We are working to level the playing field by helping populations traditionally underrepresented in the sciences, including girls, ethnic minorities, and students from rural communities.

The enthusiastic members of the new STEM Educators Club.
Mission
The College of Natural Sciences Education & Outreach Center is an incubator for innovation in STEM education. We serve both CSU and K-12 students and faculty through a wide variety of programs. A common thread that weaves through all of our programs is increasing the quality, quantity, and diversity of students in STEM disciplines. Particular emphasis is on finding new ways to promote scientific creativity and innovation, attributes essential for meeting global challenges in the 21st century. Many of our programs focus on providing authentic scientific research experiences for both students and teachers.

The EOC staff is supported by the College of Natural Sciences and constitutes 0.5% of the college’s annual resident instruction budget. Additional funds are derived from participation in grants led primarily by CSU faculty at large (see page 16) and self-funded programs such as SciTrek, Triunfo, and various collaborations with faculty.
Message from the Director

Five years ago we were given a difficult challenge: reinvent an existing center and make it more relevant to the College of Natural Sciences. Today, we believe that we have accomplished this and are heading in an exciting direction. This report aims to describe what we have done and chart a course forward.

A major dilemma that the previous center faced was how to serve the university when relying on large NSF, NASA, and EPA grants to remain sustainable. Finding faculty willing to collaborate on major science education grants was next to impossible and the grants were so demanding that there was no time left to serve the university or even let everyone know what great things were accomplished.

Over the last four years, we have been reinventing everything we do. Of particular note, we have had great success at engaging CNS faculty in our programs by helping them to write the broader impacts sections of their grant proposals. This has allowed us to showcase their cutting-edge research in many of our programs.

The following diagram illustrates how we can turn $6-$10k from a large federal grant into an effective educational and public relations tool at multiple levels.

Each STEM kit that we develop in collaboration with faculty has similar traits. They emphasize mathematics and reading comprehension. They model the use of scientific illustration in lab note taking. They are intended to be used by groups of two or three students to promote
teamwork. They do not compromise on materials or rigorous scientific content. They include interviews with female or underrepresented graduate students who are studying the topics showcased in the kits. The presentation of the kits is highly appealing regardless of age.

Kits are accompanied by a website and professional development videos for teachers. The kits have helped us raise funds from foundations like Xcel Energy and Google and attract considerable attention at regional STEM conferences. Our STEM Kit Lending Library allows us to reach more classrooms than we could otherwise. Most importantly, the kits have allowed us to establish the STEM Friday program and the STEM Educators Club.

In four short years, we have already expanded our service to 27% of the Biology faculty, 17% of the Physics faculty, 15% of the Biochemistry & Molecular Biology Faculty, 14% of the Chemistry faculty, 10% of the Mathematics faculty, 8% of the Computer Science faculty, and 6% of the Psychology faculty.

Not only have we engaged more CNS faculty than ever before, but we have also begun working more directly with pre-service science education students. By offering these students more than just standard academic advising, we are rapidly growing a community of leaders that will help attract more and better candidates to the STEM teaching profession.

Lastly, we have received some funding from the provost’s office to establish an Alumni Relations System. This system will allow us to better track and support our STEM Education graduates and help us to improve the programs we offer.

Interest in our services and programs is at an all-time high, despite the fact that our staffing is at an all-time low. The breadth and depth of the programs described in this report is accomplished on just 2.75 FTE spread over four people with a few student assistants.

Andrew Warnock
Andrew Warnock, Ph. D.
Director / Research Scientist III
CNS Education & Outreach Center
Programs: CSU Faculty

Services for Faculty
The CNS EOC provides consulting services to CSU faculty. Here are some of the things we can help with:

- Writing the Broader Impacts section of federal grant proposals;
- Designing effective outreach programs;
- Suggesting ways of leveraging existing programs;
- Assisting with science and math teacher professional development programs;
- Offering graduate continuing education credit for workshops;
- Design of inquiry and standards-based classroom kits;
- Recruitment of math and science teachers for Research Experiences for Teachers (RET) programs;
- Use of our cutting-edge STEM Education facility.

