



WPI

Morgan Teaching & Learning Center



ANNUAL REPORT

....

Academic Year 2023-2024

**KEEP UP THE
GOOD WORK.**

**YOU ARE
AWESOME.**

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MESSAGE FROM THE DIRECTOR

Once again this year, the work of the Morgan Teaching and Learning Center shows the powerful role of faculty development for organizational learning and institutional change. Three examples stand out as I reflect on the Center's activities and impact during the 2023-2024 academic year.

First was the imperative of an institutional response to the **effects of generative AI on teaching and learning**. Partnering with faculty with expertise in human-computer interaction and anthropology, our Research & Evaluation Associate conducted mini-studies that led us away from strategies centered on tools, policies, and requirements and toward an approach that focuses on developing critical AI literacy among faculty, the pedagogical affordances of project-based learning, and the societal and humanistic values expressed in the WPI Plan.

Second was the **considerable growth in the scholarship of teaching and learning** among our faculty, emerging from WPI's most recent alumni survey in 2021. Our Research & Evaluation Associate has engaged numerous faculty asking important research questions of that data set. Their findings have significantly bolstered institutional knowledge about the WPI Plan. They are also submitting manuscripts to peer-reviewed journals and presenting at conferences, extending the body of knowledge about project-based learning.

A third development is our launch of the Morgan Pedagogy Champions initiative, an effort to support WPI's strategic plan by **scaling faculty knowledge and adoption of inclusive pedagogy** using partners in each department. We learned a lot from this community of practice and are excited to continue it in the coming year.



Without a doubt, a highlight of the year has been the successful recruitment of the next Director of the Morgan Teaching and Learning Center. After a national search that attracted an excellent pool of candidates, interim Provost Arthur Heinricher has appointed Dr. Jessica (Jessi) C. Hill as the next Director, beginning July 1, 2024. Jessi brings a deep well of enthusiasm and a wide range of knowledge and skills to the position. I am confident and excited that Jessi's leadership will bring the Center's activities to the next level in ways that benefit students, faculty and staff educators, the institution, and higher education more broadly. It has been a privilege to lead the Center since 2006, and I'm proud to be leaving it in a better place.

Chupanthe Semity

Introducing Dr. Jessi Hill as the Next Director



Award-winning educator, scholar, and project-based learning practitioner with experience in faculty development and leadership development

Before joining WPI, Dr. Hill was a tenured Associate Professor of Psychology in the Behavioral Sciences Department at Utah Valley University (UVU). She is an award-winning educator who incorporates culturally relevant, learner-centered teaching and high-impact practices (HIPs) across delivery modalities. All her work centers on student success and improving student learning outcomes. She was appointed as one of three inaugural Equity, Inclusion and Diversity Faculty Fellows, and has recently focused her work on providing equitable access to education for marginalized groups both on campus, including membership on UVU's Executive Inclusion Committee, and within the community.

At UVU, Jessi also provided faculty development on high-impact practices, serving as Director of Project-Based Learning and leading UVU's participation in WPI's Collaborative on Project Based Learning. She has been recognized internationally as a scholar in teaching and learning. A seasoned grant writer and researcher, Dr. Hill was awarded UVU's first National Science Foundation Major Research Instrumentation grant. She serves as an Assistant Editor of the Professional and Organizational Development (POD) Network's flagship journal, "To Improve the Academy."

As a strong advocate for women leaders, Jessi co-created the Utah Women's Leadership Exchange and served as the Inaugural Academic Director for UVU's Research Institute at UVU's Women's Success Center. In recognition, Dr. Hill was awarded UVU's Presidential Award of Excellence for leadership for her work developing women leaders at UVU and throughout Utah and the Faculty Service Award from UVU's Women's Success Center.

