

# The POGIL Inquirer

## In the Spotlight

### CSI: Rock County

*Adolescents Learn Crime Scene Chemistry Skills at Summer Class  
Under Tutelage of Kristin Plessel* Page 6



## From The POGIL Project Director



Although it is very cold in Lancaster this week, things are really "heating up" at The POGIL Project.

This newsletter describes many of the exciting developments that have taken place recently, and that are continuing to develop.

Please be sure to contact us with any interesting developments of your own that we might consider sharing with the POGIL community. Best wishes for a productive and healthy New Year, and try to stay warm!

*Richard Smey*

## Upcoming POGIL Events

March 9	1-Day at Linfield College
March 23	1-Day at Goucher College
April 20	1-Day at Univ. of Florida
June 1-4	POGIL National Meeting – Washington University
June 18-20	SE Regional Workshop Eckerd College
June 20-22	NE Regional Workshop Franklin & Marshall College
June 25-27	NW Regional Workshop Linfield College
July 13-15	GL Regional Workshop Capital University
July 17-19	SW Regional Workshop Colorado College
July 23-25	SC Regional Workshop Washington University

For more information on upcoming workshops, visit [www.pogil.org](http://www.pogil.org)

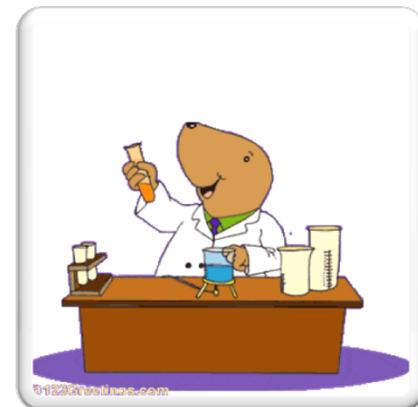
*The POGIL Inquirer is a publication of The POGIL Project, a 501(c)3 corporation.  
The POGIL Project • Box 3003 • Lancaster, PA 17604-3003*



## Ask The Mole

**Q:** What are Key Aspects of POGIL Activity Design?

**A:** There are two crucial aspects to the design of the POGIL activity. First, sufficient appropriate information must be provided for the initial "Exploration: so that students are able to develop the desired concepts. Second, the guiding questions must be sequenced in a carefully constructed manner so that not only do students reach the appropriate conclusion, but at the same time, various process and learning skills are implemented and developed.



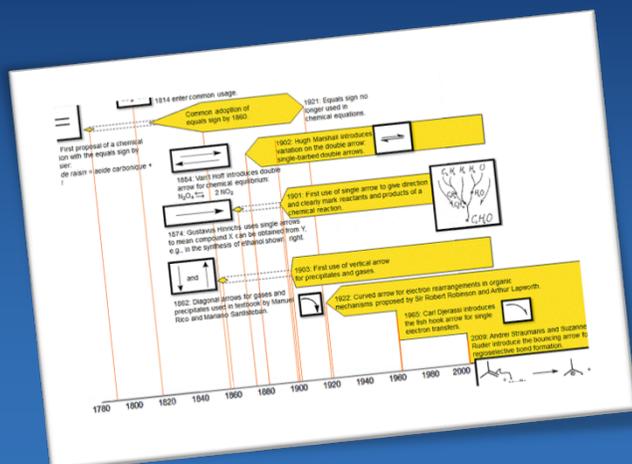
Typically, the first few questions build on students' prior knowledge and direct attention to the information provided by the model. This is followed by questions designed to help promote the recognition of relationships and patterns in the data, leading toward some concept development.

The final questions may involve applying the concepts to new situations and generalizing students' new knowledge and understanding.

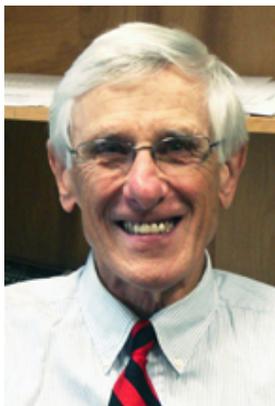
(Excerpted from Process-Oriented Guided Inquiry Learning, ACS Symposium Series 994, edited by Richard S. Moog and James. N. Spencer).

