



# Community Resources for Science

*practical support for great science teaching*

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## CRS Teaching Science Course for Multi-Subject Credential

This spring CRS was asked to develop and teach the elementary science preparation class for multi-subject credential candidates at California State University East Bay. This new opportunity to strengthen the science backgrounds of pre-credential candidates also offers a terrific venue for leader teachers to share their experience and approach to teaching elementary science.

The course was designed and is being taught by a team of experienced elementary-level teachers working with CRS staff. Susan Bellone, Sherry Johnson, and Nicki Norman are the principal instructors working in pairs or as a team for different lessons. The course provides hands-on experiences with specific activities, and models effective teaching methodology through lesson demonstrations. The nine class sessions cover the essential ideas in each of the four strands of the California State

Science Standard and provide an introduction to the newly adopted State Health Standards.

The 35 graduate students enrolled in the course are pursuing their multi-subject credential and are concurrently teaching in local schools. Despite this demanding schedule, the class seems generally excited about the science they're experiencing and the prospect of using hands-on activities to engage their own students in active learning. The lesson plans that have been developed by the class so far show that they also have real appreciation for the potential of science to reinforce the development of language arts skills.

One of our additional goals for the class is to provide support for the on-going effort to develop accurate science lessons that include diverse learning experiences. In addition to a collection of all the activities they've

seen demonstrated, each student has received a student membership in CRS and been introduced to planning tools and broader resources that can help them continue to build their content knowledge and teaching repertoire. We hope these talented new teachers will become part of our science teaching community in the future!



*Kindergarteners enjoy using real science tools in ESO's Build-A-Bug presentation.*

## CIC Teams Expand to New Departments

The Community in the Classroom scientist volunteer program grew by leaps and bounds in 2007-08, especially the lab group teams from UC Berkeley. CIC has expanded to new departments, including the Entomology Students Organization, the Plant and Microbial Biology department, and the Berkeley Edge program.

A group of students in the Berkeley Edge program developed a great presentation for fourth graders. *Microbe-Body* exposes students to the world of microorganisms and teaches the importance of microbes in the environment and in their bodies.

Teams from the Plant and Microbial Biology department created two unique lessons. In *All About Seeds*, first graders explored where seeds

come from, where they grow, different sizes and shapes of seeds, and what's inside a seed. Second graders were treated to a presentation about *Oil Spills!*, and learned about the recent oil spill in the San Francisco Bay, spill containment, wildlife rehabilitation and biodegradation.

Perhaps the most ambitious, yet very successful, group this past year is the Entomology Students Organization (ESO). Headed by ESO president Wendy Renz with CIC alum Margarita Hadjistyli, the ESO group selected Community in the Classroom as their community outreach project and formed five teams(!) – one for each grade level, with K-1 combined. ESO applied for and received a grant through the university to help fund

materials for their Community in the Classroom presentations. Their goal is to develop presentations that will be replicable through the years by students in the ESO. How fortunate for CIC and the teachers and students that we serve!

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## Branching Out: Middle School Pilot

What do 8<sup>th</sup> graders in Piedmont know about neutrino astrophysics? Quite a lot, if you ask students in Marianne Gielow's or Ted Greenebaum's classes. That's because on May 1<sup>st</sup> and 2<sup>nd</sup>, long-time CRS volunteer Alan Poon, along with researchers Gersende Prior and Jason Detwiler from Alan's lab at Lawrence Berkeley National Laboratory, led experiments measuring cosmic rays to illustrate a presentation about their work at Sudbury Neutrino Observatory.

This was the first episode in an experimental program to provide hands-on science support for middle school classes at Piedmont Middle School. The project got started when two Piedmont parents, Adam Thacher and Richard Saykally, approached CRS to see if we could

help them think about ways they could help their accomplished science faculty get kids even more engaged with science through additional hands-on experiences. They were particularly intrigued by the Community in the Classroom



*LBNL researcher Gersende Prior explains the process of measuring cosmic rays to eighth graders.*

program, noting that middle-schoolers really need role models, as well as in learning about other enrichment opportunities provided by local science education groups.

After much conversation with Ted, Marianne, and their principal Jeanne Donovan – and thanks to funding secured by Chemistry Professor Saykally – the school contracted with CRS to launch the program that will build over the course of three years with the goal of becoming self-sustaining within the school. This spring, 8<sup>th</sup> graders will also get a lesson in building solar cells from Berkeley grad students Erik Garnett and Michael Grass. Next Year we will add 7<sup>th</sup> grade enrichments, and in 2009-10 CRS will include Piedmont Middle School 6<sup>th</sup> graders.

## Be CuRious: New Interactive Websites, Field Trips

The Internet is getting even more interesting for science teaching! Here are three sites we've learned about recently that present great teaching opportunities using information that would otherwise be almost impossible to get into the classroom. The sites encourage teachers to think about ways to get kids engaged in studying astronomy, bird/wildlife observations, or marine life using (and in one case collecting) real-time scientific data.

**WorldWide Telescope** is an incredible new resource brought to us by Microsoft. This free service lets students and lifelong learners tour the night sky using high-resolution images from the world's best land- and space-based telescopes. Check it out at [www.worldwidetelescope.org](http://www.worldwidetelescope.org).

**Cone Welder**, found at <http://cone.berkeley.edu> is another fantastic real-time site. Using a robotic camera, players collect data on birds and their residency over the course of an annual cycle. This is a great site for birders!