Dr. Hill earned a B.S. in Psychology at Florida State University, an M.A. in Visual Cognition and Human Performance at the University of Illinois at Urbana-Champaign, and a Ph.D. in Psychology at Florida State. In parallel with her appointment as Director of the Morgan Center at WPI, she has been appointed Professor in the Social Science & Policy Studies Department.

The Morgan Teaching & Learning Center Team



Chrys Demetry
Director
Professor, Mechanical & Materials
Engineering



Kimberly LeChasseur
**Senior Research & Evaluation
Associate**
Half-time appointment to the
Morgan Teaching & Learning Center



Mary Courtemanche
Operations Manager



Zoe Reidinger
**Associate Director
TA & PLA Development**
Associate Teaching Professor,
Biomedical Engineering



Rudra Kafle
**Associate Director
TA & PLA Development**
Associate Professor of Teaching,
Physics



N Aaron Deskins
**Associate Director
New Faculty Programs**
Professor,
Chemical Engineering



Caitlin Neer
Senior Instructional Designer
Full-time appointment to
the Academic Technology Center



Kimberly LeChasseur was a 2024 recipient of the Trustees' Award for Outstanding Staff Member!

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SUPPORTING STRATEGIC DIRECTIONS OF THE UNIVERSITY

In 2023-24, the Morgan Center initiated or continued activities supporting three strategic drivers at WPI: 1) pedagogical considerations for the use of generative AI in teaching and learning; 2) scaling discussion and adoption of inclusive pedagogy across campus; and 3) integrating consideration of student and educator mental health and well-being in pedagogical decision-making.

MTLC fostered conversations about generative AI in teaching and learning and supported early adopters		
5	36	10
Early adopters funded in a 2023-24 PLC on <i>Investigating the Role of GPT in the Curriculum</i>	Community members attended a Food for Thought seminar led by the PLC	Additional faculty & staff granted funding for a 2024-25 PLC on <i>Generative AI in Teaching & Learning</i>

2023-24 Professional Learning Community: Investigating the Role of GPT in the Curriculum

This PLC laid groundwork for future explorations of generative AI in teaching and learning at WPI and explored mechanisms for building critical AI literacy among faculty, staff, and students. Example outcomes included a collection of AI assignments and exercises, faculty training, and a course module on AI and the future of work.



From top, left to right:
Farley Chery, IMGD;
Tim Loew, MassDigi;
Stacy Shaw, SSPS;
Gillian Smith,
IMGD/CS; Yunus
Telliel, HUA

2024-25 Professional Learning Community: Generative AI in Teaching and Learning

This PLC will extend last year's work to a broader range of disciplines, including language learning, theater, physics, and biology. Participants will develop their critical AI literacy and pedagogy through such activities as creating or modifying assignments that include critical thinking and ethics of generative AI, or developing resources for students and colleagues.



From top, left to right: Gizem Arslan, HUA; Sarah Lucie, HUA; Rich Lopez, SSPS; Lauren Matthews, BBT; Laura Roberts, IGS; Izabela Stroe, PH. Facilitator: Valerie Smedile-Rifkin, ATC. Peer mentors: Gillian Smith, IMGD/CS, Yunus Telliel, HUA.

MTLC generated knowledge and supported evidence-based action to start scaling critical AI literacy among WPI educators

38 Faculty shared perspectives in interviews with Sr. Research & Evaluation Assoc.	16 Senior leaders and other internal stakeholders informed of mini-study findings	5 Faculty and staff created micro-course for faculty	60+ Faculty and staff educators enrolled in <i>Critical Literacy in Generative AI</i> micro-course, June 2024
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The mini-study led by Kimberly LeChasseur investigated faculty motivations behind usage of and resistance to generative AI, along with their classroom practices.

01

**Faculty Are Curious
& Exploring GenAI as
a Social Technology**

While there are some faculty with a hard rejection of ChatGPT in their courses, the majority are curious about how it might be capitalized on in ways that amplify student learning & prepare them for life as engineers, scientists, & human beings.

