2018

Institute on Project-Based Learning

June 20–23, 2018

WPI

Worcester Polytechnic Institute
Worcester, Massachusetts

Application Deadline: February 13, 2018

In partnership with

AAC&U
Association of American Colleges and Universities

About the Institute

The **Institute on Project-Based Learning** at Worcester Polytechnic Institute is the flagship offering of the WPI Center for Project-Based Learning. The Center serves as a resource to promote and support efforts by colleges and universities looking to implement project-based learning on their campuses. The Institute is a 2.5-day intensive workshop where teams of five or more faculty and administrators from colleges and universities will gain knowledge about project-based learning and make tangible progress to integrate those concepts into their own curricula. It is hosted and run by WPI in partnership with the Association of American Colleges & Universities, the leading national association focused on undergraduate liberal education.

The Institute draws on over 40 years of experience integrating project-based initiatives into undergraduate education, including classroom projects in a wide range of disciplines, projects in the first year, major capstone projects, community-based projects, and study abroad projects. Project-based learning offers students real-world opportunities to research issues, think critically, gain new perspectives, solve problems, and develop written and oral communication skills—all within the framework of a team environment and guided by engaged and involved faculty.

"It was very beneficial to have a coach that was dedicated to us—she pushed us to think bigger picture, and it helped us conceptualize something that will work across our campus, not just in our own individual departments."

Laura Wheeler Poms
Assistant Professor
Undergraduate Program Coordinator, Global and Community Health
George Mason University

Institute Goals

Through collaborative work, teams of faculty and administrators will develop strategies to integrate project-based learning into their own undergraduate curricula, whether in general education or in the major, in one department or across the campus.

Institute faculty will use proven materials and examples to help participants...

- **bring project work into their own classes**, seminars, and capstones, and learn how to use projects to help students make interdisciplinary connections.
- **use faculty-guided project work** to strengthen service-learning, study abroad, and internship programs.
- **develop the fundamental skills needed** to make project-based learning work for students, including student team formation and development, evidence-based thinking and writing, and strategies for attacking open-ended problems.
- **create faculty development plans** to support project-based learning, including community networks and partnerships with external organizations.
- **use student project work** as a key component for overall program evaluation and student learning assessment.
- **build relationships with teams** from other institutions to share ideas and experiences.

Campus Action Plans

Teams from varied institutions—public, private, liberal arts, STEM, community colleges, research universities—will come to the Institute with a proposal outlining a specific goal or project they would like to advance. Through engaging and interactive group activity and faculty-led workshops, teams will formulate, develop, and refine ideas to fit their own campuses.

"This has been one of the most well-run, highly impactful, and transformative workshops I've experienced. We came in as a group of disjointed faculty who wanted to improve our individual courses. We left as a team of people excited and dedicated to championing project-based learning on our campus, and with an action plan that could make that possible."

Jen Townsend
Associate Professor
Bellevue College

Institute Faculty and Expertise

CURTIS ABEL | WPI
Building vibrant entrepreneurial mindset cultures in and out of classrooms • high-performance teams • entrepreneurship and social ventures • design thinking and innovation • leadership training • experiential integration of STEM, social innovation, and business education

HOLLY KEYES AULT | WPI
Project-based education in engineering · teaching design · engineering design graphics · assistive technology

MARJA BAKERMANS | WPI
Project-based first-year classes · collaborative co-teaching across disciplines · research projects in biology classes · incorporating citizen science

KRISTEN L. BILLIAR | WPI
Project-based learning in courses · challenge-based engineering laboratories · experiential learning in research laboratories for all ages · use of the engineering design process as a tool for curricular development

J. KRISTIN BOUDREAU | WPI
Project-based learning in the first year, the humanities and general education · working with teams · bringing the humanities to engineering education · teaching with writing · facilitating development of information literacy

ELIZABETH CLARK | LAGUARDIA COMMUNITY COLLEGE
E-portfolios · integrative learning · teaching with technology · writing and technology · assessment

