is the result of several elements; each giving off a specific quality that we have associated with fireworks: explosion, visual effects, and flying abilities. We open up the firework and explore how the firework was created, what causes these effects of fireworks, as well as the effect of the firework itself upon society and the environment. We hope to inform others of the mechanisms of fireworks every time one explodes, on all levels of effects: molecular, societally, and environmentally.
Pierson, Kaitlyn
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Silicon: You “Si” it All Around
Silicon has a long and rich history and is the second most abundant element in the earth’s crust. Silicon’s abundance and ability to form many different compounds allows it to be relatively cheap and versatile in use. This poster reviews silicon’s many modern applications, such as its use in electronics, photovoltaic arrays, and other items essential to today’s society. The chemical properties of silicon, such as its semiconductivity, are also discussed. These chemical properties contribute to silicon’s applications in technology, and have helped create the world we live in today.

Polkinghorn, Laura
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
The Sun’s the Limit: Photoelectrochemical Devices and Their Potential as a Renewable Fuel Source
Currently, our planet is dependent on finite fossil fuels. Photoelectrochemical cells, while still in the developmental stage, are becoming an increasingly likely alternative to fossil fuels. Through electrohydrolysis, these cells split water into its constituent parts, and utilize the hydrogen atoms as a fuel source. In short, photoelectrochemical devices are a viable solution to our current dependence on fossil fuels.

Power, Mark
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Microbial Fuel Cells
Alternative energy sources are in high demand, and Microbial Fuel Cells (MFC) are gaining popularity as an emerging technology. MFCs are different from other fuel cells because it uses wastewater from water treatment facilities. Naturally occurring bacteria grown on anodes are used to convert organics found in wastewater into carbon dioxide and water while producing electricity. Traditional fuel cells use expensive and rare metals, such as platinum. This technology is also cheap, which makes it very appealing to many communities who lack the funds to generate clear water and electricity.

Pyne, Katherine
Session 1.9, 9:30 am - 11:00 am, Ford 102
Who Really Lives on Sesame Street?
This project investigates the ways in which gender and race are portrayed on PBS’s Sesame Street through a critical analysis of the most recent season of the program. This project examines how Sesame Street’s representations of gender and race participate in systems of oppression and/or liberation, later offering insights into why these representations are important to discuss with children and how one might engage with children in a larger feminist context.

Ravikiran, Pooja
Session 1.5, 9:30 am - 11:00 am, Eaton 106
The Relationship Between the United States and Haiti in Accordance to Humanitarian Aid
In this project, I argue that the United States’ actions and inaction in providing humanitarian aid to Haiti were due to the US state working under a realist foreign policy agenda. Humanitarian aid at its core should reflect liberal policies, though this is not witnessed in Haiti. Therefore, there is a severe lack of infrastructure and stable development due to weak economic institutions in Haiti stemming from its dependence on the US.

Ready, Hannah
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
DDT
We will present on 1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane (DDT), along with the historical significance, global issues, and environmental interactions of the chemical. DDT was used in many applications including as an agricultural pesticide, fighting disease, and consumer use during the 1940’s and 50’s. We will explore the synthesis of DDT and the interactions of its metabolites, DDD and DDE, with the environment. The chemistry of DDT exposes its interactions with the environment and organisms, along with displaying DDT’s widely known detrimental health and environmental effects that harmed the world after its prolonged use in the mid 20th century.
Redfern, James  
**Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor**  
**Crazy as a Painter**  
In history, lead was a product found in many items meant for everyday use, including, but not limited to, makeup, paint, kitchenware, coins, and plumbing pipes. In the second half of the twentieth century it was discovered that lead was a cause of heavy metal poisoning, which leads to permanent mental and physical damages such as reduced learning abilities in children, high blood pressure, miscarriages, and in extreme cases, death. Products containing lead can still be found today in the United States, specifically in paint and piping in buildings constructed prior to the discovery of the harmful nature of lead.

Reimann, Zoe  
**Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor**  
**SSRIs: The Chemistry Behind the Most Prescribed Antidepressants**  
Currently prescribed to 40 million Americans, Selective Serotonin Uptake Inhibitor’s (SSRI’s) are the leading treatment for depression. By blocking serotonin reuptake in the nerve synapse, SSRI’s create large responses of serotonin. Though not as potent as other antidepressants, SSRI’s provide fewer side effects than their highly toxic counterparts. By researching the chemical structures of the SSRI’s we can learn about how chemical structure influences chemical properties and effectiveness. This is the case with Escitalopram (Lexapro) and Citalopram (Celexa), which are stereoisomers each with their own unique characteristics. In addition, we discuss the chemical interactions between SSRI’s and other medications.

Remmel, Jacqueline  
**Session 3.8, 12:50 pm - 1:50 pm, Eaton 307**  
**Postcolonial Politics in the Plays of Aimé Césaire**  
Two of Aimé Césaire’s plays, "The Tragedy of King Christophe" and "A Season in the Congo," depict the turbulent process of forming governments in countries that have recently gained political independence from their colonizers. Rife with military coups, dictatorships, and neocolonial international pressure, the governments in Césaire’s plays face extremely realistic difficulties, allowing Césaire to provide insight about the dangers of postcolonial rule. This presentation explores how and why theatre served as the ideal means for Césaire to communicate his stories and warnings, drawing support from Césaire’s position as an influential postcolonial intellectual and the performative aspects of postcolonial politics.

Reutin, Kenya  
**Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor**  
**Carbon Nanotubes**  
Carbon nanotubes (CNTs) are cylinders of carbon atoms that have significant properties like mechanical strength, high thermal conductivity, and electrical conductivity. The exact process through which CNTs are formed is not yet understood, but methods of synthesis include chemical vapor deposition, arc discharge, and laser ablation. Chemical vapor deposition is the most popular way to produce CNTs efficiently. CNTs could have a fundamental impact on society due to their unique characteristics. Currently, CNTs are primarily used for structural reinforcement. In the future, CNTs can potentially be used to improve filtration, batteries, electronics, structural reinforcements, fabrics, or treatment of neurological disorders.

