SOURCE 2016
SYMPOSIUM OF UNIVERSITY RESEARCH AND CREATIVE EXPRESSION

PROGRAM AND PROCEEDINGS

21st ANNUAL CONFERENCE
MAY 18th & 19th, 2016

CELEBRATING EXCELLENCE IN RESEARCH, SCHOLARSHIP,
AND CREATIVE ACTIVITIES

CENTRAL WASHINGTON UNIVERSITY
SPONSORED BY
School of Graduate Studies and Research
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Office of the Associate Provosts
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A SPECIAL THANKS TO OUR COMMUNITY SPONSORS

United Faculty of Central
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  Alumni Association
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  Jerrol’s
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Iron Horse Brewery
Ellensburg Canyon Winery
Kittitas Valley Event Center
  Domino’s Pizza
PROGRAM AND PROCEEDINGS

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About SOURCE

This year, SOURCE celebrates the 21st year of annual multidisciplinary conferences dedicated to student scholarship at Central Washington University.

SOURCE is the longest-running student symposium in Washington State.
The goals of SOURCE are to:

Celebrate the depth and diversity of scholarly inquiry and creative expression at Central Washington University.

Offer Students a professional forum in order to sharpen their presentation skills and communicate professional standards.

Promote students' professional development by providing evaluation and feedback on student presentations in accordance with rigorous professional expectations.

Promote excellence in pedagogy by providing and opportunity for faculty to mentor students through all the steps involved in presenting their work, including creating a research idea, designing and conducting research, and developing and delivering a presentation.

Create a sense of excitement about scholarship and promote life-long learning by encouraging people from within and outside the University to attend students' presentations and learn about current developments across multiple academic disciplines.

Foster partnerships between higher education, industry government, and the local community by inviting representatives from diverse fields to partake in evaluating student presentations.

Attract the attention of employers to the excellence of students at Central Washington University.

Allow opportunities for further development of mentoring relationships and skills.

Promotes a sense of community and inclusivity by encouraging students from all disciplines to participate and by recognizing that, while facilitating students' professional development is our priority, presentations by faculty and staff are welcome.

Elevate student accomplishment and recognize the excellence of undergraduate and graduate research at Central Washington University.

Recognize works of creative expression as valuable research activities with cultural significance alongside more traditional research.

Promote entrepreneurial spirit by encouraging students to develop and exhibit their business plans.

Educate the University, Town, and Region about the resources and work available through Central Washington University.
May 13, 2016

On behalf of Central Washington University, I welcome you to the 2016 Symposium Of University Research and Creative Expression. SOURCE is CWU’s largest, multidisciplinary event and is also the longest running university-associated student symposium in our state. This year marks a significant milestone, as it is our first two-day SOURCE. The growth of SOURCE has been nothing short of phenomenal in terms of both participation and attendees.

The first event, held 21 years ago, showcased the work of 23 undergraduate students. By 2015, that number had increased to 550 presenters and their work was seen by 4,300 attendees. Even more presentations, and attendance, is expect this year, which is the reason we have—by necessity—expanded to a two-day event. Actually, SOURCE is four days in length, as there are smaller, but no less important, companion events at our campuses in Des Moines and Lynnwood.

Regardless of location, SOURCE allows us to celebrate the tremendous quality, quantity, and diversity of creative achievements, research, and scholarship produced by our undergraduate and graduate students, faculty, staff, and alumni. There will be oral and poster presentations, along with performances involve the sciences, history, literature, and educational research, as well as creative writing, music, theatre, and art. SOURCE further sets itself apart through inclusion of area elementary, middle, high school, and Running Start students, along with community members, who take advantage of an atypical opportunity for them to also present their scholarly endeavors.

Through the years, SOURCE has relied on dedicated faculty and staff, who mentor students in research, scholarship, and creative projects; students who utilize their time, energy, and intellectual curiosity to complete projects; and committed university personnel and student volunteers who labor behind the scenes. Last year, 70 volunteers and more than 100 judges, who offered their invaluable professional feedback to our presenters, selflessly offered their time and expertise to facilitate SOURCE. We expect a like number this year and I want to express my gratitude to each and every one of them for their vital efforts.

As in past, SOURCE 2016 has received key contributions from administrators, notably Dr. Anne Egger; director of the Office of Undergraduate Research, and generous financial contributions from university academic and administrative units, individuals, and corporate and community sponsors. I also want to thank this year’s 27-member SOURCE committee, comprised of faculty, staff, and students representing all areas of the university, which was chaired by Jamie Gilbert. I am very appreciative of its efforts. It is through such contributions that SOURCE is now routinely regarded as one of the premier events of its kind.

Again, welcome to SOURCE, a two-day community celebration of which we all can—and should—be very proud.

Sincerely,

James Gaudino
President

Office of the President
400 East University Way • Ellensburg WA 98926-7501 • Office: 509-963-2111 • Fax: 509-963-3206
Office location Barge Hall Room 314 • E-mail: CWU_President@cwu.edu • Web: www.cwu.edu/president
SOURCE KEYNOTE

THE FUTURE OF ENVIRONMENTAL LEARNING

SURC THEATRE, WEDNESDAY, MAY 18TH, 4:00 PM

Dr. Mitchell Thomashow is currently a Fellow at Philanthropy Northwest where he dedicates his time to promoting awareness of sustainability, community, and place. Thomashow devotes his life to promoting ecological awareness, sustainable living, creative learning, and improvisational thinking.

Sponsored by The Office of Undergraduate Research & SOURCE, and the Associate Provost’s Office.
Dr. Curtis Acosta has taught high school for nearly 20 years, in Tucson Arizona, where he has developed and taught for the renowned Mexican American Studies program. He is an award winning educator and has been featured in the documentary Precious Knowledge, The Daily Show with John Stewart, and his classes were subject of multiple profiles by CNN, The New York Times, and the Los Angeles Times amongst many other media outlets.
We Congratulate All 2016 CWU Symposium of University Research & Creative Expression Participants!

Your curiosity, determination and hard work inspire us!

Through a unique, public-private partnership, Washington state is helping to grow a skilled, homegrown workforce who will foster innovation, drive our economy, and fuel a brighter future through the Washington State Opportunity Scholarship.

Scholars in the fields of STEM (science, technology, engineering and mathematics) and health care can receive up to $22,500 in scholarship funding as well as professional development and skills-building support.

2017-18 Application Available January. Learn more at waopportunityscholarship.org
MANASTASH
MASS INCARCERATION: BLACK AND BROWN LIVES MATTER

CENTRAL'S STUDENT-RUN LITERARY MAGAZINE

AVAILABLE MAY 19TH

Come join us at SOURCE
12:40 - 2 p.m. SURC 301

Don’t forget to vote for your favorite poster for SOURCE 2017!
STUDENT-RUN, AWARD-WINNING
PULSE MAGAZINE

VISIT US AT SOURCE TO HEAR HOW IT'S ALL DONE.

MAY 19 2:10-3:30 SURC 301

DON'T FORGET TO CHECK OUT THE LATEST ISSUE AND EXCLUSIVE CONTENT AT CWUPULSE.COM
STUDENT FASHION SHOW

The CWU Apparel, Textiles and Merchandising program is proud to present THE FASHION SHOW, the 20th annual spring fashion show. Come see the latest trends featured in our ready-to-wear categories. Fourteen student designers will be presenting their original lines that feature an array of styles, details and textiles. Brought to you by the FCSA 381 Fashion Show Production class and original student designs created in FCSA 488 Fashion Line Development.

Featuring two shows on Saturday, June 4, at 3:00 p.m. (doors open at 2:00 p.m.) and 7:00 p.m. (doors open at 6:00 p.m.) in the Milo Smith Tower Theater in McConnell Hall on the CWU campus. A silent auction will precede each show with proceeds supporting next year’s fashion show, student field experiences, and student scholarships. For more information email Professor Andrea Eklund at aeklund@cwu.edu. Show details can also be found on the Apparel, Textiles and Merchandising Facebook page.

BUSINESS PLAN COMPETITION

The Institute for Innovation and Entrepreneurship (I4IE) Business Plan Competition is generously sponsored by the Herbert B. Jones Foundation. All CWU students were encouraged to enter a business plan in the competition. Five finalists present their oral presentations at SOURCE. The 1st place winner will receive $5,000, the 2nd place winner will receive $3,000 and the 3rd place winner will receive $2,000. The winners will be announced at the SOURCE awards ceremony on May 25 at noon in the SURC Pit.

