

The POGIL Inquirer

In The Spotlight: Ashley Hill

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From The POGIL Project Director



Dear Friends,

We are just a few days into Spring, and here at The POGIL Project, we are eagerly anticipating both the warmer weather and our upcoming slate of summer activities.

Following a busy spring of 1- and 2-day workshops, as well as our incredibly popular eSeries events, we will begin our summer lineup with our annual POGIL National Meeting in St. Louis, MO, at the beginning of June. Now that our new strategic plan has been approved, the hard work of implementing our goals begins. Stay

tuned for exciting new initiatives that arise from this year's annual meeting of the POGIL Project's leadership.

On June 24-26, we will hold our second National Conference for Advanced POGIL Practitioners, also in St. Louis. This year, we expect more than 85 practitioners from around the country to attend. In addition to a full schedule designed by and for the participants, we also have an exciting lineup of plenary speakers and workshops. I'd like to say a special thank you to our scholarship partners Wiley and Flinn Scientific, as well as the National Science Foundation, all of whom will help fund a number of educators' attendance at this workshop. Our 3-day workshops begin in July at three locations around the country, and we will also hold our second Writers' Retreat at the end of July in Baltimore. There is truly something for everyone this summer!

We hope to see you at one of our events in the coming months!

Richard B. Moog

Upcoming Events

March 28	Univ. of Tokyo
March 29	Univ. of Southern California
April 9	Williams College, MA
April 13	POGIL NW Summit, WA
April 26-27	Miami Dade College, FL
April 29-30	Douglas College, British Columbia
May 5, 11	Teaching with Your Mouth Shut, Seattle, WA
May 9	Univ. of Pittsburgh, PA
May 21	University of Vermont

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

The POGIL Inquirer is a publication of The POGIL Project, a 501(c)3 corporation.
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Ask The Mole

Q: Can I use POGIL in a large classroom?

A: A large classroom provides significant challenges to instructors who want to engage all of their students in an active learning environment. These challenges include limited contact with and access to individual students, spaces ill-equipped for group work, the sheer volume of grading assignments, and an inability to handle student requests. However, POGIL can create effective large classrooms that can help instructors overcome many of these challenges and that provide an effective learning environment.

POGIL practitioners routinely use POGIL in classrooms with up to 400 students. POGIL pedagogy provides an excellent framework for building a productive large classroom and gives students a sense of community, a structure in which to work, and accountability for their actions during class.

While we all would prefer to teach in a more intimate classroom setting, dividing students into groups with a role for each group member, using well-designed guided inquiry assignments, and developing systems to hold students accountable for their roles and participation are all important parts of an effective strategy in a larger setting.

Sally Hunnicutt (a professor at VCU who also teaches using POGIL with large classes) and Tim Herzog (from Weber State University) have built an interactive workshop that is part of the POGIL e-Series in which they will share many of our techniques and philosophy for facilitating POGIL in large classrooms. Register today at www.pogil.org

- *Feel free to suggest your own topics. The more ideas we have, the happier the POGIL community will be! If you have any questions regarding inquiry learning, POGIL materials, or any POGIL-related knowledge, email us at marcy.dubroff@pogil.org*



Where in the world is the POGIL water bottle?

Is your POGIL water bottle coming out of hibernation? Has your bottle traveled the world? We'd love to see where our iconic bottle has traveled this past year!

Send us pictures of your bottle so we can find out where the bottle has gotten its passport stamped. Once again we will feature the photos on our website and on our Facebook page. Feel free to give us some detail! We love living vicariously through the bottle's adventures.

Send your photo or video of your water bottle to Marcy Dubroff at marcy.dubroff@pogil.org.



In the Spotlight: Ashley Hill

Fullerton Joint Union High School

Ashley Hill, science teacher in the Fullerton Joint Union High School District, is leading the Regional Network Initiative in the Los Angeles area in an effort to introduce The POGIL Project to Southern California.

After successfully getting her bachelor's degree in science and a teaching credential from California State University, Fullerton, Hill obtained her master's degree in biological science from Project Dragonfly, offered by Miami University in Ohio.

