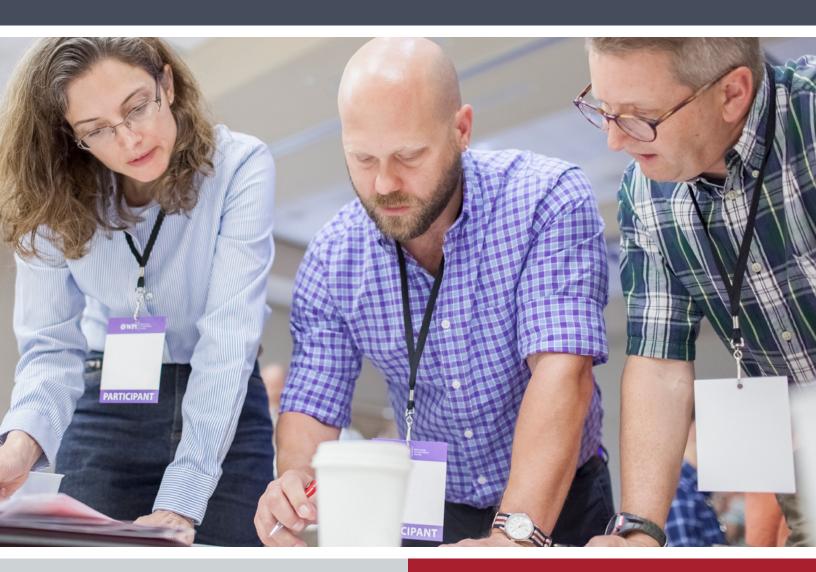
IMPACT REPORT

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2017-2022 Academic Years





CENTER FOR PROJECT-BASED LEARNING



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LETTER FROM THE DIRECTOR

As the Center for Project-Based Learning (CPBL) enters its eighth year, we decided it was time to take stock of where we've been and where we're going. Since our first Institute on Project-Based Learning in 2015, we've worked with almost 200 institutions on five continents. And though we're proud of that reach, we're more gratified that, over time, we have had repeat engagements with many of these institutions. This year, 40 percent of our work was with institutions who have engaged with us in the past. We are delighted that so many institutions have made such a significant commitment to project-based learning (PBL) and advancing these opportunities for their students.

The pandemic, while horrifying in its impact, has also helped us expand our offerings in ways that have made our work more accessible. In addition to the in-person Institute on PBL, a three-day, intensive workshop, we have piloted a virtual version—the Collaborative for Project-Based Learning—that has sessions timed throughout the year to provide just-in-time support for the participants. It ran last year with nine teams. Many of our custom workshops also are conducted virtually and, more often than not, are run as a series of shorter (60- and 120-minute) workshops spaced weeks or months apart to allow participants to absorb, develop, and begin to apply what they are learning.