Faculty want to know about guidance for students. Assignments explore ChatGPT's benefits & limits & how to use it responsibly.

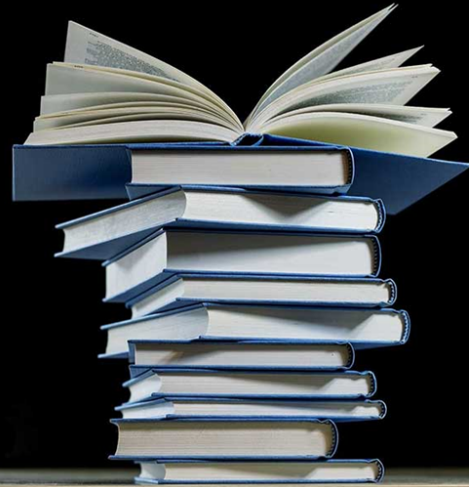
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**A Framework for GenAI
Extends the WPI Plan**

Faculty referenced several ways that GenAI highlights principles of good pedagogy that are already foundational at WPI. These include emphasizing higher levels of Bloom's taxonomy, utilizing assessment practices that require application, & the deep connections between learning and authentic deliverables.

Faculty want a framework for using GenAI in courses in ways that honor our existing pedagogical values.

The Big Takeaways



Findings were presented at the North Carolina PKAL Regional Network Meeting: Artificial Intelligence in Undergraduate STEM Education, April 12, 2024:

Kimberly LeChasseur, *Explorers and Experimenters: A Study of the Faculty Landscape of Critical AI Literacy at a STEM University.*

Developers of the Critical AI Literacy Micro-Course for Faculty



From top, left to right:
Geoff Pfeifer, IGS;
Gillian Smith, IMGD;
Yunus Telliel, HUA;
Kimberly LeChasseur,
MTLC; Valerie Smedile-
Rifkin, ATC

Aligned with the *Our Inclusive Culture* theme of the university strategic plan, MTLC initiated the Morgan Pedagogy Champions, a department engagement initiative to scale learning and action about inclusive pedagogy.

<p>15</p> <p>Departmental champions completed an <i>Inclusive Syllabus</i> micro-course around the theme of the hidden curriculum</p>	<p>15</p> <p>Department/program workshops or other activities facilitated by champions in AY23-24</p>	<p>17</p> <p>Departmental champions recruited for AY24-25 under the theme of <i>Universal Design for Learning</i></p>
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2023-2024 Morgan Pedagogy Champions



From top and left to right: Matthew Ahrens, CS; Danielle Cote, MME; Zoe Eddy, IGS; Soroush Farzin, CEAE; Kara Sieczkiewicz, HUA; Oren Mangoubi, DS/MA; Koksai Mus, ECE; Carissa Olsen, CBC; Farnoush Reshadi, BUS; Angela Rodriguez, SSPS; Andre Rosendo, RBE; Karen Stewart, IMGD; Zachary Taillefer, AE; Taimoor Afzal, BME; Samuel Tripp, MA



"The Morgan Pedagogy Champions emerged from an identified need to uncover the hidden curriculum to better support student learning and retention. In order to reach a critical mass of faculty, this program was embedded directly into academic departments using a train-the-trainer model. This also allowed for tailoring training and support to meet each departments' specific needs." -- Caitlin Neer, facilitator of the Morgan Pedagogy Champions initiative

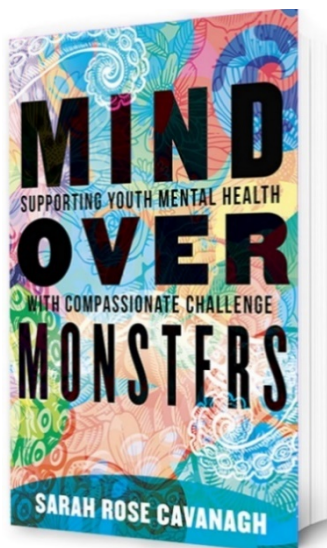
MTLC partnered with the Center for Well-Being and other offices to foster ongoing dialogue about the intersection of learning with mental health and well-being for students and educators