JUDGES:
Sandy Wheeler – Serial Entrepreneur including; Trissity, Chapters, Bowflex
David McDonnell - SCORE Board Member, Retired Owner - Right hardware Co.
Doug Webster – Director of Product Development, Treetop
Bill Provaznik – Director, CWU Institute for Innovation and Entrepreneurship
MUSICAL WELCOME

With the mentorship of Dr. John Neurohr in the Music Department, the CWU Trombone Choir will usher in the Fashion Show on the SURC Mezzanine. The CWU Trombone Choir students frequently win awards and receive recognition at auditions, music festivals, and professional engagements. The CWU Trombone Studio is recognized as one of the preeminent collegiate trombone studios in the entire Pacific Northwest region. It currently boasts a large studio of 24 music majors, and consists primarily of undergraduate students. They just returned from performing in Arlington, VA. Learn more at: https://www.cwu.edu/music/trombone-choir

SCHOLARLY SHOWCASE

Interested in research opportunities or support for your research or scholarship at Central? Check out the following tables in the 1st floor during SOURCE (in the hallway parallel to the food court – next to US Bank):

- The Science Honors Research Program,
- The Academic & Research Commons at Brooks Library,
- ScholarWorks at Brooks Library
- William O. Douglas Honors College
- The Center for Excellence in Science and Mathematics Education (CESME)
- McNair Scholars Program
- Washington State Opportunity Scholarship
- Graduate Student Association
- Undergraduate Research Club
- The Primate Awareness Network.
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<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>11:00-12:00</td>
<td>SOURCE HYPE throughout the first floor of the SURC</td>
<td>Room 135</td>
</tr>
<tr>
<td>12:00-12:30</td>
<td>MUSICAL WELCOME &amp; FASHION SHOW in the SURC Pit (Brand New this Year!)</td>
<td>Ballroom B</td>
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<tr>
<td>12:30-12:40</td>
<td>10 MINUTE BREAK</td>
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<tr>
<td>12:40-2:00</td>
<td>Poster Session #1: ART, MUSIC, WORLDS, LANGUAGES</td>
<td>Room 135</td>
</tr>
<tr>
<td>2:00-2:10</td>
<td>10 MINUTE BREAK</td>
<td></td>
</tr>
<tr>
<td>2:10-3:30</td>
<td>Keynote Speaker, Dr. Mitchell Thomashow</td>
<td>Theater*</td>
</tr>
<tr>
<td>3:30-4:00</td>
<td>30 MINUTE BREAK</td>
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<tr>
<td>4:00-5:00</td>
<td>Keynote Speaker, Dr. Mitchell Thomashow</td>
<td>Theater*</td>
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<tr>
<td></td>
<td>Dr. Mitchell Thomashow will speak about the Future of Environmental Learning. Thomashow is currently a Fellow at Philanthropy Northwest with an emphasis on building social capital, intellectual leadership, and organizational effectiveness in promoting sustainability, community engagement, ecological awareness, diversity and inclusion.</td>
<td></td>
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</table>

*The Keynote Speaker session will be live-streamed and recorded to facilitate viewing by online students.

POSTER SESSION #1 – TOPICS:
- BUSINESS, ITAM & English Department Alumini
- Philosophy & Religious Studies Alumini
- Communication Department Alumni
- Library and Information Science Alumni
- Computer Science Alumni
- Nutrition, Exercise, & Health Sciences Alumni
- Physical Education, School, & Public Health Alumni
- Art, Music, Worlds, Languages Alumni
- Apparel, Textiles, & Merchandising Alumni
- Political Science Alumni
- Service Learning Symposium
- Psychology Alumni
- Creative Works: Art, Apparel, Textiles, & Merchandising
- Creative Works: Music
- Creative Works: Apparel, Textiles, & Merchandising
<table>
<thead>
<tr>
<th>Time</th>
<th>Session #1 - Topics:</th>
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<tbody>
<tr>
<td>8:30-8:40</td>
<td>Posters Set-Up</td>
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<tr>
<td>8:40-10:00</td>
<td>Panel Discussion: POLITICAL SCIENCE</td>
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<tr>
<td>10:00-12:00</td>
<td>Panel Discussion: HISTORY</td>
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<tr>
<td>12:00-1:00</td>
<td>Panel Discussion: POLITICAL SCIENCE</td>
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**KEYNOTE SPEAKER: DR. CURTIS ACOSTA in the SURC Theater**

Dr. Curtis Acosta will speak about Culturally Responsive Education. Acosta is a former Tucson, AZ, schoolteacher who developed and taught a Mexican American studies curriculum. He now advises other communities on developing Mexican American and ethnic-studies programs through the Xicanx Institute for Teaching and Organizing.

*All sessions in room 137A and 271 and the Keynote Speaker session will be live-streamed and recorded to facilitate viewing by online students.*

**POSTER SESSION #2 – TOPICS:**

- BIOLOGY
- CHEMISTRY
- ENVIRONMENTAL STUDIES
- GEOGRAPHY
- GEOLOGICAL SCIENCES
- RESOURCE MANAGEMENT

**POSTER SESSION #3 – TOPICS:**

- ENGINEERING TECHNOLOGIES, SAFETY, & CONSTRUCTION
- PHYSICS
- MATHEMATICS
- ANTHROPOLGY & MUSEUM STUDIES
- CULTURE & RESOURCE MANAGEMENT
- PRIMATE BEHAVIOR & ECOLOGY

**POSTER SESSION #4 – TOPICS:**

- COMMUNICATION
- EDUCATIONAL FOUNDATIONS & CURRICULUM
- ETHNIC STUDIES
- FAMILY AND CONSUMER SCIENCES
- HISTORY
- LAW & JUSTICE
- POLITICAL SCIENCE
- PSYCHOLOGY
- SOCIOLGY

**WORLD LANGUAGES:**

- AMERICAN SIGN LANGUAGE
- THEATRE ARTS
- THEATRE ARTS, FILM & VIDEO STUDIES

**MUSIC PERFORMANCE: **

- WILL BE HELD IN THE MUSIC BUILDING CONCERT HALL
- FROM 9:40 – 11:00 am
Monday, May 16

SOURCE at the Des Moines Center
Higher Education Center (Building 29)

<table>
<thead>
<tr>
<th>Poster Session – 5:00–8:00 pm</th>
<th>Lobby</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 “Egg”cellent Egg Strength</td>
<td>Lobby</td>
</tr>
<tr>
<td>2 Global Climate Change: Public Perception of Scientific Reality</td>
<td>Josue Chavez, Trevor Carslay</td>
</tr>
<tr>
<td>3 Heating a home using compost</td>
<td>Valdemar Lodholm</td>
</tr>
<tr>
<td>4 Socioeconomic Segregation and the Location of Assisted Living Facilities in WA State</td>
<td>Miranda Anderson</td>
</tr>
<tr>
<td>5 Uneven development and Community Development Block Grants</td>
<td>Stefan Turner</td>
</tr>
<tr>
<td>6 What do theocracy and democracy have in common?</td>
<td>Khodadad Kaviani</td>
</tr>
</tbody>
</table>

Tuesday, May 17

SOURCE at the Lynnwood Center
Snoqualmie Hall

<table>
<thead>
<tr>
<th>Poster Session – 5:00–8:00 pm</th>
<th>Lobby</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Implementation Life Cycle of Management Information Systems</td>
<td>Sara Ciuk, Jared Gunderson, Jessica Berg, Ferdinandus Haris</td>
</tr>
<tr>
<td>2 Analyzing Natural Disaster Risk for Supply Chain Operations</td>
<td>Van Huynh, Todd Jewell, Matthew Holland</td>
</tr>
<tr>
<td>3 The Impact of Globalization on Supply Chain</td>
<td>Karma Lhaden, Zhihong Lin, Kelvin Kwandy</td>
</tr>
<tr>
<td>4 Fender’s Built-to-Order strategy</td>
<td>Jacob West-Ugartechea, Larry Thompson, Joshua Reichert</td>
</tr>
</tbody>
</table>
Opening Event

12:00–12:30 PM  
Musical Welcome and Fashion Show  
SURC Pit

Workshops

12:40–2:00 PM  
How to get started in research and scholarly work  
Room 301

During this workshop, you will learn what it means to “do research” in any field, describe your own interests and where they might take you in scholarly work, practice strategies for approaching potential faculty mentors, and learn about opportunities for funding your work and travel to present your work. Appropriate for students at all levels, from freshman to seniors.