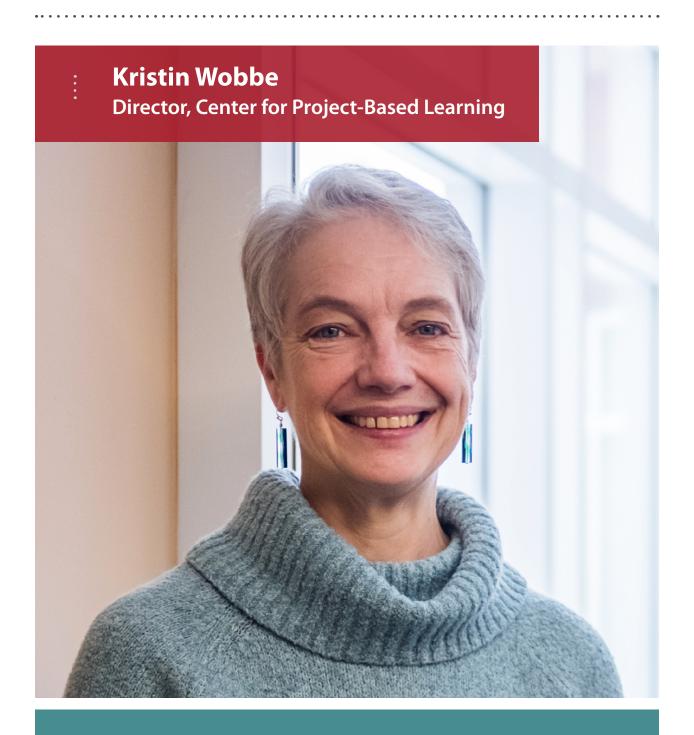
This year we launched a Faculty Fellows Program and selected our inaugural cohort. These four WPI faculty will receive summer support to advance projects that promote their own scholarship and learning, and will also provide materials useful for advancing project-based learning more broadly. Having Fellows enriches our community, as a center with an incredibly small core staff that depends largely on collaborations, both internal to WPI and beyond. We are appreciative of the continuing partnerships with eminent scholars, including Randy Bass, Vice President for Strategic Education Initiatives & Professor of English, Georgetown University, and Dawn Whitehead, Vice President, Office of Global Citizenship for Campus, Community, and Careers, American Association of Colleges & Universities. New partnerships have also been a highlight recently, with Irene Shaver, Program Administrator (Climate Solutions), Washington State Board for Community and Technical Colleges, and Sam Shields, Assistant Director of Curriculum Development, Center for Teaching Excellence, Texas A&M, joining us for capacity building. The Center is richer for these relationships.

Equity has become a key focus for the Center. In 2022 we conducted our first equity audit, and recently reviewed our progress on the equity goals that emerged from that audit. The audit was instrumental in evaluating all aspects of our operations and identifying ways we can become more equitable and inclusive, from the content and tone of our offerings, to the decisions we make about staffing our workshops, to the images we select for our public-facing materials, and more. We know we are not finished with this work, and we commit to continuing this journey. Project-based learning can be a lever for equity—how we support its adoption must also be as equitable and inclusive as we can make it.

Kristin Wobbe, PhD

Director, Center for Project-Based Learning

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ABOUT THE CENTER

The Center for Project-Based Learning, launched in 2016, leverages over 50 years of WPI's experience and expertise in project-based learning to support faculty and administrators from colleges and universities around the world in their efforts to implement, improve, evaluate, or integrate project-based learning on their campuses. The Center also supports the continued development of expertise and excellence in project-based pedagogy on the WPI campus. The range of products and services include an annual Institute on Project-Based Learning, custom workshops and seminars, consultations, and project-based learning resources.

The mission of the Center is to support and coach higher education institutions and practitioners committed to driving equitable, sustainable, and systemic pedagogical, curricular and cultural reform, through project-based learning. The Center prepares institutions and educators to offer diverse student bodies multiple, culturally relevant, project-based learning experiences. The Center serves as the hub for PBL in higher education by developing, curating, and sharing best practices that advance active, student-centered education for a just, equitable, and inclusive society.







Conter serves as the hub for PBL in higher education by developing, curating, and sharing best practices that advance active, student-centered education for a just, equitable, and inclusive society.

CPBL Affiliated Faculty





Marja Bakermans Associate Teaching Professor Biology & Biotechnology



Marcel Blais
Professor of Teaching
Mathematical Sciences



J. Elizabeth Clark
Professor of English
LaGuardia Community College



Amy Curran
Director
Accessibility Services



Corey Denenberg Dehner
Associate Teaching Professor
Integrative & Global Studies



Chrys Demetry
Professor
Mechanical Engineering



Jennifer deWinter
Professor
Humanities & Arts



Soroush Farzin
Assistant Professor of Teaching
Architectural Engineering



Caitlin Keller Instructional Designer



Courtney Kurlanska Assistant Professor of Teaching Integrative & Global Studies



Kimberly LeChasseur
Senior Research and
Evaluation Associate
Center for Project-Based Learning



Fiona Levey
Associate Teaching Professor
Mechanical &
Materials Engineering



Aarti S. Madan Associate Professor Humanities & Arts



Jillian McLeod
Associate Professor
United States
Coast Guard Academy



Charlie MorseDean of Student Wellness



Rodica Neamtu Professor of Teaching Computer Science



Anne Ogilvie
Director, Supporting WPI
through Effective and Equitable
Teamwork (SWEET) Center