Sigma Xi Chapter Office
In collaboration with Dr. Shing Ho, the EOC is working to revitalize the CSU Sigma Xi Chapter. In order to bring together the more than 170 active Sigma Xi members on campus, we have begun Sigma Xi keynotes each semester focused on current issues in STEM fields.

EOC/Sigma Xi Keynote Presentations
Spring 2015: Project Youth & Chamber Music
“Einstein’s Light: Illuminating How Imagination and Innovation Advance the World”

Fall 2014: Dana Murphy
“The Zoo’s Role in Inspiring Science Students”

Spring 2014: Dr. Jaime Ruiz
“Scratch Pong on a Pico”

Fall 2013: Mike Whatley
“Interpretive Solutions”

Spring 2013: Dr. Stephen Thompson and Gary Raham
“Scientific Illustration 101”

Fall 2012: Dr. Andrea Schweitzer
“Reaching for the Stars: Community Based Space Science”

Spring 2012: Sparkfun
“The Maker Faire Phenomenon and Engaging Students in STEM with eTextiles”

Fall 2011: Dr. Kirk Johnson
“The Discovery of Snowmastodon”

Spring 2011: Dr. Nancy Kellog
“Is Science Education in Colorado on the Right Track?”

Fall 2010: Dr. Paul Dorherty
“Science for Everyone”

Sigma Xi was founded in 1886 to honor excellence in scientific investigation and encourage a sense of companionship and cooperation among researchers in all fields of science and engineering. The Greek letters "sigma" and “xi” form the acronym of the Society’s motto, “Spoudon Xynones,” which translates as “Companions in Zealous Research.”

For a complete list of past flyers visit: www.cns-eoc.colostate.edu/sigmaxi.html
Canvas Course Support
The EOC is home to the CNS Canvas coordinator, Ms. Barry Carroll, who is available to assist faculty in their use of CSU’s online learning management system. This system has many useful tools to facilitate cooperative learning, non-linear inquiry-based learning, self-assessment, and use of web resources.

Mentoring Opportunities
There are numerous opportunities for faculty to mentor in the area of STEM education. Here are a few ideas:

• Mentor a student doing a science fair research project;
• Be a judge at a regional science fair or the Colorado Science and Engineering Fair;
• Present a session at Math-Science-Tech Day; and/or
• Be a content expert at a teacher professional development workshop.

**For a complete list of current and pending grants in collaboration with CSU Faculty, please see page 16.
Programs: CSU Students

Bachelors of Science in the Natural Sciences Advising
For students interested in teaching science at the middle and/or high school levels, this is the right major. The BSNS degree program combines the CSU Core Curriculum with strong scientific content, strong educational pedagogy, and real classroom experience to meet the increasing demand for licensed science teachers nationwide.

Students can be assured that their BSNS degree will provide a firm foundation for continued graduate work in science education leading to a Masters in Education and/or Ph.D. degree. Concentrations in the Natural Sciences major include Biology education, Chemistry education, Geology education, and Physics education.

The BSNS degree also has a concentration in Physical Sciences, where a student completes the CSU Core Curriculum along with the requirements for two minors chosen from Biochemistry, Chemistry, Computer Sciences, Geology, Mathematics, Statistics, or Physics. Students choosing this major can meet requirements for professional schools (e.g., medicine or law) or graduate programs in the basic or applied sciences.

There are currently over 75 undergraduate BSNS majors in the 5 concentrations. Our learning studio is open to BSNS majors for use as a study/work space and teacher lounge.

STEM Educators Club
Natural Science Education majors (n~75), Mathematics Education majors (n~65), Engineering Education majors (n~5), and any interested STEM major (n>1000) are welcome to join our new STEM Educators Club. This student run organization is designed to provide pre-service STEM Education students with a lively community, mentoring, engaging volunteer and professional development opportunities, introductions to professional organizations, worthy fund raisers, and post-graduation support (see diagram on next page). Most of these students take their Science or Math Methods courses at the EOC. Many take advantage of our teaching materials and resources.