2:10–3:30 PM  
Writing the statement of purpose for graduate school applications  
Room 301

In this workshop, we will have a general introduction about applying to grad school and the nature of the statement of purpose. Then we will practice writing and give feedback to each other in disciplinary subgroups. You will leave the workshop with the beginnings of your graduate school application and strategies for writing and getting feedback.

Alumni Panels

2:10–3:30 PM  
English Department Alumni Panel  
Room 140

Five recent English Alumni will discuss their developing careers. Because they are successfully negotiating today’s job market, they have valuable insights for our current students.

2:10–3:30 PM  
Philosophy and Religious Studies Alumni Panel  
Room 201

Whether you intend to pursue a career in academia, law, or public service, these graduates know how to navigate the challenges of your chosen path. Join us for an entertaining and candid conversation about how you can put your philosophy degree to work.

2:10–3:30 PM  
Life & Work after Graduation: Advice from Communications Alumni  
Room 202

A goal of the panel is to give advice to our communication students about what they can do to prepare for what happens after graduation from Central. Panelists will tell their own stories and talk about things they wish they had known when they were a student but no one ever told them.

2:10–3:30 PM  
Life & Work after Graduation: Advice from WL Alumni  
Theater

The speakers will talk about the value of their WL degree(s) (Spanish, Japanese, and French) for work and life. They may tell their own story and talk some about things they wish they had known when they were students but no one ever told them.

Keynote Speaker

4:00–5:00 PM  
Mitchell Thomashow: The Future of Environmental Learning  
Theater

Environmental Learning is at a crossroads. How do campuses and communities address the extraordinary environmental challenges of the next several decades?
## Oral Sessions – 12:40–2:00 pm

### Session 1: COMPUTER SCIENCE  
Chair: Razvan Andonie  
Room 135

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Presenters</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:40 PM</td>
<td>SIWI - Visual Stock Analysis Made Simpler</td>
<td>Travis Hardman, Kenneth Mullinix, Ryan Millard, Jonathan Misiak, Zachary Wilcox</td>
</tr>
<tr>
<td>1:00 PM</td>
<td>Automatic classification of perceived gender from face images</td>
<td>Joseph Lemley, Sami Abdul-Wahid, Dipayan Banik</td>
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<tr>
<td>1:20 PM</td>
<td>Bizubee</td>
<td>Gabriel Ratener</td>
</tr>
<tr>
<td>1:40 PM</td>
<td>Image Recognition using Spiking Neural Networks and Hierarchical Encoding Mechanisms</td>
<td>Sami Abdul-Wahid</td>
</tr>
</tbody>
</table>

### Session 2: ENGLISH  
Chair: Christine Sutphin  
Room 140

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Presenters</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:40 PM</td>
<td>Alluring Games: Feminism and Dystopian Fiction</td>
<td>Maili Jonas</td>
</tr>
<tr>
<td>1:00 PM</td>
<td>Which is the Rooster and Which is the Hen: Evolving Gender Roles in This Side of Paradise</td>
<td>Mary Killeen</td>
</tr>
<tr>
<td>1:20 PM</td>
<td>The Work of a Nepantlera: Moving Away From Patriarchal Paradigms in the Work of Ana Castillo</td>
<td>Amanda Patrick</td>
</tr>
<tr>
<td>1:40 PM</td>
<td>A Poetic Persona: The Creation, Chaos, and Character of John Berryman's Dream Songs</td>
<td>Kimberly Glenn</td>
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</table>

### Session 3: PSYCHOLOGY  
Chairs: Anthony Stahelski & Mary Radeke  
Room 201

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<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Presenters</th>
</tr>
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<tbody>
<tr>
<td>12:40 PM</td>
<td>Symposium: Extending Darwin’s Facial Hypotheses Beyond Emotion</td>
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### Session 4: SERVICE LEARNING  
Chair: Jeffrey Snedeker  
Room 202

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<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Presenters</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:40 PM</td>
<td>Sexual Assault Prevention at CWU: Are We Doing Enough?</td>
<td>Lindsey Bates, Edith Martinez, Mariela Martinez, Jessica Ortega-Mendez, Jordan Rocco</td>
</tr>
<tr>
<td>1:00 PM</td>
<td>2016 CWU Bateman Competition</td>
<td>Travis Isaman, Nicolette Bender, Jasmine Randhawa, JoAnn Briscoe</td>
</tr>
<tr>
<td>1:20 PM</td>
<td>Music Advocacy at CWU (40 minute presentation)</td>
<td>Jeffrey Snedeker, Rachel Kramer, Hannah Mowry, Erik Poehlman, Hayley Stephenson</td>
</tr>
</tbody>
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### Session 5: POLITICAL SCIENCE  
Chair: Mathew Manweller  
Room 271

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<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Presenters</th>
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<tbody>
<tr>
<td>12:40 PM</td>
<td>American Outreach and the Liuzhou Association of Overseas &amp; Returned Scholars (LAORS)</td>
<td>Qiwen Wang</td>
</tr>
<tr>
<td>1:00 PM</td>
<td>Force and Firearms in China</td>
<td>Yu Zhao</td>
</tr>
<tr>
<td>1:20 PM</td>
<td>Content Media Analysis of English &amp; Spanish Newspapers in Yakima County, WA</td>
<td>Edgar Zamora</td>
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<tr>
<td>1:40 PM</td>
<td>U.S. Immigration: what is broken, and how to fix it</td>
<td>Scott Halliday</td>
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### Session 7: ART, MUSIC, WORLD LANGUAGES  
Chair: Nathalie Kassellis  
Theater

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<tr>
<th>Time</th>
<th>Title</th>
<th>Presenters</th>
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<tbody>
<tr>
<td>12:40 PM</td>
<td>Indian Classical Music and Philip Glass</td>
<td>Holly Chapman</td>
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<tr>
<td>1:00 PM</td>
<td>Camera Phones: Ubiquity of Images and Social Experience</td>
<td>Allyson Klutenkamper</td>
</tr>
<tr>
<td>1:20 PM</td>
<td>Learning a Foreign Language: Monolingual vs. Bilingual Students</td>
<td>Stella Kwak</td>
</tr>
<tr>
<td>1:40 PM</td>
<td>Reminiscence de l’enfance et de la nature chez Prévert, Pagnol, et Proust (Reminiscence of childhood and nature in Prévert, Pagnol, and Proust)</td>
<td>Robert Koffler, Alexius Schleif</td>
</tr>
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Oral Sessions – 2:10–3:30 pm

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<thead>
<tr>
<th>Session 8: BUSINESS and ITAM</th>
<th>Chair: Chet Claar</th>
<th>Room 135</th>
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<tbody>
<tr>
<td>2:10 PM Is Your Identity Protected?</td>
<td>Jackson Muhirwe</td>
<td></td>
</tr>
<tr>
<td>2:30 PM College of Business Methods of Recruiting Female Students</td>
<td>Mallory Icenhower, Richard Miller, Marisol Sanchez, Monica Alcantar-Castro, Cherelle Demps</td>
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Session 12: LIBRARY AND INFORMATION SCIENCE | Chair: Maureen Rust | Room 271 |
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<tbody>
<tr>
<td>2:10 PM Demystifying the Research Process</td>
<td>Sean Lind, Elizabeth Brown</td>
<td></td>
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<tr>
<td>2:30 PM Getting to Know Altmetrics</td>
<td>Julie Carmen</td>
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</tr>
<tr>
<td>2:50 PM Reflecting the diversity of Hispanic cultures in children’s and young adult collections</td>
<td>Ginny Blackson</td>
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Poster Session 1 – 12:40–2:40 pm

