

SPECIAL
POINTS OF
INTEREST:

- WE²ST celebrates its first year with a Grand Opening in the new space
- Students present their research at the first annual Research Symposium
- WE²ST enjoys a sensational Spring Speaker Series
- WE²ST Fellows and Scholars are heavily involved in education and outreach activities

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ConocoPhillips Center for a Sustainable

WE²ST

Water-Energy Education, Science and Technology

SPRING 2015

Cheers to the Grand Opening of WE²ST

The ConocoPhillips WE²ST Center celebrated a highly



Fran Vallejo conveys her enthusiasm for the new ConocoPhillips WE²ST Center

successful first year with a move into a brand new space. On April 9th, representatives from ConocoPhillips, members of the Colorado School of Mines Foundation, and university executives gathered to meet the WE²ST leadership team, to view the new space, and to raise a glass in celebration. Terry Parker, Fran Vallejo, and Terri Hogue each gave brief remarks before the grand toast.



Tzahi Cath and Terri Hogue toast to the new center and a successful first year

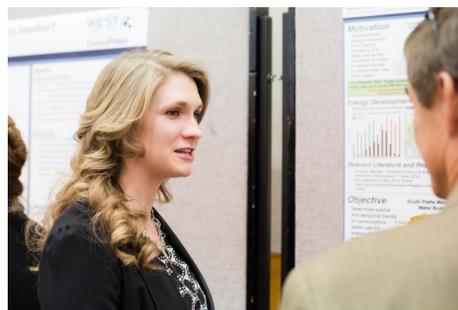
First Annual WE²ST Research Symposium

On April 9th, after the Grand Opening, the celebration continued with the first annual WE²ST Research Symposium. Eight Undergraduate Scholars and five Graduate Fellows presented posters highlighting their research from the past year. Guests all gathered to enjoy an elegant evening with drinks, hors d'oeuvres, and a wealth of scientific research. Students

worked all semester to prepare their posters and oral research pitches. They competed with one another to impress the poster judges. The winning students, Liz Bell, Kathryn Newhart, and Seth Suydam all received bookstore gift cards donated by David Ellerbreek from AECOM. All of the students did an amazing job and represented WE²ST with excellence!



Guests mingle at the Research Symposium as students present their research posters



Sophomore Scholar, Aspen Anderson, delivers a two minute research pitch about her work



WE²ST Fellows and Scholars pose for a picture with ConocoPhillips representatives at the Research Symposium

Scholars Get Their Hands Dirty



Austin Roberts prepares to work on the mass spectrometer

The eight Undergraduate WE²ST Scholars have faced a steep learning curve this year jumping into complex research topics and learning graduate level research skills. Much of the fall semester was spent “digging” into literature to get up to speed, but this semester, two of the Scholars literally did some digging! Carley Lauer and Kylie Ford, two Chemical Engineering majors, worked together to set up some trial wetland plant experiments in the Mines Park greenhouse. These two Scholars are testing

different varieties of wetland plant species to see which ones will thrive. The top performers will be used in a pilot wetland system along with microbial communities to treat produced water. Carley has an internship with ConocoPhillips in Houston this summer. Kylie will complete CSM Field Session and then continue her research with WE²ST. Other Scholars also got their hands dirty this semester working in a variety of labs on various projects!



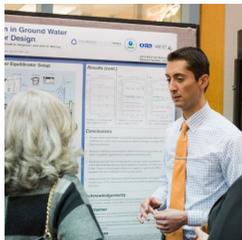
Scholars Carley Lauer and Kylie Ford touring Denver Botanic Gardens (top) and growing wetland plants in the Mines Park greenhouse (bottom)

“One of the most valuable aspects of the series was the opportunity for WE²ST students and faculty to enjoy numerous, rich conversations with the speakers in informal settings...”

Fellows Engage with Local Community

The Graduate Fellows have been busy both on and off campus this semester. Collectively they have presented at five different scientific conferences, including AGU

in San Francisco and ACS in Denver. In particular though, Skylar Zilliox’s research on the effectiveness of Memorandums of Understanding has taken her out into the community of Erie, CO where she frequently engages with local government and other key stakeholders to get the pulse on people’s attitudes toward unconventional energy development in their community.



Chris Ruybal explains his work at the WE²ST Research Symposium



Austin Shaffer looks on as **Skylar Zilliox** addresses the crowd at a community meeting in Erie, CO

Curriculum Corner: Spring Speaker Series

A second brand new graduate seminar course for WE²ST Fellows was offered this semester. It was titled Water Sustainability and Energy Production: Current Science and Practice and was taught by Terri Hogue and Andrea Blaine. Students explored relevant literature in depth and honed their technical communication skills through multiple individual and group oral presentations. In addition, students enjoyed a fantastic speaker series this spring.