CHRYSANTHE DEMETRY | WPI
Course design · faculty development · assessment for student learning · projects for program-level assessment · project-based learning in K–12 outreach for girls

MICHAEL B. ELMES | WPI
Using experiential methods to foster social innovation and change · identifying processes that promote learning in organizations and communities · engaging students in reflective practices

GLENN R. GAUDETTE | WPI
Entrepreneurial mindset learning · value creation · creativity · incorporation of projects in technical engineering courses · combining introductory engineering courses with humanities courses

DESTIN HEILMAN | WPI
Curriculum design · project-based learning throughout the curriculum · senior undergraduate research mentorship · student metacognitive strategies and learning modes · outcomes-based learning and assessment

ARTHUR HEINRICHER | WPI
Institutional change · STEM education · first year programs · industrial sponsorship for project work · program assessment

LORRAINE HIGGINS | WPI
Project-based education in community settings • intercultural communication • teaching project proposal and report writing • student and community collaboration

SCOTT JIUSTO | WPI
Project-based, experiential education · project partners, and communities, student proposal and report writing and presenting · multi-stakeholder, cross-cultural collaboration and learning

CAITLIN A. KELLER | WPI
Instructional design • faculty development and coaching • experiential education • learner-centered course design (face-to-face, online, and blended) • learning sciences and pedagogy

FRED LOOFT | WPI
Project-based learning and advising • applying systems thinking and systems engineering principles to complex, ill-defined and "messy" problems • graduate capstone project advising (MS level) • development of student writing and presentation skills • capstone and general sustainability inter- and multi-disciplinary project advising

AARTI SMITH MADAN | WPI

Project-based language learning · experiential education in the humanities · local and global service learning · cross-cultural competency · teaching with technology · interdisciplinary teaching and research

LAUREN MATHEWS | WPI

Principles of hypothesis-driven experimental design · quantitative analysis and data interpretation · inquiry-based education · building skills in quantitative literacy in biology courses

JOHN A. MCNEILL | WPI

Project-based education in engineering • mentoring project advisers • industrial sponsorship for project work

CHARLES MORSE | WPI

Preventive programming to enhance student project team functioning · project team group dynamics consultations · campus community programming on recognizing and responding to student distress

GEOFFREY PFEIFER | WPI

Project-based learning in the first year and as general education strategy · ethics and politics education · interdisciplinary and integrative teaching and learning

PAULA QUINN | WPI

Assessment and evaluation in education ·strategies and logistics for data gathering · instrument development

TERREL RHODES | AAC&U

E-portfolios and rubrics · learning communities · integrative learning · institutional transformation · transfer students · assessment

KENT RISSMILLER | WPI

Learning outcomes and project assessment · mentoring project advisors · student preparation for project work

LAURA ROBINSON | WPI

Information literacy in project-based learning · information practices in STEM disciplines · information literacy outcomes assessment across disciplines

DERREN ROSBACH | WPI

Cross-disciplinary collaboration · sustainability across the curriculum · problem-oriented and interdisciplinary teaching and learning · team science · transdisciplinary methodologies

CAROLINA RUIZ | WPI

Interdisciplinary projects • knowledge discovery from data • artificial intelligence and machine learning in medicine and behavioral health • vertical integration of research teams from high school to PhD students • STEM education and research

BRIAN J. SAVILONIS | WPI

Project-based learning in the first year and in engineering design • outcomes assessment in engineering • thermofluid applications and design

JEANINE SKORINKO | WPI

Project-based learning in courses · experiential learning in research laboratory · bridging the sciences and engineering · engaging students in reflective practices · cross-cultural psychological science research projects

DAVID SPANAGEL | WPI

Project-based learning in the first year, humanities, interdisciplinary settings · working with teams · bringing the history of science and technology into technological education · discussion and collaborative writing as tools of critical thinking

ROBERT TRAVER | WPI

Teaching, curriculum, and learning environments · instructional design and assessment (K–16) · science and environmental education