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<th>Room 137A &amp; B</th>
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<tr>
<td>1 Millennials and the Workforce</td>
<td>Carina Ulkekul</td>
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<td>2 Does diversity within top management teams lead to a better performance for multinational firms?</td>
<td>Myles Wesener</td>
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<tr>
<td>3 An Analysis of Union Growth and Future Trends</td>
<td>Emily King</td>
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<td>4 IHS Tour of Israel 2015</td>
<td>Ben Harbaugh</td>
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<tr>
<td>5,6 Intertwined: Art and Chemistry (II)</td>
<td>Tarra Hall</td>
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<tr>
<td>7,8,9 The Nature of Our Nature</td>
<td>Krista Zimmerman</td>
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<tr>
<td>10 Blood Lactate and Ventilatory Responses to Shallow-Water Exercise In Males</td>
<td>Jerusalem Tesfaye, Mitchell Fisher, Michael Dohrman, Karen Roemer, Debra D'Acquisto</td>
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<tr>
<td>11 Anomalous arterial pattern of human upper limb: A cadaver case study</td>
<td>Joseph Galindo</td>
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<tr>
<td>12 Applying machine learning to predict stock value</td>
<td>Joseph Lemley, Yishui Liu, Dipayan Banik, Sadia Afroze</td>
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<tr>
<td>13 Washington State Public School Bus Fuel Conversion Possibility</td>
<td>Connor Courtney</td>
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<tr>
<td>14 Equilibrium Pricing in Cherry Markets</td>
<td>Foster Peebles</td>
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<td>16 Progressive Discipline</td>
<td>Meghan Caldwell</td>
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<td>17 Wage and Hour Violations</td>
<td>Erin Wiardaayer</td>
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<tr>
<td>18 Social Media and the Hiring Process</td>
<td>Sarah McCafferty</td>
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<td>19 Benefits and barriers of the harm reduction approach for injection drug users.</td>
<td>Arianne Sandel</td>
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<tr>
<td>20 Investigating the Effects of Oliggo-Fiber Inulin on Chocolate Fudge Brownies</td>
<td>Katie St John, Rotana Radwan, Sandra Valencia</td>
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<tr>
<td>21 The Effects of Using JustFiber® White Wheat Fiber to Increase the Servings of Fiber in Duncan Hines Moist Deluxe Carrot Cake</td>
<td>Carl Bender, Madison Henke, Lauryn Searles</td>
</tr>
<tr>
<td>22 The Effect Of Farm-To-School Participation On Childhood Obesity</td>
<td>Hannah Brzozowski, Nicole Stendell-Hollis, Dana Ogan, Tim Englund</td>
</tr>
<tr>
<td>23 What’s For Lunch In Chennai, India!</td>
<td>Alejandra Calderon, Heather Gerrish, Hannah Brzozowski</td>
</tr>
<tr>
<td>24 Nutrient Intake of Elite Canadian and American Athletes with a Spinal Cord Injury</td>
<td>Heather Gerrish, Kelly Pritchett, Dana Ogan, Robert Pritchett</td>
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<tr>
<td>25 Heart rate and metabolic response to head-out water immersion in humans</td>
<td>Michael Dohrman, Mitch Fisher</td>
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</tbody>
</table>
Emulsified Mint Cod Liver Oil is an Acceptable Source of Vitamin D in Boxed Brownies  Anna Eide, Katelyn Newkirk, Hannah Hugo
Tierra De Sienna  Briana Nelson
Spirit High  Amanda Fronckowiak
Alcohol consumption and use of protective behaviors among Central Washington University students: Are there any gender differences?  Marie Betts, Jill Hoxmeier
Assessing the Need for Chemical Dependency and Co-occurring Mental Health Needs on Campus  Marie Betts
Sustainability of Plastic Water bottles on the CWU Campus  Kimberly Todd
Stopping Female Genital Cutting in Nigeria  Nicole Field
Foodborne Illness: Salmonella Heidelberg Causes Multistate Outbreak in the United States  Yarizel Herrera
Religiosity and Health  Katie Kleeberger

FASHION SHOW POSTERS

TRI  Thomas Waldron
Kingly  Emily Olson
Novia  Maria Zepeda
The Jungle Book  Jesse Leaupepe
Veni Vidi Vici  Emma Mahr
In Defense Of Being Average  Tina Beamon
Tierra Ajena  Yoalis Perez
Serendipity  Lauren Abrams
Modern Heroine  Justyna Henderson
Flannel Outbreak  Joshua Perez
Set the Tone  Alissa Leach
Skye  Rachael Wescott
Thursday, May 19

Business Plan Competition – 9:00 am–12:00 pm

**Finalists:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Company</th>
<th>Room</th>
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<tbody>
<tr>
<td>Kevin Kaib</td>
<td>Fire</td>
<td>Room 301</td>
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<tr>
<td>Zach Howard, Alex Thiong’o, Samuel Mariga, &amp; Tyler Lehto</td>
<td>Flightbites</td>
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<td>Sy Danton</td>
<td>AutoMed</td>
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<td>David Swanson</td>
<td>Lapsea</td>
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<tr>
<td>Sydney Edmundson &amp; Ivan Villareal</td>
<td>Crunch-Time</td>
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<td>Clayton Webster</td>
<td>Mobile Mocha</td>
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</table>

**Oral Sessions – 9:40–11:00 am**

**Session 16: PRIMATE BEHAVIOR & ECOLOGY**
Chair: Lori Sheeran
Room 135

- 9:40 AM  Seasonal Differences in the Intestinal Parasites of the Saddleback Tamarin (*Saguinus weddelli*)
  Krista Banda
- 10:00 AM  Human-Monkey Interactions: 12 Years of Fieldwork on Tibetan Macaques at the Valley of the Wild Monkeys, Mt. Huangshan, China
  Lori Sheeran
- 10:20 AM  Play in immature Tibetan macaques: Location preference and causes of bout termination at Mt. Huangshan, China
  Kaitlin Wright
- 10:40 AM  A comparison of social behaviors of Tibetan macaques (*Macaca thibetana*) near provisioned food sources and natural food sources
  Brianna Voight

**Session 17: MASS INCARCERATION PANEL**
Moderators: Chuck Reasons, Roger Schaefer
Room 137A

- 9:40 AM  Mass Incarceration, Race, and the War on Drugs
  Jordan Segura-Mitchell, James Segura-Mitchell
- 10:00 AM  Economics of Mass Incarceration
  Christine De Leo
- 10:20 AM  La Familia Latina and Mass Incarceration
  Ashley Garcia
- 10:40 AM  Collateral Consequences of Mass Incarceration
  Hauke Harfst, Nina Caldwell

**Session 18: BIOLOGY**
Chair: Paul James
Room 137B

- 9:40 AM  Autumn floods and winter snow: Understanding seasonal movement and habitat use of resident Westslope Cutthroat Trout in Cascade mountain streams
  Chas Lawson
- 10:00 AM  Seasonal Microhabitat Selection of Young-of-the-year Bull Trout, *Salvelinus confluentus*, in a Drought Year
  Ashton Bunce
- 10:20 AM  Testing the forage selection of the American pika (*Ochotona princeps*) to advise vegetation plans for connectivity corridors
  Carly Wickhem, Kristina Ernest, Lisa Shipley
- 10:40 AM  Natural History of a Terrestrial Turtle (*Rhinoclemmys rubida perixantha*) in a Tropical Dry Forest
  Taggert Butterfield, Daniel Beck

**Session 19: NUTRITION, EXERCISE, & HEALTH SCIENCES**
Chair: David Gee
Room 140

- 9:40 AM  Obesity and Related Risk Factor Prevalence Among Ethnic Groups in the United States
  Kayla Thomas
- 10:00 AM  A Better Anthropometric Index of Abdominal Obesity and its Association on the Prevalence of Diabetes among Asian Americans
  Yu Xiao
- 10:20 AM  Carbohydrate Mouth Rinse and High Intensity Intermittent Exercise
  Garet Simpson
- 10:40 AM  Effects of Oversized Running Shoes on Sagittal Plane Kinematics and Kinetics during Running
  Kevin Aubol
Session 20: MATH & ECONOMICS  
Chair: Dominic Klyve  
Room 201

9:40 AM An Analysis of The Mathematical Relation between Major and Minor Triads  
Linzy Mutch
10:00 AM Ellensburg Weather: A Time-Series Forecasting Model  
Madelyne Weber
10:20 AM The Economic Impact of the Exempt Water Well Moratorium and Creation of Water-Banks in Kittitas County  
Kaleb Javier
10:40 AM A Comparison of Implied Risk Free Rates and Treasury Rates  
Jesse Wehlast, Anthony Fish, Arjun Thapar

