

Society of Physics Students Zone 14 Regional Meeting Conference Report

Colorado Mesa University
Grand Junction, CO
September 30-October 1, 2011

Report prepared by Caitlin Heath, Colorado Mesa University, Associate Zone Councilor

On the weekend of September 30th-October 1st, 2011, Colorado Mesa University in Grand Junction, Colorado hosted the Society of Physics Students Zone 14 Fall Regional Meeting, the first SPS Zone Meeting of the 2011-2012 school year. The Society of Physics Students (SPS) is divided into 18 zones that encompass all 50 states, the District of Columbia, two Canadian provinces, the Philippines, China, Egypt, and Puerto Rico. Zone 14 includes Colorado and Wyoming.

Colorado Mesa University (CMU) SPS put out invitations to physics students and faculty from all 16 colleges and universities in Zone 14, as well as sending invitations to CMU alumni

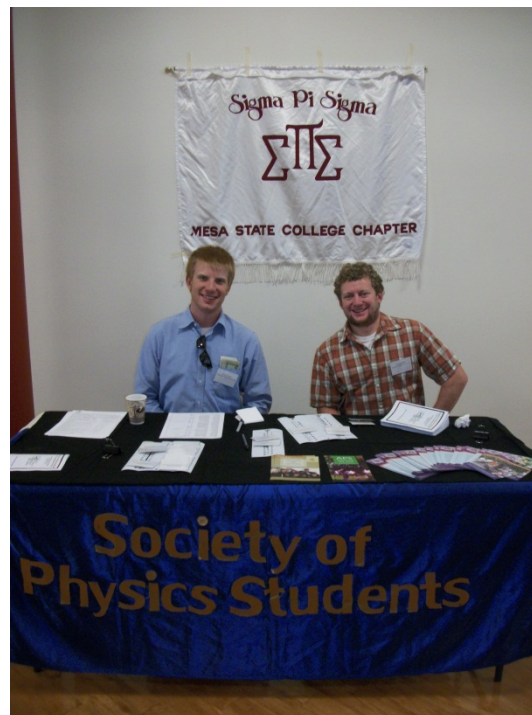
and high school teachers and students in the Grand Junction area. In the end, over 40 people attended from six schools (with students and faculty from Colorado Mesa University, Colorado School of Mines, Metropolitan State College of Denver, Colorado Technical University, University of Wyoming, and Fruita Monument High School). We were also delighted to have two high school students attend, one of whom gave both an oral and poster presentation!



Students and faculty enjoy the kick off BBQ Friday night

The festivities kicked off Friday evening with a barbeque, graciously hosted by CMU's advisor Dr. Chad Middleton, who proved he was deserving of his nomination for last year's Outstanding Chapter Advisor award. Students, faculty, and invited speakers all enjoyed getting to meet and mingle while relishing the delicious shish kabobs prepared by the Middleton family and side dishes made by other CMU physics faculty members.

Saturday morning started bright and early with registration and breakfast (including coffee brewed that morning by CMU SPS-ers who kindly donated their coffee makers to the cause). After welcoming remarks by Dr. Middleton and an introduction by Zone Councilor Chuck Stone, Director of Education for the American Institute of Physics, Dr. Jack Hehn, presented the first of five invited talks. Dr. Hehn's talk, entitled "A Great Time to do Physics," got everyone excited about the value of a physics education and the outlook for those finishing up their undergraduate education. Next, Dr. Roland Schulze, a physical chemist from Los Alamos National Laboratory (LANL), talked about "Using Physics to Study Surfaces." In his talk, he discussed the physical properties of the gas/surface interface and some of the physics involved in his research.



CMU SPS President Peter Schulze and Treasurer Mitchell Reid in charge of registration



AIP Director of Education Jack Hehn got the meeting going with a fantastic talk about the value of a physics education

Next came the student oral presentation session, where four students from two schools presented their summer research. First off was Peter Schulze, son of invited speaker Roland Schulze and CMU SPS President. His talk was about his summer research at LANL on “Accurate Sample Manufacturing for Distance Raman and Explosive Detection.” Following Peter, CMU SPS Vice President Garry Stewart gave a talk entitled “Glycerol as a precursor for anticancer applications” from his summer REU at Alabama A&M University.

Associate Zone Councilor Caitlin

Heath, also from CMU, then presented her research on “High Harmonic Generation from Rotationally Excited Molecules” that she did during her REU with the NSF Engineering Research Center for Extreme Ultra Violet program at JILA on the University of Colorado campus. Finally Lindsey Whitesides from Fruita Monument High School in Fruita, Colorado, presented her summer research on “Observing the Mira Variable Star S Leo Using CCD Photometry.” Everyone was impressed and excited to see a high school student not only attend but present at the meeting.

After enjoying lunch and a terrific view from the top of the Academic Classroom Building, the meeting reconvened with a talk by Dr. Derek Lamb of the Southwest Research

Institute in Boulder, Colorado. Dr. Lamb’s talk, “Recent Advances in Predicting Solar and Space Weather Events,” discussed how weather and events on the Sun affect the Earth, and his enthusiasm and energy helped keep everyone going after lunch.

