

# The POGIL-Zine\*

## From the POGIL Project Director



Welcome to the inaugural issue of The POGIL-Zine\*. One of the core goals of The POGIL Project is to promote active engagement in thinking in both the classroom and the laboratory.

With this newsletter, we hope to encourage your additional engagement with the news of the POGIL Project.

It is our goal to share with you information about the latest developments in POGIL, to celebrate the achievements of the growing numbers of POGILers, and to spotlight the people and ideas that make this project such an exciting venture.

The newsletter will be published electronically four times per year and will be edited by Project Coordinator Marcy Dubroff and POGIL Intern Shayna Fitzgerald. However, we hope that much of the content will be contributed by POGILers from around the country and we encourage you to send us your news, your thoughts, and any other items you think might be of interest.

As always, we encourage your feedback. We look forward to hearing from you!

*Rick Moog*

### \*Name the Newsletter... Please!

After wracking our brains for at least 10 minutes over what to name this new newsletter, the POGIL staff has thrown its collective hands in the air in abject frustration. So, we are assigning the task to you, our faithful POGILers, to come up with a name that is both creative and symbolic of the project. Please send your suggestions to Marcy Dubroff at [mdubroff@pogil.org](mailto:mdubroff@pogil.org) by March 30.

Keep it clean, keep it within 20 characters (so it will fit on the masthead!), and have fun! The person whose submission is chosen will win a lovely POGIL T-Shirt, suitable for all workshops and meetings.

## Upcoming Regional Meetings

POGIL is now accepting applications for the regional meetings through March 4<sup>th</sup>.

**Southeast Regional Meeting**  
Emory College, Atlanta, GA  
6/28-6/30

**South Central Meeting**  
Washington University, St. Louis, MO  
6/28-6/30

**Northwest Regional Meeting**  
Linfield College, McMinnville, OR  
7/6-7/8

**Northeast/Mid-Atlantic Regional Meeting**  
Muhlenberg College, Allentown, PA  
7/6-7/8

**Southwest Regional Meeting**  
University of Redlands, Redlands, CA  
7/12-7/14

**Great Lakes Regional Meeting-**  
Hope College, Holland, MI  
7/19-7/21

*Applications are being accepted  
at [www.pogil.org](http://www.pogil.org)*

## Upcoming Public Workshops

**Mount Mary College**  
Milwaukee, WI  
3/5, 8 a.m.- 4 p.m.

**Georgia Southern University**  
Statesboro, GA  
3/12, 8 a.m. - 4 p.m.

## Facilitation by the Sea

The POGIL Project recently held its first facilitation workshop in Myrtle Beach, S.C., led by co-facilitators and steering committee members Andy Bressette (Berry College) and Suzanne Ruder (Virginia Commonwealth University).

Eighteen enthusiastic facilitators-in-training attended, representing each of the POGIL regional areas.

According to Ruder, "the main objectives of the workshop were to provide formal training for the facilitation of "Intro to POGIL", "Intro to Writing" and "Improving Classroom Facilitation" workshops."

All participants were given active roles in facilitating some aspect of the workshop during this training session. Additionally, participants explored the workshop slides and agendas, developed an understanding of the goals of the various workshops and how they link to the overall Mission, Vision and Values of the POGIL project.

"The participants were actively engaged throughout the workshop and all reported they found the experience to be highly valuable in their training to become workshop facilitators," reports Ruder. "Overall the responses from workshop participants were overwhelmingly positive and participants left with the training and knowledge necessary to lead workshops at POGIL regional meetings or other events."



Participants at the workshop were: Patrick Brown (King College); Roy Cohen (Xavier University); Brandon Fetterly (University of Wisconsin - Richland); Grace Ford (Kathleen Senior High School); Regina Frey (Washington University); Laura Galligan (Johnson and Wales University); Steve Gravelle (St. Vincent College); Timothy Herzog (Weber State University); Murray Jensen (University of Minnesota); Rosalie Koenig (University of Florida); Clif Kussmaul (Muhlenberg College); Pat Ligon (Broughton High School); Emily Moore (University of Utah); Betsy Morgan (Lone Star Kingwood); Laura Parmentier (Beloit College); Shawn Shields (Washington University); Shawn Simonson (Boise State University); and William Wallace (Barton College.)