After encountering POGIL books, Hill tried implementing the pedagogy into her classroom, but after attending a POGIL conference in San Jose, she realized that training was required to know how to effectively implement POGIL into the classroom. "I realized pretty quickly that POGIL would be a powerful tool for teaching and learning," Ashley explains.

Hill notes several differences in her classroom since implementing POGIL. She says that since getting away from merely providing information, her students have increasingly developed skills in communication, process, and inquiry that make them better critical thinkers.

"We went from worksheets and homework to group work, using roles, stopping to share out, correcting misconceptions, and it turned into *guiding* them," she says. Hill has successfully implemented learning groups that promote the development of these crucial skills in students.

In order to expand the POGIL Project in Southern California, Ashley has introduced POGIL to her classroom and her district. She is working on creating local teams with more teachers in the region. She hopes to unite a strong team of POGIL practitioners to create community and activate a change in education and finds that POGIL aligns well with the NGSS model that emphasizes process skills. She is currently working on creating a space for motivated individuals to meet on a more regular basis in order to promote an effective use of POGIL in the classroom.

She is especially excited about the upcoming POGIL 3-day summer workshop in Costa Mesa this summer at which she will facilitate. "This will be a chance for educators in this area to experience POGIL firsthand," she says, "and to network with each other. There is no better way to build community than by getting together and sharing experiences with other educators who are passionate about changing the face of education."



Our POGIL Family – Hail & Farewell

The POGIL National Office is thrilled to announce the addition of two new staff members and sadly bids goodbye to two others.



Kathleen Clark joins the team as our new administrative assistant, replacing Ruth Ferguson who retired at the end of January.

Kathy graduated from Lebanon College with a bachelor's in sociology. She worked as an academic department coordinator in anthropology and sociology for Franklin & Marshall College for 18 years, before "retiring" a few years ago.

"I want to reengage with an educational community," Kathy says. With a passion for education, she is excited to be back in an environment that focuses on different ways of teaching and learning.

Outside of POGIL, Kathy is a master gardener and serves as president of the Horn Farm Center for Agricultural Education. With a passion for regenerative agriculture, she focuses on different ways to mitigate climate change.

Matt Tarka joins The Project as consultant in session materials management. Matt recently moved back to Pennsylvania after living in Washington D.C., and working for groups in the food and healthcare industry. "I was seeking opportunities to expand my knowledge in STEM education," says Matt, "POGIL just felt like the place to do that."



He appreciates the collaborative and inclusive atmosphere within POGIL and is excited to be a part of The Project. Outside of POGIL, Matt enjoys playing his guitar and going on historical house tours hoping to encounter ghosts!



Ruth Ferguson retires from POGIL after seven years of service with The Project. She joined the team after stints in education and medical illustration. Her favorite part of the job was, by far, working with her student workers, and engaging with the student community.

Following her retirement, Ruth plans on spending time traveling, pursuing her artwork, and growing her lush and lovely garden.



Becky Guo has worked with POGIL since her freshman year at Franklin & Marshall College as an office assistant and intern. She helps with office needs creating packing lists, packing boxes, copying,

and filing. Becky also works closely with fundraising initiatives, donations, and research on trends with workshops. "The environment here is just so friendly, and I really appreciate the relationships I have built," Becky says.

This spring, Becky will graduate with a degree in biology. She then plans on taking a certified nursing assistant class with the goal of becoming an emergency technician. She also has a career goal of becoming a physician assistant. "I want to have a direct impact on people with health needs," she says, "I want to build meaningful relationships with my patients."

To continue her relationship with POGIL, Becky aims to be able to give back to POGIL through donations. "Nonprofits like POGIL will help improve the future of education," she says, "and have a positive impact on students and teachers."

Registration Open for Summer Workshops

If you are a high school teacher or college/university instructor and want to enhance your professional development, our POGIL 3-day workshops are for you! You will learn about POGIL's philosophy and methodology and benefit from additional focus on activity writing, classroom facilitation, and/or lab implementation. In addition, informative poster and plenary sessions will provide you with opportunities to meet and network with other POGIL practitioners.

