

The POGIL Inquirer

In the Spotlight

Brian Gilbert Uses POGIL in an innovative beer-brewing course at Linfield College.

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From The POGIL Project Director



A lot has been happening at The POGIL Project over the past several months. In particular, as of April 1 of this year (no fooling!) we are now operating as a fully independent entity. Although we are still located on the campus of Franklin & Marshall College, we are working through the final stages of separating from the college in terms of our administration, finances, and operation.

We are also adding some new staff members, and plan to introduce them to you in the next

newsletter. Another great piece of news is that our initial fundraising effort, begun last fall, raised nearly \$20,000. Thanks to all of you who made founding contributions to The POGIL Project; your generosity and support are greatly appreciated.

In addition, three members of The POGIL Project family received awards recently for their work in chemistry education. At the national American Chemical Society (ACS) meeting in San Diego in March, Diane Bunce (Catholic University) received the Pimentel Award in Chemical Education and Loretta Jones (University of Northern Colorado) received the ACS Award for Achievement in Research for the Teaching and Learning of Chemistry. In April, Laura Trout (Lancaster Country Day School) received the Whalen Memorial

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Upcoming POGIL Events

May 29	ACSM Meeting, San Francisco, CA
June 2-5	POGIL National Meeting, St. Louis, MO
June 12	College of Western Idaho
June 14	Canisius College
June 16	Iowa State
June 25	ACS NORM/AAAS Regional Meeting
July 10-13	Regional Workshops SC - UTexas-Dallas NW - Seattle U SW - Westminster Coll. NE - Quinnipiac U
July 23-25	Regional Workshops SE - Guilford Coll. GL - U of St. Thomas
July 29-Aug. 1	BCCE

For more information on upcoming workshops, visit www.pogil.org

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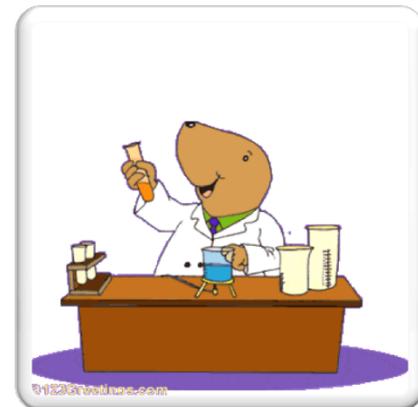


Ask The Mole

Q: What are Process Skill Goals?

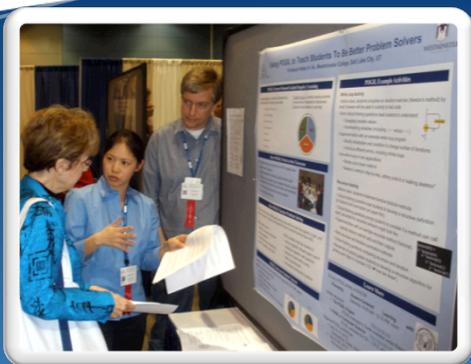
A: One of the principles that characterizes POGIL as a teaching strategy and philosophy is the explicit emphasis on the development of process skills as an important component of the student learning experience. The process skills for POGIL activities include both cognitive and affective processes that students use to acquire, interpret, and apply knowledge. At its outset, The POGIL Project identified seven process skills as those that would be the focus of development in a POGIL Classroom:

- Teamwork
- Management
- Information Processing
- Oral & Written Communication
- Problem Solving
- Assessment
- Critical Thinking



There are many other process skills that are important and valuable. For example the ability to make order of magnitude estimates is a valid and worthwhile process skill, even though it is not listed above. In an effective POGIL activity, the author has explicitly considered what process skill (or skills) is particularly well suited for development in that context, and has designed the activity to promote the development of the chosen process skill.

If you have any questions regarding inquiry learning, POGIL materials, or any POGIL-related knowledge, email us at mdubroff@pogil.org.



Helen Hu and Clif Kussmaul recently presented posters at the ACS Symposium in Raleigh, N.C.

Computer Scientists Present at ACM Symposium

ACM Technical Symposium on Computer Science Education was held Feb 29-March 3 in Raleigh, N.C., and The POGIL Project was well represented.