## POGILer in the Spotlight

**Laura Trout**

***Lancaster Country Day School  
Lancaster, PA***



Laura teaches Algebra 1, AP and IB Chemistry at Lancaster Country Day's Upper School and also serves as the Editor-in-Chief for the High School POGIL Initiative (HSPI). Trout first encountered The POGIL Project at a conference in 2001. She found the approach to be a natural fit with her teaching style and knew that POGIL activities could be used effectively not only with undergraduate students, but also in high school courses.

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**Trout, *continued from p. 2***

Laura quickly began writing POGIL activities for use with her classes. Her belief in the value of this style of inquiry learning was strengthened upon seeing improvement in her students' ability to retain information, to demonstrate a deeper understanding of content presented, and to transfer information to new learning situations.

Now an experienced author, Laura has made many contributions to The POGIL Project's collection, including the familiar "Classification of Matter" and "Quadrilateral" activities. Trout spends approximately 8–12 hours creating each one. Despite this time-intensive process, Trout remains energized by the confidence that her students gain when they begin to understand the topic at hand. "Although at times students moan when they see a POGIL activity scheduled, they work harder and understand the materials better after completing the exercise," she says. "I believe that my students recognize the reasons for using POGIL activities in the classroom, and recognize the benefit that such activities have."

Trout truly enjoys hearing the intellectual conversations between her students as they work to complete POGIL activities in her chemistry and algebra classes. She has even created activities when her students request further explanations or are simply not grasping a concept.

Trout is optimistic about the growth of POGIL into new content areas. "The technique is endless," she claims, and she believes that POGIL can cut across and through

various disciplines, furthering student learning in other subjects such as English, history and even art.

**Straumanis Gives TED Talk in San Miguel**

Andrei Straumanis recently presented a TED talk in San Miguel Mexico, endorsing the benefits of teaching with the POGIL method.

Straumanis began his talk by inviting those in attendance to partake in a 4–5 minute activity, similar to one that students in a POGIL classroom might use.

Straumanis went on to identify the "crisis of passion and creativity" within the realm of science, and concluded that it is student interaction and engagement with material, and not lecture, that can result in a genuine passion and interest in the sciences.

Rather than lecturing and forcing students to memorize facts, which Straumanis believes leads to "academic bulimia," he asserted that the POGIL method allows students to engage with the material and therefore retain what he or she learns.

At the close of his discussion, Straumanis referenced a certain 'aha' moment, in which students explore an unknown topic, and upon engaging with the material, have an epiphany, and begin to fully understand the material.

To view the talk, visit [www.youtube.com/watch?v=XFYVmjYGJe8](http://www.youtube.com/watch?v=XFYVmjYGJe8)

## A Different Small Group Learning Method – POGIL

*Reprinted from <http://edtheory.blogspot.com/> by permission of the author*

*Amy Nathanson, Pharm.D., PGY1 Community Pharmacy Practice Resident, University of Maryland School of Pharmacy*

Small group learning with an active component is incorporated in many curricula today. Have you been in a class where you had small group breakout sessions to discuss a case or apply learned concepts? Many of us would answer yes. Have you been enrolled in a course which was taught exclusively using a small group learning method? Likely fewer would say yes. Have you heard of or been enrolled in a process-oriented guided-inquiry learning (POGIL) course?

POGIL is a student-centered small group method of education. The goal of this educational method is geared to develop the learner's critical thinking and communication skills while keeping the student actively engaged in the learning process. Students work in teams of four. Using course materials and equipped with "guided" questions from the instructor, students explore an idea, (hopefully) grasp a concept, and then apply it.<sup>1</sup> The instructor's role is to serve as a facilitator and, therefore, will not answer questions if s/he believes the students have enough information to come to a conclusion.<sup>2</sup> This method of learning was initially developed for science courses and was prompted by an understanding the needs of industrial employers.<sup>3</sup> A survey was conducted and concluded that "employers would like chemistry-trained employees whose education includes greater preparation in communication, team skills, relating applications to scientific principles, and problem solving, without sacrificing thorough preparation in basic science concepts and experimental skills."<sup>3</sup>

I am fortunate to have participated in a POGIL course taught by one of the founders of this methodology. It was an introduction to chemistry course taught at Franklin & Marshall College. Reflecting back on the course, I remember it was very different from the typical lecture-based courses and, at the time, only a few courses were taught in this manner. I enjoyed working with other students and remember favoring certain roles over others. As a group we taught ourselves the key concepts of chemistry.