Geoffrey Pfeifer
Associate Professor of Teaching
Integrative & Global Studies



Zoe Reidinger
Associate Teaching Professor
Biomedical Engineering



Kent Rissmiller Associate Dean The Global School



Taylor Rohena Assistant Director Accessibility Services



Derren RosbachAssociate Professor of Teaching Integrative & Global Studies



Carolina Ruiz
Professor and Associate Dean
Computer Science



Gbeton SomasseAssociate Professor of Teaching Social Science & Policy Studies



Sarah Stanlick Assistant Professor Integrative & Global Studies



Elisabeth (Lisa) Stoddard Associate Professor of Teaching Integrative & Global Studies



Yunus Doğan Telliel Assistant Professor Humanities & Arts



Rick Vaz
Professor
Integrative & Global Studies
CPBL Senior Fellow



Dawn Michele Whitehead

Vice President

Office of Global Citizenship for Campus,
Community, and Careers, AAC&U



Kristin Wobbe
Director, CPBL
Professor
Chemistry & Biochemistry



CPBL NETWORK of PARTNERS

SPREADING THE POWER OF PBL

• • • •

Miami Dade Virginia Tech College of the Canyons University of the District of Columbia AAC&U

American Councils for International Education

SXSW EDU (Bellevue, Agnes Scott, Miami Dade)

TeachThought podcast
The Academic Minute

Chronicle of Higher Education

OneHE

Colorado School of Mines

Nebraska Wesleyan Wake Forest University

Bellevue College

Texas A&M

Plymouth State University

Duke Symposium on PBL

California Community Colleges Success Network Civic Dialogues

Blackstone Valley Education Foundation

IvyPlus Writing Consortium

National University of Singapore

KEEN

New England Psychological Association

Society for College and University Planning

Stetson College

Suffolk University

MS4SSA (Math and Science for Sub-Saharan Africa)

Stony Brook University

Weber State University

Howard Hughes Medical Institute



INVESTIGATING THE POTENTIAL OF PBL

• • • •

University of Michigan-Dearborn Villanova University Bellevue College

Texas A&M

National Science Foundation
Carnegie Mellon University

UC San Diego

Miami Dade

Ivy Tech

SUPPORTING CENTER INFRASTRUCTURE

• • • •

National Science Foundation

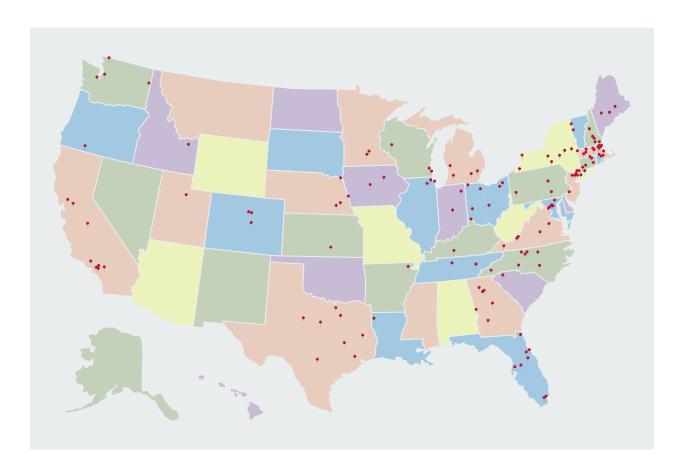
One8

KEEN

AAC&U

CPBL Alumni Network

The Center for Project-Based Learning has supported faculty at over 180 higher education institutions in the US—nearly 200 worldwide—including liberal arts colleges, community colleges, comprehensive institutions, and research universities.