This year, thanks to seed funding from the provost and the CNS Dean’s office, we are actively encouraging STEM Education students to use our space, assist our programs, and reap the many benefits of being involved with the EOC.
The goal of the STEM Educators Club is to provide students with the tools and experiences that they will need to enter their own classroom prepared to do cutting-edge, hands-on science with students. By being introduced to practicing science teachers at our workshops and key-note events, getting to know the EOC staff, and joining professional societies, new teachers will be armed with the support needed as they navigate their first few years of teaching. Most new teachers quit within three years due to a lack of the kind of support that we offer.
Programs: K-12 Faculty

**Masters of Natural Science Education**
This online masters program is for in-service teachers wishing to hone their science skills. Courses feature a series of hands-on labs that are developed in partnership with CSU faculty and, assembled and shipped by the EOC.

**Annenberg Learner Distance Courses**
The CNS EOC is the only center in the United States that offers graduate-level semester credit for teacher professional development courses developed by Annenberg Learner. These rigorous courses are cutting-edge and are produced by widely respected faculty from leading universities.

**Teacher Professional Development**

**Science Kit Lending Library**
Many local and regional science teachers borrow classroom STEM materials from the EOC. One of our ongoing efforts is to add breadth to our library of science kits.

**Information**
EOC staff regularly fields questions from the Colorado science education community. These are generally related to lab or field equipment, science fair research issues, or questions about a specific scientific topic.

**Water Science Education**
The EOC has a strong emphasis in the area of water education. Our latest effort is working with the National Park Service on implementing a new Water Budget Activity at schools surrounding national parks.

Additionally, the GetWET Observatory is the only outdoor hands-on groundwater education facility in the Rocky Mountain Region and is located on CSU property along Spring Creek. The EOC hosts approximately 20 field trips per year for the Poudre School
District, Front Range Community College, and Weld County Schools. Students study water quality and quantity issues and how they relate to use, conservation, and flooding. Pre and post field trip laboratory activities include the use of an innovative physical groundwater model. GetWET is a partnership between the department of Geosciences and the EOC.

**Energy Science Education**
Like water, energy is a basic necessity. Our focus is on helping students to discover basic principles that govern sources of renewable energy. We currently offer several energy-related science kits. The Get Energized! kit covers rechargeable batteries and solar cells. The Regenerate! kit explores how regenerative braking works in hybrid electric vehicles. Our Solar Cars kit is an engineering design challenge to make a working car that meets specific design criteria. An important objective with these efforts is to inspire students in Colorado to consider beginning their clean energy career at CSU.

**Summary of Current Content Efforts by Discipline:**

**Astronomy:** World Window

**Biology:** Evolution Workshop, Hominid Evolution Kit, NetLogo Modeling of Biological Processes, Transpiration Kit (*in development*), Crayfish Molting Kit (*in development*)

**Chemistry:** Get Energized Kit, GetWET Backpacks

**Computer Sciences:** Scratch Pong Kit, NetLogo Modeling

**Earth & Environmental Sciences:** GetWET Backpacks, Groundwater Modeling Kit, Tree Rings Backpacks, Really Ancient Fossils Kit, School Water Budget Kit, Soil Carbon Kit.

**Engineering:** Solar Cars Kit, 3-D Printing, Maker Space.

**Mathematics & Statistics:** All Kits.

**Physics:** Regenerate Kit, Get Critical Kit.
Programs: K-12 Students

**Colorado Science & Engineering Fair**
Colorado has an extensive network of local and regional science fairs that feed into a state-level science fair that is hosted by CSU and directed by Ms. Courtney Butler. The Colorado Science and Engineering Fair also affiliates with the Intel International Science and Engineering Fair and Colorado sends approximately 25 projects to this competition each year.