Three Tracks to Choose from in 2019

These summer workshops are designed for all levels of POGIL practitioners. On the first day of the workshop, new POGIL participants will attend a "Fundamentals of POGIL" session while those who have previously attended a POGIL workshop will attend two sessions of universal application. The start of the second day will expose all participants to activity structure and facilitation in a POGIL classroom. For the remainder of the workshop, participants will follow a series of sessions focused on their chosen area of interest - **Activity Writing, Classroom Facilitation, or Implementing POGIL in the Lab.**

For more information on the tracks, please visit <https://pogil.org/2019-3-day-summer-workshops>

Registration Information

The workshop fee is \$450, which includes registration, materials, three lunches, and two dinners. On-campus housing for two nights is available for an additional \$189 and includes two accompanying breakfasts. Two quarter graduate credits (equivalent to 1.34 semester credits) will also be available through Seattle Pacific University for an additional fee of \$110. Visit www.pogil.org to register today!

Simmons University
Boston, MA
July 16-18

Capital University
Columbus, OH
July 22-24

Lewis & Clark College***
Portland, OR
July 30-August 1

*****Thanks to an anonymous donor, we have a limited number of scholarships available for rural High School STEM teachers from the states of Washington and Idaho. Visit www.pogil.org for more information.**

Contact Marcy Dubroff to find out which track is right for you (marcy.dubroff@pogil.org) or contact Julie Boldizar (Julie.boldizar@pogil.org) or Ellen Harpel (eharpel@pogil.org) for additional information about the workshops.

Register today!





POGIL Writers' Retreat

Johns Hopkins University, Baltimore, MD
July 29–August 1

This retreat will provide an opportunity for individuals and small teams to work on developing, writing, and improving POGIL activities with the mentorship of experienced POGIL author coaches. The agenda also includes workshop sessions focused on activity authoring, feedback sessions, and ample time for writing and interacting with other authors and author coaches.

Apply: To apply for this workshop, applicants will need to complete the POGIL [Writers' Retreat application](#) by April 2.

Payment: The workshop fee is \$575 and includes registration, materials, and four lunches. On-campus housing for four nights is available for an additional fee of \$275 and includes four accompanying breakfasts. Attendees who are interested in earning graduate credits will pay an additional \$165 fee directly to Seattle Pacific University during the first day of the retreat.

Contact: For additional information and details on this workshop, please contact Ellen Harpel at (ellen.harpel@pogil.org)

The retreat is appropriate for authors in all content areas at both the post-secondary and K-12 levels. If you have an interest in authoring high-quality POGIL activities, if you have already authored activities and would like to refine them, or if you are getting activities ready to submit for endorsement, the POGIL Writers' Retreat is a great opportunity for you to get feedback from colleagues and author coaches.

Notice: The POGIL Project has leased or rented facilities from the Johns Hopkins University. However, The POGIL Project and any programs operated by The POGIL Project are not related to or affiliated with the Johns Hopkins University in any way. The POGIL Project is an entirely separate legal entity with no connection to the Johns Hopkins University aside from the temporary use of facilities for the specified program.

NCAPP 2019

Welcome and thank you to our returning NCAPP Scholarship Partners, Flinn Scientific and Wiley & Sons. As Scholarship Partners, Flinn and Wiley are making it possible for several educators to attend NCAPP this summer. We are grateful to have our key publishing partners as sponsors and supporters of NCAPP, and as an integral part of the POGIL community. A special POGIL thank you to Flinn and Wiley!

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WILEY

POGIL Published Works

Process-oriented Guided-inquiry Learning at Jackson State University and Tuskegee University

Naomi F. Campbell, Melissa S. Reeves, Marilyn Tourné, M. Francis Bridges

Process-oriented guided-inquiry learning (POGIL) is a student-centered instructional strategy to actively engage students in the classroom in promoting content mastery, critical thinking, and process skills. The students organize into groups of three to four, and each group member works collaboratively to construct their understanding as they proceed through the embedded learning cycle in the POGIL activity. Each group member has a specific role and actively engages in the learning process. The roles rotate periodically, and each student has the opportunity to develop essential process skills, such as leadership skills, oral and written communication skills, team-building skills, and information-processing skills. The student groups are self-managed, and the instructor serves as a facilitator of student learning. A POGIL activity typically contains a model that the students deconstruct using a series of guided, exploratory questions. The students develop concepts (concept invention) as the group members reach a valid, consensus conclusion. The students apply their concepts to new problems completing the learning cycle. The authors implemented POGIL instruction in several chemistry courses at Jackson State University and Tuskegee University. They share their initial findings, experiences, and insights gained using a new instructional strategy.