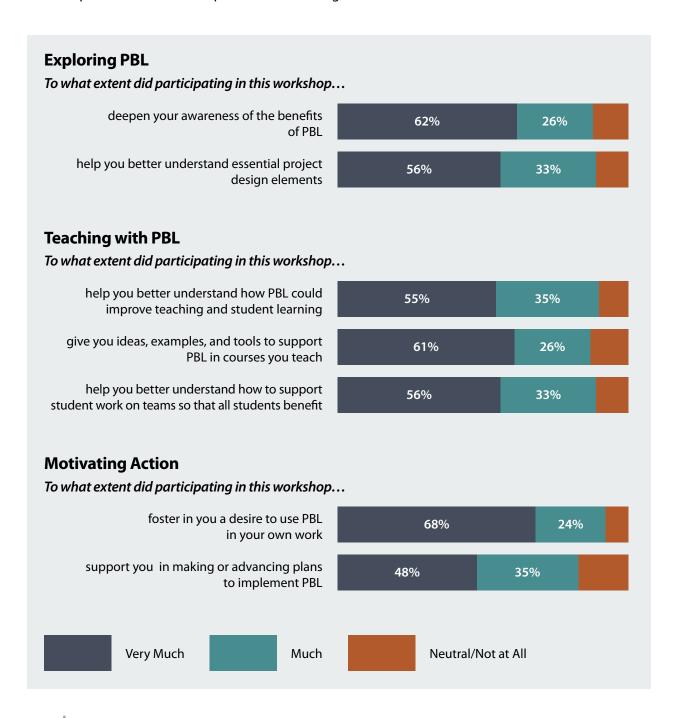




5-YEAR IMPACT

Professional Development

Our workshops provide opportunities for faculty, professional staff, and leaders of higher education to learn about high-quality project-based learning. Each workshop is customized to the host institution's unique context, strengths, and plans for project-based learning. Time together can range from one to two days, with 10 to 40 people typically participating. More than 600 participating educators from workshops at 30 institutions reported the following as a result:





The **Institute on Project-Based Learning** is a three-day intensive workshop where teams of faculty and administrators learn about project-based learning and make tangible progress to advance PBL on their own campuses.

The theory of action behind the Institute's design:

• Inspiration. We ask teams to articulate their initial motivations for advancing PBL on their campuses as part of the application process. Dr. Debora Jackson provides a charge that energizes and inspires all and the keynote address by Randy Bass reminds everyone that our work is needed to save humanity. Coaches, workshop facilitators, and other participating educators serve as sources for extending that inspiration for exploring new ways of harnessing PBL's potential. 93% of Institute participants indicated they "much" or "very much" received encouragement.

Teamwork. Faculty and administrators work in teams of five or more people in roles that are relevant to the anticipated implementation—e.g., within a program scaling up PBL across courses, across departments, creating a new first-year program.

- 94% of Institute participants reported that working closely with members of their own institutions helped their team make progress towards their goal
- "Most important was working with the faculty from my own institution. Without this Institute, I never would have worked with them, or collaborated with them." —Institute Participant, 2020
- "Time with colleagues to intentionally think through strategic implementation and rollout of project-based learning at our institution, coupled with the session content, informed all of our conversations and plans."—Institute participant, 2020

What Participants Say

- *(c)* I loved the opportunity to spend an extended period of time really studying and discussing a specific teaching strategy with colleagues. *(c)*
- —from a community college
- (*[This workshop] provides a common framework for talking with colleagues.*)
- —from a private university
- (C) It helped me see the clear alignment of meaningful student projects with academic growth and long-term success of students beyond graduation.)
- —from a large research-intensive university
- **'** I've used project-based ideas from my first year of teaching 20 years ago, but thinking about PBL as a deliberate strategy of its own helped clarify a lot of pedagogy. **?**
- —from a public teaching university
- **C** This was time well spent. Equal measures informative and inspirational. **>>**
- —from a large research-intensive university

Dedicated coaching. Learning is scaffolded by a coach with relevant expertise who asks questions to deepen reflection and examine assumptions. The coach serves as a connector to additional resources and assists with navigating opportunities.