Rizzo, Zoey  
**Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor**  
**SSRIs: The Chemistry Behind the Most Prescribed Antidepressants**  
Currently prescribed to 40 million Americans, Selective Serotonin Uptake Inhibitor’s (SSRI’s) are the leading treatment for depression. By blocking serotonin reuptake in the nerve synapse, SSRI’s create large responses of serotonin. Though not as potent as other antidepressants, SSRI’s provide fewer side effects than their highly toxic counterparts. By researching the chemical structures of the SSRI’s we can learn about how chemical structure influences chemical properties and effectiveness. This is the case with Escitalopram (Lexapro) and Citalopram (Celexa), which are stereoisomers each with their own unique characteristics. In addition, we discuss the chemical interactions between SSRI’s and other medications.

Robinson, Ian  
**Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor**  
**Fire Works**  
Fireworks are a source of entertainment for many generations. The creation of the firework is the result of several elements; each giving off a specific quality that we have associated with fireworks: explosion, visual effects, and flying abilities. Within our research,
ABSTRACTS

we will open up the firework and explore how the firework was created, what causes these effects of fireworks, as well as the effect of the firework itself upon society and the environment. Through our studies, we hope to inform others of the mechanisms of fireworks on all levels of effects: molecular, societally, and environmentally.

Robles, Yasmine
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor

Vitamin C
This presentation summarizes and discusses vitamin C pertaining to human health. Vitamin C - ascorbic acid - serves as a fundamental super nutrient that can overcome, prevent, and improve a variety of illnesses. It primarily functions as an antioxidant that prevents free radicals, molecules with unpaired electrons, from altering biological structures. Too many free radicals can weaken cells making them vulnerable to pathogens and even cause cancer. With studies each year demonstrating its effectiveness in fighting disease, vitamin C proves that its chemical properties can play a major role in making it an effective antidote.

Rogala, Anya
Session 2.7, 11:10 am - 12:40 pm, Eaton 211

Does One size fit All? An Analysis of ¡Cuídate! Sex Education Curriculum in Marion County, Oregon
This project serves as an evaluation of Cuídate, an evidence-based, comprehensive sex education program, as it has been implemented in Marion County, Oregon. First, the research findings are contextualized with a brief history of sex education programs in the United States to show how each cultural era has influenced policies and discussions about sex, past and present. The evaluation comprises two components: evaluation of the goals set by the creators of Cuídate, analyzed through statistical data and qualitative feedback of facilitators, and a critical analysis of the curriculum’s discourse, with special focus on its inclusivity.

Rohrbach, Christa
Session 3.8, 12:50 pm - 1:50 pm, Eaton 307

Césaire and the Colonizer: The evolution of Cahier d’un retour au pays natal over 60 years and its confrontation of colonialism
This work explores four different versions of Aimé Césaire’s Cahier d’un retour au pays natal (Notebook of a Return to my Native Land) and how the constantly changing state of Césaire’s most notable poetic work outlines his commitment to undermining the effect of French colonial rule. As one founder of Négritude, a Francophone philosophical movement, Césaire uses Cahier to deliver ideas to the French-speaking public. In aiming his ever-changing radical poetry about the experience of growing up in a colonized Martinique at those who perpetuated the colonization, Césaire calls for change and underlines why Négritude remains significant.

Rohrbach, Christa
Session 4.6, 2:00 pm - 3:00 pm, Eaton 209

Seeking a Fictionalized Version of Myself
This project is a hybrid of prose and poetry (prosetry) that explores stylistic aspects of the genres, as well as multiple senses of self and the line between fictional characters and their author. It follows Imogen, a first person narrator living in a world where poetry does not exist, along a journey of self-discovery through various mediums.

Rossi, Lance
Session 1.1, 9:30 am - 11:00 am, Collins 205

What Makes a Garden Grow: A Comparative Study of Community Gardens in Salem, Oregon
Throughout urban areas, Community Gardens have become a popular way to engage in food production and cultivate neighborhood relationships. In these constructed communities, different factors interact to shape and maintain the garden space, with mixed results. For gardens in the Salem area, defining features, commonalities, and potential solutions to problems are identified using comparative statistics and a systems approach. While every garden has a unique composition of community and infrastructure, having access to donations, reliable and attentive coordinators, and group accountability are factors that can contribute to garden success. Overall, established connections within the local area can help provide these factors.

Ruano, Kricia
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor

Gold nanoparticles in cancer thermal therapy
Nanotechnology has become a powerful tool in cancer treatments. This poster examines gold nanoparticles, which due to their minuscule size have been found to successfully attach to the EGFR proteins of cancer cells upon intravenous injection. Subsequently, thermal therapy can be used to excite the gold nanoparticles by infrared radiation and surface plasmon resonance. This results in
ABSTRACTS

thermal explosion, which causes damage and elimination of the cancer cells. Because non-invasive methods can be applied in heating the nanoparticles, risk factors surrounding cancer treatments are greatly minimized. Ultimately, gold nanoparticles provide the best defense against cancer cells and are continuously under research in clinical trials.

Ryer, Michael
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Carbon Nanotubes
Carbon nanotubes (CNTs) are cylinders of carbon atoms that have significant properties like mechanical strength, high thermal conductivity, and electrical conductivity. The exact process through which CNTs are formed is not yet understood, but methods of synthesis include chemical vapor deposition, arc discharge, and laser ablation. Chemical vapor deposition is the most popular way to produce CNTs efficiently. CNTs could have a fundamental impact on society due to their unique characteristics. Currently, CNTs are primarily used for structural reinforcement. In the future, CNTs can potentially be used to improve filtration, batteries, electronics, structural reinforcements, fabrics, or treatment of neurological disorders.

Saiki, Jacob
Session 5.10, 3:10 pm - 4:10 pm, Ford 201
Tough to Swallow: An Investigation of the Variance Encountered When Implementing the Healthy, Hunger-Free Kids Act in a Decentralized School Structure
In this research, I seek to understand variance in public school meal participation trends across the United States since the 2013-2014 school year, when implementation of the Healthy, Hunger-Free Kids Act began in earnest. More broadly, I study how effective the Federal Government is at implementing broad operational changes in a decentralized school system. To do so, I conduct interviews with nutrition and health decision-makers in demographically different school districts, looking for the following explanations of how implementation variance may crop up: 1) Palate & Diet, 2) Social Navigation, 3) Student Body Demographics, 4) Legal Decentralization, 5) Autonomous Actors.

