

**SPECIAL
POINTS OF
INTEREST:**

- **WE²ST** students and faculty visit ConocoPhillips' headquarters in Houston
- **WE²ST** students continue to earn local and national recognition
- **WE²ST** Research Symposium is a big success

**INSIDE THIS
ISSUE:**

Student Highlights	2
Research Symposium	3
Education & Outreach	3
New NSF K-12 Teacher Training Program	4

ConocoPhillips Center for a Sustainable

WE²ST

Water-Energy Education, Science and Technology

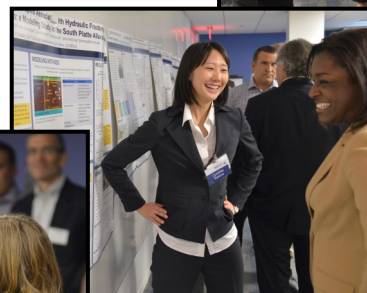
SPRING 2016

WE²ST Visits ConocoPhillips in Houston

Fourteen representatives from the ConocoPhillips WE²ST Center traveled to Houston this February to visit ConocoPhillips. The trip began with a nice dinner Sunday evening at Del Frisco's hosted by Mr. Steve Crowell from PlusPetrol. Faculty and students were seated among Senior Executives from the O&G Industry who all have had significant international experience. The dinner allowed the students to see the myriad of paths that a career can take, and it allowed the industry folks a chance to learn

more about the WE²ST Center. Monday involved a full day at ConocoPhillips headquarters where a well crafted agenda wove together presentations from ConocoPhillips and WE²ST. While CSM Faculty presented more traditional style research talks, Undergraduate Scholars gave 5 minute "research pitches" and Graduate Fellows gave 8 minute compelling "TED-Style" talks on their research. The students also brought posters for an interactive discussion session. Lunch was

provided and offered a wonderful informal opportunity for everyone to mingle and visit. In the afternoon, the leadership team from WE²ST stayed to discuss research directions with ConocoPhillips. Of course, before leaving, ConocoPhillips gave a tour of their amazing facility. On Monday evening, the CSM Foundation sponsored a wonderful alumni dinner at the Omni Hotel. Students had a chance to network and share information about the WE²ST Center with the Houston alumni crowd. All in all it was a fantastic trip and well worth repeating annually!



WE²ST Scholars, Micaela and Michelle, Show Off Superior Innovation Skills!



Kaylie Haynes, Undergraduate Scholar, researches effects of produced water on crops

Two WE²ST Undergraduate Scholars, Micaela and Michelle Pedrazas were part of a 4 woman team, Team Airband, to enter Newmont Mining's Innovation Challenge at CSM this semester. Team Airband not only competed, but ultimately took first place winning \$20,000 dollars to implement their idea. They invented an "airband" that is a wearable air-quality monitor for detecting the levels and presence of hazardous chemicals in the air. Congratulations to Team Airband and to our outstanding WE²ST twins!



Undergraduate Scholars Micaela and Michelle (left) with President Johnson and their other two team members, Daniela and Arjumand

"It is a privilege to use my education now in the service of Alaska"

-Seth Suydam, WE²ST Undergraduate Scholar

WE²ST Fellows Continue to Win National Recognitions through Scholarships and Awards

- ◇ Cynthia Kanno was selected as a recipient of the American Water Resources Association-Colorado Section's Rich Herbert Memorial scholarship for the 2015-2016 academic year.
- ◇ Emily Nicholas was selected as the 2016 recipient of the HDR/Henry Benjes Scholarship through the American Water Works Association. Emily will be a guest at the Annual AWWA Conference in Chicago this summer where she will formally receive her scholarship at the Water Industry Luncheon.
- ◇ And finally...a hearty congratulations to Chris Ruybal, who earned 3rd place in the National "7th Annual 2015-16 Geosyntec Student Paper Competition" for his paper "Real Time Field Measurements of Aqueous Methane in Groundwater For Monitoring near Shale Gas and Coalbed Methane Development."

Carley Lauer, Undergraduate Scholar, Represents WE²ST Well!

Carley Lauer will be a third year undergraduate ConocoPhillips with WE²ST Scholar next year. communication and leadership skills. Not only has she maintained an excellent GPA in her coursework, she has also won numerous scholarships. She was awarded the Denver Area Panhellenic scholarship which was open to all sorority women in 26 sororities in the Denver area. In her scholarship application, Lauer credited WE²ST as well as her internship at ConocoPhillips with communication and leadership skills necessary to be a confident, effective leader (she's the newly elected president of the Greek honor society). In her application, she also talked about the volunteering and outreach that she gets to do through WE²ST and how that carries over into her other activities. Congratulations Carley!

Seth Suydam, WE²ST Scholar, Presents to Local Alaskan Community

This semester, Seth Suydam, a returning WE²ST Scholar, was chosen to do a special project as an intern with the Prince William Sound Regional Citizen's Advisory Council (PWSRCAC) due to being a former resident of Seldovia Alaska and because he is a petroleum engineering student. His project involved learning more about oil spills and spill response in Alaska. Part of his task involved

generating a 12-15 page report containing useful information and guidelines for spill response during the event of an oil spill, and giving a 15-20 minute presentation to the PWSRCAC board of directors on May 6, in Valdez Alaska. Seth's family was directly affected by the Exxon Valdez oil spill and Seth says that "it is a privilege to use my education now in the service of Alaska." Way to go Seth!