- 82% of Institute participants reported that team time with their coach "much" or "very much" helped their team make progress toward their goals
- 75% indicated they "much" or "very much" received useful feedback

- "Having such a large and diverse group of coaches and workshop leaders was very helpful. Our team coach was very helpful and we also enlisted another workshop leader to discuss specific issues connected to our campus."
 - —Institute participant, 2021
- "I learned the real meaning of PBL through direct modeling from our coach and other WPI mentors." —Institute participant, 2022
- "Our coach pushed us to seriously think about how we plan to use what we learned in our own program and college, identify the short-and long-term goals, and create the campus action plan!" —Institute participant, 2022

Crafting an action plan. Teams are provided time and feedback to create an action plan that will advance PBL on their campus. Action plans are publicly presented at the end of the Institute before being brought back to teams' campuses.

- 89% of Institute participants stated that having a campus action plan would be "much" or "very much" useful
- Of these, 94% indicated that developing a campus action plan at the Institute "much" or "very much" helped their team make progress toward their goals for implementing project-based learning

- "We came up with a focused, clear goal, identified all the pieces that we needed to work with to contribute to the goal, and the action items needed to align all of those pieces."
 - -Institute participant, 2019
- "I have never been more hopeful about post-conference implementation than after this Institute." —Institute participant, 2019

Overall, 81% of participants reported that they "much" or "very much" made progress towards their goals at the Institute.

90% would recommend or highly recommend the Institute to a colleague.



Deepening PBL Learning

A major goal of the Center is to advance PBL implementation, which requires deepening learning beyond an exploratory introduction. Of the colleges and universities who have attended an Institute, participated in the Collaborative, or brought our program to campus for a customized workshop, 32% have been repeat customers. The percentage of customers who work with us multiple times is even greater among community colleges (64%) and minority-serving institutions (75%). This suggests a great commitment of these colleges and universities to support faculty learning about PBL.

Case in Point: Virginia Tech first attended the Institute in 2018 and sent a second team in 2019. Each year since, WPI has collaborated with Virginia Tech to replicate our Institute on its campus to spread PBL expertise among its faculty. To date, 80 faculty from across departments have participated, representing an impressive commitment to advancing PBL through professional development.

Another indicator of advancing PBL is when colleges and universities focus on institutional transformation in soliciting customized professional development through the Center. Over the five year period of 2017-2022, 23% of customized workshops provided strategies for institutional-level change. This phenomenon is also elevated among our community college partners, of whom 36% are focused on transformational use of PBL.

Case in Point: Miami Dade College sent teams to the Institute in 2017 and 2018, followed by a customized on-site workshop. The leadership focused on building infrastructure for sustainable, wide-scale implementation of PBL. This included training a cadre of faculty champions who met biweekly over two years to craft materials and hone their own trainings. With the support of two librarians, they also curated a comprehensive PBL toolkit, made available to all faculty.

Learn more about how Virginia Tech and Miami Dade College have supported institutional level PBL in Part 3 of our Chronicle of Higher Education webinar series by scanning the QR code below.





Thought Leadership







PBL & Demonstrating Mastery

Kimberly LeChasseur, PhD • Center for Project-Based Learning • November 2022

In mantery-based approaches, the emphasis is on achieving high-level outcomes. PBL can enhance mastery-based HIPs as a method of latending to the importance of process; doing so can keep mastery-based approaches from becoming superficially centered on attention to transferability of skills and the role of critect. The quality of implementation in high-impact practices is also critical to their impact on students' and PBL can improve implementation.

can improve imprementation. This bird begin by describing and synthesizing the empirical literature on each of the three HPs. Within this synthesis, the trends across the existing scholarhiply are described and the weaknesses in what we know are assessed. Also within each section is a summary of the empirical support around using PBL to realize the potential of the practice. The bird concludes with recommendation for future scholarship and suggestions for further reading.