Samora, Diego
Session 2.4, 11:10am-12:40pm, Eaton 105
Conserving the Economic Benefits of Coastal and Marine Ecosystems in the Puget Sound Region
Economically valuable coastal and marine ecosystems in the Puget Sound region in Washington State are being lost and/or degraded due to population growth and increasing economic development. This research project will explore the following questions: why the development and degradation of these ecosystems is not ecologically or economically sustainable for the region; what new methods to better incorporate their value into economic analysis; and lastly, what impacts this may have on achieving more ecologically and economically efficient and sustainable decision making in the long-run.

Sanchez, Jesse
Session 3.11, 12:50 pm - 1:50 pm, Ford 204
Washed Out: Water Resources, Environmental Racism, and Queer Policing in the Greater Palm Springs, CA Region
Palm Springs is known as a queer-inclusive paradise, but another story remains to be told. This presentation focuses on the recent history of the region in the age of marriage equality, analyzing the extent to which modern LGBTQ politics promote intersection progress. By analyzing the intersection of race, housing, and water resources, I disrupt the progressive image and recognize the ingrained de facto segregation largely shaped by environment degradation, particularly regarding the predominantly Latin@ communities surrounding the Salton Sea.

Sanchez, Jesse
Session 4.9, 2:00 pm - 3:00 pm, Ford 102
Creating the Queer: Searching for Sexuality in the Early Oregon State Hospital
Institutions such as mental hospitals and prisons were formative forces in the invention of the concept of sexuality. By looking through arrest and patient records from the late 19th and early 20th century State Hospital and penitentiary, a queer history can be found in a seemingly unqueer city such as Salem, OR. The presentation will focus on digging selected records in search of the individual within documents designed for institutional control.

Sandell, Erik
2.12, 9:30 am - 11:00 am, HFMA
The Oregon State Capitol:
Building a New American Iconography

Architecture and culture shape each other in a complex symbiosis. This presentation examines the ways in which the Oregon State Capitol could be related to the political as well as cultural climate of the United States between 1920s and 1930s. Significant events such as the Great Depression spurred a daze in Americans, whose economic growth and prosperity had been suddenly halted. I argue that the Oregon Capitol represents a major change in the history of American mentality during the 1930s as local politicians and artists wished to create an architectural vocabulary that could be presented as distinctively "American.”

Sannes-Pond, Celine
Session 1.7, 9:30 am - 11:00 am, Eaton 211
The Feminist Avenger with the Dragon Tattoo: The power of violence against men in Stieg Larsson’s novels
This thesis examines the role of graphic violence against men in Stieg Larsson’s The Girl with the Dragon Tattoo. Larsson’s novels shocked and intrigued readers by vividly describing women’s, particularly Lisbeth Salander’s, violent responses to subjugation by men. My work analyzes the ethicality and efficacy of such moments of violent resistance. The female violence in the series is contextualized within a world dominated by a male monopoly on violence. I examine how the novelty of depicting women as equally powerful and aggressive encourages a belief in women as powerful, capable actors against their own oppression.

Santos, Malia
Session 5.2, 3:10 pm - 4:10 pm, Collins 318
Determining the genetic differentiation between populations of Great Bustards (Otis tarda) in Europe and Asia
Great bustards (Otis tarda) are the heaviest birds capable of flight, and occur in open grasslands throughout Europe and Asia. Due to habitat fragmentation, hunting, and human disturbance great bustards populations are declining. Populations in Europe are geographically isolated from those in Asia and exhibit differences in life history traits suggesting that they may be a distinct species. We analyzed DNA sequence data from the mitochondrial cytochrome b gene in individuals that occur in distinct breeding populations (lekks) in Europe and Asia to determine the level of genetic differentiation between them, and evaluate whether they may be reproductively isolated.

Sealine-Smith, Lark
Session 1.6, 9:30 am - 11:00 am, Eaton 209
Remembering Trauma: Violence, Identity and Belonging in Precarious Times
This presentation explores how minor literature portrays the impact of state-sanctioned violence on Othered bodies through cultural memories. In Maryse Condé’s novel I, Tituba, Black Witch of Salem. Cultural memory explains that a group can be bonded by a common shared memory of trauma rather than common lived experience. My particular intervention here investigates how strange temporality informs how Othered bodies construct history and remember trauma. I explore how time is worked in the text from a contemporary period to an anachronistic setting during the Salem Witch Trials.

Sellner, Diana
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
There are multiple types of vitamin D. We discuss vitamin D2 and D3 which help in the absorption of calcium and in maintaining phosphate and calcium concentrations to enable mineralization of bone. The human body, along with some yeasts, fungi, and other animals, develops vitamin D3 through the absorption of ultraviolet B photons. The lack of vitamin D can cause cognitive impairment in adults, severe asthma in children, and various diseases and conditions. We also address the lack of vitamin D obtained through sunlight in the United States specifically, where there is a lack of dietary vitamin D.

Seyffert, Hannah
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Vitamin C
Vitamin C (ascorbic acid), which serves as a fundamental supernutrient that can overcome, prevent, and improve a variety of illnesses. It primarily functions as an antioxidant that prevents free radicals, molecules with unpaired electrons, from altering biological structures. Too many free radicals can weaken cells making them vulnerable to pathogens and even cause cancer. With studies being released each year demonstrating its effectiveness in fighting disease, vitamin C proves that its chemical properties can play a major role in making it an effective antidote. The purpose of this presentation is to summarize and discuss vitamin C pertaining to human health.
ABSTRACTS

Shafi, Jacob  
Session 3.3, 12:50 pm - 1:50 pm, Collins 320  
Observing changes in force dependent kinetics for myosin VI in a mutant associated with heart disease  
The goal of this research is to further understand the role of myosin VI and the overall effects of H246R, a mutated myosin, has on the health of heart tissue. This research focuses on a mutation associated with hypertrophic cardiomyopathy (HCM), a disease in which the heart walls thicken inhibiting blood flow.