*If you have any questions regarding inquiry learning, POGIL materials, or any POGIL-related knowledge, email us at [mdubroff@pogil.org](mailto:mdubroff@pogil.org).*

## Straumanis and Ruder Cited in Article on the History and Usage of Arrows in Chemistry



The arrow is used in almost every field of human activity, from prehistoric cave paintings depicting hunting scenes to traffic signs. In chemistry, arrows have played a variety of roles and the exact meaning of each type of arrow has evolved with growing understandings of substances, reactivity and structure. In a recent article in *Chemistry Views* ([www.chemistryviews.com](http://www.chemistryviews.com)), POGIL practitioners Andrei Straumanis and Suzanne Ruder made it onto a timeline of the modern usage of arrows in chemistry. In 2009, Straumanis and Ruder introduced the bounding arrow for regioselective bond formation. Congratulations Andrei and Suzanne!



## Conrad Stanitski Named 2013 Recipient of ACS George Pimentel Award

Conrad Stanitski, Franklin & Marshall College, has been honored as the 2013 recipient of the George C. Pimentel Award in Chemical Education sponsored by Cengage Learning and friends and colleagues of George and Jeanne Pimentel. The ACS is the world's largest scientific society, representing professionals in chemistry-related fields — from agriculture to industry. There are 163,000 members worldwide. The Pimentel Award award recognizes outstanding contributions to chemical education. Recipients must have made outstanding contributions to chemical education considered in its broadest meaning, including the training of professional chemists; the dissemination of reliable information about chemistry to prospective chemists, members of the profession, students in other fields, and the general public; and the integration of chemistry into our educational system. The activities recognized by the award may be in the fields of teaching (at any level), organization and administration, influential writing, educational research, the methodology of instruction, the establishment of standards of instruction, and public enlightenment.

Stanitski received his B.S. in Science Education from Bloomsburg State College, his M.A. in Chemistry Education from the University of Northern Iowa, and his Ph.D. in Inorganic Chemistry from the University of Connecticut. He began his teaching career at the secondary school level followed by many years of teaching at the college and university level. He has authored and co-authored widely adopted chemistry textbooks for science majors, non-science majors, and allied-health students. Stanitski is the recipient of several awards including-- the Visiting Scientist Award of the Western Connecticut ACS Section; the Catalyst Award—a national award for Excellence in Chemistry Teaching from the Chemical Manufacturers Association; the Gustav Ohaus-National Science Teachers Association Award for Creative Innovations in College Science Teaching, and is a Fellow of the American Association for the Advancement of Science. He also received the Distinguished Alumni Award from Bloomsburg University, as well as the Samuel Nelson Gray Distinguished Professor Award and the Thomas R. Branch Award for Teaching Excellence from Randolph-Macon College. In 2001, he served as the Chair of ACS Division of Chemical Education. In 2005 he retired as Distinguished Emeritus Professor from the University of Central Arkansas and since then has been a visiting professor of chemistry at Franklin & Marshall College. He was an inaugural member of The POGIL Project board of directors.

## POGIL Project Welcomes Susan Bell as Event Planner



The POGIL Project is happy to welcome Susan Bell as a new event planner with the project. Susan will assume responsibility for planning events in the Northeast, Great Lakes and Northwest Regions, as well as coordinating the details for the POGIL National Meeting. Susan has spent most of her career in corporate event planning for an international franchisor, executive administration, communications and newsletter development. She is a graduate of Goldey Beacom College in Wilmington, Del. She lives in the Lancaster area with her husband and their two sons.

## High School Happenings

The latest Flinn Scientific book, AP Biology, was released this past fall, and the upcoming AP Chemistry book should be published later this year.

2012 sales figures were strong for all of the Flinn publications with more than 1,100 biology, 1,600 chemistry and 400 AP biology texts already sold!