Common Intellectual Experiences

The idea of providing common intellectual experiences is described by Kuh, D'Donnell, and Schneider (2017) as a me of carting intellectual obtenence for students across with might otherwise seem like disconnected learning experien Furthering this idea of general educations promise, Borning (2007) points out that "these connections' promise, Borning (2007) points out that "these connections' should occur with disciplines, samp disciplines, to real life and the world, and to majors and careers" (a. 1). Coherence might come in the form of a set of required common courses," a vertically integrated general education program," or a set of themed projects completed by all students. "Common intellectual"

PBL Resources: By the Numbers





6 research briefs

17 webinars & podcasts

(1)

(1)

165 views **3,085** views



8 editions of the AdvancePBL newsletter

0

17,712 views

20% - 23% click-through rate

Learn More About our PBL Resources



PBL Fellows

The Center invited our first cohort of PBL Fellows for the summer of 2023. As a WPI faculty member, each fellow will receive a \$10,000 stipend and develop a resource that can be shared broadly. The inaugural projects will focus on diversifying and democratizing higher education, supporting students in team-based learning, and strengthening writing during project-based learning.

Marja Bakermans, Associate Teaching Professor in the Department of Integrative and Global Studies

Centering Inclusive Practices in Student-Authored OERs in Project-Based Learning

Student-authored OERs can open a student's world to global citizenship, but if not connected with social justice principles, they can reinforce biases. The idea of co-creation of inclusive OERs with students can be daunting, so this project will provide a walk-through of how this occurs in my courses. For example, I will provide syllabus, assignments, sources, and context of the project. All items have an open license so participants may adopt and adapt materials to meet their own needs.



John-Michael Davis, Assistant Professor of Teaching in the Department of Integrative and Global Studies

A Systematic Revision Guide to Improve Project-Based Team Writing

Team writing is fundamental to project-based learning, yet few resources exist to systematically direct students through the revision process. This project will develop a revision guide composed of 3-5 sequential exercises that target common macro and micro-level writing problems and navigate student-teams through the revision process. The revision guide will function as a team writing assignment with an assemblancing rubric with relevance for sources that incorporate the incorporate that incorporate that incorporate that incorporate that incorporate the incorporate that incorp



with an accompanying rubric with relevance for courses that incorporate project-based team writing.

Fiona Levey, Associate Teaching Professor in the **Department of Mechanical and Materials Engineering**

A Toolkit for Incorporating Collaborative Project-Based **Learning in STEM Capstone Design Courses**

Based on my thermal fluids capstone course (redesigned to incorporate explicit focus on DEI, connections, professional development, teamwork, and technical skills), I will develop a toolkit for instructors teaching capstone design courses in technical fields. Responding to challenges and insights from the COVID-19 years (work-life imbalance, learning gaps, isolation, and the effects of cultural differences)

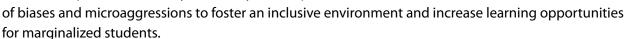
and evidence about student engagement and learning, I take a layered and culturally responsive approach to course design that can be applied in other disciplines.

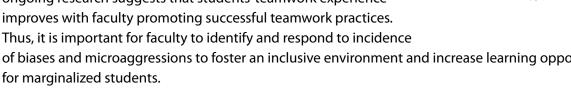


Hermine Vedogbeton, Assistant Research Professor in the Department of Social Science and Policy Studies

Co-Designing Tools to Identify and Address Microaggressions in Teamwork/Classroom

I will design and implement real-life teamwork scenarios to reduce microaggressions toward black and other marginalized students. I will create a learning tool for PBL in teamwork for instructors. My ongoing research suggests that students' teamwork experience improves with faculty promoting successful teamwork practices.





(In offering these new fellowships, we want to support projects that would be broadly useful for our clients from other schools. And by making the resources that our fellows develop available beyond WPI, we will help faculty everywhere provide impactful project-based learning *experiences to their students.* **>>**



Kristin Wobbe, Director, Center for Project-Based Learning

EQUITY AUDIT HIGHLIGHTS

In 2021, we conducted our inaugural equity audit of the Center—a major step forward in aligning our values with reflective practice. We were acutely aware that our programming did not yet provide sufficient attention to social justice and equity. Equity audits involve examining data around programming and practices to assess whether and where change is necessary to ensure equitable education practices. We are committed to this change.