Sheldon, Dylan  
Session 1.10, 9:30 am - 11:00 am, Ford 201  
Opportunists: Electronic Surveillance in the United States and France  
After the terror attacks of September 11, 2001, the American government significantly expanded its surveillance and intelligence gathering activities. In the last year, France has also moved to create a mass surveillance program similar to America's. That the anti-terror policy of these two countries has converged, despite their many other differences, offers the opportunity to better understand what drives countries to enact policies of mass surveillance and whether anything can be done to moderate this tendency.

Shinkle, Collin  
Session 4.4, 2:00 pm - 3:00 pm, Eaton 105  
What Could It Mean?-Intentionality, Communication, and the World Beyond the Mind  
Most of us take it for granted that there is an external world beyond our conscious experience, and modern science is predicated on this assumption. However, this view has difficulty accounting for how things outside the mind have meaning if we assume that meaning is fundamental to the mind. If meaning is instead considered to reside only in the mind and communication to be a provocative act rather than an intermediary between minds, no account of meaning without mind is necessary and those difficulties are avoided.

Sia, Whitney  
Session 3.2, 12:50 pm - 1:50 pm, Collins 318  
The Effects of Diethylhexyl Phthalate on Xenopus laevis Oocyte Maturation  
Phthalates are plasticizers and solvents found in many common consumer products. Previous studies have shown that some behave as endocrine-disrupting chemicals (EDCs) by interfering with hormone-regulated events including reproductive development. Formation of eggs is essential for fertility and requires maturation of oocytes, which is induced by exposure to the hormone progesterone. I tested the hypothesis that maturation of oocytes from the frog, Xenopus laevis, would be disturbed by exposure to diethylhexyl phthalate (DEHP). Oocytes were incubated in the above chemicals to determine percentage maturation. Western blot analysis was used to detect maturation-specific proteins determining the internal maturation effects.

Siegle, Liberty  
Session 2.5, 11:10 am-12:40 pm, Eaton 106  
Food Insecurity Among Immigrant Populations: How Local Food Shares Can Improve Practices  
In the U.S. in 2014, 17.4 million households experienced food insecurity (USDA). Immigrants are especially hurt by food insecurity for a number of reasons. I will explore how food shares can adapt to the cultural differences of the immigrant populations to better serve them. I will build my argument around institutionalism theory and explain how this would require food shares to understand the different habits and behaviors of the immigrant populations they serve. I will look specifically at the practices of Marion Polk Food Share and suggest ways they could improve.

Signor, Hannah  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
Ozone in the Troposphere: “Good up high, bad nearby”  
Ozone is a highly reactive gas composed of three oxygen atoms (O3). Depending on where it is in the atmosphere, ozone affects life on Earth in either good or bad ways. Ozone in the stratosphere filters out and protects us from UV rays, but ground level ozone (ozone in the troposphere) is a harmful pollutant and can cause a variety of health issues as well as negatively affect vegetation and ecosystems. Due to the way ground level ozone is formed, it is of more concern during the summer months and in areas with high levels of human activity.
Silva Mendez, Elizabeth
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Ozone in the Troposphere
Ozone is a highly reactive gas composed of three oxygen atoms (O3). Depending on where it is in the atmosphere, ozone affects life on Earth in either good or bad ways. Ozone in the stratosphere filters out and protects us from UV rays, but ground level ozone (ozone in the troposphere) is a harmful pollutant and can cause a variety of health issues as well as negatively affect vegetation and ecosystems. Due to the way ground level ozone is formed, it is of more concern during the summer months and in areas with high levels of human activity.

Simonovich, Elisabeth
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Meth: Easy to Make, Easy to Abuse
This poster displays how accessible methamphetamines (meth) are, long-term results of using meth, and the chemistry behind it. The main component in meth is pseudoephedrine, a common ingredient in cold medicine that is easy available at any drugstore. Meth is very dangerous and an extremely addictive substance. Meth can alter the abuser’s brain chemistry causing psychosis, impaired memory, and extreme paranoia. Meth damages the abuser’s health, causing serious conditions: loss of muscle, bone density, and low blood flow. The results of meth usage are very dangerous to the user and those around them.

Simpson, Kenmedy
Session 2.5, 11:10 am-12:40 pm, Eaton 106
Kids versus Career: The Childcare and Maternity Problems in Japan
With the declining population and low birth rate currently in Japan, the role of the mother as a care provider and creator of the next generation has become more important than ever. This does, however, bring up a dilemma. Should women pursue careers and contribute to the economy, or should they have families and ensure the reproduction of next generation? With the current maternity and child-care policies, there is a tradeoff between the two. In this presentation, I will analyze the problem with the policies and propose potential solutions to change the policies in order to allow women to have both kids and careers.

Singer, Joshua
Session 4.6, 2:00 pm - 3:00 pm, Eaton 209
pseudo Time Traveling and Glorified Fortune Telling
I read from an in-progress novella, a coming-of-age story that involves some pseudo time travel, and discuss some of the difficulties in writing it.

Sloper, Mary
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Gold Nanoparticles in Cancer Thermal Therapy
Nanotechnology has become a powerful tool in cancer treatments. Due to their minuscule size, gold nanoparticles have been found to successfully attach to the EGFR proteins of cancer cells upon intravenous injection. Subsequently, thermal therapy can be used to excite the gold nanoparticles by infrared radiation and surface plasmon resonance. This results in thermal explosion, which causes damage and elimination of the cancer cells. Because non-invasive methods can be applied in heating the nanoparticles, risk factors surrounding cancer treatments are greatly minimized. Ultimately, gold nanoparticles provide the best defense against cancer cells and are continuously under research in clinical trials.

