A Project-Based Education
August 2023
WPI Plan.
Our Distinctive Approach to STEM Education.

• In 1970, the WPI Plan was a bold experiment—a radically new, student-centered, project-based approach to learning. Today, it’s a proven, highly effective, and sought-after model for academic innovation—one that will help guide further change at WPI and throughout higher education.

• This distinctive approach to education gives students:
  – Freedom to chart their academic paths
  – The essential professional and personal skills and mindset for the future
  – Real-world experience and impact
  – An expanded world view and global perspective
The Global Leader in Project-Based Learning: It’s Theory and Practice, Not Theory then Practice.

- Leadership in Project-Based Education—Over 50 Years
- Projects at the Heart of the WPI Education—Three Major Project Degree Requirements
- Proven Hands-on Approach to Learning—Preparing Graduates for Careers and Lives
- Groundbreaking Global Projects Program—Tackling Real-World Problems
- The Global School—Empowering and Inspiring Students to Become Civically Engaged, Compassionate, and Globally Aware Individuals

THEORY × PRACTICE × GLOBAL × IMPACT = WPI
Project-Based Learning at WPI—Because Learning is an Active Verb

1st Year

Great Problems Seminar (GPS)
- Optional
- University-level research to address problems focused on themes of global importance

2nd Year

Humanities and Arts
- Degree requirement
- Seminar or practicum in chosen area

3rd Year

Interactive Qualifying Project (IQP)
- Degree requirement
- Interdisciplinary team projects to address a problem or need that lies at the intersection of science and technology
- Usually an off-campus project experience working with sponsor partners at 50+ project centers around the globe
Project-Based Learning at WPI—Because Learning is an Active Verb

4th Year:
Major Qualifying Project (MQP)
- Degree requirement
- Major-specific research, design, and creative projects

1st – 4th Years:
Course Project Work
- ~70% of faculty have introduced a project into 1 or more courses
- 98% of WPI alumni surveyed in 2021 indicated they had projects in at least some of their courses
The Global Projects Program.
Not Your Typical Study Away Program.

Academic Year 2022-2023

1114 Student Participants
54 Project Centers
30 Countries
6 Continents

50
Years of Undergraduate Project Experiences Through the Global Projects Program

100%
of Undergraduate Students Eligible to Receive Global Scholarship

85%
of all WPI Undergraduate Students Participate in the Program
Lifelong Impact of WPI’s Project-Based Education

• WPI’s distinctive project-based educational model has been praised by the most recognized and valued resources in the academic world, as well as by those who know the benefits of a WPI education firsthand—WPI students and alumni.

• Powerful empirical evidence of its effectiveness—an extensive study of more than 2,200 WPI alumni, conducted in 2021 and 2012, has confirmed that there are lifelong professional and personal benefits of experiential, hands-on learning through project work.
In the 2021 survey—analysis conducted by Hanover Research—alumni were asked to rate the extent to which their project work contributed to 39 professional skills and abilities, world views, and personal attributes. Respondents from this survey reported significantly greater impact from formal project experience across all 39 areas as compared to alumni surveyed in 2012 regarding the same 39 attributes.

The 2021 survey also revealed:

- Female alumni reported more positive impact of project work than males in all 39 areas, with the most notable differences in world views and personal impacts.
- 95% of respondents reported that their project experience prepared them for their current career.
- In addition to major project requirements, 98% of respondents indicated they had projects in at least some of their courses at WPI.
2021 WPI Alumni Survey on the Impact of Project Work
Professional Areas of Impact – Interpersonal and Communication Skills

Indicate the extent to which your (through GPS, HUA capstone (enquiry seminar/or sufficiency), your IQP, and/or your MQP) at WPI enhanced your ability to:
% Moderately, Much or Very Much

- Effectively function on a team: 93%
- Effectively manage a project: 92%
- Write clearly and effectively: 90%
- Effectively manage interpersonal dynamics: 89%
- Communicate effectively visually: 88%
- Speak clearly and effectively: 87%
- Make connections across disciplines: 86%
- Be an effective leader: 86%
2021 WPI Alumni Survey on the Impact of Project Work
Professional Areas of Impact – Professional Abilities

Indicate the extent to which your formal project experience at WPI (through GPS, HUA capstone (enquiry seminar/practicum or sufficiency), your IQP, and/or your MQP) enhanced your ability to:

% Moderately, Much or Very Much

- Take responsibility for own learning: 94%
- Integrate information from multiple sources: 94%
- Develop ideas: 94%
- Identify, analyze, and solve problems creatively through sustained critical investigation: 93%
- Use current technology: 89%
- Deliver effective presentations: 87%
- Awareness of how your decisions affect and are affected by others: 79%
- Understanding of ethical responsibilities: 74%
2021 WPI Alumni Survey on the Impact of Project Work
Professional Areas of Impact – Professional Advancement

Indicate the extent to which your WPI formal project experience (through GPS, HUA capstone (enquiry seminar/practicum or sufficiency), your IQP, and/or your MQP) contributed to:

% Moderately, Much or Very Much

- Effectively interact as a professional: 91%
- Opportunities you believe students from other universities did not have: 91%
- Development of a solid base of knowledge: 91%
- Function effectively in the "real world": 88%
- Mastery of fundamental concepts and methods in your major: 88%
- Succeed in business or industry: 83%
- Knowledge or experience that helped you change your mind about your future plans: 71%
- Professionally beneficial connections: 51%
2021 WPI Alumni Survey on the Impact of Project Work
Personal Areas of Impact

Indicate the extent to which your WPI formal project experience (through GPS, HUA, IQP, and/or MQP) contributed to:
% Moderately, Much or Very Much

- Develop a stronger personal character: 88%
- Feelings that own ideas are valuable: 84%
- Feelings of being connected to the WPI community: 77%
- Feelings of being able to "make a difference": 77%
- Enriching life in ways that were not necessarily academic or work-related: 75%
- Feelings of being connected to a non-WPI community: 65%
- Desire to maintain involvement with the WPI community: 65%
- Achieve work/life balance: 57%
- Desire to maintain involvement with a non-WPI community: 56%
## Indicate the extent to which your formal project experience at WPI (through GPS, HUA capstone (enquiry seminar/practicum or sufficiency), your IQP, and/or your MQP) enhanced your ability to:

<table>
<thead>
<tr>
<th>Ability</th>
<th>Enhanced Ability</th>
</tr>
</thead>
<tbody>
<tr>
<td>View Issues from several different perspectives</td>
<td>88%</td>
</tr>
<tr>
<td>Understanding of the connection between technology and society</td>
<td>82%</td>
</tr>
<tr>
<td>Understanding of global issues</td>
<td>71%</td>
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<tr>
<td>Respect for cultures outside your own</td>
<td>70%</td>
</tr>
<tr>
<td>Understand people of other cultures</td>
<td>69%</td>
</tr>
<tr>
<td>Understand people of other racial and ethnic backgrounds</td>
<td>66%</td>
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</tbody>
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What Alumni Say About their WPI Project Experience

“[Project-Based Learning] is the "crown jewel" of the WPI undergraduate education experience and is an excellent experience preparation for the working world after college.”
—WPI Alumnus ’95, Environmental Engineering

“I was fundamentally transformed during my time at WPI. I can think of no other life event that could have done as much.”
—WPI Alumnus ’16, Mechanical Engineering

“Project work is key to prepare students for real life work.”
—WPI Alumnus ’16, Chemical Engineering

“The project-based learning made me feel empowered with ownership of my education. It was fantastic and I would recommend it to others.”
—WPI Alumnus ’06, Applied Physics

“I am incredibly grateful for my project experiences at WPI. It definitely shaped me to be the person and the professional that I am today.”
—WPI Alumnus ’17, Mechanical Engineering

“My experience at WPI was one that shaped my career and set the stage for my success in the real world.”
—WPI Alumnus ’10, Industrial Engineering
What Alumni Say About their WPI Project Experience

― WPI Alumnus ’05, Biomedical Engineering

“Project work transformed my educational (and later professional) mindset from passive repetition to an active/proactive (empowered) participant. I became actively responsible and vested in my educational and problem-solving process.”

― WPI Alumnus ’88, Electrical Engineering

“I am forever grateful for the WPI project plan curriculum. This curriculum is what made WPI stand out against other schools and ultimately led me there in the first place. I have never regretted this decision.”

― WPI Alumnus ’04, Electrical & Computer Engineering

― WPI Alumnus ’00, Electrical Engineering

“In industry, it isn’t what you know today, but more importantly what you are able to learn. WPI and its project-based curriculum taught me how to learn and feel comfortable with the unknowns.”

― WPI Alumnus ’00, Electrical Engineering

― WPI Alumnus ’11, Mechanical Engineering

“Working as part of a team is an essential life skill that is not taught as a default by many institutions. I’m forever thankful WPI is one that forces you to learn it—and travel, especially long-term travel, is enriching in so many ways.”

― WPI Alumnus ’11, Mechanical Engineering

“The project program was the primary reason I chose WPI. I had incredible opportunities there that I couldn’t have had at other schools. The real world is project-based, so I think it’s extremely valuable experience.”

― WPI Alumnus ’04, Electrical & Computer Engineering
PBL In Higher Education

Center for Project-Based Learning. Sharing PBL Expertise for the Betterment of Higher Education.

- Advancing PBL Across Higher Education
- Serving as PBL Hub For Higher Education
- Supporting Equity and Inclusion Through PBL Within Higher Education
- Strengthening PBL Network Through Strategic Academic Collaborations

Founding in 2016:

- 2,000+ Faculty and staff engaged in Center professional development offerings
- 30+ PBL resources (research briefs, newsletters, webinars, podcasts, etc.)
- 2021 Inaugural Center Equity Audit
- Nearly 50 Network of Partners