Science fair research projects are the ideal science, math and engineering educational activity. Students work individually or within small groups to develop a research question, formulate hypothesis or create an engineering goal, design an experiment, collect and interpret data, and then communicate their conclusions both verbally and in writing. Science fair competitions also allow students to use multiple visual and physical representations.

Students who participate in a science fair competition interact with teachers, mentors, family members, judges, scientists, and the public. Awards, scholarships and internships are available to students and are great incentives to continue studying in the STEM fields.

CNS EOC is interested in increasing diversity and participation in Science Fair. To this end, the EOC is actively encouraging schools to integrate research projects into the curriculum rather than just supporting self-motivated students after school.

The following map shows the distribution of students that have recently made it to the Colorado Science and Engineering Fair.
Anyone who has had the opportunity to interview any of the students that visit CSU every April for the Colorado Science and Engineering Fair will know that these are just the sort of students we want to attract to the College of Natural Sciences. The fair brings over 300 of the best students from every part of the state to campus and faculty, graduate students, CSEF alumni attending CSU, and staff serve as judges. The Departments of Chemistry, Biochemistry and Little Shop of Physics provide special awards, and the College of Natural Sciences provides scholarships to the top senior division winners. The center would like to encourage more CNS faculty and departments to host Lab Tours to help entice these students to come to CSU.

**Triunfo Mentoring Program**

The Triunfo Mentoring Program is a partnership with CSU’s El Centro office that aims to inspire students and close the achievement gap by offering weekly one-on-one tutoring in all academic areas to local elementary school students.

Triunfo is open to all students without restrictions, but only provides free transportation to the highest needs students from the highest needs schools. The program takes place every Thursday from 4-5:30 p.m. from September through May in the experiential learning studio at CNS EOC where students have access to STEM reading books, computers, 3-D printer and scanner, Lego robotics, construction sets, scientific lab materials, and educational expertise. Special presentations and lab tours take place throughout the year. This program is funded primarily by the Bohemian Foundation’s Pharos Fund.
**Math-Science-Tech Day**
Math-Science-Tech Day brings hundreds of local underserved 4th grade students from Poudre School District to CSU for a fun-filled day to show them that college is something worth pursuing. The day includes exciting STEM content in three different sessions, admissions information, CSU student mentoring, and cultural programming.

**Summer Camps**
The EOC summer camps are one week long and attract junior and senior high school students from across the nation (see map below). They are highly popular and fill up within days after registration opens in early January. The majority of students enroll in both the morning SciTrek camp and the afternoon Summer Vet camp and stay on campus in one of the residence halls to give them the full college life experience.

![Campers have hailed from 39 states indicated in green.](image)

Due to the highly competitive nature of veterinary medicine, only a small percentage of students even make it into vet school. SciTrek’s mission is to introduce these talented students an exciting alternative that they probably have not been exposed to in school.

Here are some impressive statistics:
Over the last 9 years, we have had 270 students go through the camps. Of those 270 students, 85 (31%) came to CSU, 21 (8%) are CNS majors, and 6 made it into CSU’s Vet school!

While these programs are self-funded from student registration fees, CNS EOC in collaboration with the College of Veterinary Medicine & Biomedical Sciences offers fee waiver scholarships to deserving students using funds earned the previous summer. In 2014, scholarships totaling $2,500 went to three students from Wyoming, Michigan, and Ohio.
SciTrek
Students participating in this program learn how scientists do real research. Camp participants spend a significant amount of time in the field at Lory State Park developing a systems approach to scientific reasoning, using scientific models to help reveal natural processes and phenomena, assessing the health of a pine forest being invaded by pine beetles, using increment borers to date trees, testing the surrounding soil, and mapping the distribution of affected trees.

