THE POGIL PROJECT: 2021 COMMUNITY REPORT

Ripple Transforming education one classroom at a time Effects









OUR MISSION IS TO IMPROVE TEACHING AND LEARNING BY FOSTERING AN INCLUSIVE, TRANSFORMATIVE COMMUNITY OF REFLECTIVE EDUCATORS WHO DESIGN, IMPLEMENT, ASSESS, AND STUDY LEARNER-CENTERED ENVIRONMENTS.

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DEAR FRIENDS

This has been an exciting year of change.

With the support of our community, The POGIL Project addressed the

challenges of the pandemic by offering more virtual programs. The results of this shift are still rippling outward and affecting each of our strategic goals and programs. It has been thrilling to watch.

Over the past year, we've offered 32 inperson and virtual workshops to more than 2,500 instructors. Even though the world of in-person professional development is opening up again, we have learned how important having an option for online webinars, teacher training, and conferences is to you.

We believe virtual programs are a vital way for us to support the teachers who make our community such a great place to reflect and learn. Because The POGIL Project is committed to diversity and inclusion, we will continue to offer virtual programming and provide more affordable

professional development opportunities to more educators.

Your generous contributions also help make our programs more affordable and inclusive. Over the past year, your gifts to the Jim and Kathy Spencer Fund to Advance POGIL Practice have helped us provide financial support to 2021's NCAPP participants and build a foundation of support for future attendees. We are proud to announce that we have raised more than \$61,000 toward our \$100,000 goal and can offer more scholarships than ever to our inperson NCAPP event in 2023. Thank you for helping us reach this major milestone!

In 2021 and beyond, we will also introduce new initiatives to further strengthen our strategic goals. These include a community-based program aimed at bringing in and supporting new teachers, research studies to examine student engagement in POGIL classrooms, and the release of revised high school activities aligned with NGSS standards.

As always, The POGIL Project evolves in order to meet the demand for more programming, newer activities, and stronger practitioner networks. We're working with a new publisher to deliver more POGIL activities to more post-secondary educators. We're now part of an exciting, subscription-based program at Flinn Scientific that provides POGIL activities at the secondary level. And we're continuing to expand and refine the POGIL Activity Clearinghouse (PAC), in order to provide authors a collaborative and supportive environment as they develop new activities.

We know the ripple effect of these changes will be momentous. We can't wait to see what comes next—and how our amazing community will help us continue to grow.

Rick Moog

Rick Moog

Executive Director of The POGIL Project



Teacher training lies at the heart of our model for change. Here's a look at what we accomplished in 2021.

POGIL TRAINING & FACILITATION WORKSHOPS

Our workshop offerings keep on growing! This year, we offered nine sessions of Fundamentals of POGIL, allowing us to reach more than 200 new practitioners. We also welcomed 96 practitioners to our Facilitation and Activity Writing workshops and (virtually) hosted 17 practitioners during our weeklong Writers' Retreat. Thank you to the 29 POGIL community members who facilitated these lively workshops!

eSERIES, WEBINARS, AND BOOKS — OH MY!

After pivoting to meet the needs of teachers during the pandemic, we're continuing to offer more professional development virtually. This year, we covered topics such as team formation and fostering inclusivity in the classroom during our popular eSeries. Our practitioners also kicked off a new Zoom discussion group dedicated to reading Ibram X. Kendi's *How to Be an Antiracist*.

SPUR+ GRANTS

of the elements of art.

One of the best parts of The POGIL
Project is watching collaborations between practitioners bloom. Our SPUR+ grants provide up to \$2,500 of seed money for projects that further our strategic plan.
Congratulations to Mare Sullivan and Lori Stanton on their funded proposal to create and classroom-test 15 new POGIL activities designed to help students develop the basic concepts

NATIONAL CONFERENCE TO ADVANCE POGIL PRACTICE

From author coaching sessions to facilitation fishbowls, this year's NCAPP may have been virtual, but it was still exciting. One hundred practitioners attended three days of networking, learning, and reflection. We can't wait to see you all in Utah in 2023!





"NCAPP always gives me the ability to interact with POGIL Practitioners so we can learn from each other."

- CHARITY LOVITT

POGIL NATIONAL MEETING

During this year's POGIL National Meeting, our strategic plan working groups made incredible progress. Be on the lookout for details about our new communitybased networking program for new practitioners, the launch of our OPTIC observation tool, new activities and publications, and much more! A big thank you to everyone who attended and rolled up their sleeves for four days of virtual working sessions. We couldn't do it without you!