Session 21: AEROSPACE STUDIES  
Chair: Amber Johnson  
Room 202

9:40 AM How President Lincoln's Leadership Traits Apply to Modern Day Leaders  
Lianne Nguyen, Kylee Garcia
10:00 AM The Military and Leadership Legacy of Alexander the Great  
John Gossett, Ben Drake
10:20 AM General Robin Rand: How his leadership style affects those around him  
Andres Velez, Sarah Beck, Alex Renfrow

Session 22: PSYCHOLOGY & SOCIOLOGY  
Chair: Susan Lonborg  
Room 271

9:40 AM Effect of Prior Trauma Exposure on Alpha Amplitude, Heart Rate, and Self-Reported Negative Affect  
Gina DeNoble, Chris Buchanan, Susan Lonborg
10:00 AM The Effects of Sexism on Working Memory Performance in Women  
Sydney Jensen
10:20 AM Differences in College Students' Attitudes towards Heterosexual and LGBT Homeless Youth  
Jonathan Clinkenbeard
10:40 AM Relationship Ties In College Students  
Alicia Brito

Session 23: AMERICAN SIGN LANGUAGE  
Chair: Jer Loudenback  
Ballroom B

9:40 AM Feast Your Eyes! Two performances in American Sign Language (ASL)  
The Five Chinese Brothers  
Selena Addison, Veronica Benavides, Mykaela Catano-Lee, Ariana Cooks, Megan Courter, Sarah Foy, Lacey Goldsby, Amanda Huffstetler, Brittany Lancaster, Austin Lowell, Megan Macarthur, Meghan Osborn, Bailee Rogers, Mitchell Vanderman, Taylor Vetter  
Individual Creative Works  
Micaela Clark, Micaiah Davis, Celena Gilbert, Kaiti Klepec, Laura Leist, Stephanie Main, Meghan Osborn, Kaleb Payne, Vianey Rivas

Session 24: THEATRE ARTS  
Chair: Geraldine O'Mahony  
Theater

Each presentation in this session is 40 minutes.
9:40 AM Love Transcends  
Ryan Anderson
10:20 AM Montjoie Palestine  
Jordan Talbot, Carmen Taylor Uding, Hannah Chandley, Shawn Kaufman, Sarah Hoot

Session 52: MUSIC PERFORMANCE  
Chair: Gayla Blaisdell  
Concert Hall, Music Building

9:40 AM A Romantic Interpretation of J.S. Bach’s Contrapunctus I from The Art of Fugue  
Sami Abdul-Wahid
10:00 AM Creating and Performing a Composition for Tuba and Piano  
Joel Ragona
10:20 AM Becoming a Queen: The Analysis and Interpretation of Libby Larsen’s Try Me, Good King  
Caitlin Stave
10:40 AM Jack of All Trades  
Sabrina Juhl
Session 25: Apples, Sugar & Jail Food: The Business & Politics of Food Mod: Marji Morgan Room 135

11:10 AM Apples to Apples: How the Washington Apple Industry took control of the national apple market between 1950 and 1960 Kyle Scott
11:30 AM The Impact of American Sugar Interests in Hawaii Grant Harley
11:50 AM Wartime Jail Food Kaycee Jackson

Session 26: SUPREME COURT PANEL Moderator: Robert Claridge Room 137A

11:10 AM Evolving Sense of Justice: Montgomery v. Louisiana Kailey Anthony
11:30 AM Betterman v. Montana Elizabeth Sayre
11:50 AM The Stop and a Warrant: Which Comes First? Utah v. Strieff Katie Carnell
12:10 PM Wearry v Cain: The Supreme Court’s New Direction Thomas Burford

Session 27: BIOLOGY Chair: Lucinda Carnell Room 137B

11:10 AM Expression of Claudin Genes in Polycystic Ovarian Syndrome Sean Gadson
11:30 AM Developing a worm model to study effects of serotonin selective reuptake inhibitors on behavior Tykayah Baird
11:50 AM The development of eDNA sampling for use in surveying Oomycetes for amphibian and fish conservation using nanopore sequencing Doug Bennett
12:10 PM An Extendable Software Package for Determining the Effects of Developmental Interactions on Evolutionary Trajectories Elizabeth Brooks, Filip Jagodzinski

Session 28: CHEMISTRY Chair: Dion Rivera Room 140

11:10 AM Effect of Various Parameters on Bromate Formation During Drinking Water Ozonation Gaheishi Aldowis
11:30 AM Dose-Dependent Inhibition of Succinoxidase by Buckminsterfullerene (C60) Juan Flores, Carin Thomas, Zach Miller
11:50 AM Rethinking the rainbow: Utilizing a classic pH demo for ocean acidification education Eamonn Clarke
12:10 PM Kinetic decay of a polymer/ink complex as an oxygen indicator Becca Hoene

Session 29: GEOGRAPHY Chair: Megan Walsh Room 201

11:10 AM Using ESRI Story Maps to Present Spatial Temporal Information Trinity Turner
11:30 AM Water Stress and Mitigation in the Thames River Basin Megan Cline
11:50 AM Why Now? A case study of split estate and fracking activity in Garfield County, Colorado Janessa Zucchtto, Elvin Delgado
12:10 PM Two Holocene sagebrush-steppe fire records at the wildland-urban interface, eastern Cascades, WA Dusty Pilkington

Session 30: AEROSPACE STUDIES Chair: William Phipps Room 202

11:10 AM Professionalism as an essential component to effective leadership Reid Eliason, Christina Black
11:30 AM The Importance of Effective Conflict and Change Management in a Military Environment Reed Lefler, Brandon Tucker, William Eris
11:50 AM Importance of Mentorship Brian Anker
Session 31: PSYCHOLOGY  
**Chair:** Marte Fallshore  
**Room 271**

11:10 AM  Reliability and Validity of the Circumplex Religious Orientation Inventory (CROI)  
*Steven Isaak, Jesse James, Mary Radeke*

11:30 AM  Does the Safe Space Project Create Safe Spaces for Latinx Students?  
*Ayla Medina Ulloa*

11:50 AM  Addressing HIV/AIDS Stigma at the Community Level  
*Katie Kleeberger*

12:10 PM  College Students’ Perceptions of Rape  
*Dorothy Moore, Marte Fallshore*

Session 32: THEATRE ARTS  
**Chair:** Jay Ball  
**Ballroom B**

11:10 AM  Destroying Christian Masculinity on Sarah Kane’s Blasted  
*Elba Sanchez*

11:30 AM  Muse on the Margins: Rediscovering the Plays of Sor Juana Inés de la Cruz  
*Kevan Gardner*

11:50 AM  Finding Frank: Searching for a Coded Surrogate in Tennessee Williams’ In the Bar of a Tokyo Hotel  
*Robert Hanson*

12:10 PM  A Refined Fête: Edgar Allan Poe’s Application of Mikhail Bakhtin’s Carnivalesque  
*Alexis Renfro*

Session 33: THEATRE ARTS/FILM & VIDEO STUDIES  
**Chair:** Jennifer Green  
**Theater**

11:10 AM  Gamer Girl: A Student Driven New Work  
*Ashley Baker, Zachary Mysliwiec, Megan Courter, Wayne Ogle, Greg Scheopner*

11:50 AM  Evolution of Film Criticism  
*Bailee Wicks*

12:10 PM  Portrayals of Trans Characters in Pedro Almodovar’s Cinema: From Law of Desire’s Tina Quintero to All About My Mother’s Agrado  
*Sarah Clinger*

Oral Sessions – 12:40–2:00 pm

Session 34: HISTORY  
**Chair:** Jason Knirck  
**Room 135**

12:40 PM  Skinned Shin in the Kootenai War: Violent Rhetoric in A Peaceful Conflict  
*Patience Collier, Catherine Graham*

1:00 PM  Fish Heads and Fishing Strikes: Cultural and Economic Agency of Native Women in Northwest Salmon Canneries  
*Patience Collier*

1:20 PM  Fidel Castro and Los Barbudos: How Facial Hair Became the Symbol of a Revolution  
*Luke Pearsons*

1:40 PM  Stalin’s identities  
*Sophie Andarovna*

Session 35: COMPARATIVE POLITICS PANEL  
**Moderator:** Gilberto Garcia  
**Room 137A**

12:40 PM  Great Britain vs. Ireland: Who is the Stronger State?  
*Sydney Sullivan*

1:00 PM  Israel and New Zealand: A Comparison of Two Parliamentary Democracies  
*Katie Klein*