Summer Vet
The Summer Vet program is for students who are serious about becoming a veterinarian and is a great opportunity to look into the real and sometimes gritty field of veterinary medicine. Through presentations, demonstrations, laboratory visits, and in-depth, hands-on activities, students discover what modern veterinary medicine is about.
## Budget Summary

<table>
<thead>
<tr>
<th>Year</th>
<th>General EOC Funding*</th>
<th>DA/RSP Funding</th>
<th>DCE Funding</th>
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</thead>
<tbody>
<tr>
<td>FY14/15</td>
<td>CNS Dean’s Office $167,063</td>
<td>Indirect Cost Recovery $2,400</td>
<td>Annenberg TBD Summer Vet/SciTrek $36,550 Other $11,241</td>
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<td>FY13/14</td>
<td>CNS Dean’s Office $143,028</td>
<td>Indirect Cost Recovery $3,243</td>
<td>Annenberg $17,020 Summer Vet/SciTrek $29,810 Other $1,161</td>
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<td>FY12/13</td>
<td>CNS Dean’s Office $138,300</td>
<td>Indirect Cost Recovery $974</td>
<td>Annenberg $17,265 Summer Vet/SciTrek $25,564 Other $4,020</td>
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<td>FY11/12</td>
<td>CNS Dean’s Office $141,300</td>
<td>Indirect Cost Recovery $974</td>
<td>Annenberg $17,180 Summer Vet/SciTrek $25,960 Other $5,567</td>
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<td>FY10/11</td>
<td>CNS Dean’s Office $143,500</td>
<td>Indirect Cost Recovery $0</td>
<td>Annenberg $20,870 Summer Vet/SciTrek $24,874 Other $2,760</td>
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* Our general fund represents 0.5% of the college’s annual resident instruction budget.

## Collaborations with CSU Faculty and External Organizations

<table>
<thead>
<tr>
<th>Collaborator</th>
<th>Project</th>
<th>Funding</th>
<th>EOC Share</th>
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<tbody>
<tr>
<td><strong>Current</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Park Service</td>
<td>Water Science Education &amp; Outreach</td>
<td>NPS Task Agreement</td>
<td>$107,133</td>
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<tr>
<td>Ashok Prasad</td>
<td>Understanding the mesenchymal stem cell response to the topography and geometry of their environment</td>
<td>NSF CAREER ($423k)</td>
<td>$5,000</td>
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<tr>
<td>None</td>
<td>Energy and Earth Systems Summer Session</td>
<td>Bohemian Foundation Discretionary Grant ($20,000)</td>
<td>$20,000.</td>
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<td>Don Mykles</td>
<td>Signaling Mechanisms in the Crustacean Moltin Gland</td>
<td>NSF ($982k)</td>
<td>$8,000</td>
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<tr>
<td>SUNY-Oneonta</td>
<td>Climate Change Education</td>
<td>NASA</td>
<td>$25k/year for 3 years</td>
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<tr>
<td>El Centro</td>
<td>Triunfo Tutoring (2014-2015)</td>
<td>Bohemian Foundation ($12,000)</td>
<td>$12,000</td>
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<tr>
<td>LSOP &amp; UV Program</td>
<td>Hands-on STEM Workshops</td>
<td>Xcel Foundation ($21,000)</td>
<td>$7,000</td>
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<tr>
<td>Continuing Education</td>
<td>Annenberg Media Teacher Center</td>
<td>Course Credit Tuition &amp; Fees (~$60k/year)</td>
<td>~$20,000/year</td>
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<tr>
<td><strong>Pending</strong></td>
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<td>Derek Schutt</td>
<td>Magma Input and Crustal Response along the Snake River Plain-Yellowstone Hotspot Track</td>
<td>NSF Geophysics ($123k)</td>
<td>$7,000</td>
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<td>Rachel Mueller</td>
<td>Speciation Box</td>
<td>NSF</td>
<td>$7,000</td>
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<td>Jaime Ruiz</td>
<td></td>
<td>NSF CAREER</td>
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<td>Christina Boucher</td>
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<td>NSF CAREER</td>
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<td>Husam Mahmoud</td>
<td>Organic Structures</td>
<td>NSF CAREER</td>
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<td>Chrisite Peebles</td>
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<td>NSF CAREER</td>
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<tr>
<td>Nick Fisk</td>
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<td>NSF CAREER</td>
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## Past