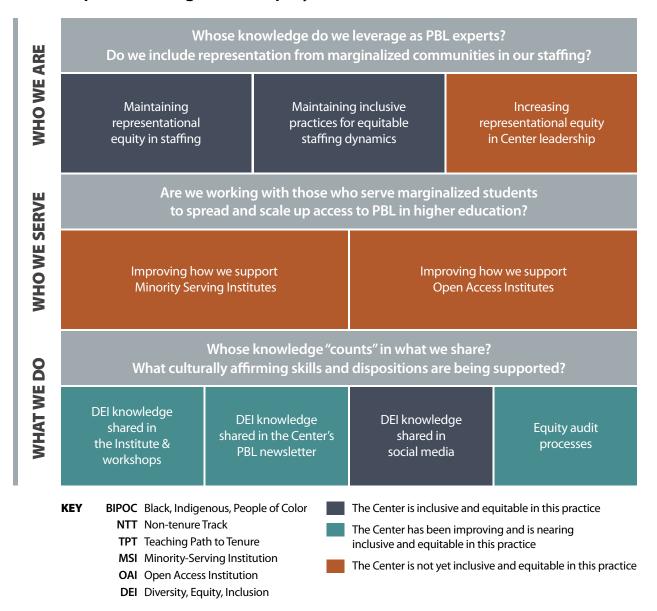
A Snapshot of Equity within the Center for Project-Based Learning in 2022

ARE	Whose knowledge do we leverage as PBL experts? Do we include representation from marginalized communities in our staffing?								
WHO WE ARE	BIPOC faculty & Women fac staff as experts at staff as expe the PBL Institute the PBL Ins		erts at as exper		ts at the for		sive practices equitable ng dynamics	Equity in Advisory Board positions	
ERVE	Are we working with those who serve marginalized students to spread and scale up access to PBL in higher education?								
WHO WE SERVE	MSIs at the PBL Institute	MSIs at Center workshops	MSIs as repeat customers		OAIs attending the PBL Institute		OAIs at Center workshops	OAIs as repeat customers	
0	Whose knowledge "counts" in what we share? What culturally affirming skills and dispositions are being supported?								
WHAT WE DO	DEI content at Center workshops	DEI content at the PBL Institute	DEI content in PBL newsletter		Scholarship centering DEI		Following DEI on Twitter	Tweeting DEI content	
	KEY BIPOC Black, Indigenous, People of Color NTT Non-tenure Track TPT Teaching Path to Tenure MSI Minority-Serving Institution OAI Open Access Institution DEI Diversity, Equity, Inclusion					The Center is inclusive and equitable in this practice The Center has been improving and is nearing inclusive and equitable in this practice The Center is not yet inclusive and equitable in this practice			

To draw trustworthy conclusions, equity audits must be informed by multiple perspectives. Center staff provided opportunities for our affiliated faculty to engage with the analysis and suggest improvements, both to the equity audit process and to the Center's approach to justice, equity, and transformation more broadly. To hold ourselves accountable, we have made our full report publicly available on our website. We plan to further strengthen this work with ways for alumni of Center programming to participate in future rounds.

We have committed to those future rounds, with regular equity audits now part of the staffing and operations of the Center. Ideally, conducting equity audits over time allows leaders to assess whether adjustments to practices have led to more equitable processes and outcomes. Recently we re-assessed our progress since the 2021 findings suggested several action steps. While some changes are slower than others, the Center believes enough in these values to act.