Smelt, Brenna
Session 4.5, 2:00 pm - 3:00 pm, Eaton 106
An evaluation of scientific reasoning and critical thinking modules for Introductory Psychology
Critical thinking and scientific reasoning are both important skills for psychology students to master. To improve these skills, eight teaching modules were given to Introductory Psychology instructors. A pre-test/post-test design was used to assess change in students’ scientific reasoning skills, and a test of critical thinking was also distributed at the end of the semester. Between instructors, students in the treatment class improved more on all scientific reasoning skills tested than the control classes (M=2.13, SD=2.222, M=-0.12, SD=2.355, t(54)=-3.601, p<0.001). Students in the treatment class earned higher scores on one principle of critical thinking (M=2.191, SD=0.981, M=1.692, SD=0.922, t(58)=-1.952, p<0.05).
ABSTRACTS

Smith, McKenna
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
The Chemistry of CO Poisoning
Carbon monoxide (CO), a chemical that bonds to hemoglobin 200 times as well as oxygen, kills up to 500 people per year, and leaves thousands of others in the hospital with severe side effects. CO is formed during combustion of carbon-containing fuels. Carbon monoxide can be hard to detect because it is colorless and odorless. Symptoms of CO poisoning include headache, dizziness, and nausea, and they are often confused with symptoms of the flu. When someone is exposed to CO, their levels of oxygen drop dangerously. While treatment of carbon monoxide poisoning is fairly simple, overexposure can have serious consequences.

Stacy, Alex
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Easy, Breezy, Beautiful: Chemicals
The variety of chemicals ingredients in liquid foundation make-up differs depending on the brand. Given this it is important to be aware of the potential hazards of the ingredients we are exposed to by this route. This poster will examine key ingredients in 3 cosmetic brands, including their hazards. The specific foundations presented will be Neutrogena, Cover Girl, and Maybelline, which all possess key ingredients that may be harmful to the consumer.

Sterbenc, Michael
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Vitamin D
There are multiple types of vitamin D. We discuss vitamin D2 and D3 which help in the absorption of calcium and in maintaining phosphate and calcium concentrations to enable mineralization of bone. The human body, along with some yeasts, fungi, and other animals, develops vitamin D3 through the absorption of ultraviolet B photons. The lack of vitamin D can cause cognitive impairment in adults, severe asthma in children, and various diseases and conditions. We also address the lack of vitamin D obtained through sunlight in the United States specifically, where there is a lack of dietary vitamin D.

Stirton, KayLyn
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Vitamin
Vitamin C - ascorbic acid - serves as a fundamental super-nutrient that can overcome, prevent, and improve a variety of illnesses. It primarily functions as an antioxidant that prevents free radicals, molecules with unpaired electrons, from altering biological structures. Too many free radicals can weaken cells making them vulnerable to pathogens and even cause cancer. With studies being released each year demonstrating its effectiveness in fighting disease, vitamin C proves that its chemical properties can play a major role in making it an effective antidote. Therefore, the purpose of this presentation is to summarize and discuss vitamin C pertaining to human health.

Strandoo, Erik
Session 1.6, 9:30 am - 11:00 am, Eaton 209
Navigating Neoliberalism and Empathy in Octavia Butler's Parables
By looking at Octavia Butler’s Parable of the Sower and Parable of the Talents, this project explores the specific aspects of neoliberalism that encourage individual responsibility through the misidentification of threat; it looks at empathy as grounds towards understanding emotional resonance between human beings that potentially indicate a framework for designing a cultural system unmarked by utopian desire. In exploring these attributes of the novel, this project aims to discover how Butler uncovers the mechanisms that drive societal oppression’s cyclical nature, and what lies beyond.

Straube, Lindsay
Session 4.6, 2:00 pm - 3:00 pm, Eaton 209
Sandy Jenkins
My work is about a woman named Sandy Jenkins who is an isolated housewife living in 1960s America. Her husband abuses her and her friends ignore her. As she attempts to navigate life without any close confidants, disaster strikes: her husband is the suspect in a murder case. Fraught with uncertainty, Sandy must decide whether she sides with her husband, the police, or herself. Without anyone to trust, Sandy slowly slips into a state of neurotic paranoia, desperately attempting to find the truth. In the end, what she finds is that the truth was already inside of her.
ABSTRACTS

Sydeman, Claire
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Glyphosate and the Risk It Poses to Humans
Glyphosate (Roundup) is the most widely used herbicide in America and can be found in nearly every home. While glyphosate undoubtedly kills unwanted weeds and shrubs, it could also be killing the humans who use and are exposed to it. Glyphosate can be commercially synthesized via a Mannich Reaction between iminodiacetic acid and phosphoric acid, followed by oxidation. Recent studies have linked its phosphonic acid functional group to carcinogenic properties and cases of endocrine disruption. This news poses a dilemma for large corporations as consumers are confused about whether or not the product is safe to bring into their homes.

Tachiyama, Vincent
Session 4.9, 2:00 pm - 3:00 pm, Ford 102
The Campaign of Julius Meier
In 1930, Julius Meier was elected to be the 20th governor of Oregon by an overwhelming margin but his campaign for governor was not without controversy. Meier whose family has started the Meier and Frank department store was not only attacked for his rich roots but for his Jewish heritage. By viewing voter pamphlets and newspaper from the time, this presentation will illustrates the resistance to the election of Julius Meier and link the experience and reaction to Meier’s campaign to other public Jewish figures.

Thornton, Joshua
Session 1.9, 9:30 am - 11:00 am, Ford 102
The Problem with Translating Eastern Action Movies to Western Hollywood
I’m presenting on the problems with the translation of Eastern philosophy in Eastern action movies into Western cinema (particularly Hollywood), as the Eastern philosophies original stances and meanings get skewed, diverge, or get cut out in the process of making it into Western cinema.

Tjaarda, Madeleine
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Crazy as a Painter
In history, lead was a product found in many items meant for everyday use, including, but not limited to, makeup, paint, kitchenware, coins, and plumbing pipes. In the second half of the twentieth century it was discovered that lead was a cause of heavy metal poisoning, which leads to permanent mental and physical damages such as reduced learning abilities in children, high blood pressure, miscarriages, and in extreme cases, death. Products containing lead can still be found today in the United States, specifically in paint and piping in buildings constructed prior to the discovery of the harmful nature of lead.