95

Faculty, staff, and student attendees at “Hope in a Time of Monsters” keynote by Dr. Sarah Rose Cavanagh

62

Page views of keynote resources on Canvas



Hope in a Time of Monsters: Supporting Mental Health and Well-Being with Compassionate Challenge

Dr. Sarah Rose Cavanagh, Senior Associate Director for Teaching and Learning, Simmons University

To support their mental health and reinvigorate their learning, students need both compassion and care on the one hand, and assistance developing competence and self-efficacy on the other. Faculty need relief from overburdened workloads, but also to reignite their love of teaching. How can we support our students without burning ourselves out? How can we revive all our sparks? Professor Sarah Rose Cavanagh presented research, food for thought, and practical applications based on her book on how higher education should respond to both faculty depletion and the student mental health crisis.



“I thought that the keynote was FABULOUS. It was so very validating in all the ways Sarah acknowledged the burden that inclusive practices can place on the faculty and the ways that it can backfire. And it was in turn very productive and actionable because most of what she proposed were things that require just small shifts and reframing that make a big impact but don’t carry a large burnout toll. So helpful and pragmatic! I’ve now written “warm demander” across the white board in my office, because this is what I will aspire to be and a crown I’ll proudly wear.” – faculty participant

CORE OPERATIONS

Building Capacity for High-Quality Teaching

MTLC and partners led foundational pedagogical training programs for three core aspects of faculty teaching roles: course instruction, MQP and IQP advising, and academic advising.

15

New faculty participated in **Faculty On-Ramp to Teaching (FORT)**, a micro-course on course design

22

Early career faculty participated in **Project Advising 101**

31

Early career faculty participated in **Just-In-Time Training for Faculty Academic Advising**

Faculty Actions After Completing FORT



Modified learning outcomes



Changed assessment strategies



Improved syllabus language



Met for debriefing of their first course

"I wanted to congratulate the Morgan Center for creating this program, which I found immensely useful. I am also grateful to [the Provost] for providing incentives for new faculty that wanted to incorporate those lessons in their first courses."—FORT participant

82%

of participants in Project Advising 101 reported much better understanding of how to foster effective teamwork

91%

of participants in Project Advising 101 reported much better understanding of the value of setting expectations



Just-in-Time Training for Faculty Academic Advising

MTLC built capacity for high-quality teaching among faculty, staff, and student educators

372 WPI faculty and staff engaged in programming to enhance teaching	16,730 Views of teaching resources on MTLC Canvas site 247 Downloads	3,294 Views of Morgan Center newsletters
78 Graduate Teaching Assistants trained in best practices for teaching	165 Undergraduate Peer Learning Assistants and other course assistants trained in best practices for teaching	15 1-on-1 teaching consultations



Most Commonly Used Resources in MTLC Canvas Collection



Project Advising 101 Resources and Project Advising Syllabus Toolkit



Course Syllabus Toolkit



Making Use of Student Feedback:

Soliciting Formative Feedback at Mid-Term

Making Use of Instructor-Specific Questions

Achieving High Response Rates to Online Student Course Reports



Advising & Mentoring Toolkit



Creation and Evaluation of Teaching Portfolios



Supporting Students Through Challenging Times

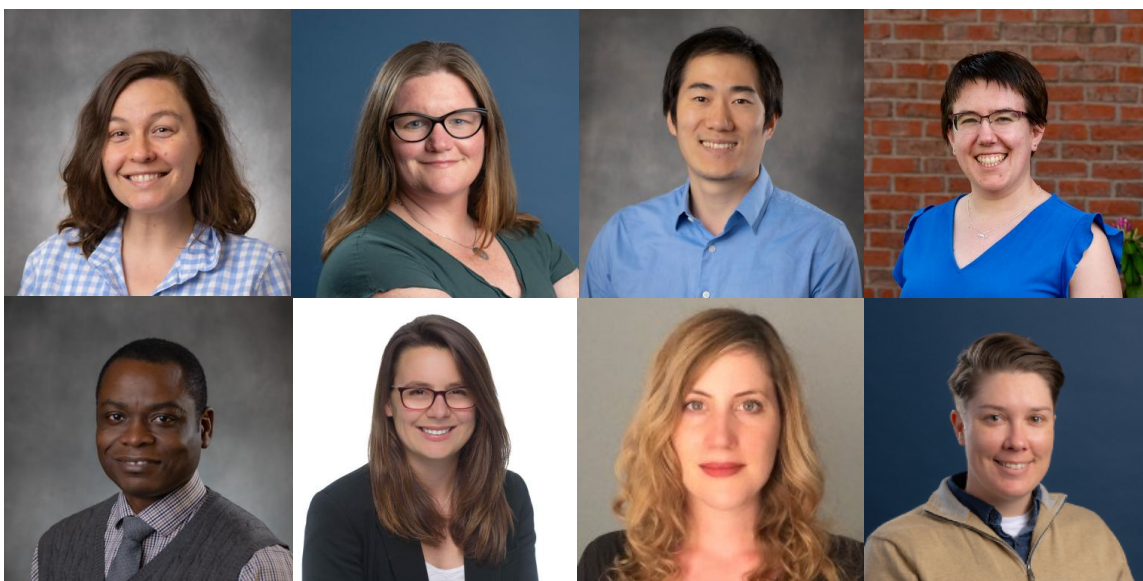
Generating and Disseminating Knowledge and Innovations in Teaching & Learning

MTLC and partners supported innovation in teaching and learning within WPI			
25 Faculty and staff awarded Teaching Innovation Grants	\$88,500 Funds provided by the MTLC, EDC, and ATC to support teaching innovations	19 Faculty & staff shared teaching innovations in Food for Thought sessions	206 Faculty & staff learned about innovations in Food for Thought sessions

Teaching Innovation Grants Awarded in Spring 2024

Professional Learning Community on Alternative Grading

Traditional grading often dampens the joys and good habits of learning and teaching, contributes to educational inequities, and can cause significant stress for students and faculty alike. To address those problems, members of this PLC will consider four pillars for growth-based grading (Clark & Talbert, 2023) as they refine, implement, and reflect on alternative grading practices.



From top, left to right: Melissa Kagen, IMGD; Courtney Kurlanska, IGS; Ye Lu, AE; Jennifer Mortensen, CS; Gbeton Somasse, SSPS; Carly Siegel Thorp, MA. Peer Mentor: Sarah Riddick, HUA; Facilitator: Caitlin Neer, ATC.

Professional Learning Community on Gen AI in Teaching & Learning

Participants in this PLC will develop their critical AI literacy and pedagogy through such activities as creating or modifying assignments that include critical thinking and ethics of generative AI, or developing resources for students and colleagues.



From top, left to right: Gizem Arslan, HUA; Sarah Lucie, HUA; Rich Lopez, SSPS; Lauren Matthews, BBT; Laura Roberts, IGS; Izabela Stroe, PH. Facilitator: Valerie Smedile-Rifkin, ATC. Peer mentors: Gillian Smith, IMGD/CS, Yunus Telliel, HUA.