Your donation changes everything.

For every teacher who has access to POGIL workshops and webinars, entire classrooms experience better learning outcomes.

Since 2012, we have

Offered

415+

Workshops

Served

12,900+

Educators

Reached an estimated

310,000 **Students**

POGIL STORY | CHANGING TO MEET THE MOMENT

Charity Lovitt & Karl Bailey bring POGIL to virtual classrooms

When the pandemic hit, Karl Bailey was ready—at least in terms of his lesson plans. As Professor of Chemistry at Clark College in Vancouver, WA, Bailey had already been adopting the POGIL pedagogy for asynchronous, online, and hybrid lessons using peerbased learning communities.

This became especially important during the pandemic. "My students have all said that the peer-to-peer element was the most real face-to-face experience they had during the pandemic," said Bailey. "This gave them all the flexibility and support they needed, and gave them that connection that they were lacking in their other courses."

Bailey's ability to foster a strong peer learning community interested other members of The POGIL Project, too. Charity Lovitt, an Associate Teaching Professor at the University of Washington Bothell, immediately struck up a correspondence with Bailey about his pedagogy after

listening to his NCAPP panel and poster presentation in 2019.

"I implemented what he was doing on the panel in my class the following week," Lovitt recalled. Then, by May of 2020, Lovitt and Bailey decided to respond to a call for papers from *The Journal of Chemical Education* with their insights about translating POGIL activities to the virtual classroom.

"What emerged as we were writing the paper was how well the POGIL process connected with online theories of learning," said Lovitt. She cited the 'Community of Inquiry' model of learning and noted how neatly each element corresponds to the POGIL method.

"How students connect with, and learn from, one another socially is embedded within the content," Lovitt explained. "POGIL activities foster social relationships between students, even virtually."

In addition to reflecting on how their teaching strategies changed during the pandemic, both Lovitt and Bailey uncovered new student needs they plan to address as the world eventually opens back up. "One of the big takeaways was how powerful
peer-to-peer community
is, especially in online and
asynchronous learning," said
Bailey. "What you're getting out
of this learning community is a much
more powerful, capable, and motivated learner."

"One thing that emerged for me during this pandemic was the need for accessibility," Lovitt added. "Having the synchronous and asynchronous options has proven really helpful for everyone feeling connected." Moving forward, Lovitt plans to keep checking in on her students, who also expressed challenges like "food insecurity, housing insecurity, and lack of internet."

Like Bailey, she hopes other instructors will see how easy it is to adapt POGIL to virtual or hybrid classrooms. "A lot of the things we think of as being hard, like offering a choice between synchronous and asynchronous content, aren't actually hard," said Lovitt. "It's a paradigm shift."

"POGIL activities foster social relationships between students, even virtually."

NEW PARTNERSHIPS MEAN NEW POGIL **PUBLICATIONS ARE ON THE HORIZON**

The POGIL Project has inked new publishing deals with Kendall Hunt and Flinn Scientific, which will allow us to update classroom materials and continue to expand our offerings at both the secondary and postsecondary levels.

Our busy practitioners continue to create incredible materials by applying for SPUR+ grants and moving their activities through the POGIL Activity Clearinghouse (PAC). Thank you to our community for working so hard to make POGIL activities better and for meeting the demand in new subject areas.

Here are just a few of the subject areas we have to look forward to in the coming years:

- AP Environmental Science
- Art
- Biochemistry
- Conceptual Physics
- General Chemistry Lab
- Pre-Calculus, College Algebra, and AP Calculus
- Updates to four existing high school publications (Biology, Chemistry, AP Biology, AP Chemistry)

2021 POGIL PEACH AWARDS

Congratulations to our 2021 POGIL PEACH honorees! The PEACH award recognizes significant and enthusiastic contributions to The POGIL Project by secondary and postsecondary practitioners.

