WORCESTER POLYTECHNIC INSTITUTE
April 11, 2019

To: The WPI Faculty

From: Tanja Dominko
Secretary of the Faculty

The seventh Faculty meeting of the 2018-2019 academic year will be held on **Thursday, April 11th, 2019 at 3:00 pm in Olin Hall 107**.

1. Call to Order   T. Dominko
   - Approval of the Agenda
   - Approval of the Consent Agenda and the Minutes from 3-14-2019

2. Faculty Governance report   T. Dominko

3. Recommendations of **Bylaws and Governance Working Group**   M. Richman

4. Committee Business

   - Committee on Governance
     - **Motion to approve the Global School Proposal**   D. Spanagel

   - Committee on Governance and Committee on Information Technology Policy
     - **Motion to approve WPI Data Retention and Maintenance Policy**   R. Paffenroth

     - **Motion to approve Academic and Research Computing User Account Policy**   R. Paffenroth

   - Committee on Academic Policy and Undergraduate Outcomes Assessment Committee
     - **Motion to change Undergraduate Learning Outcome #8**   D. Olinger/
                                                                J. deWinter

5. New Business

6. Adjournment

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WORCESTER POLYTECHNIC INSTITUTE
Faculty Meeting Minutes
March 14, 2019

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5. Committee Business: CAP/CAO; CAO
6. Special Reports: Dean, Arts & Sciences; Dean, IGSD
7. New Business
8. Adjournment

Detail:
1. <u>Call to Order</u>
The seventh Faculty meeting of the 2018-2019 academic year was called to order in Olin Hall 107 by **Prof. Dominko (BBT).** She reminded everyone that the meeting is being recorded for the purpose of accuracy in taking minutes. The agenda and consent agenda (including the minutes from the February 7, 2019 Faculty meeting) were approved.

2. <u>Faculty Governance Report</u>
Prof. Dominko reported that the elections of new committee members (COG, CTAF and COAP) were now complete. She thanked all those individuals who agreed to be on the ballot, and congratulated the winners. She stated that the next ballots, for Standing Committees would be forthcoming and encouraged those interested in running to contact any member of COG. Prof. Dominko reminded all of the upcoming Evaluation of Administrators, and stated that presentations from all four administrators to be evaluated this year will be available on the Faculty Governance website.

3. <u>President's Report</u>
President Leshin spoke about the recent Board of Trustees meeting, which included a three-hour plenary session on Governance with many Faculty members present. She stated that the Bylaws Group has made significant progress and is drafting a report for presentation at the next Faculty meeting. The President announced that, at their February meeting, the Board approved the five-year Financial and Capital plans, which includes growth of Tenured/Tenure-Track Faculty from 250-300, along with proportional growth of Staff. She reported that deferred maintenance to Kaven, Olin, Stratton, Higgins, Higgins House as well as de-tripling some of the student housing areas is included in the plan. She spoke briefly on the plans for a new academic building (Smart World Building) which will be breaking ground in the next few months, as well as an additional residence hall within Salisbury Estates.

4. <u>Provost's Report</u>
Provost Soboyejo congratulated colleagues that were awarded tenure and/or promoted:
*   Promotion to Associate Professor and tenure:
    Profs. Albrecht (BME), Cowlagi (ME), Onal (ME), Rao (ME), and Titova (PH)

- Promotion to full Professor:
  Profs. Burnham (PH), deWinter (HUA), Djamasbi (FBS), Fischer (ME), Furlong-Vazquez (ME), Liang (ME), Rao (BBT), Rudolph (HUA), Skorinko (SSPS), Vaz (IGSD), Wang (ME) and Wobbe (UG Studies)

- Promotion to Associate Teaching Professor:
  Profs. Belz (IGSD), Johnson (MA), Levey (ME) and Posterro (MA)

- Promotion to Teaching Professor:
  Prof. Traver (UG Studies)

He congratulated all on behalf of himself, the President and the Board of Trustees.

The Provost discussed cross-cutting areas of research: Materials & Manufacturing, Biology, Smart World and Global Initiatives (See **Addendum #1** attached to these minutes). He also spoke about the importance of institutional core values: Diversity, Equity & Inclusion, Sustainability, Entrepreneurship & Innovation and Value Creation; Project-Based Learning, Stem education, Design Thinking & Maker Culture. He spoke about the upcoming group events in March to develop strategic planning outline for inter-disciplinary groups and the next steps in this process. He asked for feedback and endorsement for this project.