Todoki, Ariel
Session 2.14, 11:10 am - 12:40 pm, Rogers Rehearsal Hall
Fantasie by Philippe Gaubert (flute)

Toledo, Kelly
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
The Sun’s the Limit: Photoelectrochemical Devices and Their Potential as a Renewable Fuel Source
Currently, our planet is dependent on finite fossil fuels. Photoelectrochemical cells, while still in the developmental stage, are becoming an increasingly likely alternative to fossil fuels. Through electrohydrolysis, these cells split water into its constituent parts, and utilize the hydrogen atoms as a fuel source. In short, photoelectrochemical devices are a viable solution to our current dependence on fossil fuels.

Towata, Dayton
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
FIREWORKS
Fireworks are a source of entertainment for many generations. The creation of the firework is the result of several elements; each giving off a specific quality that we have associated with fireworks: explosion, visual effects, and flying abilities. Within our research we will open up the firework and explore how the firework was created, what causes these effects of fireworks, as well as the effect of the firework itself upon society and the environment. Through our studies, we hope to inform others of the mechanisms of fireworks every time it explodes, on all levels of effects: molecular, societally, and environmentally.
ABSTRACTS

Tupuola, Jared
Session 2.9, 11:10 am - 12:40 pm, Ford 102
Sending Back to the Samoas: A Comparative Study of American Samoa and Samoa’s Relationship with Transnationalism
This presentation analyzes the effects of transnational migration and social remittances on American Samoa and Samoa. Through ethnographic research, literary resources, and interviews with multiple individuals in both locations, I discuss the relationship Samoan culture has in regards to the influences from migrants as well as the differences that the two groups of Samoans have in terms of their relationship to transnationalism and its effects.

Vasquez, Olivia
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Adderall (Abuse and Treatment of ADHD)
Attention Deficit Hyperactivity Disorder (ADHD) affects many people in the United States and is an important societal issue. The prescription drug Adderall is one of the most common forms of treatment for this disorder. Adderall is both effective but also subject to abuse. We explain how Adderall is synthesized through the reductive amination of a ketone, direct displacement of a leaving group by an amine, and by nitro alkane addition followed by reduction of the nitro group. We have found that proper diagnosis is critical to Adderall abuse but is not the sole factor responsible.

Vega, Yesenia
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Cryo Creamery: Cryogenics in Modern Culinary Arts
We describe how liquid nitrogen ice cream is made and focus on the benefits of this process over the typical freezing process. We also review the molecular aspects of freezing and what impacts a substance’s freezing temperature. We also discuss how liquid nitrogen is formed, how liquid nitrogen impacts society, and provide additional facts on its characteristics and structure. Lastly, we explain the history of liquid nitrogen. The use of liquid nitrogen contributes to higher quality ice cream, less power usage during the freezing process, and faster service for ice cream vendors.

Vital Torres, Angelina
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Ocean Acidification
Since the start of the industrial revolution, anthropogenic carbon dioxide emissions have increased. Higher emissions of CO2 coincide with higher CO2 absorbance and increase ocean acidity. This chemical change in water prevents shell growth that is essential to survival for many organisms. It directly affects an organism’s ability to form a calcium carbonate shell. We examined global historic CO2 emissions in order to quantify the total effect on oceans, and the rate at which the ocean is changing. We also analyzed how these changes in the ocean’s chemistry have affected and could further affect large ecosystems and the human population.

Vuong, Milton
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Ozone in the Troposphere: “Good up high, bad nearby”
Ozone is a highly reactive gas composed of three oxygen atoms (O3). Depending on where it is in the atmosphere, ozone affects life on Earth in either good or bad ways. Ozone in the stratosphere filters out and protects us from UV rays, but ground level ozone (ozone in the troposphere) is a harmful pollutant and can cause a variety of health issues as well as negatively affect vegetation and ecosystems. Due to the way ground level ozone is formed, it is of more concern during the summer months and in areas with high levels of human activity.

Wagener, Nick
Session 4.9, 2:00 pm - 3:00 pm, Ford 102
Shell Shock: A Historical Look at PTSD In Oregonian World War I Veterans
"Shell Shock," a term used in the World War I era, referred to the ailment now known as Post-traumatic Stress Disorder. In recent years, our understanding of PTSD and how to treat it has grown immensely; however that has not always been the case. Using archival sources from the local Oregon area such as census data, draft registration files, and medical case files, this presentation will shed light on the treatment of WWI veterans suffering from PTSD.
**ABSTRACTS**

**Waite-Himmelwright, Jackson**  
Session 4.2, 2:00 pm - 3:00 pm, Collins 318  
Reproductive Success and Visitation Patterns of Yucca Moths in a Joshua Tree Hybrid Zone  
Coevolution between plants and pollinators is hypothesized to have promoted the radiation of angiosperm. Pollinator specialization may cause reproductive isolation between plant species. Negative fitness consequences associated with host switching lead to increased specialization for pollinators. Here we examine host specificity and fitness tradeoffs between two morphologically distinct Joshua trees (Yucca brevifolia) sub groups and their respective obligate pollination mutualists (Tegiticula). We collected moth larva from trees in a small area of sympatry and, using microsatellite PCR, we established sibships and species ID's to determine reproductive success.

**Walin, Noah**  
Session 2.1, 11:10 am - 12:40 pm, Collins 205  
Effects of Climate Change on Coral Reef Mortality  
Anthropogenic climate change is undoubtedly, the most prevalent issue facing our planet. Coral reefs provide, among other things, protection to coastlines, habitat for marine species, an abundant fishery, and income for people. However, climate change is putting coral reefs at risk. Increased ocean temperatures, ocean pollution from terrestrial runoff, and sea-level rise are major factors that affect coral reef mortality. This paper looks at future projections of ocean temperature, precipitation coupled with surface runoff, and sea-level rise and what that means for coral reefs. This paper uses the EdGCM database to run models that project future climate scenarios that directly affect coral reef mortality. It also uses data from the IPCC report on projected sea-level rise at the end of the century. Through synthesis of the data and relevant scientific literature, the results suggest that anthropogenic climate change will have adverse effects on coral reef mortality. These effects will filter throughout the ecosystem and economy that coral reefs are a centerpiece in. If business carries on as usual with respect to anthropogenic climate change, there will be a total collapse of near shore fisheries that are connected to coral reefs.