Food for Thought Seminars in AY 2023-24

Empowering Students with Open Educational Resources (OERs)

KLIQED: A Feedback Tool for Fostering Peer Engagement during Student Oral Presentations

Generative AI in the Classroom: Explorers and Experimenters

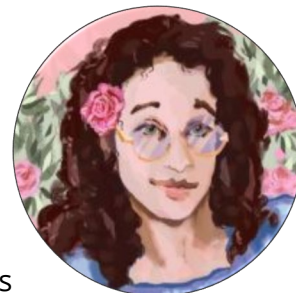
The MQP: More than a Technical Senior Project

Course and Program Projects

Rose Bohrer, Computer Science

Pedagogical Comics for Programming Language Design Instruction

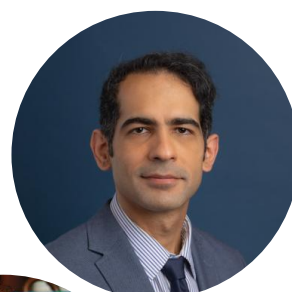
This project funds the production and assessment of a series of one-page comics, each illustrating a key concept from lessons in the PI's courses on programming language design. Not only do comics serve as mnemonics for key concepts, but the diverse cast of characters promotes a subtle message of belonging in the classroom.



Shichao Liu (PI), Soroush Farzin, and Navneet Anand, Architectural Engineering; Marie Keller, Humanities & Arts

Revive the Legacy of Drawing at WPI in the Era of AI

As drawing has dwindled from our curricula, many students have become deficient in drawing, inhibiting conceptual ideation and visual communication. We will develop and assess educational modules using generative AI to teach drawing in five courses, affecting at least 160 students annually.



Lucy Caplan (PI) and VJ Manzo, Humanities & Arts

Developing an Inclusive Introductory Music Curriculum

The music curriculum at WPI has traditionally focused on the theory, performance, and history of music from the Western classical and jazz canons. This project aims to develop a curriculum that is more inclusive in its content, more focused on developing broadly applicable skills, and more closely attuned to students' interests and needs.



Alireza Ebadi, Mechanical & Materials Engineering

GPThermo: An In-House GenAI Tutor for Thermodynamics

With careful in-house training focused on course materials, AI could provide students with rapid feedback to reinforce key concepts. This project aims to train a GPT model focused on thermodynamics using in-house resources, such as ES 3001 lecture notes and video transcripts.



Corey Denenberg Dehner (PI), Marja Bakermans, Katherine Foo, Derren Rosbach, Integrative & Global Studies

Developing Civic Engagement Modules for Courses and Programs

Our project aims to increase the ease with which WPI faculty help students connect their WPI work to living a civically engaged life. Using Dr. Nick Longo's 'Practicing Democracy: A Toolkit for Educating Civic Professions' as a springboard, we will develop modules educating students on the importance of being civically engaged.



Renata Konrad, Business

Creating a More Authentic Collaborative Environment to Teach Discrete Event Simulation Fundamentals

Discrete-event simulation (DES) teaching strategies often rely on commercial simulation software which risks insufficient attention to DES foundations, leaving students unprepared and frustrated. The project goal is to create an authentic collaborative environment in the preparatory phase of a DES course to solidify fundamental DES concepts and prepare students for collaboration on a simulation study.



MTLC increased the capacity for knowledge generation and organizational learning about teaching and learning

<p>10</p> <p>Courses studied by 9 faculty and our Senior Research & Evaluation Associate, across 6 departments in 3 schools serving approximately 550 students</p>	<p>38</p> <p>Faculty interviewed for mini-studies on teaching & learning issues</p>	<p>34</p> <p>Faculty and staff leveraged MTLC consultations for 25 grant writing projects</p>
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Supports from the MTLC contributed to the dissemination of innovations beyond WPI

<p>15</p> <p>Journal articles and conference proceedings submitted or published with MTLC support, 11 with MTLC Research & Evaluation Associate as co-author</p>	<p>27</p> <p>Faculty, staff, and students supported to leverage attendance and presentations at the Annual Conference of the American Society for Engineering Education</p>
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Examples of Articles Submitted or Published with Support from the Morgan Teaching and Learning Center's Research & Evaluation Associate