5. Committee Business
CAP/CAO
Prof. Olinger (ME), for the Committee on Academic Policy (CAP) and **Prof. Strong** (FBS), for the Committee on Academic Operations (CAO) moved to approve an undergraduate B.S. program in Data Science. Prof. Strong gave a brief description of the program on behalf of the fourteen Faculty members affiliated with the Data Science Steering Committee, as well twelve-affiliated Faculty.
Prof. Billiar (BME) asked if, in a few years, this program would compare to the Robotics program, and if it would have a program head. Prof. Strong stated that it would be very much be like the Robotics program, and already has a division head. She stated that the program would only need a few extra resources, but was already structured.
Prof. Gaudette (BME) asked for verification that it is under 15 units for an undergraduate degree. Prof. Strong stated that it is exactly 15 units. Prof. Gaudette stated that it has been shown that this program has significant potential, and believes a commitment from administration is needed in writing before a vote should take place. Provost Soboyejo gave his word that there will be more than two new Faculty positions. Prof. Strong stated that the students would be coming from CS, FBS and MA.
Prof. Rundensteiner (CS) stated that in the coming years, students could be coming from other divisions as well.
Prof. Cowlagi (ME) asked if Data Science would be a "home department" for tenure-track Faculty candidates. Prof. Strong stated that so far, each Faculty member is affiliated with a department and no plans are underway to change this affiliation.
Prof. Heffernan (CS) stated his support for the motion.
Prof. Ryder (BBT) inquired about the demand for the B.S. vs. the Masters in this field. Prof. Strong stated that a variety of jobs are available, some requiring a PhD, some requiring the

Masters, but that companies are desperate to have people with these sets of skills and that are analytically savvy. **President Leshin** stated that next week, the CEO from Burning Glass would be visiting campus to speak to Management Council and others, about their role as developing labor market data technologies to match people with jobs.

Prof. El-Korchi (CEE) asked if there is a risk to WPI as a whole, or departments who have students gravitate toward Data Science, and asked about the longevity in sustainability of the program. Prof. Strong stated her conviction that Data Science would be around for a long time. Provost Soboyejo spoke about the projected growth of undergraduate student body, growing by 500 students in the next five years, and that Data Science would have major implications in that growth. He stated that many new fields will come from the intersection of Business, Engineering, Natural Sciences and Social Science,s all cross-cutting with Data Science. The Provost believes this is an important step for WPI, with benefits all around.

Prof. Gennert (CS/RBE) stated his support for this motion, and sees no downside to it. He asked whether any other universities offered all three degrees (BS, MS and PhD). Prof. Rundensteiner (CS) stated that WPI is the first school to have a PhD in Data Science, that most other schools offer a Master's Degree.

Prof. Hansen (HUA) called the question. Seconded. The motion to call the question passed.

The motion **passed.**

CAO
Prof. Strong (FBS), for the Committee on Academic Operations (CAO), moved to modify the Data Science (DS) minor. She presented details of the new program, with two motions.

The motions **passed**.

6. Special Reports
Dean King (A&S) gave a presentation on her Accomplishments, Role and Responsibilities. Her presentation (See **Addendum #2** attached to these minutes) can be found on the WPI Faculty Governance webpage: https://www.wpi.edu/offices/faculty-governance

Dean Rissmiller (IGSD) gave a presentation on his Accomplishments, Role and Responsibilities. His presentation (See **Addendum #3** attached to these minutes) can be found on the WPI Faculty Governance webpage: https://www.wpi.edu/offices/faculty-governance

7. New business - none

8. Adjournment
Meeting was adjourned at 4:40 pm by **Prof. Dominko**.

Respectfully submitted,

Tanja Dominko
Secretary of the Faculty

Addenda on file with these minutes:

1. **Addendum #1** Provost Soboyejo, Cross-Cutting Thematic Areas in Education, Research & Outreach – March 14, 2019
2. **Addendum #2** Special Report, Accomplishments of the Dean of Arts and Sciences, Dean Jean King – March 14, 2019
3. **Addendum #3** Special Report, Accomplishments of the Dean of IGSD, Dean Kent Rissmiller – March 14, 2019

Appendix: Consent Agenda Motions

CAO - Change IMGD3500

CGSR – Add CH 515

Date: April 11, 2019
To: WPI Faculty
From: Committee on Academic Operations (prof. Mattson, Chair)
Re: Motion to change the description for IMGD 3500 approved by IMGD Steering Committee on 1/10/2019.