**Warrick, Peter**  
Session 3.3, 12:50 pm - 1:50 pm, Collins 320  
The use of a nanosecond pulsed laser to conduct laser-induced breakdown spectroscopy.  
My group within the Dr. Kleinert’s laboratory has extensively worked on the creation of a laser system to experiment with techniques of Laser-induced Breakdown Spectroscopy (LIBS). Through various optics and electronic signal modifiers, it is possible to collect spectra from various metal samples and analyze their compositions.

**Washington, Rachel**  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
The Contributions of Alchemy to Modern Chemistry  
Alchemy is the predecessor to chemistry, focused primarily on the transmutation of metals and the attainment of the Philosopher’s stone. Our presentation focuses primarily on the contributions alchemy has made to modern chemistry. These contributions include the identification of several elements, the production of acids, the creation of tools and the utilization of several basic chemical processes. Furthermore, we will discuss how modern chemists are influenced by the objectives alchemists aimed to accomplish.

**Webster, Morgan**  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
Acid Rain  
When Sulfur (S) is exposed to air through the combustion of fossil fuels, it reacts with Oxygen (O) to form sulfur dioxide (SO2). The SO2 oxidizes, forming a sulfate ion (SO42). SO42 reacts with water to form sulfuric acid (H2SO4), which falls to earth as acid rain. Because H2SO4 is a strong acid, it dissociates completely into H+ and SO42- ions, impacting the environment and damaging buildings. Acid rain also affects civilization and wildlife. For society’s health, these chemical findings will help us reduce damage done to respiratory systems and decrease health problems related to air pollution from acid rain.

**Wei, Matthew**  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
The Contributions of Alchemy to Modern Chemistry  
Alchemy is the predecessor to chemistry, focused primarily on the transmutation of metals and the attainment of the Philosopher’s stone. Our presentation focuses primarily on the contributions alchemy has made to modern chemistry. These contributions include
the identification of several elements, the production of acids, the creation of tools and the utilization of several basic chemical processes. Furthermore, we will discuss how modern chemists are influenced by the objectives alchemists aimed to accomplish.

Werthmann, Nathan  
Session 1.9, 9:30 am - 11:00 am, Ford 102  
Understanding Shounen Ai Through Translation  
Within Shoujo manga, Japanese comics aimed at young women, there is a subgenre in which the protagonists are not themselves young women, but young homosexual men, popularly known as Shounen Ai (Boy's Love). This project explores the significance of this phenomenon through translating the article "The Result of a Look into the Gender of Women," written by Sumiko Fujimoto, and situating her analysis within that done by other scholars.

Whitby, Allison  
Session 4.5, 2:00 pm - 3:00 pm, Eaton 106  
The Willamette Experience: How Academic and Social Factors Influence Well-Being  
Social involvement and academic achievement have been independently examined in relation to the well-being of college students. However, little research has explored the relationship of their combined influence on well-being. In this study, we examined how social and academic factors correlated to the well-being of college students across two years, analyzing both institutional data and self-reports. Multiple regression was utilized to examine these factors individually and in combination on well-being. Our questions were: How strongly related are the social and academic factors? Do these factors combine to predict well-being? Is perceived or actual academic performance a better predictor?

Whitney, Daniel  
Session 3.9, 12:50 pm - 1:50 pm, Ford 102  
(de)Constructing the 'Gayborhood': How LGBTQ Portlanders Imagine Community Outside the Gayborhood  
Historically, gay, lesbian, bisexual, transgender, and queer (LGBTQ) persons developed gay and lesbian districts—or 'gayborhoods'—that served as the core of LGBTQ community by centralizing in dense, urban neighborhoods. Portland, Oregon’s LGBTQ community developed comparably to other communities without such a district. This project explores how the use of temporary community sites complemented by a few, more permanent sites scattered throughout Portland has provided a replacement for the concentrated gayborhood. In doing so, this research reveals complexities in LGBTQ community organization that may categorize development in future communities.

Willems, Jameson  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
Adderall: Abuse and Treatment of ADHD  
Attention Deficit Hyperactivity Disorder (ADHD) affects many people in the United States and is an important societal issue. The prescription drug Adderall is one of the most common forms of treatment for this disorder. Adderall is both effective but also subject to abuse. We explain how Adderall is synthesized through the reductive amination of a ketone, direct displacement of a leaving group by an amine, and by nitro alkane addition followed by reduction of the nitro group. We have found that proper diagnosis is critical to Adderall abuse but is not the sole factor responsible.

Williams, Angus  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
DDT  
We will present on 1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane (DDT), along with the historical significance, global issues, and environmental interactions of the chemical. DDT has been used in many applications including as an agricultural pesticide, fighting disease, and consumer use during the 1940’s and 50’s. We will explore the synthesis of DDT and the interactions of its metabolites (DDD and DDE) with the environment. The chemistry of DDT identifies the chemical interactions with the environment and exposed organisms; along with exposing detrimental health and environmental effects that harmed the world after its prolonged use in the mid 20th century.

Williams, Rachelle  
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor  
Ethics of Chemistry: Sarin Gas and the biochemical effects of chirality
This research paper explores the physical and chemical properties of sarin nerve agent and its synthesis. Originally developed as a pesticide, this molecule was further developed in Nazi Germany and utilized as a chemical weapon by various countries. Sarin is synthesized by combining methylphosphonicdifluoride and isopropanol alcohol, resulting in two alternate, chiral forms of the chemical. In the body, this compound inhibits muscle function by binding to acetylcholinesterase, the enzyme responsible for regulating muscle contraction. Sarin raises important questions on the ethics of chemistry.

Williams, Sara
Session 2.14, 11:10 am - 12:40 pm, Rogers Rehearsal Hall
Still by Dorothy Chang (oboe)

Wilson, Sydney
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
How MDMA Changes the Neurochemistry of the Brain
3,4-methylenedioxy-methamphetamine (MDMA) is a psycho-stimulant drug first synthesized by Merck via the bromination of safrole, creating 1(3,4-methylenedioxyphenyl)-2-bromopropane, followed by a reaction with methylamine. MDMA consists of a secondary amine attached to a benzene ring (methamphetamine) with a methylenedioxy group attached. MDMA binds to receptor proteins on brain neurons, inhibiting the reuptake of serotonin and stimulating excess serotonin release. MDMA has also been found to inhibit the metabolism of the neurotransmitters serotonin and dopamine. Excessive long-term use can cause negative effects on the brain and body, yet new studies show that MDMA could be used therapeutically for patients with social anxiety.