Beyond PBL: The Value of Stacking High-Impact Practices

Impacts of a Free-body Diagram Mobile App on Content Mastery and Women's Self-Efficacy

Capstone Projects for Self-Efficacy, Skills, and Successful Careers

Building Community & Fostering Continuing Professional Growth

MTLC helps new faculty transition to WPI and supports their early career development

80% New faculty hires welcomed at New Faculty Orientation in August '23	26 New faculty participated in the New Faculty Mentoring Program	12 Experienced faculty served as mentoring facilitators for new faculty	7 Consultations for NSF CAREER proposals
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See p. 11 on foundational pedagogical development for early career faculty.

MTLC has been an important support for the success of teaching mission tenure track faculty

16 Pre-tenure faculty on the teaching path to tenure (47%) supported with two MTLC sessions on "writing for tenure"	8 of 9 of the teaching faculty granted tenure in 2024 had received Teaching Innovation Grants* 6 of 9 Received multiple grants*	28 Total Teaching Innovation Grants* utilized by the first 9 tenured teaching faculty to foster their professional growth
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** Includes Professional Learning Communities and Course & Program Projects awarded by the EDC and Morgan Center, and Summer Sandbox Grants awarded by Undergraduate Studies*



The first nine teaching mission faculty granted tenure at WPI in spring 2024

Example Areas of Expertise of Tenured Teaching Faculty Supported by Teaching Innovation Grants

- Fostering equitable and effective teamwork in project-based learning
- Open education resources (OER)
- Expanding racial and ethnic representation in animation
- Social justice and STEM
- Laboratory learning in mathematical sciences
- Ungrading for learning and equity
- Learning with reflection
- Global and intercultural learning

MTLC provided supports for professional advancement of faculty across the career span, providing transparency and attending to educators as whole people

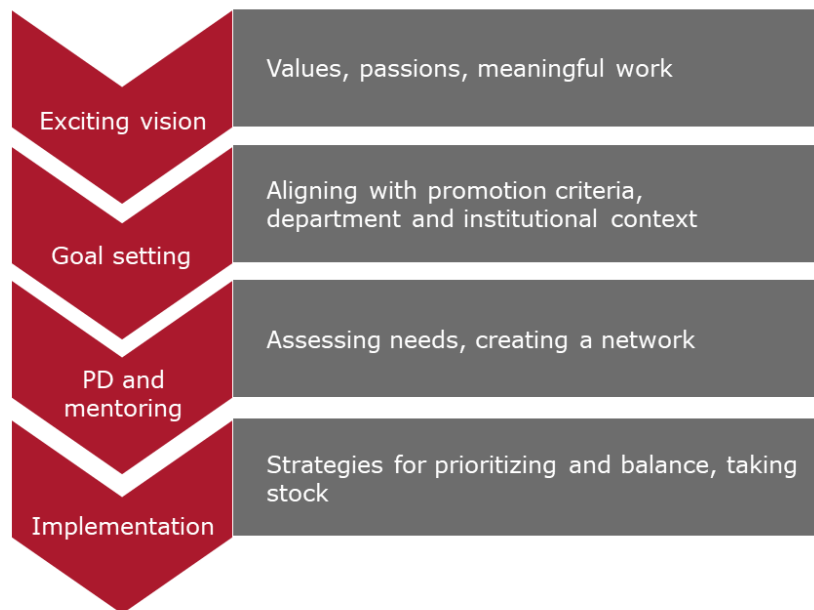
10 Associate-rank faculty participated in annual workshop on creating a values-based professional development plan	1,538 Views of resources in Associate Professor Mentoring Canvas collection	306 WPI users of NCFDD* resources	857 NCFDD* sessions used by WPI community members in the last year
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* WPI users of NCFDD resources are disproportionately those historically under-represented in the academy: non-male, non-white



Mentoring and Professional Development of Associates

Professional Development Plan (PDP) for Mid-Career



The Morgan Center promotes WPI's institutional membership in the NCFDD, an independent professional development, training, and mentoring community that helps academics make successful transitions throughout their careers.