The Effectiveness of the Process Oriented Guided Inquiry Learning (POGIL) Model in Educational Psychology Learning

Sri Haryati

Theoretically, this research contributes to: (1) the development of educational psychology theory, and (2) the development of research-based learning theory; the research results are especially relevant to methods such as authentic learning, problem-based learning, cooperative learning, inquiry learning, process oriented guided inquiry learning (POGIL) and contextual teaching and learning, which are currently increasingly popular. Practically, this research can be used as a teaching material for lecturers and students in lectures, and may be particularly beneficial as a comparative or supplemental book to enrich the educational psychology materials used in a new course of Faculty of Education and Teachers' Training at Tidar University. The objectives of this study were: (1) to propose appropriate learning materials for the subject of educational psychology using research-based learning models, and (2) to test the effectiveness of research-based learning models, especially POGIL. The research was conducted among the second semester students in English Education Study Program. The research method used was Research and Development, which consisted of three steps, namely preparation, development, and reporting of results. The data analysis

technique used was one group pre-test post-test design. This research succeeded in developing teaching materials for educational psychology using a research-based learning model and indicates that POGIL can improve students' learning outcomes. The research results show that: (1) there is a significant difference between learning outcomes before and after learning using the POGIL model, as proven by the increase in the mean score from 58 to 91, and (2) there is no significant difference between the three sample groups using POGIL model in their learning, as proven by t-count being smaller than t-table, and the average post-test score of both groups 1 and 2 being 90, and the average post-test score of group 3 being 93.

Kudos!

Sheila Qureshi was promoted to Visiting Associate Professor of Chemistry at Weill Cornell Medical College in Qatar.

Stephanie O'Brien won the 2018 American Chemical Society New York Chapter Outstanding Teacher Award for "highly effective teaching and inspirational leadership to students of high school chemistry." This award is given to just one teacher in New York State each year and is presented by the Middle Atlantic Regional Meeting (MARM) of ACS.

Michael Bruno of North Carolina School of Science and Math was chosen as one of the winners of this year's UNC Board of Governors Excellence in Teaching Awards. Bruno was recognized for exceptional contributions in classroom innovation. These awards recognize outstanding contributions of faculty members at each UNC system institution.

Sheila Barbach was named General Studies Principal at the Gerrard Berman Day School. Barbach has contributed to the science curriculum at GBDS with robotics, 3D design, printing, coding, and programming. She integrates POGIL into her classrooms for her student to develop teamwork, communication, problem-solving, and information processing skills.



POGIL Role Cards are here!

Colorful laminated role cards for use with POGIL activities are now available through Flinn Scientific. Each set contains cards for seven groups of four students. Each role is represented with a different color. The four roles are manager, presenter, recorder and reflector.

<https://www.flinnsci.com/pogil-role-cards/ap9841/>

POGIL Summer Coordination Team

Joe Brown
U.S. Coast Guard

Megan Daschbach
Washington University in St. Louis

Joyce Easter
Virginia Wesleyan University

Tim Herzog
Weber State University

Dan Libby
Moravian College (retired)

Mare Sullivan
Seattle Pacific University

Craig Teague
Cornell College

Shannon Wachowski
University of Wyoming

THANK YOU for an AMAZING 2018 fundraising season!

We are deeply grateful to you, our friends and community members, who gave so generously last year, and helped us exceed our goals! Every gift, of any amount makes a difference, and combined, look what we can accomplish! Your support helps make it possible to keep the workshops, materials, and scholarships coming—benefitting thousands of students and teachers each year.

We'd also like to send a special shout-out to our **114 POGIL Sustaining Partners**, who have donated for three or more consecutive years or who participate in our monthly giving program. Thank you for your continued support!