1:20 PM  Comparative Politics: Cuba and Venezuela  
*Elvia Verduzco*

Session 36: ANTHROPOLOGY & MUSEUM STUDIES, REM  
**Chair:** Mark Auslander  
**Room 137B**

12:40 PM  Narrative Seductions: Myth, Magic, and the Missing Audience  
*Nicolas Crosby*

1:00 PM  Engaged Buddhism and a Universal Climate Change Ethic  
*James King*

1:20 PM  Parrots: The Dinosaurs That Forgot To Die  
*Katie Childs*

1:40 PM  Sustainable Safari Practices: Education, Impacts and the Quality of Experience  
*Ryan Tarver, Ken Cohen*
Session 37: CHEMISTRY
Chair: Todd Kroll
Room 140
12:40 PM Progress toward Aza-decannulation by Four-Carbon Homologation 
Jonathan Adams
1:00 PM Oxo-amination of highly functionalized heterocycle-bearing alkenes 
Andrian Basargin
1:20 PM An Investigation of Anthelmintic Components of Dalea pogonathera (Fabaceae) 
Haley Wolhart, Blaise Dondji, Kaitlin Deardorff
1:40 PM Identification of proteins that interact with neocortical arealization factor Emx2 
Cody Gillman

Session 38: PHYSICS & GEOLOGY
Chair: Erin Craig
Room 201
12:40 PM General Relativity and Cosmological Models 
Jason Arakawa
1:00 PM Runaway Stars as a Possible Source of the Elliptical Ring Structure in NGC 7538 
Jason Arakawa
1:20 PM Computational model of microtubule transport in axons 
Howard Yeung, Anand Rao, Nathan Kuwanda, Peter Baas
1:40 PM Communicating seismic hazards to the Ellensburg community 
Eamonn Clarke

Session 39: AEROSPACE STUDIES
Chair: Amber Johnson
Room 202
12:40 PM Ethical Leadership within the Military 
Anna Morris
1:00 PM The Effect of Motivation in Leadership 
Robert Savino, Ariana Linse, Scott Leeming
1:20 PM How do Ethics Impact Leadership in the USAF? 
Drew Houghton
1:40 PM Motivational Theory and its applicability in real world experiences 
Alexander Mathison, Omar Freemire, Thomas Lenell

Session 40: PHILOSOPHY & RELIGIOUS STUDIES
Chair: Matthew Altman
Room 271
12:40 PM The Art of Well-Regulated Freedom: Rousseau and Cortázar 
Braden Goveia
1:00 PM Issues of Identity for the Human Person 
Zachary Korsgaard
1:20 PM What's Wrong With Morality 
Alysia Rogers
1:40 PM Ecofeminism: The Link between Women and Nature 
Jacquelyn Stroud

Session 41: MANASTASH SHOWCASE
Chair: Xavier Cavazos
Room 301
Presenting works from: Ryan Bailey, Donson Curtiss, Shaylynn Gould, Emily James, Haley Lindsley, Jennifer Marsh, Tranell Mayfield

Session 42: DANCE PERFORMANCE/EDUCATION
Chair: Therese Young
Ballroom B
12:40 PM Life, After, A Dance Requiem: The process of writing and producing a work for dance 
Krista Connelly
1:00 PM Convolutions 
Jacquelyn Johnson
1:20 PM History of Teacher Education: A Reader’s Theatre 
Sharryn Walker, Brita Williams, Susana Flores, lan Loverro, Janet Finke

Session 43: FILM & VIDEO STUDIES
Chair: Melissa Johnson
Theater
12:40 PM The Evolution and Application of Violence in Cinema 
Jacob Heflin
1:00 PM Gender and Genre 
Kristen Moerdyk
1:20 PM “Friends” and Television’s Cultural Influence on America in the 1990s 
Brily Walked
1:40 PM Buster Keaton’s Comedic Innovations 
Tyler Templeton
### Oral Sessions – 2:10–3:30 pm

#### Session 44: HISTORY
Chair: Brian Carroll

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<thead>
<tr>
<th>Time</th>
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<th>Speakers</th>
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<tr>
<td>2:10 PM</td>
<td>The Buddha’s Basic Teachings and Pedagogy</td>
<td>Hideki Takei, Yoko Allen</td>
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<tr>
<td>2:30 PM</td>
<td>Reasserting Masculinity in Colonial Uganda: Kabaka Mwanga II and his fight against the British</td>
<td>Haleigh Downing</td>
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<td>2:50 PM</td>
<td>American Cinema in the 1950s in relation to conformity and the real/ideal</td>
<td>Claudia Trevitt</td>
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<tr>
<td>3:10 PM</td>
<td>At Home on Land and at Sea: Nineteenth Century American Sailors’ Tattoos as Evidence of Sailors’ Dual Cultural Membership</td>
<td>Pamela Stephenson</td>
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#### Session 45: LATINO STUDIES PANEL
Moderator: Gilberto Garcia

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<tr>
<td>2:10 PM</td>
<td>Liberation Theology: A Theology for the People</td>
<td>Omar Manzo</td>
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<tr>
<td>2:30 PM</td>
<td>Comparative Study of Health Care Systems in Cuba and Mexico</td>
<td>Estela Cervantes</td>
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<tr>
<td>2:50 PM</td>
<td>Recruitment Policies For Latino Collage Students</td>
<td>Deysi Contreras</td>
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<tr>
<td>3:10 PM</td>
<td>US Hispanic Leadership Institute: Educate, Inspire, and Advocate in the Latinx Community</td>
<td>Maira Gutierrez, Cruz Juarez, Adriana Guijarro, Yazmin Aguilar, Armando Ortiz</td>
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#### Session 46: ANTHROPOLOGY/BLACK STUDIES
Chair: Mark Auslander

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<tr>
<td>2:10 PM</td>
<td>Queer Modifications</td>
<td>Nicole Phillips</td>
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<td>2:30 PM</td>
<td>10 Years of Service: Subversion of the American Dream and Working-Class Ideology Through Punk Rock</td>
<td>Elizabeth Seelye</td>
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<tr>
<td>2:50 PM</td>
<td>Field Work among Q’eqchi’ Mayas in Semuc Champey, Alta Verapaz, Guatemala</td>
<td>YiShan Lea</td>
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<td>3:10 PM</td>
<td>Multicultural and Trapped</td>
<td>Sayana Lombard-Chappell</td>
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#### Session 47: BIOLOGY
Chair: Robert Weaver

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<tr>
<td>2:10 PM</td>
<td>Extracts of the plant Dalea spp. are active against the Hookworm, Ancylostoma Ceylanicum</td>
<td>Brianda Cardenas, Blaise Dondji, Gil Belofsky</td>
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<tr>
<td>2:30 PM</td>
<td>Ex vivo Assessment of the anthelmintic activity of Natural Plant Products on Hookworm</td>
<td>Kaitlin Deardorff, Kiah Jones, Brianda Cardenas, Shannon Fulkerson, Cassandra Ripley</td>
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<tr>
<td>2:50 PM</td>
<td>Trypanosoma cruzi: Vectors, parasite strains, and hosts within the dry tropical forest in Jalisco, Mexico</td>
<td>Uyen Nguyen, Daniel Beck, Analiese Wenger</td>
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<td>3:10 PM</td>
<td>Range expansion of an introduced population of checkered whiptail lizard (Aspidoscelis neotessealta) in Grant County, Washington Robert Peterson, Dawn Snow, James Walker</td>
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#### Session 48: MATH, SCIENCE, & HEALTH EDUCATION
Chair: Jill Hoxmeier

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<tr>
<td>2:10 PM</td>
<td>Studying Engagement based on the Math Activity of Set</td>
<td>Kassandra Guajardo, Brandy Wiegers</td>
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<td>2:30 PM</td>
<td>Science Education Through Online Video</td>
<td>Trevor Taylor</td>
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<td>2:50 PM</td>
<td>Parent-child communication about sexual health issues: What we know and what we need to know</td>
<td>Lindsey Bates</td>
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<td>3:10 PM</td>
<td>Use of alcohol among college students: Do student athletes at CWU drink more than non-student athletes?</td>
<td>Kelly Cronic</td>
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#### Session 49: TRANSGENDER LITERATURE PANEL
Chair: Paulus Pimomo