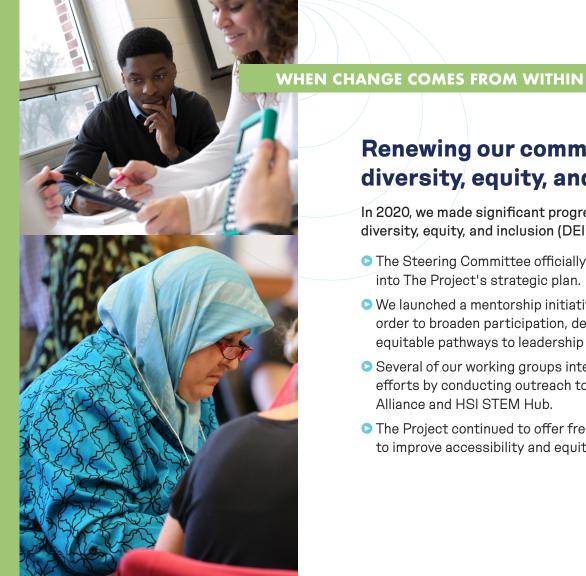
Despite a pandemic and the challenges of remote learning, these POGIL Practitioners transformed their classrooms and our organization—for the better.



Ashley Hill, Fullerton Union High School Ashley is a key member of the NCAPP biennial planning committee, as well as an active member of our high school activities revisions working group.



Melissa Reeves, **Tuskegee University** Melissa has been a member of the POGIL Activity Clearinghouse (PAC) working group since 2016 and chaired the group this past year.



Renewing our commitment to diversity, equity, and inclusion

In 2020, we made significant progress in our efforts to improve diversity, equity, and inclusion (DEI) at The POGIL Project.

- The Steering Committee officially adopted guiding DEI principles into The Project's strategic plan.
- We launched a mentorship initiative for new practitioners, in order to broaden participation, deepen community, and create equitable pathways to leadership opportunities.
- Several of our working groups intensified faculty recruitment efforts by conducting outreach to the Learning Assistant Alliance and HSI STEM Hub.
- The Project continued to offer free or low-cost virtual programs to improve accessibility and equity.

Joan Roque wants to make it easier for faculty of color to adopt POGIL

Joan Roque understands what it's like to have student frustration directed your way.

As a woman of color who uses POGIL, a pedagogy that upends student expectations about teaching and learning, Roque has experienced her fair share of student pushback over the years. Students have done everything from pretending not to understand her when she speaks to transferring out of her class.

"I saw how students didn't talk to me," said Roque, who was the only Hispanic faculty member in the Chemistry department at Westminster College in Salt Lake City, Utah. "They didn't approach me. They didn't trust me. They didn't ask me questions. You know, they preferred to just suffer in silence."

Thankfully, because she worked in a POGIL-friendly environment at Westminster, Roque had plenty of support from her colleagues. Now, as she moves to a new role as Assistant Professor of Chemistry at the University of Puerto Rico at Cayey, she wants to pay it forward by connecting other historically

marginalized faculty members with resources from The POGIL Project.

By offering assistance in the form of networking, mentorship, and scholarships, The POGIL Project has a chance to provide faculty of color with the support they need to overcome some of the challenges that they might face adopting and using POGIL in the classroom. "A lot of these faculty come from institutions that have no money for professional development," Roque explained. "The little bit they have, they want to use it for presenting at a conference."

She also believes that this climate, in which publishing a paper can make or break a bid for tenure, leads faculty members to choose their research careers instead of focusing on their pedagogy. Roque herself was in that position until she received a scholarship from The POGIL Project.

"[That scholarship is] how I got to NCAPP and the last two POGIL national meetings," she said.

"Otherwise, I wouldn't have applied. Once I was there, I was really excited to be engaged with The Project on a deeper level."

Roque currently serves as chair of The Project's targeted recruitment working group and is forging connections with other professional organizations such as the Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS).

"We got through the first part—connecting with people," said Roque of her outreach work. "Now we have to keep them and have more people of color use POGIL. This is a nice and engaging way to keep the momentum going."

"A lot of these faculty come from institutions that have no money for professional development."



ENHANCING AND IMPROVING INSTRUCTOR PRACTICE

GETTING READY TO LAUNCH OPTIC

We're ever closer to launching our OPTIC classroom observation tool. Currently, the OPTIC working group is validating the tool and testing the app. Thanks to everyone involved for all of their incredible efforts!



SUPPORTING THE PROFESSIONAL DEVELOPMENT OF SCIENCE EDUCATORS

The POGIL Project is proud to administer two **National Science Foundation grants** that support the professional development needs of science educators across the country.