Following the third 45-minute talk, everyone went outside to stretch their legs and observe the physics demonstration presentations. Colorado Mesa University performed their liquid nitrogen demos, including a garbage can launch and tennis ball cannon. The



Waiting for the launch of the liquid nitrogen tennis ball cannon during the demo presentation

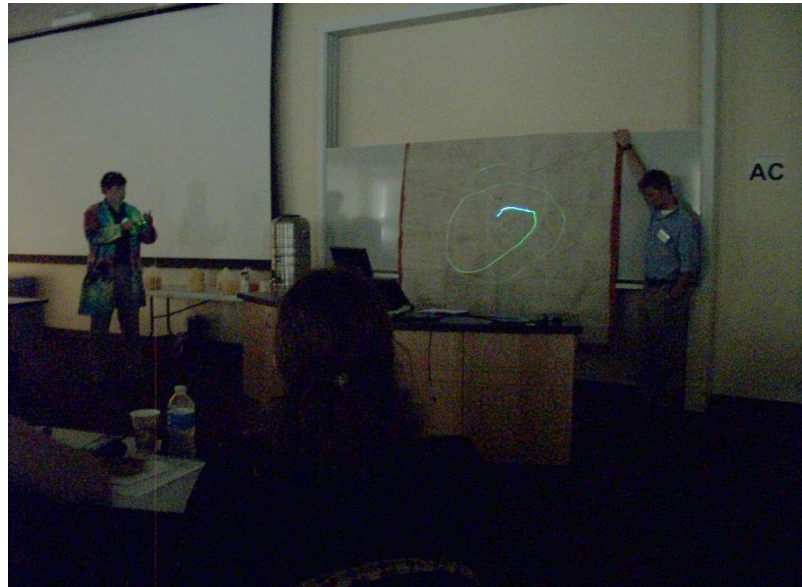


Students anxiously awaiting the launch of the LN2 cannon

University of Wyoming showed the (less dangerous) version by making rockets out of film canisters using water and alka seltzer tablets. Colorado School of Mines also showed off their laser writing demo, where a laser pointer is used to temporarily write on a sheet covered with photoluminescent paint.

After the demonstrations, Dr. Brenda Dingus, a Los Alamos National Laboratory and APS fellow, gave a talk on “Observing the High Energy Universe.” She discussed her research on high-energy particles and the new gamma-ray observatory being built in Mexico that she is involved with.

During the afternoon snack break, seven students from five schools presented posters on their research. There was a wide variety of topics being presented and some very impressive posters. Among the posters were: “Accurate Sample Manufacturing for Distance Raman and Explosive



Colorado School of Mines' laser writing demo. Here CSM's Jason Buster shows how to write with a laser pointer with the help of CMU's Peter Schulze



Poster session during the afternoon break. Seven students presented posters from five different schools.

Detection,” Peter Schulze, Colorado Mesa University; “Characterizing Companions of Massive Stars,” Rachael Smullen, University of Wyoming; “Obtaining Precise Dust Temperatures in Nearby Galaxies,” Amy Miller, University of Wyoming; “Characterizing Single Quantum Dots with a Multiphoton Microscope,” John Caleb Speirs, Colorado School of Mines; “Student use and perception of Tablet PCs; Are they helpful?”

Charley Parker, Colorado School of Mines; “Open-source electronic education tools using Tablet PCs,” Zachary Boerner, Colorado School of Mines; “High Performance Computing Applications for Material Physics,” Matthew Johnson, Colorado Technical University; and “Observing the Mira Variable Star S Leo Using CCD Photometry,” Lindsey Whitesides, Fruita Monument High School.

Following the poster session was the last of the five invited talks. Dr. Ellen Keister, a postdoc at JILA at the University of Colorado, Boulder, gave an entertaining and enlightening talk on “How I Survived My Decision to go to Graduate School.” Her talk gave the students vital information about picking and applying to grad schools, as well as what to expect once they get there.

The day ended with the business meeting and a presentation by Zone Councilor Chuck Stone of the Colorado School of Mines. His presentation, “To infinity... and beyond!” gave a rundown of the previous week’s SPS National Council Meeting in Washington, D.C., attended by ZC Stone and AZC Caitlin Heath. It also included SPS trivia, complete with prizes for correct answers. Together Stone and Heath worked to get people excited about SPS and to get involved with the national office through scholarships, grants, and attending conferences. After the conclusion of the meeting, many of the attendees met at a local restaurant to have dinner and enjoy getting to know each other more before everyone departed.

Overall, Colorado Mesa University’s Zone 14 Meeting was a huge success. With five invited speakers, six schools, and over 40 attendees, the meeting had a fantastic turnout. The meeting was an amazing opportunity of students to attend a physics conference, and for many it was their first experience at a conference and exposure to the larger physics community. This meeting would not have been possible without all the hard work by CMU SPS members, CMU physics faculty, and all of the invited speakers who agreed to come and present on a shoestring budget.

Our budget for the weekend was as follows:

Expenses	Cost
Dinner Friday (shish kabobs, soda)	\$268.49
Breakfast/lunch Saturday (doughnuts, fruit, juice, subway sandwich, plates/napkins/cups)	\$271.29
Snacks Saturday (chips, cookies, sodas, coffee)	\$109.15
Invited Speakers (\$150 x4 for gas/travel, \$200 x1 for lodging)	\$800.00
Total	\$1448.93

CMU SPS is requesting the remaining \$250 from the National Office to help cover our costs. In addition to the grant from the SPS National Office, we were also able to acquire funding from the CMU Club Advisory Board and from the CMU Physics Department.