Technical speakers invited specifically for the graduate course included Bridget Scanlon from UT Austin, David Ellerbroek and Jay Accashian from AECOM, and Robert Puls from University of Oklahoma. On top of the technical speaker series, WE²ST hosted campus wide seminars featuring Steve Crowell, CEO of PlusPetrol, Patty Limerick, Director of the Center of the American West at CU, and Tisha Schuller, President and CEO of Colorado Oil and Gas

Association. One of the most valuable aspects of the series was the opportunity for WE²ST students and faculty to enjoy numerous, rich conversations with the speakers in informal settings such as at lunch or over coffee.



Students and faculty visit with guest speakers from **AECOM**



Students and faculty attend a seminar given by **Bridget Scanlon** from **UT Austin**

Engineering Week Career Panel

In celebration of Engineering Week, WE²ST hosted a career discussion-panel lunch on the CSM campus. The panel consisted of six engineers from AECOM (many of whom are CSM alumni) with varying backgrounds and job descriptions ranging from technical new hires to experienced upper management. Three WE²ST Scholars, Luis Servin, Kathryn Newhart, and Austin Roberts, prepared questions for the

panel and moderated the discussion. The event was open to all CSM students which resulted in a roomful of almost 40 attendees curious to learn about “a day in the life” of a professional engineering consultant. Questions focused on topics such as current and favorite projects, non-technical skills needed, work/life balance, daily responsibilities, time management, and transitioning from academia to industry.



Luis Servin (far left), Kathryn Newhart and Austin Roberts (far right) pose with a panel of engineers after the discussion

Colorado Environmental Film Festival



This February, WE²ST seized an opportunity to step out and engage with the community at the Colorado Environmental Film

WE²ST students with Terri Hogue (center) at CEFF

Festival (CEFF). CEFF took place at the American Mountaineering Center in Golden, CO drawing crowds from Golden, Boulder, and surrounding Denver communities. Approximately sixty thought-provoking films were shown to raise awareness of environmental and social issues. WE²ST students

and faculty manned a WE²ST table for twelve hours over two days at the Eco Expo Exhibit Hall which provided an excellent opportunity to engage in dialogue with the crowds of film-goers. The atmosphere was charged with passion brought on by the power and beauty of film which allowed for many energized conversations!



Kylie Ford and Carley Lauer pet the wolf from the W.O.L.F. Sanctuary exhibit at CEFF

STEM Adventures in K-12 Outreach



Andrea Blaine presents to Ralston Elementary students on Earth Day

Education and outreach (E&O) continues to be a cornerstone of the WE²ST Center providing K-12 students and teachers with fresh STEM material and WE²ST students with invaluable communication practice. This spring, Amy Martin, WE²ST E&O Specialist, delivered over 25 STEM labs at Shelton Elementary. For each lab, groups of WE²ST students were able to accompany Amy to help facilitate the activities. Spring lab topics were chosen to coordinate with state curriculum standards and infuse current research into K-12 education; a few example topics include nanotech-

nology, biomagnification, and advanced water treatment. In a culminating event, WE²ST hosted Shelton Math & Science night. More than fifteen WE²ST students and faculty facilitated hands-on research stations at the event which saw more than 300 students and parents. On another occasion, Andrea Blaine, WE²ST Assistant Director, was the invited



Amy Martin explains animal adaptations to a group of 4th graders in a Shelton Elementary science lab

speaker for Earth Day at Ralston Elementary. She presented “human impacts on the water cycle” to more than 400 students.



Austin Shaffer helps a student with her water cycle bracelet (top) and Kylie Ford helps students test water quality (bottom) at Shelton Math & Science Night



The ConocoPhillips Center for a Sustainable WE²ST at Colorado School of Mines was formulated to promote the joint sustainability of unconventional energy production and water resources through education of water-energy literate graduate and undergraduate students and by conducting world-class research on critical topics in the field.



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Advisory Board:

- Fran Vallejo, ConocoPhillips**
- Samer Adham, ConocoPhillips**
- Sabrina Watkins, ConocoPhillips**
- Kim Senger, CSM Foundation**
- Kevin Moore, CSM, CECS Dean**

Leadership Team:

- Terri Hogue, Director**
- John McCray, Deputy Director**
- Andrea Blaine, Assistant Director**
- Jessica Smith, Community-Corporate Relations**
- Amy Martin, Cynthia Howell, Education Outreach**
- Jackie Randell, Administrative Assistant**

A New Space for WE²ST



The new WE²ST conference room

Renovations were completed in Suite 120 of Chauvenet Hall creating a new space for WE²ST. The finished center houses the office for Andrea Blaine, WE²ST Assistant Director, a desk for Jackie Randell, the Administrative Assistant, and desks for nine Graduate Fellows. In addition, there is a conference room that seats 6-8 people. Move-in day was April 3rd, just 6 days before the Grand Opening!



The nation's "go-to" institution for research, education and outreach in the water-energy nexus



Andrea Blaine, Assistant Director, poses by her new office



Sabrina Watkins, Holly Keeton, Fran Vallejo, and Louis Salazar at the Grand Opening