Withy-Berry, Bryce
Session 4.5, 2:00 pm - 3:00 pm, Eaton 106
Personality Change and Ideal-Current Discrepancies Across the Study Abroad Experience
Previous research has examined personality change in young adulthood, but little research has investigated the change and interplay of well-being and personality throughout study abroad. In this study, we collected data from American Studies Program (ASP) students in order to document their perceived and actual change over the course of the ASP. We assessed ASP students in Japan just prior to study abroad and twice during their year at Willamette. We explored how well-being is related to the discrepancy between ideal and current personality traits. We also examined how these discrepancies change over the course of the study abroad experience.

Wright, Adam
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
The Advantages and Disadvantages of Solid and Liquid Rocket Propellant
We report on differences between solid and liquid rocket propellants, including ammonium nitrate, cyclotrimethylene-trinitramine (RDX), liquid oxygen, and hydrazine. Liquid propellants undergo combustion, followed by decomposition; whereas solid propellants undergo oxidation-reduction reactions, followed by combustion to produce energy. Liquid propellants are more efficient, but also more expensive than solid propellants. In addition, the by-products of liquid propellants are less detrimental to the environment. The similarities and differences, efficiency, environmental impact, and chemical properties of the four selected propellants will be discussed in the context of modern day space delivery vehicles.

Yaginuma, Kevin
Session 1.9, 9:30 am - 11:00 am, Ford 102
Life and Development of Miyazaki Hayao
Miyazaki Hayao’s films are loved throughout the world. But the images that western scholars have about him are slightly different from what can be read about him from his books. By introducing some of this writing that describes his personality and his past, one can understand his works better.

Yoshida, Noemi
Globalization and
Many scholars are condemning China’s rapid globalization as the reason for its changing moral landscape. These value shifts are evident in the market of its contemporary society, and interestingly also within the early classroom environments. I assess how and why contemporary views of China stem from its post socialist progression into becoming one of the world's most economically powerful countries.
Youtsey, Brett
Session 2.13, 11:10 am - 1:50 pm, UC 2nd Floor
Vitamin C
Ascorbic acid - vitamin C - serves as a fundamental supernutrient that can overcome, prevent, and improve a variety of illnesses. It primarily functions as an antioxidant that prevents free radicals, molecules with unpaired electrons, from altering biological structures. Too many free radicals can weaken cells making them vulnerable to pathogens and even cause cancer. With studies being released each year demonstrating its effectiveness in fighting disease, vitamin C proves that its chemical properties can play a major role in making it an effective antidote. Therefore, the purpose of this presentation is to summarize and discuss vitamin C pertaining to human health.

Zhang, Natalie
Session 2.9, 11:10 am - 12:40 pm, Ford 102
It Ain’t Over Till The Fat Lady Sings: Combatting Fat Shaming and Its Repercussions
In a graphic novel, many of the misconceptions that the public has regarding fat, fatness, and fat shaming will be refuted through research that is woven into characters and a multitude of scenarios throughout the plot. The main purpose of this novel is to educate people of all ages to respect and promote equal treatment of all bodies and to inform them about the consequences of body shaming.

Zimmer, Anelise
Session 2.1, 11:10 am - 12:40 pm, Collins 205
Regional climate IMpacts of Future Warming in Western North America to Western Europe
Global warming is predicted to have large impacts globally, with variables such as precipitation, winter snow and ice cover, and annual mean temperature expected to change consequently. In the regions of Western North America and Western Europe, changes in such variables will have large impacts on public health, the economy, and the health of ecosystems. In order to adapt and mitigate such effects of climate change, it is important to understand the extent to which different regions may be affected. We utilized EdGCM to compare the changes in precipitation, winter snow and ice cover, and annual mean surface temperature. To make these comparisons, we used two climate simulations developed by the IPCC: A1F1 and RCP 8.5. The Modern Predicted simulation that uses a baseline of data from 1958 was subtracted from each of the two simulations for each variable tested. The results for each map produced were compared and predictions for the regions were made. The RCP 8.5 predictions are more drastic than the A1F1 predictions but overall, precipitation in both Western North America and Northwestern Europe is predicted to increase, snow and ice cover for December through February is predicted to decrease, and annual mean surface temperatures are expected to increase. These predictions have serious implications for the futures of both regions and more research about the consequences for public health, natural ecosystems, and the economy is needed and serious policymaking to help human populations to mitigate and adapt to the impacts of global warming.

Zuckerman, Evann
Session 4.6, 2:00 pm - 3:00 pm, Eaton 209
Short Prose and Poems Explore Mind and body
Short prose and poems exploring the relationship between and alienation of the mind and body as affected by mental health, trauma, and dreams.

Zurschmeide, Kate
Session 4.5, 2:00 pm - 3:00 pm, Eaton 106
Longitudinal Relations between Personality traits and Social Adjustment in College
Making friends and combating loneliness in a new social environment may be challenging for college students. Individual differences in Extraversion, Neuroticism, and Agreeableness may predict feeling socially fulfilled or lonely. The current research examines how these factors interact during a longitudinal study of recent students at Willamette University (N=196). Two questions were considered: How do Extraversion, Neuroticism, and Agreeableness relate to Loneliness and Social Fulfillment in the moment and over time? What overall changes occur in traits and social adjustment over four years of college? Results reveal the dynamic interaction of traits and social adjustment throughout college.
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2016 SSRD Committee

Ricardo De Mambro Santos, SSRD Chair, Associate Professor of Art History

Gretchen Flesher Moon, Associate Dean and Professor of English

Bill Kelm, Librarian, Mark O. Hatfield Library

David Altman, Associate Professor of Physics

Jason Duncan, Associate Professor of Biology

Yan Liang, Associate Professor of Economics

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Students; Emily Evers, McCall Concannon, Maya Zavala, Anna Langren, Tiffany Chan, and Sarah Crabb,