<table>
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<tr>
<th>Organization</th>
<th>Project Description</th>
<th>Collaborator</th>
<th>Funding</th>
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</thead>
<tbody>
<tr>
<td>Extension, Fort Collins Utilities, PSD, Discovery Science Center</td>
<td>Clean Energy Science Kit Development</td>
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<td>$7,500</td>
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<td>Poudre School District</td>
<td>Phunky Phenology</td>
<td>PSD SPIE Grant Program</td>
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<td>CSU Ventures</td>
<td>Hybrid Electric Vehicle Science Kit</td>
<td>Department of Energy</td>
<td>$33,518</td>
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<td>El Centro</td>
<td>Triunfo/Triumph Tutoring Program Technology</td>
<td>Google Rise ($9,592)</td>
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<td>Sampath and Sites</td>
<td>Solar PV</td>
<td>NSF</td>
<td>$2-5K/year</td>
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<tr>
<td>SUNY-Oneonta</td>
<td>Climate Change Education</td>
<td>NASA</td>
<td>$25k/year for 3 years $19,000</td>
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<tr>
<td>Francesca Cotrufo</td>
<td>The Role of Black Carbon in the Carbon Cycle of Fire-Prone Systems</td>
<td>NSF-GEO ($448k)</td>
<td>$19,000</td>
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<tr>
<td>LSOP &amp; UV Program</td>
<td>Hands-on STEM Workshops (2011-2014)</td>
<td>Xcel Foundation</td>
<td>$17,000</td>
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<tr>
<td>El Centro</td>
<td>Triunfo Tutoring (2010-2014)</td>
<td>Bohemian Foundation (4 years)</td>
<td>$60,000</td>
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</table>
EOC Donors
(Cumulative since 2010)

$20,000
Bohemian Foundation Discretionary Grant

$10,000
Dean Tsao – CSEF

$5,000
Anonymous CSU Faculty

$3,000
Linda Hamilton – SciTrek

$1,000
Mortar Board Society – Books for Triunfo

Under $1,000
Jean Carpenter
Janice Utsler

Other EOC Support
Chuck Andre – Videography and SciTrek Assistance
Meena Balgopal – STEM library book donations
Dan Bihn – Videographic consulting and misc. electronic equipment
Peter Brown – Dendrochronology Supplies
Dave Dahms – Electronics Assistance
Ann Randall – 4-H Materials
Mary Richmond and Paul Meyers – Loan of GPS units
Nature Active Publishing – Science booklets
Cynthia Smeraski – Science books for STEM Library
Ralph Towers – Makerbot assistance and STEM library book donations

Thank You!
Accomplishments and Contributions

June 2015
• SciTrek / Summer Vet Programs for Future Scientists and Veterinarians, Jun 22 - 26
• Every Drop Counts Workshops, Kaloko-Honokohau National Historical Park, Hawaii, Jun 5 - 12
• EOC Staff Meeting, Jun 4

May 2015
• EOC Staff Meeting, May 21
• GetWET: Rocky Mountain High School, May 11
• Intel International Science and Engineering Fair, Pittsburgh, PA, May 10 - 15
• GetWET: Rocky Mountain High School, May 7
• STEM Educators Club Meeting, May 5
• STEM Friday: Lucile Erwin Middle School, May 1

April 2015
• Triunfo Spring 2015 Celebration, Apr 30
• EOC Staff Meeting, Apr 30
• STEM Friday, Cache La Poudre Elementary School, Apr 24
• STEM Educators Club Meeting, Apr 21
• STEM Friday: Lab School, Apr 17
• EOC Staff Meeting, Apr 16
• STEM Friday: CSEF Participants, Apr 10
• 60th Colorado Science and Engineering Fair, Apr 9 - 11
• STEM Educators Club Meeting, Apr 7
• STEM Friday: Mead Middle School, Apr 3
• EOC Staff Meeting, Apr 2