Clif Kussmaul (Muhlenberg College), and Helen Hu (Westminster College) organized a 75-minute session to introduce POGIL to computer science faculty.

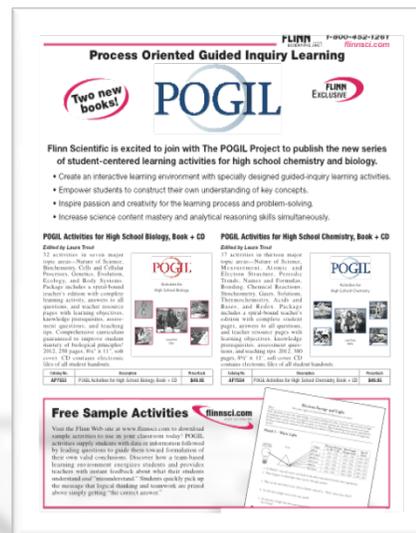
Helen presented a poster titled "Using POGIL to teach students to be better problem solvers" about her work with Tricia Shepherd (Westminster College) on POGIL in an introduction to scientific computing class. Clif gave a paper on "POGIL for computer science" about his work using POGIL to teach data structures and software engineering.

HSPI Happenings

They're here!! POGIL is pleased to announce a new series of student centered learning activities for high school chemistry and biology, edited by Laura Trout. The first two activity collections developed through the High School POGIL Initiative are now available to order and are already a hot seller for Flinn Scientific, Inc. (www.flinnsci.com). Over 100 copies of each collection, *POGIL Activities for High School Chemistry* and *POGIL Activities for High School Biology*, were ordered in the first 3 weeks of release! See the flyer for more details about the collections.

Activities in Nature Science, Biochemistry, Cells and Cellular Processes, Genetics, Ecology, Evolution, and Body Systems are provided in the biology text, supplemented with learning activities, learning objectives, assessment questions, and teaching tips. Additionally, a CD-ROM is provided containing student handouts. Thirty-seven activities are provided in the chemistry book, covering Nature of Science, Measurement, Atomic and Electron Structure, Periodic Trends, Names and Formulas, Bonding, Chemical Reactions, Gases, Solutions, Stoichiometry, Thermochemistry, Acids and Bases, and Redox. The textbooks are available through Flinn and free sample activities can be viewed at flinnsci.com.

The HSPI Webinar series is underway. In an effort to reach teachers being introduced



to POGIL through the newly released HSPI activity collections, several of our former HSPI Partners and Editorial Board members are embracing technology and working together to produce a series of six short (30-45 minute) webinars. These webinars are *not* designed to replace the content and training presented at a POGIL workshop. Instead, the events are more casual and conversational in nature, helping to translate POGIL theory into classroom practice. Through personal experiences and anecdotes shared by our presenters, we hope to help participants see how POGIL and the HSPI activities can fit into their classrooms and curriculum. Please join us for a live event or listen to the recordings of our past sessions. Registration information and the recording links can be accessed through the High School tab of the website. Upcoming webinar sessions include:

May 17 – Managing Group Dynamics

June 21 – Reporting Out and Making

POGIL Workshop for Graduate Students and Postdocs at Washington University in St. Louis



More than 30 graduate student and postdocs from across STEM departments attended the POGIL workshop led by Gina Frey (Professor of the Practice in Chemistry and Director of The Teaching Center) and Bryn Lutes (Assistant Director of The Teaching Center) on February 16. Workshop participants learned about the philosophy behind POGIL before exploring practical aspects of implementing POGIL-style learning in a course. Participants were able to experience POGIL from a student's perspective, discuss the role of the instructor as a facilitator, and analyze a POGIL worksheet to discuss the essential elements and their purpose in the POGIL process.

The workshop was presented as a part of the Introduction to STEM Pedagogies Workshop series (<http://teachingcenter.wustl.edu/graduate-students/workshops/STEM>), which was launched in fall 2011 with support from the Howard Hughes Medical Institute to help prepare Washington University graduate students and postdoctoral appointees for faculty positions in STEM. The workshops in this series provide STEM graduate students and postdocs opportunities to learn about effective methods for improving teaching and learning in STEM.