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<tr>
<td>2:10 PM</td>
<td>Trade and Tourism in Aphra Behn’s Oroonoko</td>
<td>Anne Dennon</td>
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<td>2:30 PM</td>
<td>Rita Dove’s The Darker Face of the Earth: Dismantling Slavery from the Inside</td>
<td>Elliot Staatz</td>
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<tr>
<td>2:50 PM</td>
<td>Nadine Gordimer’s The Pickup: A Counter-Colonial Journey into the Arab World</td>
<td>Alexis Renfro</td>
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Session 50: ENGINEERING  Chair: Greg Lyman  Room 271

2:10 PM  Occupational Safety and Health Educators Salary and Qualification Survey  Sathyanarayanan Rajendran, Zack VanZanten, Dan Dorn

2:30 PM  Hogue Wind Turbine Monitoring System  Michael Waytuck

2:50 PM  Associated Schools of Construction Student Competition: Team Preparation and Benefits to the Careers of Participants Now Employed  David Carns, Warren Plugge

3:10 PM  Cyber Security Awareness  Toni Hunt

Session 51: PULSE SHOWCASE  Chair: Jennifer Green  Room 301

2:10 PM  Finding the Pulse of Print: How the Student Staff of Pulse Magazine Made the Transition from Online to Print  Angelica Bartorelli, Bailey Williams, Brielle Rutledge, Mackenzie Loete, Vanessa Cruz, Heidi Thaemert, Ashytn Mann, Mindi Riggenberg

Session 53: FILM & VIDEO STUDIES  Chair: Justin Beckman  Theater

2:10 PM  Hardship Withdrawal  Evan Catlin, Zane Perry, Shay LaPierre, Cory Henderson, Kory Hollingsworth

2:30 PM  Collage  Shay LaPierre

2:50 PM  Tabbie  Jonathan Glover, Catherine Johnson, McKenzie Lakey, Julian Smart

Keynote Speaker

4:00–5:00 PM  Curtis Acosta: Culturally Responsive Education  Theater

Acosta is a former Tucson, AZ, schoolteacher who developed and taught a Mexican American studies curriculum. He now advises other communities on developing Mexican American and ethnic-studies programs through the Xicano Institute for Teaching and Organizing.
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<td>Icequakes and ocean tide near the grounding line at Beardmore Glacier, Antarctica</td>
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<td>The Spatial Distribution and Origins of Sandstone Monoliths in the Swauk Watershed, Kittitas County, WA</td>
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<td>Channel flow studies using driftwood density analysis in Elger Bay, Camano Island, WA</td>
<td>Jasmine Bates, Clairissa De La Vergne, Rebeca Becerra</td>
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<td>Dextrally offset tuff-filled paleovalleys of the Central Walker Lane: A field-based study</td>
<td>Peter Dubyoski</td>
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<td>Fault Slip Rates Along the Petrified Springs Fault, Gabbs Valley Range, Nevada</td>
<td>Zac Bales</td>
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<td>Likely source for nitrate of atmospheric origin in the groundwater of the lower Yakima Valley</td>
<td>Dallin Jensen</td>
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<td>12</td>
<td>A study of the effects of stream restoration on the hyporheic zone of Reecer Creek</td>
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<td>Metamorphic Evolution of Dulan Eclogites</td>
<td>Vaughan Gilmore</td>
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<td>Assessment of antiparasitic potentials of the Plant Dalea spp (Fabaceae) against the hookworm Ancylostoma ceylanicum</td>
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<td>Natalie Levesque</td>
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<td>Does Western Spruce Budworm herbivory change catchment-stream connectivity by altering soil carbon and nitrogen dynamics?</td>
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<td>Monitoring Multiple Cryptic Species in Altered and Restored Habitats in the Snoqualmie Pass I-90</td>
<td>Kayleigh Mullen</td>
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<td>Micro-habitat and characteristics of leaf-cutter ant trails</td>
<td>Anna Hood, Connor Arnold, Kristen Crawford, Natalie Levesque</td>
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<td>Response of Leaf cutter ants (Atta mexicana) to trail disturbance in a tropical deciduous forest in Mexico</td>
<td>Tykayah Baird, BreAnna Douglas, Christopher Johnson, Robert Peterson</td>
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<td>The Effect of Organic Matter on Hyporheic Nitrification Rates in Taneum Creek</td>
<td>Sarah Clark, Sarah Olden</td>
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<td>Late-season cold hardiness of overwintering adult wasps in the family Vespidae (Dolichovespula maculata &amp; Polistes dominula)</td>
<td>Logan Kral, Shawn Corrigan</td>
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<td>Gluttonus for Gluten: Wheat Protein Effect on MCF-7 Cell Growth and Morphology</td>
<td>Hannah Pederson, Heather Gerrish, Tania Aybar, Jessica Mackiewicz</td>
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<td>Effects of low temperatures on digestion and metabolism of the Northern Pacific Rattlesnake (Crotalus oreganus)</td>
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30 Contribution of Irrigation Canals to the Water Quality of Two Streams in Kittitas County, Washington  
Arlene Castro, Kristell Hallsson

31 The Effects of Phthalate Exposure on the Neuroblastoma 2A Cell Line  
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32 Using C. elegans as a Model Organism to Study the Behavioral Effects of the Antidepressant Cymbalta  
Omar Martinez

33 Using Flow Cytometry to Measure Macrophage Phagocytosis of Fluorescent E.coli  
Naomi Bryant, Catherine Treichel

34 Expedient access to highly functionalized iodoarylated lactams: Application to the synthesis of macrocyclic enamidynes  
Brandon Mansker

35 Expedient construction and functionalization of allylic β-pipecolinates by [4 + 2] cycloaddition of 1,3-azadienes and glutaric acid  
Monique Khim

36 Expedient, scalable, and modular synthesis of cyclic α-halo enamides and their synthetic applications  
Spencer Langevin

37 Impact of Hurricane Patricia on Trees in a Tropical Dry Forest of Mexico  
Katie Hovenkotter, Aaron Balagot, John Schutz, Christopher Smith

37 Modular access to polycyclic N,O-heterocycles using a highly functionalized allylic morpholinonate  
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Lindsey Kotlarz

39 Synthetic Applications of a Versatile Piperidine-Derived Lactamoyl Ester  
Hannah Braunstein

40 Towards the Synthesis of Novel 1,3-Azaborines as Potential Hiv-1 Protease Inhibitors  
Katherine Norris, Edward Magner, Roberto Rodriguez, Sierra Hoover

41 Toward the synthesis of possible antibiotic products derived from lasalocid A  
Diana Baluca, Eamonn Clarke, Morgan Sessions

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43 Method Development for the Simultaneous Detection and Quantification of Organic Acids in Juices and Wines  
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45 Toxic doses and effects of the manufactured nanomaterial Buckminsterfullerene on mouse liver cells in culture  
Utshaha Maharjan, Zach Miller

46 Bull Kelp Distribution in Northern Puget Sound, 1870-2000  
Luke Stilwater, Anthony Gabriel

47 Updating the Projectile Point Chronology of Two Columbia River House Feature Sites: Hole-in-the-Wall-Canyon and French Rapids  
Matt Johnson