Thank you also for the thoughtful comments so many of you sent about what POGIL means to you. Here's one of many that warmed our hearts:

POGIL has meant so much to improving my classes that I can't teach without it! Thanks POGIL for the great workshops, conferences and new friendships.

The Project is all about a shared commitment to improving teaching, learning, and working together to provide the best possible education to our students. We focus on fostering tight communities through small teams within the classroom and partnering with the educator in the room next door. These smaller communities contribute to the larger community of POGIL practitioners to effect educational change on a broader scale.

To all of you who give so much, in so many ways, you are truly our heroes and we thank you from the bottom of our hearts. We couldn't do it without you!

The POGIL Project Names Three to Steering Committee

The POGIL Project has named three educators to three-year terms on its Steering Committee. The nine-member Steering Committee provides definition and direction to the goals of The Project. The three are: **CDR Joseph D. Brown**, Ph.D., U.S. Coast Guard Academy; **Michael Bruno**, Ph.D., North Carolina School of Science and Mathematics; and **Tim Herzog**, Ph.D., Weber State University. They officially begin their terms at the 2019 POGIL National Meeting in St. Louis in June.



Brown has a B.S. in marine and environmental sciences from the U.S. Coast Guard Academy, a master's in chemistry from San Diego State University and a Ph.D. in organic chemistry from the University of Rhode Island. While still on active duty, he holds a rank of Associate Professor of Chemistry at the United States Coast Guard Academy. He began utilizing POGIL materials and approaches in his courses after attending a 3-day POGIL workshop in 2007. He has facilitated numerous POGIL workshops, served as the Northeast Regional Coordinator, and is currently assisting with the organization of the 3-day summer workshops. His research focuses on the trace detection of illicit drugs. He regularly puts his expertise into practice helping improve the U.S. Coast Guard's drug detection abilities for their drug interdiction mission. He recently led a team of seven faculty in the implementation of POGIL in general chemistry at USCGA.



Bruno grew up in CT and received an A.B. in chemistry from Dartmouth College and a Ph.D. in biochemistry from Cornell University. At Cornell, he studied changes in membrane elasticity caused by polyunsaturated fatty acids. As a post-doc at the University of North Carolina – Chapel Hill, he studied the role of membrane curvature on synaptic vesicle fusion. At UNC he was a fellow in the SPIRE fellowship program, which combines research support and community service with an emphasis on minority careers in academic science. It was as a SPIRE fellow that he became interested in active learning. He was first introduced to POGIL as an assistant professor of chemistry at Guilford College. He is currently an Instructor of Chemistry at the North Carolina School for Science and Mathematics, a public residential high school for talented students, where he uses POGIL to teach chemistry and biochemistry, and has introduced the practice to many of his colleagues who now incorporate the pedagogy into their own classrooms. Bruno was named the recipient of the 2018 POGIL Early Achievement Award (PEACH) in 2018.



Herzog is currently an Associate Professor of Chemistry at Weber State University in Ogden, UT. He grew up in Spokane, WA and attended Gonzaga University and received his Ph.D. in inorganic chemistry from the California Institute of Technology. He worked for eight years as an R&D scientist for Union Carbide and Dow Chemical before moving to Utah with his family in 2004. After a few years as a stay-at-home dad, he joined the chemistry department at Weber State where he has focused his energy on teaching general chemistry and inorganic chemistry. His current research efforts are split between studying how assessment methods impact students and working with students to synthesize organometallic cancer therapy targets. Herzog has used POGIL in all of his classes since he began at Weber State and has been active in The POGIL Project the entire time. He has served in a variety of roles in The Project, including facilitating local and regional POGIL workshops, coordinating the POGIL Facilitator Training Workshop, leading a team to develop local POGIL networks across the country, and working as a member of the SPIRAL project to develop, evaluate, and publish a collection of POGIL experiments for introductory chemistry labs.

Looking to Book a Workshop?

- If you would like to bring a POGIL workshop to your area, please get in touch with us! We are interested in teaching more instructors about POGIL at both the high school and post-secondary levels and want to help them make their classrooms and laboratories more student-centered.

Please visit our website and submit a request a workshop form or email Marcy Dubroff at marcy.dubroff@pogil.org.



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 marcy.dubroff@pogil.org

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