- The goal of the **Building Capacity in STEM Education Research via the POGIL Community** grant is to introduce current mid-career POGIL practitioners to the knowledge and skills involved in the design, implementation, and analysis of STEM education investigations.
- The Bridging to STEM Excellence (BTSE) grant funds the work of a consortium of professional development organizations, including BioQUEST/QUBES, The National Association of Geoscience Teachers, the National Center for Science and Civic Engagement, The POGIL Project, and Summer Institutes for Scientific Teaching. The grant program provides targeted support for science faculty at Bakersfield College, California State University, Chico, University of Richmond, Georgia State University, and the University of Texas at Austin.

POGIL STORY | ENHANCING AND IMPROVING INSTRUCTOR PRACTICE

Shannon Wachowski sheds light on the "controlled chaos" of active learning

Shannon Wachowski has always wanted to help people. With a background in chemical engineering, she found her true calling in education. While not all of Wachowski's students shared her enthusiasm for high school science content, she ultimately discovered POGIL was a great way to keep them engaged.

Learning the POGIL pedagogy also freed Wachowski to put structures in place to help students construct their own learning. "Sometimes people think POGIL is just about 'worksheets,' but it's so much more than that," Wachowski explained. "It's the facilitation of the entire activity. How do you group students? How do you help them engage with the material in a productive way?"

To an untrained eye, active learning may even look disorganized. "When I taught and administrators came into my classroom, they would think my classroom was chaotic, but it wasn't," Wachowski said. "It's controlled chaos."

Wachowski is no longer in the classroom, but her experiences inform her work as a Science and Career

and Vocational Education consultant for Wyoming's Department of Education. She's also helping to launch The Project's new classroom observation tool, OPTIC. Designed specifically for active learning classrooms, OPTIC will help both newer instructors and administrators see what someone like Wachowski sees during a POGIL activity.

"Collecting this data will help give a better picture of what's happening in active learning classrooms," she said. "A lot of the evidence we have is anecdotal, which means it's hard to understand what's actually happening. But having data from an observation tool changes that."

With data from OPTIC in hand, teachers and administrators can more easily "advocate for active learning and POGIL as an alternative to more traditional teaching methods," said Wachowski.

She also sees the OPTIC tool as a powerful way to broaden the POGIL community and speed the acceptance of active learning classrooms more broadly. The more educators learn from one another,

the easier facilitating active learning becomes.

"That's why the
POGIL community
is so important,"
said Wachowski.
"People who are new
to the community are
welcomed, and they
understand that they're not
doing active learning 'wrong.'
POGIL really is a community effort to help
teachers and students."

OPTIC is currently in the testing stage. If you'd like to help our working group test the app or provide feedback on its training videos, visit https://bit.ly/3ngemic for more information.



to help teachers

and students."

How a mother-daughter team developed POGIL activities for Introductory Art

When you hear the phrase "POGIL activities," you likely imagine chemistry students diligently collaborating to solve a problem—not an art class discussing different line styles or ways to represent the texture of an object.

But Mare Sullivan, an instructor at Seattle Pacific University, and her daughter, Gwen Katz, a visual artist with a background in chemistry and classics, are working to change that. Last year, Sullivan and her colleague Lori Stanton received a SPUR⁺ grant to develop introductory POGIL activities for the art classroom. They brought on Katz to hand-illustrate each activity.

"There are very few art textbooks with written art curriculum," explained Katz. Instead, art is often taught through projects. Instructors introduce concepts in short lectures and use demonstrations to introduce skills.

After months of conceptualization, activity development, and classroom testing, the trio is pleased with the responses they've received from art educators. "For art teachers, it doesn't matter whether

their students can recall the specific definition of an art concept," recalled Sullivan. "Teachers want their students to identify concepts when looking at other artists' work and to be able to use them in their own artwork."

The new activities also align with the National Art Education Association's (NAEA) recommended changes to art education standards. "We looked at how the NAEA discussed comparing and contrasting skills, communication, metacognition, and developing language for both analysis and critique," said Sullivan.

"The art sector is always under fire, and budgets are always being cut," added Katz. "That's why these process skills are really important. These are skills that employers and colleges want their graduates and employees to have."

Sullivan and Katz are also hopeful that this collection will support the needs of students who aren't natural artists and teachers who are new to art education. "Art classes are often very well-tailored to top students with talent and intuition," explained Katz. "Students who are just there to get a general education

requirement don't have the same opportunities to acquire foundational knowledge."