After discussing various small group teaching methods during the Educational Theory and Practice course, I have been reflecting on my experiences in this course and how it is unique. POGIL utilizes carefully crafted learning materials to provide information to students systematically with leading questions to promote critical thinking to arrive at the best conclusion. In each small group students have defined roles and responsibility that rotate weekly. The roles include:

**Manager**– delegates responsibilities and keeps team focused, resolves disputes and ensures full member participation

**Recorder**– writes up group answers to turn in

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**Nathanson, *continued from p. 4***

**Spokesperson/presenter**– presents report to class

**Analyst/reflector**– identifies strategies and methods for problem solving, identifies positive attributes of the team

Every student is expected to learn the material on a daily basis and ensure that all group members have learned it too.

Unlike other small group learning environments such as Problem Based Learning (PBL), POGIL is more structured. Every member of the group has an assigned role. PBL is less structured and requires more independence of each student.<sup>1</sup> There are never lectures in a POGIL course, whereas occasionally there is a lecture in a PBL course.

This method of learning is rewarding to students because it actively engages them in the learning process. It's more rewarding to the instructors as well because there is constant feedback from students. Instructors have greater awareness of how the class is doing by getting this feedback.<sup>4</sup>

In my pharmacy education at University of Maryland we have small group case-based learning activities. These cases often included leading questions to encourage critical thinking and further application of knowledge and guidelines of disease states and therapies.

However, the groups were often too large, consisting of 10–12 students, making it difficult to effectively work as a team. And as is typical with most group work, certain people become the leaders or “managers” for every session, and other members of the group assumed roles that they were naturally comfortable with. This is a problem that POGIL addresses by creating small working groups and assigning student roles.

These small group learning activities take a substantial time commitment from instructors and more effort on the part of the student too. This likely explains why small group facilitated learning is not commonplace. However there is a place for this methodology and I believe it can be used more in pharmacy education. The skills POGIL works to enhance are necessary skills in pharmacy: communication and team work with patients and other health professionals are critical skills that every pharmacist should master.

#### **References**

1. Eberlein T, Kampmeier J, Minderhout V, Moog RS, Platt T, Varma-Nelson P, White HB. Pedagogies of Engagement in Science: A Comparison of PBL, POGIL and PLTL. *BAMBED*. 2008; 36(4):262–73.
2. [POGIL Guided Inquiry Classroom](#) [Internet]. Lancaster: Franklin & Marshall College. The POGIL Project. C2010 [Cited 2010 Nov 19]
3. Hanson DM. [Instructor's Guide to Process-Oriented Guided-Inquiry Learning](#). Lisle, IL: Pacific Crest. 2006. [Cited 2010 Nov 19]
4. [POGIL](#) [Internet]. Lancaster: Franklin & Marshall College. The POGIL Project. C2010 [Cited 2010 Nov 17]

## POGILERS in the News

- POGIL Initiative Partners Melissa Hemling and Bruce Wellman, who were named as recipients of the Presidential Award for Excellence in Mathematics and Science Teaching earlier this year, were formally recognized in Washington in December.
- Drexel University's Dan King was quoted in a *Philadelphia Daily News* article about clickers in classrooms. The article describes this learning tool as "transforming teaching – and learning."
- POGIL Project Director Rick Moog was quoted in the Sept. 13 issue of *Chemical and Engineering News* in its cover story on "Measuring Success." In the article, he discusses his thoughts on assessment and evaluation. Photos from Laura Trout's (HSPI) class were featured on both the cover of the magazine and in the inside story.



### Send us your news!

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