RICHARD VAZ | WPI

Experiential education · international education and global learning · design and assessment of engaging pedagogies · integrative and interdisciplinary learning · institutional change and curricular reform

KRISTIN WOBBE | WPI

First-year students · team teaching · project-based learning · interdisciplinary courses · engaging students · faculty development

Institute Curriculum

The Institute curriculum is a mix of interactive workshops on project-based learning, consultations with experts, and collaborative teamwork. Teams will engage with institute faculty in project-based learning at workshops and in mentoring sessions focused on their proposed projects. Participants will develop curricular and organizational strategies tailored to their own institutions and will leave with practical action plans, examples of best practice, and relevant case studies to integrate project-based learning practices into varied academic curricula.

Institute Workshops

Teams will choose from a selection of interactive workshops to address their goals and ideas in areas such as...

- project-based learning as a first-year and general education strategy
- partnering with external organizations for project-based learning
- student project team formation, development, and mentoring
- integrating project-based learning into STEM courses
- feedback, evaluation, and assessment strategies for project-based learning
- project-based learning in major capstones
- faculty development for project-based learning
- long-term impacts of project-based learning
- designing project-based learning experiences
- institutional leadership and organizational support for project-based learning

Institute Keynote

The Institute's **keynote speaker** will be Randy Bass, Vice Provost for Education at Georgetown University.

Founding Executive Director of Georgetown's Center for New Designs in Learning and Scholarship, Randy Bass is a thought leader in pedagogical research, and an authority on inquiry-based learning.

From Planning to Campus Action

Teams will leave the Institute with an enhanced understanding of project-based learning and a tailored plan to advance work on their own campuses. Each team will deliver a concise presentation of its action plan to gather feedback and advice.

Institute Campus Teams

Each team will consist of a minimum of five members (including a designated leader) from across disciplines and administration staff. A team's institutional diversity helps facilitate implementing a comprehensive change inthe curriculum and sustains the foundations of initiatives arising from work at the Institute.

Application Components and Selection Criteria

Applications will be judged on the extent to which the team is likely to benefit from the Institute and advance its project-based learning initiatives. Reviewers will also consider a number of other factors, such as institutional type and project focus, to ensure a diverse group of participants who will complement and benefit from each other.

Applicants are asked to explicitly address the following questions:

Goals: What high-priority tasks do you expect your team to work on during the Institute? (These should be the tasks that, if advanced substantially during the Institute, would lead your team and campus to judge your efforts a success.)

Need and readiness: What is the current state of project-based or engaged learning on your campus, and what has motivated a desire for reform or action? Have assessment results prompted change, or do you need help creating an assessment plan? Has a unified vision of the planned reform emerged?

Team characteristics: In what ways do your team members reflect the opportunities for implementing project-based learning on your campus? How do they reflect the diversity and the various interest groups on your campus?

Contributions: We believe that participants will learn from each other, as well as from the workshop leaders. What do you believe your institution can contribute to the Institute?

Visit wpi.edu/+2018institute to apply online.

""I want to come back next year with another team!"

Maggie Geppert
Associate Professor
Harper College

Application Deadline and Fees

Applications must be received no later than **February 13, 2018.** Notifications regarding acceptance will be sent to teams no later than **March 16, 2018.**

The Institute runs from Wednesday, June 20, through Saturday, June 23, 2018. Attendees should plan to arrive on Wednesday in time for the Welcome Reception beginning at 6:00 pm. The Institute program will officially start with the opening plenary at 8:30 am on Thursday and will end by noon on Saturday with team presentations. Please plan on having your team attend the Institute in its entirety.

The registration fee for the Institute will cover on-campus, dormitory housing for three nights (June 20–22); tuition, materials, and consultations; three breakfasts, three lunches, and one dinner. A limited number of hotel rooms near campus also will be available at a group rate. If choosing this option, reservations and additional costs for hotel lodging will be the responsibility of the teams. Travel costs to and from the Institute are the responsibility of the teams.