POGIL Annual Appeal Raises \$20K

Thank you to everyone who responded to The POGIL Project's first annual appeal.

More than 500 requests were sent and, to date, almost \$20,000 has been raised.

Your generosity and commitment to this fundraising drive reminds us that it is the passion and support of the POGIL community that enables us to effect change in our educational system.

Thank you again! And if you haven't already made a gift, please consider a donation by sending your check to:

*The POGIL Project
Box 3003
Lancaster, PA 17604-3003.*

POGIL in Malaysia

POGIL Steering Committee member Elliot P. Douglas presented a 1-Day Introductory POGIL Workshop in Seremban, Malaysia, as a post-conference workshop for the International Conference on Teaching and Learning in Higher Education in conjunction with the Regional Conference on Engineering Education & Research in Higher Education.

Approximately 40 faculty from universities around Malaysia experienced a POGIL class and analyzed POGIL activities to understand how they are structured. Response to the program was very positive. In fact, one Ph.D. student from Pakistan who is studying in Malaysia was inspired to consider using POGIL in an action-research project on improving mathematics education in middle schools.

Other faculty in mathematics are interested in creating a group in Malaysia to look at using



POGIL at the university level. There was enough interest that there may be an opportunity to conduct a longer workshop in the summer of 2013.

From the Director, continued from page 1

Memorial Award from the Southeastern Pennsylvania Section of the ACS, which recognizes the outstanding high school chemistry teacher in the section. Congratulations to all three of these outstanding educators!

The staff is very busy at the POGIL Project Office getting ready for a flurry of workshop activity this summer. We are particularly excited about the three-day regional POGIL workshops being held around the country in July, and we expect to have more than 250 people attend these six events, with a mixture of both high school and post-secondary instructors from a wide range of disciplines.

Don't forget to regularly check The POGIL Project website to hear the latest news, get new information, and learn about all of the activities of The POGIL Project.

Best wishes,

Richard Smey

In the Spotlight



Beer Brewing: What's Chemistry got to do with it?

When one thinks of chemistry, beer brewing does not immediately come to mind. However, for Brian Gilbert, chemistry professor at Linfield College, a beer-brewing course was created as a way to make chemistry relevant and applicable to every day life. In addition to teaching physical chemistry, and general chemistry,

Gilbert teaches The Art and Science of Brewing, and a Chemical Free Beer course. These courses are offered to non-science majors, and provide students with knowledge of the chemistry biochemistry, and biology involved in brewing beer.

Gilbert uses POGIL in the beer brewing courses, and has students take on the traditional POGIL roles of manager, recorder, reporter, and reflector. In the course, students learn how the brewing process works, and discuss the flavor, aroma, and mouth feel of beers, in addition to the chemicals at work that produce flavors. The course culminates with an untraditional final- a beer tasting! Local beer brewers in the area come in and taste the beers produced by the class, and then evaluate the beer.



Although Gilbert does not use POGIL techniques in every class during the semester, he uses POGIL activities as a means to focus the discussion. Student's attest to the enjoyment of the course, and even non-science majors appreciate the knowledge that they derive from the course.



POGIL in The News

- Congratulations to Laura Trout of Lancaster Country Day School, who was recently honored for teaching excellence by the American Chemical Society. She received the 2012 Allen Floyd Whalen Memorial Award for high school chemistry by the Southeastern Pennsylvania Section of the American Chemical Society.
- Project Director Rick Moog will present a lecture on POGIL at the Summer Instructional Development Institute devoted to "Strategies for Improving Learning Outcomes" at the University of Pittsburgh on May 18.
- Anne Marteel-Parrish, an associate professor of chemistry at Washington College, has been named the inaugural recipient of the Frank J. Creegan Chair in Green Chemistry. The chair was established last spring with a \$2 million gift from an anonymous donor in recognition of Professor Creegan's 40-year service to the College and his longstanding development and oversight of the chemistry program.



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

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).

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