A Snapshot of Progress on Equity Audit Recommendations from 2021

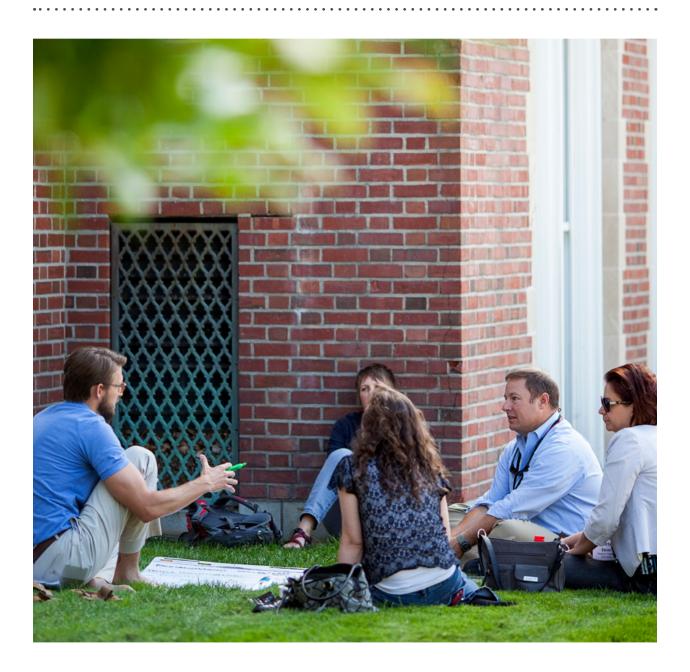


WHAT'S NEXT FOR THE CENTER

As higher education continues to evolve in response to a post-pandemic and politically charged world, the Center does too. We continue to learn alongside our partners, which teaches us where we might better meet emerging needs. One strategy we are launching to learn better as a Center will be assembling an external advisory board. The Center has enjoyed the wisdom and championing of a cadre of internal WPI leaders since its inception. A more inclusive board representing the diversity of PBL champions from across the field will provide a broader sense of the multiple realities involved in advancing PBL practice, collaborate on knowledge development, and help shape our next steps.

Part of our new annual equity audit process is a commitment to addressing our shortcomings and continuing not only to reflect, but to improve as a Center. We will continue to infuse culturally responsive pedagogies into our programming as central to definitions of high-quality PBL. Our inaugural cohort of Faculty Fellows has a strong focus on creating tools to assist others in adopting PBL as an equity lever in the classroom. We will be seeking external funding to continue to support this line of work and the inquiry needed to demonstrate its value.





One strategic direction aligned with this commitment is intensifying our partnerships with community colleges. PBL is a natural extension of Guided Pathways into curricula and pedagogy, but has not yet received much attention within the movement. Analysis of past collaborations with this sector demonstrated that community colleges are seeking support for institution-wide transformation when they adopt PBL. Extending our portfolio of partners in this sector will offer exciting opportunities to advance transformation on a broad scale.

Recently, the Center has engaged in several programming innovations based on educators' needs: we shifted to the online realm along with the rest of the world during the pandemic; piloted a more affordable, just-in-time alternative to the Institute with our year-long Collaborative for PBL; and we were honored to join College of the Canyons' PBL symposium in Southern California—our first regional event. We continue to reimagine the possibilities for improving higher education.



**To have an opportunity to be on a project where you need to try, re-evaluate, and try again was really more applicable to how you solve problems in the working world and in life outside of the classroom. **P

—Megan Homes, WPI '05



Long -Term Benefits

Of the more than 2,200 alumni across a span of 39 years who responded to a 2021 survey on the impact of their off-campus project experiences:



reported positive impact in viewing issues from different perspectives



reported better understanding of the connections between technology and society



reported positive impact in solving problems

C Life is projects. >>
-Michael Kentley, WPI '90

** This is real. This is going to make a difference for somebody. **

—Cindy Gagnon, WPI '82



reported positive impact in functioning effectively on a team



reported developing stronger personal character



reported positive impact on success in business or industry





**C The way the project experience changed my view of the world translates to multiple, different areas of my life.

I look at my community as a much smaller piece of a larger world than I used to. I see diversity in a different way. **>

-Nicholas Pelletier, WPI '09



Special thanks to WPI staff who assisted with this report.

Sara Ringer, Business Manager; Diane O'Keefe, Director of Marketing and Brand Strategy; Lindsay Beaulieu, Senior Digital Marketing Specialist; Melissa Arndt, Senior Graphic Designer.

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CENTER FOR PROJECT-BASED LEARNING

Worcester Polytechnic Institute
100 Insitute Road, Worcester, MA 01609-2280
wpi.edu/+projectbasedlearning
@cpbl_wpi