## Second POGIL Facilitator Training Workshop a Success



The second POGIL facilitator training workshop was held Jan. 12-14, 2013 in Myrtle Beach, S.C. Twenty-two participants from each of the POGIL regions attended and represented a wide array of academic disciplines and institutions. Three participants hailed from India and attended in order to learn more about facilitating workshop and to expose faculty in their country to the POGIL pedagogy. All participants were experienced POGIL practitioners. The facilitator training workshop was designed to give each participant a deeper understanding of the goals of POGIL workshop sessions as well as an opportunity to practice their workshop facilitation skills while also learning about a number of POGIL sessions. In particular, participants experienced aspects of Introduction to POGIL, Classroom Facilitation, Writing and SoTL workshops. All participants facilitated parts of these workshops and received valuable feedback on their facilitation skills. A highlight was the "speed facilitation" session in which participants came to the front of the room and were asked a random question typical of a question from a typical workshop. They had 1 1/2 minutes to respond to the question in their role as workshop facilitator. Key workshop goals were to increase the number of workshop facilitators across the nation, provide consistent training of all POGIL workshop facilitators, and to train people to present POGIL workshops at their home schools and regions. The workshop was led by Suzanne Ruder (Virginia Commonwealth University) and Andrew Bressette (Berry College).

## U. Florida's Elliot Douglas Named Dean's Fellow



POGIL Steering Committee member Elliot Douglas has been named University of Florida's first Dean's Fellow for Engineering Education. In this role, Elliot will facilitate faculty development in teaching methods, peer evaluation of teaching, and engineering education research.

He will also assist faculty in developing broader impacts components of their proposals by

developing a college framework for Research Experiences for Undergraduates (REU) programs, creating a student certificate program in engineering education, and serving as an Accreditation Board for Engineering and Technology (ABET) coordinator.

Elliot has garnered several million dollars in funding from the NSF to pursue engineering education research, has authored numerous publications regarding engineering education, serves as an associate editor of the *Journal of Engineering Education*, and as editor of the *ASEAN Journal of Engineering Education*. He has also served in various leadership roles in the American Society for Engineering Education. Elliot was inducted in the University of Florida Academy of Distinguished Teaching in 2009, and was selected by the University of Florida as Teacher of the Year in 2003-04.

## 5-Year Strategic Plan Update

The POGIL Project Steering Committee and Board of Directors are excited to have recently finalized a strategic plan that will guide the work of the POGIL Project for the next 5 years. The plan was intentionally designed to align with the POGIL project Mission, Vision and Values (see <http://www.pogil.org/about/mission>) and was informed by work done at the 2012 POGIL National Meeting in St. Louis and by input from the larger POGIL community last August. The plan is organized around 5 goals (see below) with strategies designed to help reach each goal. The full plan has already begun to inform the work of the Project. This year's POGIL National Meeting is being organized to highlight the work the plan calls us to do. We are excited about the opportunities (and challenges) the plan represents and look forward to involving the larger community in working toward these goals. Watch for more information in the coming months!

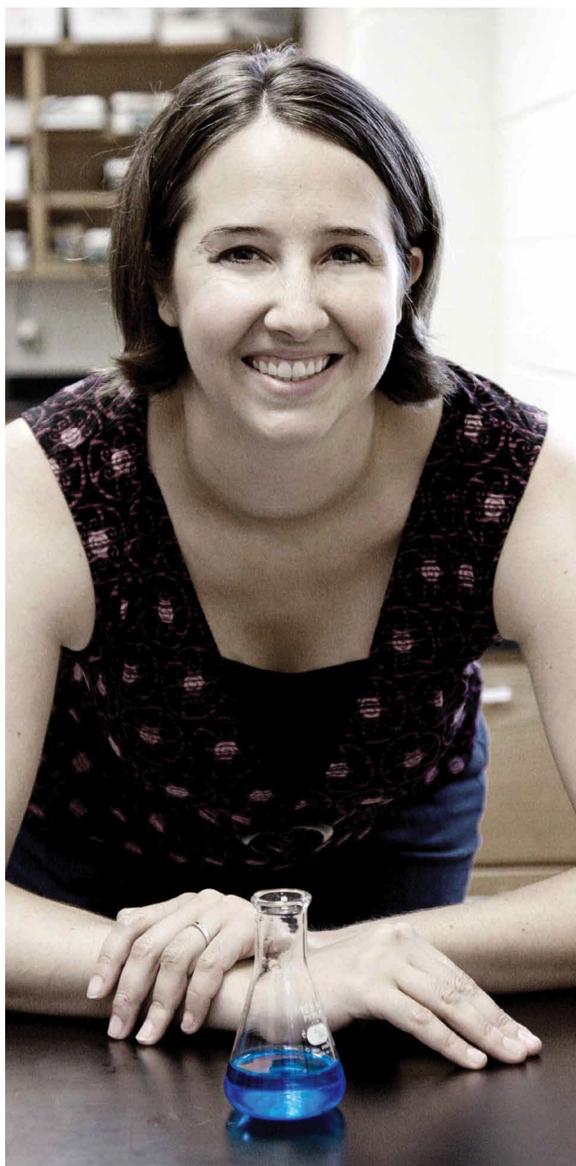
### The 5 Goals of the POGIL Project Strategic Plan