For middle and high school teachers and students, **Signals of Spring** is a

website dedicated to cool ocean curriculum with great maps and data. Learn about summer workshops available through their ACES program. You can find these and more Signals of Spring at [www.signalsofspring.net](http://www.signalsofspring.net).

Remember - the CRS online database is a valuable and current resource when searching for standards-based websites. Create a personalized website report for your classroom using the CRS database at [www.crscience.org](http://www.crscience.org).

### Need new field trip ideas?

**CRS teacher socials** are an enjoyable way to find out about Bay area resources and field trip destinations!

This spring, CRS members enjoyed two fun and unique Science Socials! On February 26, we were hosted by the wonderful folks at the **Hayward Shoreline Interpretive Center**. The Center is an excellent choice to learn about the San Francisco Bay and shoreline and watershed ecology. They also have a terrific resource center for teachers and will provide

curriculum materials related to your field trip. For more information, contact Adrian at 510-670-7270.

At the May 29 Science Social, teachers were treated to an exciting building activity and guided tour of **UC Berkeley's Earthquake Engineering Research Center**. K-12 field trips are available for schools in the Bay Area. The experience includes a separate hands-on in-class presentation by a researcher! Check out the EERC website at [www.eerc.berkeley.edu](http://www.eerc.berkeley.edu) for more information.



*CRS members examine a mollusk at the CRS Social held at Hayward Shoreline Interpretive Center in February.*

## Distinguished Group Advises CRS

In January CRS's board of directors invited a group of community members representing deep experience and expertise with local science and education issues to come together for a discussion about our future.

In attendance were: Debbi Bellush, *Biotech Partners*, Robert Bergman, *UC Berkeley Department of Chemistry*, Susan Helmrich, *Berkeley High School Development Group*, Molly Fraker, *Berkeley Public Education Foundation*, Mary Friedman, *Berkeley Public Education Foundation*, Nancy Morton, *Accounting Consultant*, Rollie Otto, *Center for Science & Engineering Education, Lawrence Berkeley National Laboratory*, Nancy Riddle, *Berkeley Unified School District School Board and WestEd*, Karl Pister, *Chancellor Emeritus of UC Santa Cruz*, and Lisa Wahl, *Grant-writing Consultant*.

CRS board members presented background about the reality of science education in local public schools, pointing at research showing that science education is crucial for student success, but also severely lacking in local elementary schools, particularly as a result of lack of teacher support and training.

Sherry Johnson, retired elementary teacher and science professional development coordinator in Castro Valley, gave an eloquent description of CRS's contributions to elementary science teaching. In addition, Chemistry post-doc Rebecca Abergel, who introduced the event with her video of 2<sup>nd</sup>-graders visiting a UC science lab, shared

her experience volunteering in the Community in the Classroom program.

Following the presentations, guests were asked to brainstorm ideas for new strategic partners and collaborators, new board members, and new directions for funding support. The discussion raised a number of important opportunities and questions for CRS. We are grateful for the support and solidarity this distinguished group provided, and look forward to more opportunities for this kind of conversation.



*Fifth graders show off coins used to demonstrate properties of metals in a lesson developed and presented by graduate students from the Bergman Lab Group.*

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Check us out online!  
[www.crsscience.org](http://www.crsscience.org)

<b>CRS Has a New Office!</b> <b>(but same mailing address)</b>		<b>CRS Staff and Board</b>
<p>We invite you to visit CRS at its new office! In January, after years of working from our homes, CRS moved to a small office on San Pablo Avenue in Berkeley. We're right next door to Acme Bread Co. and Café Fanny. Our location provides a convenient and centralized meeting place for teachers and volunteers. We are close to the freeway and the North Berkeley BART station. Plus, there is plenty of metered and free parking nearby.</p> <p>The new office houses our complete library of activities binders, science-related books and resources, and materials to lend or give away. We now have room to hold small meetings and conduct Community in the Classroom orientation sessions on-site.</p> <p>Please stop by if you're in the neighborhood!</p>	<p>Our physical office location is 1611 San Pablo Ave, Suite 10B, but our other contact information, including our mailing address, remain the same.</p> <p><b>CRS Office:</b> 1611 San Pablo Ave., Suite 10B, Berkeley CA 94702</p> <p><b>Mailing Address:</b> 1375 Ada Street, Berkeley, CA 94702</p> <p><b>Phone/Fax:</b> 510-527-5212</p> <p><b>Email:</b> <a href="mailto:teach@crsscience.org">teach@crsscience.org</a></p>	<p><u><b>Staff</b></u>                  Cecille Harris                  Anne Jennings                  Nicki Norman</p> <p><u><b>Consultants</b></u>                  Susie Bellone                  Corinn Brown                  Denise Davila                  Hugo Evans/end2end Tech                  Kari Gim                  Loren Hayden                  Sherry Johnson                  Nancy Morton</p> <p><u><b>Board Members</b></u>                  Robert Bergman                  Susan Henderson                  Anne Jennings                  Susan Kattchee                  Nicki Norman                  Michael Ranney                  Ben Sanders</p>
<p><i>The mission of CRS</i> is to build a community of educators dedicated to getting kids excited about learning through science. This community includes YOU! Whether you're a teacher, a scientist, a parent, or an informal educator, let us help you connect with elementary students, schools, or science programs to support great science teaching.</p>		<hr/> <p><b>Community Resources for Science</b>                  (510)527-5212 ~ <a href="mailto:teach@crsscience.org">teach@crsscience.org</a>  <a href="http://www.crsscience.org">www.crsscience.org</a></p>