NCFDD offerings emphasize:

- strategic planning
- writing/research productivity
- healthy relationships
- work-life balance

Recognizing Teaching Achievements

The Morgan Teaching and Learning Center is pleased to coordinate several teaching awards, in collaboration with the Educational Development Council and the Undergraduate and Graduate Deans.

Romeo L. Moruzzi Young Faculty Award for Innovation in Undergraduate Education – 2024 Recipients



Rose Bohrer, Assistant Professor, Computer Science

In an amazing redesign of an undergraduate programming language course, Professor Bohrer has integrated theory-driven content with human-oriented concerns, social and ethical considerations, and belonging in computing. A suitable text did not exist, so Rose created an open-access textbook, a work rich in research and her conceptualization of the field. Her teaching approach has already been shared in several conference publications, and in two short years, she has already changed Computer Science at WPI for the better.



Joseph Aguilar, Assistant Professor of Teaching
Kate McIntyre, Assistant Professor
Humanities & Arts



Professors Aguilar and McIntyre launched an international literary magazine, *Hex Literary*, making creative writing at WPI a thriving enterprise. The day-to-day business of running the journal is done largely by students, who learn about the history of literary journals, how to promote content through social media and other campaigns, evaluate literary submissions, plan events, and conduct interviews with writers. The work Joe and Kate have done to build the journal, their pedagogy, and outcomes for students are examples of the best things project-based learning can achieve.



TA of the Year

Rebecca Gilchrist, Chemistry and Biochemistry

Described as a leader and a mentor, dedicated, reliable, and passionate. The faculty who worked with Rebecca were impressed by her involvement with every experiment and how she taught with humor and great skill. Students commented on Rebecca's exceptional command of the laboratory and overall leadership throughout the course, with one student mentioning how Rebecca enabled them to "leave [the] fear of failure behind" while another indicated how Rebecca motivated her to become a better chemist.



Honorable Mention

Alexandra Harrison, Chemical Engineering

Recognized for her excellence in going above and beyond to support students and faculty. The letters of support described Alexandra as a very dedicated educator who has demonstrated a high level of commitment to the students at WPI.

PLA of the Year



Lauren Abraham
BBT '24

"Lauren's love of learning is infectious. She serves as a hub of communication and learning for the enrolled students and the teaching staff."

Honorable Mention



Cassidy Williams
BME & ME '24

"Outstanding contributor to the Physics Department. Her combination of expert understanding of Physics and her humility provides a deeper connection with the students she supports."

CONTRIBUTING TO RECOGNITION FOR WPI

Kimberly LeChasseur (Senior Research & Evaluation Associate) and Chrys Demetry (Director) were significant contributors to WPI's successful application for the prestigious **Council on Undergraduate Research (CUR) 2023 Award for Undergraduate Research Accomplishments** (AURA). This national award recognizes institutions that exemplify the CUR's Characteristics of Excellence in Undergraduate Research, including such things as campus mission and culture, curriculum, student-centered practices, administrative support, and recognition for student and faculty researchers. Kimberly's analysis of the 2021 WPI alumni survey data provided evidence for many of the claims WPI made in the application.



"WPI's holistic approach integrates research and design experiences throughout the entire curriculum, ensuring that students engage in meaningful research from their first year through to graduation....WPI exemplifies how investing in its faculty and students, showing passion for undergraduate research, and building a career-readiness mindset around undergraduate research provides a model for many other campuses to follow."

– award citation for WPI

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Report compiled by Chrysanthé Demetry, Director
and Mary Courtemanche, Operations Manager

Special thanks to others who assisted with this report:

Kimberly LeChasseur, Senior Research and Evaluation Associate

Caitlin Neer, Senior Instructional Designer

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Morgan Teaching and Learning Center

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