WE²ST happy hour with ConocoPhillips guests after Willie Staudt's seminar presentation

Bigger and Better: The WE²ST Annual Research Symposium



Each April WE²ST holds an Annual Research Symposium to showcase all of the student research. This year's event was even bigger and better than last year as the

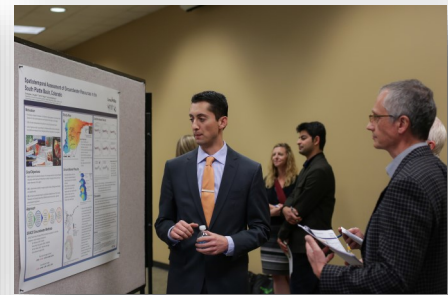
Symposium was combined with the Civil and Environmental Engineering Department and the Hydrologic Science and Engineering Program to collectively display almost 40 research posters! The event was held in the student center ballrooms and included a poster judging session for WE²ST, door prizes and awards, refreshments, and many networking opportunities. The event was well attended by many students, representatives from

ConocoPhillips and other industry folks, faculty and administration from CSM, as well as family and guests personally invited by students. Finally, the Symposium showcased the winning 6th grade water project (mentored by WE²ST) from Shelton Elementary. The four 6th graders presented posters and a model to show off their water-saving shower design.



WE²ST Student Poster Winners

First and second place for the best WE²ST Graduate Fellow Poster were awarded to Ella Walker and Chris Ruybal, respectively. Best WE²ST Undergraduate Scholar Poster went to Kate Newhart, and second place to Kaylie Haynes. Attendees also voted for the overall favorite poster at the Symposium, and this award went to Skylar Zilliox.



Ella Walker (left) and Chris Ruybal (right) won the poster competition at the Symposium. Judges for the graduate posters were Willie Staudt from ConocoPhillips and Kevin Moore

A few Undergraduate Scholars smile for a picture



WE²ST students, faculty, and guests



Michelle, a Scholar, presents her research to Fran Vallejo



WE²ST Sponsors 6th Grade Project Based Learning Units: Earth's Processes and The Real Water Cycle

The Education and Outreach efforts of WE²ST, included supporting the 6th grade Shelton science classes this year with two big project based learning units: Earth's processes and the *Real Water Cycle*. The Earth's processes unit involved teaching the students about how earthquakes affect the way buildings are constructed and insured. Each team of 6th graders had to form a company and ultimately bid for a job in front of a team of experts. In the water cycle unit, the students expanded on

prior knowledge of the hydrological water cycle to include human impacts and components like water treatment, conservation, and reuse. Each team of 6th graders was presented with a different current real problem, and they worked together to come up with a solution. The winning team put in extra hours to work with WE²ST students and faculty to develop posters for the Research Symposium. The students then presented their project at the Symposium alongside all of the college students.



Winning 6th Grade team with their teacher, Ms. Adams, presenting at the Research Symposium



Colorado School of Mines

1500 Illinois St.
Golden, CO 80401

E-mail: WE2ST@mines.edu
Website: WE2ST.mines.edu

Advisory Board:

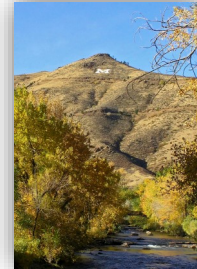
Fran Vallejo, ConocoPhillips
Samer Adham, ConocoPhillips
Willie Staudt, ConocoPhillips
Michelle Mertz, CSM Foundation
Kevin Moore, CSM, CECS Dean



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.

Leadership Team:

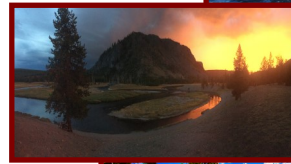
Terri Hogue, Director
John McCray, Deputy Director
Andrea Blaine, Assistant Director
Jessica Smith, Community-Corporate Relations
Amy Martin, Education & Outreach Specialist
Cassie Aungst, Administrative Assistant



New WE²NG Program Kicks-Off This Summer

WE²NG is a National Science Foundation funded *Research Experience for Teachers* program where nine K12 teachers will attend a full-time (40 hours/week) six week summer program at CSM engaging in water and energy research under the direction of faculty and graduate student mentors. The program will include an initial orientation session followed by integrated research, learning, and curriculum development. Each week will include components of individual research time, on-going workshops (e.g., communicating science, field sampling), collaborative research meetings,

connections with industry (e.g., speakers and field trips), and embedded curriculum development workshops. Another key part of the WE²NG program will be establishing long-term collaborative relationships with the participants by providing classroom support throughout the academic year. Terri Hogue and Andrea Blaine are the directors of the program and Amy Martin will be serving as the program manager. WE²ST will play a big role in this program by supporting it with both faculty and students.



WE²ST

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

Water-Energy Education for the Next Generation

WE²NG

Giving Flight to Tomorrow's Scientists

COLORADO SCHOOL OF MINES
EARTH • ENERGY • ENVIRONMENT