- Increase the number of POGIL practitioners and support practitioner professional development, with a particular emphasis on those in STEM disciplines.
- Increase availability of high quality POGIL activities, with a particular emphasis on those designed for use in STEM disciplines.
- Increase the diversity of the POGIL community and the students it serves.
- Collect data to provide comprehensive assessment of student learning and development in a variety of POGIL learning environments.
- Develop human and financial resources to accomplish the work of the Project and implement the strategic plan.

## In the Spotlight: Kristin Plessel

# CSI: Rock County

## Adolescents Learn Crime Scene Chemistry Skills at Summer Class



It's difficult to find an opportunity to talk to the adolescents in the Crime Scene Chemistry summer class at University of Wisconsin-Rock County.

First, they have to fill test dishes with various powdery substances, such as laundry detergent and baking soda. Then, they have to mix the powders with liquids such as vinegar to determine how they interact, eventually using their newfound knowledge to identify an unknown substance.

These kids simply don't have time to talk to a curious outsider.

That's as it should be, says Kristin Plessel, assistant professor of chemistry at UW-Rock County and a teacher at the College for Kids summer program. The class she's teaching shows fifth- to eighth- graders how to use chemistry to decode secret messages and identify suspects through blood typing and lip prints. Eventually, the kids work together to investigate a fictional crime scene.

"I thought I'd get a little pushback these first few days of the class, because we're just talking about the science of crime scene investigations," says Kristin. "But they're really interested and working hard."

UW-Rock County has been offering College for Kids one week every summer for about 30 years. The program is divided into two age groups – second- to fourth-graders and fifth- to eighth-graders. Kids can choose from among six to nine different classes with topics such as Hot Air Ballooning 101, Group Guitar and Fun with Photoshop.

*Spotlight, continued from p. 6*

One might wonder whether the classes would be too much work for adolescents during the lazy summer months. Not to worry, say the students. “I like school,” says Becca Parker, 11, of Janesville. “I’m actually missing homework, so I read the dictionary instead.”

**Fostering an Interest**

The youngsters who signed up for the Crime Scene Chemistry class had a variety of reasons why they wanted to be involved. For

some, it was a chance to mimic their favorite TV show.

“I love watching CSI,” says Lindsey Lucas, 13, of Edgerton.

“I watch it all the time.”

Annika Levenson of Janesville, however, just wanted to test the chemistry waters, so to speak. “I’m starting fifth grade, so I’ve never taken chemistry before,” the 11-year old says, “I want to see whether it’s something I might like.” And, it turns out, she does like it. “I love seeing how things react with each other.”

In her classroom, Kristin uses “inquiry learning,” meaning she doesn’t tell the students what they’re supposed to discover – she allows them to discover it for themselves. “I’m letting them own the material,” she says.

So when she walks around the classroom inspecting their work, she doesn’t inform them if they’re right or wrong; she merely asks questions. For two boys who believe they have identified the unknown powdery substance, she asks them why the unknown mixture looked slightly different than the mixture to which the boys are comparing them. They eventually admit that they had used different amounts of powdery substances in the experiment, thereby introducing another variable.

On the last day of class, students use their new skills to analyze a fictional crime scene. Under the scene’s parameters, a man was killed in his house, and the only evidence that remained at the scene of the crime was a smear of lipstick on a napkin. The kids compare the lipstick print on the napkin with the lipstick prints of the only three women known to have visited the man that day, eventually coming up with a suspect.

Kristin tempers the students’ glee at solving the problem with a reminder that their analysis is only piece of the puzzle. “Just because the lipstick is left at his house does not mean the woman killed the man,” she says.