March 2015
• STEM Friday: Ponderosa Elementary School, Mar 27
• STEM Educators Club Meeting, Mar 24
• STEM Friday: Wellington Middle School, Mar 13
• EOC Staff Meeting, Mar 12
• STEM Educators Club Meeting, Mar 10
• STEM Friday: Poudre High School, Mar 6

February 2015
• STEM Friday: Brentwood Middle School, Feb 27
• STEM Educators Club Meeting, Feb 24
• STEM Friday: Walt Clark Middle School, Feb 20
• EOC Staff Meeting, Feb 19
• EOC/Sigma Xi Spring Event: “Einstein’s Light: Illuminating how Innovation and Innovation Advance the World,” Feb 16
• STEM Friday: Riffenburg Elementary School, Feb 13
• STEM Educators Club Meeting, Feb 10
• EOC Staff Meeting, Feb 5

January 2015
• EOC Staff Meeting, Jan 29
• Spring 2015 Triunfo program begins, Jan 26
• STEM Educators Club Meeting, Jan 25
• Intel International Science and Engineering Fair Meeting, Las Vegas, NV, Jan 23 - 25
• Triunfo Mentoring Program Orientation, Jan 22
• EOC Staff Meeting, Jan 22
• Meeting at Fort Collins Museum of Discovery, Jan 21
• Roosevelt High School STEM Advisory Board Meeting, Jan 21

December 2014
• STEM Educators Club Meeting, Dec 10
• STEM Friday: Preston Middle School, Dec 5
• Triunfo Fall 2014 Celebration, Dec 4

November 2014
• Colorado Science Educators Conference, Denver, Nov 21
• National Sigma Xi Meeting, Glendale Arizona, Nov 6 - 9
• STEM Friday: Bauder Elementary School, Nov 7
• STEM Educators Club Meeting, Nov 5

October 2014
• STEM Friday: Blevins Middle School, Oct 31
• CSEF 60th Anniversary Reception, Oct 28
• CSEF Board of Directors meeting, Oct 28
• STEM Friday: Linton Elementary School, Oct 24
• EOC Presentation in Science Methods Course, Oct 22
• STEM Educators Club Meeting, Oct 21
• STEM Friday: Polaris Lab School, Oct 17
• Blevins Middle School Field Trip, Lory State Park, Oct 16
• EOC/Sigma Xi Fall Keynote: Dana Murphy - Denver Zoo, Oct 14
• 24th Annual Math-Science-Tech Day, Oct 8
• STEM Educators Club Meeting, Oct 8
• STEM Friday: Roosevelt High School, Oct 3
• GetWET: Front Range Community College, Oct 1

September 2014
• GetWET: Rocky Mountain High School, Sep 30
• STEM Friday: McGraw Elementary School, Sep 26
• GetWET: Roosevelt High School, Sep 25
• GetWET: Rocky Mountain High School, Sep 23
• Fall 2014 Triunfo Mentoring Program Begins, Sep 18
• CSEF Board of Directors & Advisory Council meetings, Golden, Sep 13
• Triunfo Tutor Orientation, Sep 11
• STEM Educators Club meeting, Sep 9
• Triunfo Tutor Orientation, Sep 4
• SLiCE Involvement Fair, Sep 3

August 2014
• STEM Friday: Kagawa University, Aug 29
• Triunfo Principal meeting, Aug 28
• Ram Welcome, Aug 22
• CAM Jam!, Highlands Ranch, Aug 16
• GetWET: Rocky Mountain High School, Aug 5

July 2014
• Frontiers of Science, Greeley, Jul 24
• CSEF Board Retreat, Alamosa, Jul 12
Future Plans

Our mission statement has held up over the last five years and we plan to stick with it into the future. Since mission statements are inherently vague, we thought we’d share some guiding principles that underlie much of what we do.