ELLENSBURG HIGH SCHOOL POSTERS

48 Strawberry Farms Forever  
Jeff Hashimoto, Logan Davis, Miranda Nover, Sichen Liang

49 A Plant-Based Diet: Healthy You, Healthy Planet  
Jeff Hashimoto, Quinton Gasper, Ryan Creech, Owen Canterbury

WALTER STROM MIDDLE SCHOOL POSTERS

50 Bugs are insects but not all insects are bugs!  
Trish Griswold, Conner Hilberg, Jake Kelly

51 Check Your Temperature: In the Open and Under a Tree  
Trish Griswold, Harley McPhillips, Gretchen Huston

52 Chittery-cheap: Where to eat?  
Trish Griswold, Amaya Smith, Brook Wolf

53 Drip Drip: How Much Rain Can You Get?  
Trish Griswold, Beth Schilling, Josie Larned

54 How far does sound travel in the open and in the forest?  
Trish Griswold, Jacob Isatolo, Dylan Cook

55 Tweet! Tweet! Where do Birds Prefer To Eat?  
Trish Griswold, Tiffany Pink, Hennasy Reeves
CONSTRUCTED OBJECTS

1. Analysis of Wind Turbine Configurations | Junior Lenseigne
2. Automated Core Feeder System | Sergio Flores Velez
3. Inverted Pendulum | Cameron Gordon, Kyung Kim
4. Orchard Bin ATV Trailer | Neil Leitz
5. ATV Rack Extension | Trista Smith
6. 1/10th Scale Multiple Apple Box Lift | Kyle Burlingame
7. Suspension for Electrathon Vehicle | MacKenzie Angeledes
8. Effects of Sustained Damage on Photovoltaic Panel Performance | Peter Zencak
9. Solar Thermal Collector and Mobile Stand | Hazel Tickner, Tyson Nakamura
11. Truss Alignment Tool | Jason Hedin
12. Electric-Powered Tree Pruner | Erich Heilman, Thomas Wilson, Daniel Gibson
13. Conversion Casting Adapter Hub | Joseph Coup
14. Jeep WJ Multipurpose Oversize Spare Tire Carrier | Caleb Marrs
15. Multi-Use Fireline Hand Tool | Bruce Bernard
16. Pneumatic Leg Extension | David Sedano
17. Thermodynamics Air Motor Torque Measuring Device | Jose Bejar
18. ASME mini RC Baja Drivetrain | Mike Cox, Jason Moore
19. Rider Aid, e-bike kit | Song Wang
20. Automotive Hub Stand Design | Peter Noh
21. Vertical farming | Taylor Fish
22. The Prosthetic Finger | Jose Garcia
23. Testing RFID readers and RFID blocking products | Paul Niman
24. Rotor Pole Lifting Device | Baylie Johnson
25. Using Negative Feedback in a Tube Amplifier | Jed Callarman
26. Portable Die Cast System | Brad Barringer
27. Shellfish Bag Cutting Device | Trevor Reher
29. Bicycle Lock Combining Flexibility and Strength | Zachary Uhrich
30. Torque Measuring device | Logan Dearinger
31. Ultra light split board binding | Jared Van Putten
32. Dynamometer Stabilizer | Derek LaMarche
33. Flag Raising Device | Joshua Quintero
34. Torque vs RPM of Electric Motors | Eli Westbay

POSTERS

35. Locomotion Physics of a Cheetah | Eli Westbay
36. High Altitude Balloon Observations & Measurements During the 2017 Total Solar Eclipse | AJ Harpring
37. Modeling Energetic O+ Ions Interacting With Titan’s Atmosphere | Theodore Jimson, Mike Smith
38. Computational Model of Brownian Motion of Biomolecules in Crowded Cellular Environments | Jessica Carder
39. Tracking Microtubules Along an Axon | Brianna Owen, Howard Yeung
40. Central Washington University 2015 Cultural Resource Management Archaeological Field School on Washington Department of Fish and Wildlife Lands | David Davis, Jennifer Calabro-Pecora, Maxim Morton
41. A Zooarchaeological Analysis of the Mesa 12 Site: Preliminary Results | Justin Fitzpatrick
42. Aye Aye: Daubentonia madagascariensis | Helen Anderson
43. Enclosure use by a singly-housed spider monkey (Ateles fusciceps) | Jake Funkhouser
Poster Session 4 – 1:30–3:30 pm

1. A Comparison of Education Systems of the United States and Finland   *Andrea Blatner, Madison Doty, Madison Pfeil, Connor Fobes*
2. Classroom Management for Students with Disabilities   *Aunna Colter*
3. Groupthink and Nazi Germany   *Elizabeth Rasmussen*
4. Billy Murray, the Phonograph, and Forgotten Memories of American Recorded Music   *Erika Naficy*
5. Liuzhou City’s Fantastic Stones   *Weiwen Huang*
6. A Comparative Study of Agricultural Modernization between China and the USA, France, the Netherlands, Japan, and Israel   *Jing Huang*
8. Regenerating Old Industrial Cities   *Qiong Liang, Bin Mo*
9. A Different War: Vietnam in Film   *Derek Flint*
10. American Exceptionalism and the Vietnam War   *Josh Sanders*
11. The Many Faces of The Vietnam War   *Aaron Hardy*
12. Vietnam Dehumanization   *Joseph Bauer, Drew Houghton, Brent Evans, Chris Meyers, Camrin Johnson*
13. Vietnam: The Home Front   *Kevin Zwink, Dylan Call*
14. The Place Of God Before And After The Vietnam War   *Samuel Coleman, Rex Wirth*
15. Donald Trump, winning the Viet Nam War and making America great again   *Jackson Berry*
16. Reforming government statistics in China   *Dongyin Wei*
17. Underground Infrastructure: Planning, Development and Revitalization   *Guoliang Meng*
18. Patterns of Governance and Transportation Infrastructure   *Wenjie Du*
19. Kittitas County Water Budget Neutral Mitigation   *Nick Richardson*
20. Professional by Day, Roller Derby Super Hero by Night   *Andrea Eklund, Barbara Masberg*
22. The Effects of Microaggressions on Minority Students’ College Experiences   *Taylor Adams, Katy Mendoza, Daysi Mendez, Tanya Zambrano*
23. Gender Bias in Student Evaluations of Instruction   *Erika LaCarney, Emma Paradise, Tom Henderson*
24. Women’s Lives Matter: Women of Color and Police Brutality   *Sheena Wu, Samantha Zuno, Felycite Guerra, Desiree Mix*
25. The Impact of Gender, Age, and Political division on Parenthood   *Jessica Murillo-Rosas*
26. Undocumented Children & The American Foster Care System   *Cynthia Moreno*
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<td>Scott Villa, Romario Solano, Israel Garcia</td>
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<td>Jenny Pham</td>
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<td>Jenny Pham, Brandi Forgey, Alisyn Cundiff, Jesse James</td>
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<td>The Relationship Between Parental Discipline and Aggression in Children</td>
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<td>Power and deceit: Resource control frames and subordinate competence combine to predict the ability to detect deception</td>
<td>Kendra Key, Romario Solano, Jose Garcia</td>
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<td>Correct vs. Incorrect Identification of Facial Expressions Under a Time Constraint</td>
<td>Deidra Dudney, Natasha Omura</td>
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<td>The Influence of Peppermint on Productivity in the Workplace</td>
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<td>A Cultural Comparison of Two Facial Inference Studies</td>
<td>Janine Swiney, Anthony Stahelski, Mary Radeke</td>
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<td>A School Mental Health Issues Survey From the Perspectives of Washington State School Psychologists</td>
<td>Shayla Tiffany</td>
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<td>Interactions Between Teacher Efficacy and Student Behavior in Elementary Schools Adopting Positive Behavior Supports</td>
<td>Jordan Nitcy</td>
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<td>Passion and Motivation in MMORPG Players</td>
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<td>The effects of question-present versus item-present conditions on acquisition of mands</td>
<td>Paige Thornton</td>
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<td>The effects of animal environments on perception and the relationship to environmental conservation</td>
<td>Carolina Montenegro</td>
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<td>47</td>
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<td>Travis Pyle</td>
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ACKNOWLEDGMENTS

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In particular, we are grateful for the work of our two SOURCE Event Planning Practicum Students, Denise Jarnecke and Amanda Hamilton.

The Event Planning specialization prepares students for positions in special events coordination and operation, lodging sales and marketing, convention centers, destination marketing organizations, tourism planning, recreation and sports center, and many others. SOURCE is grateful for their energy and expertise, especially on the day of the event.

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Mina Massey
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Rebecca Becerra
Trevyn Corps
Colin Connors
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Alexa Beck
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Cody Nilsen
Blake Cranston
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Marrissa Martin
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SPECIAL THANKS TO OUR ALUMNI AND COMMUNITY JUDGES

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Come tour the new Science Phase II building before it opens to the public

Tour times are:
Wednesday, May 18, 2016: 1:00 pm and 2:30 pm
Thursday, May 19, 2016: 9:00 am, 1:00 pm, and 2:30 pm

If you would like to go on the tour, please meet our Tour Ambassador on the East SURC Patio at the times shown above.
After attending our Keynote speaker Mitchell Thomashow’s presentation from 4 -5 pm Wednesday, May 18, visit one of our local venues for dinner and then return to campus to the Music Building to witness the performance of the amazing Kairos Quartet at 7 pm.
PROGRAM COVER DESIGN

Senior graphic design student, Wai Wong, is this year’s SOURCE poster designer under the direction of Professor Glen L. Bach in the Department of Art. The SOURCE poster and program cover is one of many academic service learning projects that students undertake in Professor Bach’s curriculum.

SEE YOU NEXT YEAR
AT SOURCE 2017!
MAY 17TH & MAY 18TH