The team's testing sessions, which included classroom teachers from the natural sciences, proved that even non-experts felt comfortable discussing art concepts after working on an activity.

"It's amazing when you hear a physics teacher say, 'Wow, I want to go to a museum and look at paintings now!" said Sullivan with a laugh. "They were so invigorated by the activities that they wanted to engage with art in their own ways."

"These are skills that employers and colleges want their graduates and employees to have."



EXPANDING OUR IMPACT

MEET THE POGIL PROJECT'S FIRST LEARNING COMMUNITY MEMBERS

POGIL Learning Communities is an initiative designed to broaden participation, deepen community, and create equitable pathways to leadership in The POGIL Project. The program will support a diverse set of new practitioners with a professional learning community, so they can share expertise, collaborate, and enhance their teaching.

We're proud to welcome the following practitioners as our first cohort of POGIL Learning Communities members:

Amber Arsenault

Maria Beal-Parker

Maddy Blain

Kristen Campbell-Blumhagen

Steve Cederbloom

Erin Craven

Tracy Felton

Kristy Jurchen

Jessie Oehrlein

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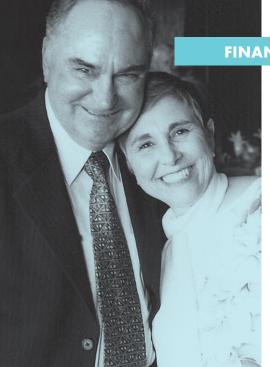
D. Natalie Taylor-Shaw

Audra Brown Ward

Cynthia Woodbridge



Thank you to cohort leaders Sara Fox, Alex Grushow, Clif Kussmaul, and Shannon Wachowski for devoting your time and energy to this project.



FINANCIAL OVERVIEW

SPOTLIGHT ON THE SPENCER FUND

The Jim and Kathy Spencer Fund to Advance POGIL Practice was established in 2020 to honor the Spencers' lifetime commitment to education. In March 2021, we mourned the loss of Jim Spencer, an incredible mentor and colleague to many in The POGIL Project.

\$61,000 Raised!

\$100,000

GOAL

To date, we have raised more than \$61,000 toward our \$100,000 goal. Thank you to those of you who have donated in Jim's memory. We are so proud to carry on his legacy at The POGIL Project through the Spencer Fund by providing financial assistance for educators who wish to attend the National Conference to Advance POGIL Practice.

Learn more at pogil.org/donate/spencer-fund

POGIL Donors: Fiscal Year 2020 **174**Donors

128Sustaining Partners

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\$67,083
Annual Fund Gifts

Thank you to our generous **2020 donors!**

high-impact professional development programs and expert publications are supported by an incredible group of monthly and yearly donors. We are especially grateful to our 128 Sustaining Partners* who have donated for three or more years or have joined our monthly giving program.

Thank you so much for your ongoing support!

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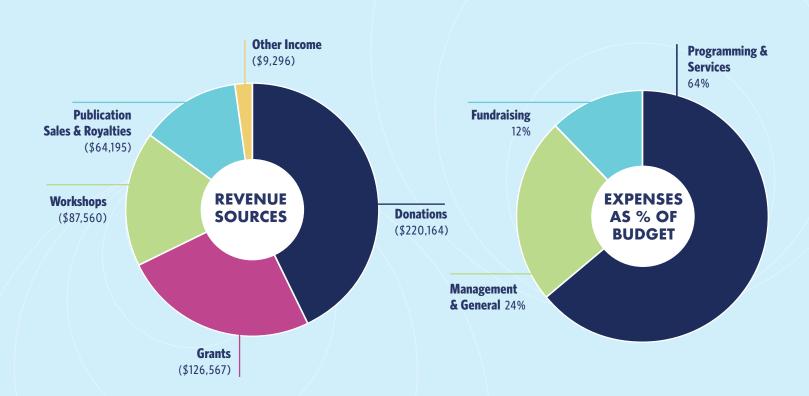
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The POGIL Project trains secondary and post-secondary educators to provide learner-centered instruction that helps students construct and retain knowledge, all while developing crucial process skills such as communication and collaboration. Your gift, of any amount, helps bring POGIL to new educators and classrooms every year. Thank you for helping us to make student-centered instruction the norm!

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Community Report Contributors

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"POGIL helped to transform my classroom and my philosophy of teaching. It's given me a purpose beyond my classroom."

— LAURA TROUT