- Although we would like to think that teachers inspire students to become scientists, it is more often an engaging hands-on experience guided by an enthusiastic mentor.
- Many students we work with will not become scientists, but the challenges that we face as a society need everyone to at least understand the basic premises underlying scientific reasoning.
- If you capture the interest of students in 4th or 5th grades and support that interest through middle and high school, math classes become more relevant and the students are better prepared for a STEM major in college.
- Diversity must be embraced to meet the scientific challenges that lie ahead.
- CNS faculty research is a fantastic source of ideas that we can use to inspire students.
- Real-time teacher professional development allows us to demonstrate to them that students are capable of doing real science.
- Anyone can make sound on an instrument, but it takes slow and steady practice to play music. Similarly, anyone can observe scientific phenomena, but to learn how to conduct scientific research takes regular practice.

In the next five years, we plan to:

- Continue our current programs and services;
- Increase the number of CNS faculty involved in STEM education and outreach;
- Develop and lend more inquiry-based STEM instructional kits;
- Promote our STEM Friday Expedition program; and
- Foster the STEM Teacher Club.
Courtney Butler  
*Assistant Director*  
Ms. Butler is interested in encouraging more students to enter into local, regional, state, and international science fairs. She advises prospective science teachers who are enrolled in the BSNS program. She also serves at the Director for the Colorado Science and Engineering Fair.  
courtney.butler@colostate.edu  
(970) 491-7716 | NESB B311

Jessie Mader, EOC Assistant

Nick Cashman, Triunfo Assistant

Monica Brown, CSEF Assistant

Santos Gonzales, Triunfo Asst.

Andrew Warnock  
*Director*  
Dr. Warnock strives to design outstanding scientific educational experiences.  

Courtney Butler  
*Assistant Director*  
Ms. Butler is interested in encouraging more students to enter into local, regional, state, and international science fairs. She advises prospective science teachers who are enrolled in the BSNS program. She also serves at the Director for the Colorado Science and Engineering Fair.  
courtney.butler@colostate.edu  
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Lynne Judish  
*Laboratory Coordinator*  
Ms. Judish manages all of the educational materials and resources that the center houses. She also coordinates the after-school Triunfo/Triumph Tutoring Program.  
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Bi-Monthly Staff Meetings  
Minutes available on request
Advisory Board

**Ms. Lori Ball**, Director of Longs Peak Regional Science and Engineering Fair and the Frontiers of Science summer camp at University of Northern Colorado.

**Ms. Marcee Camenson**, Adjunct Instructor at Front Range Community College.

**Dr. Marty Gelfand**, Associate Professor of Physics at Colorado State University.

**Ms. Linda Hamilton**, Retired Informal Science Educator.

**Ms. Vicky Jordan**, Science Teacher at Wellington Middle School.

**Mr. Scott Kemp**, Science Teacher at Rocky Mountain High School, Fort Collins.

**Ms. Sylvia Parker**, Coordinator of the Science and Mathematics Teacher Center at University of Wyoming.

**Dr. Jaime Ruiz**, Assistant Professor of Computer Science at Colorado State University.
Websites

The Center maintains web and database servers that support our programs and help us stay connected with teachers nationwide. The Center hosts five information-packed websites. The database server allows us to quickly create detailed online forms. Data can be browsed and edited by our colleagues via the web.

Teacher professional development videos are available on the EOC YouTube channel.
Directions to CNS EOC

From South College Avenue, take Pitkin Street West.
Immediately after the RR tracks, take Mason Street North (right).
Take the second left onto 'A' Street, which dead ends at East Drive and at the NESB Building.
Park at a meter before 4 pm.
Parking is free after 4:00 p.m. weekdays and free all day on weekends.
Enter the building through the main doors of the south wing.
Go up to the 3rd floor and make a left.

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De la Avenida, tome Pitkin str. al rumbo oeste.
Emmediatamente despues de cruzar los riales de tren, tome la calle Mason al rumbo norte o doble derecha a la calle "A"
La calle "A" se termina en la calle "East Drive"
Alli en frente esta situado el edificio donde tendremos el programa Triunfo.

B307 Natural & Environmental Sciences
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Colorado State University
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College of Natural Sciences
Education & Outreach Center