- $7,500 per five-member team from AAC&U member institutions
- $8,500 per five-member team from non-member institutions
- $1,500 per additional team member beyond five (as space permits)

For additional information, contact Paula Quinn at 508-831-6836 or pquinn@wpi.edu.

Since 1970, project-based learning has been the core of WPI's undergraduate curriculum, known as the WPI Plan. Under the Plan, students work closely with faculty and each other to develop solutions to real-world problems in their own communities, and communities around the globe. Participating in team and individual research settings, students tackle authentic, open-ended projects under faculty guidance. In the process, they master critical thinking, sharpen research skills, fine-tune written and oral communication skills, and connect the curriculum to local and global issues.

"Many students come to WPI expecting to be prepared to get good jobs when they graduate, but they've found their project-based education has given them much more. They are more sophisticated, more well-rounded, and therefore much better prepared for whatever the world throws at them."

Richard F. Vaz
Director, Center for Project-based Learning
Worcester Polytechnic Institute

WPI alumni confirm the findings of a 2014 Gallup-Purdue index poll that showed students who undertook long-term college projects report more career satisfaction and stronger connections to professional satisfaction, advancement, and personal enrichment.

"The project work can literally be life changing."

Mary Ellen Blunt '79
Worcester Polytechnic Institute

Center for Project-Based Learning

The **Center for Project-Based Learning** provides support to college and university faculty and administrators looking to implement, improve, evaluate, or integrate project-based learning efforts on their campuses, and supports the development of expertise and excellence in project-based pedagogy on the WPI campus.

The Center offers a range of products and services:

- The **Institute on Project-Based Learning**—an intensive, multi-day workshop hosted on the WPI campus where teams of faculty and administrators create action plans to advance project-based learning initiatives on their own campuses. Teams work with experienced faculty coaches and workshop facilitators, while learning from project-based learning practitioners and from efforts at other campuses. **Applications are currently being accepted for the 2018 Institute.**
- **Custom workshops on your campus**—workshops offered to groups of different sizes and compositions, and tailored to your institution's interests, goals, and level of experience with project-based learning.
- **Consultation visits by project-based learning experts**—help for your leadership team, curriculum committee, department, or interdisciplinary group to set goals for project-based learning and make progress toward those goals.
- **Support for project-based learning at WPI**—through workshops and seminars, advising materials, mentoring, and Faculty Fellowship opportunities, including a range of activities that engage WPI faculty broadly in the work of the Center.

"WPI conducted an intensive workshop on project-based learning on our campus that served as a very effective catalyst, providing the information, guidance, and encouragement that we needed. The result is that we now have an ongoing discussion and working group that aims to add project-based learning experiences to our course offerings."

Beverly Kahn PhD
Title III and FITW Project Director
Farmingdale State College, State University of New York

For more information about the Center and how WPI can assist in advancing project-based learning initiatives on your campus, visit **wpi.edu/+projectbasedlearning.**

Worcester Polytechnic Institute, Worcester, Massachusetts

Worcester Polytechnic Institute is a private university located in the heart of New England. WPI was founded in 1865 with the mission of providing an education that balances theory and practice. WPI's pioneering undergraduate project education model provides students with extensive experience extending their classroom knowledge through undertaking hands-on projects with real-world impact. With over 40 project centers across the globe, students also have the opportunity to make a difference through project work in communities around the world.

WPI's 80-acre campus is centrally located in Worcester, MA, New England's second-largest city. Worcester is at the crossroads of several major routes, making it accessible from several surrounding airports, including Logan International Airport in Boston, T. F. Green Airport in Providence, RI, Bradley International Airport in Hartford, CT, and Manchester Airport in Manchester, NH. There is also an airport in Worcester with flights to and from a limited number of cities. For more information, visit **wpi.edu**.

"If a group is looking to implement a project-based learning course for the first time, this Institute workshop is IDEAL!"

Jeff Pullen
Assistant Professor of Mathematics
Mercer University

WPI

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