But the kids are still jubilant. Even more than solving the crime, they say, they love the process of figuring it out. And they don’t even mind – that much – when they mess up. “I’ve messed up on experiments before,” says 13-

*Story and photos reprinted with permission of Great People Great Stories, Fall 2012.*

## New NSF-Supported Effort to Study Successful STEM Networks

### *The POGIL Project one of four networks to be studied*

The National Science Foundation has funded the University of Southern California, under the leadership of higher education change and reform expert Dr. Adrianna Kezar, to examine ways to spread STEM education reform through the use of networks.

The proposed project will examine and compare four longstanding and successful undergraduate STEM reform networks (SENCER, PKAL, BioQUEST, and The POGIL Project) that have different designs, but a common purpose, in order to understand how the networks can be most effectively designed to spread innovations among network members and ultimately on the campuses where they are employed.

The three research questions examined are: 1. How do network members and network leaders perceive undergraduate STEM network design shape the ability to achieve goals? 2. What are the perceived benefits of participation in a network related to change for the individual network members and their campus? 3. How do networks form and how are they sustained in ways that help them achieve their goals? In order to address these research questions, a mixed-methods study will be conducted: a survey of participants within the networks; and interviews with network leaders. The study will provide information to inform the STEM community in terms of better network development as well as help NSF direct their funding priorities. This study will also provide needed information about created or non-organic networks and their ability to foster innovation and change.

POGIL Project Director Rick Moog (Franklin & Marshall College), Gail Webster (Guilford College, N.C.), and Chris Bauer (University of New Hampshire, N.H.) will serve as POGIL's advisory board representatives for the study, and Marcy Dubroff, associate director of The POGIL Project, will serve as POGIL's liaison to the project.

---

## 2013 POGIL Regional Networks/ Coordinators

Great Lakes Region  
(IA, IL, IN, MI, MN, ND, NE, OH, SD, WI)  
Tracey Murray, Capital University  
([tmurray2@capital.edu](mailto:tmurray2@capital.edu))

Northeast Region  
(CT, DC, DE, MA, MD, NH, NJ, NY, ME, PA, RI, VT, WV)  
Caryl Fish, St. Vincent College  
([caryl.fish@email.stvincent.edu](mailto:caryl.fish@email.stvincent.edu))

Northwest Region  
(AK, ID, MT, OR, WA)  
Shawn Simonson, Boise State University  
([shawnsimonson@boisestate.edu](mailto:shawnsimonson@boisestate.edu))

South Central Region  
(AR, KS, LA, MO, OK, TX)  
Marty Perry, Ouachita Baptist University  
([perrym@obu.edu](mailto:perrym@obu.edu))

Southeast Region  
(AL, FL, GA, KY, MS, NC, SC, TN, VA)  
Elliot Douglas, University of Florida  
([edoug@mse.ufl.edu](mailto:edoug@mse.ufl.edu))

Southwest Region  
(AZ, CA, CO, HI, NM, NV, UT, WY)  
Tim Herzog, Weber State University  
([timothyherzog@weber.edu](mailto:timothyherzog@weber.edu))

## Annual Appeal Going Strong

• The POGIL Project Annual Appeal has gotten off to a wonderful start, with more than 50 donations in two weeks totaling almost \$14,000. If you haven't yet made a contribution to The POGIL Project, please consider a gift. The POGIL Project stands at crossroads — functioning for the first time without direct funding from the NSF, we are in a unique position to positively impact our nation's educators and students at an unprecedented level, expanding into new communities, institutions and subject matters. Your commitment and generosity has allowed The POGIL Project to impact countless lives for the better. With your continued support, you can help us achieve and surpass our potential!

Contact Aaron Spangler, [aaron.spangler@pogil.org](mailto:aaron.spangler@pogil.org), for more information on how to make a gift.



### Send us your news!

We'd love to feature your news, your grant, or your video on the POGIL website and in the POGIL newsletter. Send news to Marcy Dubroff at [mdubroff@pogil.org](mailto:mdubroff@pogil.org)

Get all the latest POGIL news by following us on Twitter or Facebook! Sign up to get our @POGIL tweets at [twitter.com](https://twitter.com/POGIL).



### The POGIL Inquirer

The POGIL Project

Box 3003

Lancaster, PA 17603