Motion: The Committee on Academic Operation recommends and I move, that the description for *IMGD 3500 Artistic Game Development I* be changed as described below.

Revised course description (showing changes):
This course focuses on the unique problems presented to the artist when working in game development. ~~Students learn to work with 2D sprite-based art, including tiling and simple animation. They then explore 3D architecture, level design, texturing, and environmental animation.~~ Students will learn game art pipelines and how to prepare art assets for use in game engines. Topics may include modular level design, 3D architecture, texturing and shaders, high poly and low poly workflows, environments, lighting, particle effects, and character animation for games. Students will ~~use art to create compelling game experiences through environments~~ create original art for compelling game experiences by designing their own levels ~~in both 2D and 3D games~~.
~~Recommended background: IMGD/AR 2101 and IMGD/AR 2201.~~
Recommended background: 3D modeling (IMGD/AR 2101 and 3101), digital painting (IMGD/AR 2700), 3D animation (IMGD/AR 2333).

Revised course description (no markup):

This course focuses on the unique problems presented to the artist when working in game development. Students will learn game art pipelines and how to prepare art assets for use in game engines. Topics may include modular level design, 3D architecture, texturing and shaders, high poly and low poly workflows, environments, lighting, particle effects, and character animation for games. Students will create original art for compelling game experiences by designing their own levels.
Recommended background: 3D modeling (IMGD/AR 2101 and 3101), digital painting (IMGD/AR 2700), 3D animation (IMGD/AR 2333).

Explanation of Motion: Since this course was first taught in 2006 the IMGD curriculum has undergone numerous changes. At the time there were only 4 courses in the IMGD Art sequence; now there are more than 20. Some of the material that was originally covered in IMGD 3500 has been redistributed to other courses and the focus of the course has shifted slightly. At the same time, the tools and techniques typically used in game development have continued to evolve, necessitating updates in what material is appropriate for a course of this type. While the description revision may look substantive, there are only two main changes: a) the topic of 2D art has been removed from the course description – 2D art is now handled in IMGD 2201, IMGD 2222, IMGD 3201 and IMGD 3222, and b) the list of recommended background courses has been updated to reflect current course offerings and numberings.

Rationale: To bring the course description up to date, to make it more accurately reflect the material that is currently covered in the course, and to correctly situate this course in the recommended course flow.

Impacts on students: There is no anticipated impact on students. No changes are anticipated in how the course is taught or who will take it, but rather students who are interested in the course will have a more accurate description of what to expect.

Resource Needs:
There are no new resource needs for the course. It will continue to be taught by Prof. Joshua Rosenstock and other IMGD faculty as part of their regular teaching loads, in the IMGD lab, using software for which WPI already has licenses.

Implementation Date: 2019-20 academic year

Date: April 11, 2019
To: WPI Faculty
From: Committee on Graduate Studies and Research and the Chemical Engineering Department
Re: Motion to Add New Course, CHE 515: Research Analysis and Design

Motion: The Committee on Graduate Studies and Research recommends and I move that the following new course be created, CHE 515: Research Analysis and Design.

Catalog Description
CHE 515. Research Analysis and Design (3 Credits)
Effective research requires understanding methods of data collection and analysis. Students will learn to apply statistical methods to analyzing data, develop mathematical models from data, visually present information, and design experiments to maximize the gain of useful information. Emphasis will also be on performing research ethically and according to accepted practices. Other topics that may be covered include: efficient use of the literature, creating and testing a hypothesis, making sound arguments, and preparing results for publication. Students should have a background in calculus. Students may not receive credit if they previously completed this course as CHE 580: Special Topics.

Rationale: The proposed course covers important topics for graduate students: how to efficiently and accurately analyze data from research, and efficiently perform research. Students often come into research with a "data collection" mindset, namely that research is primarily aimed at data collection and little more. Some of our graduate students have never taken a statistics course, or have taken a statistics course detached from their own discipline or research area. Students' approaches to research can also often be sporadic. A central goal for graduate school is to help students become independent, credible researchers. This course will help students analyze data to make quantitative and scientific conclusions, and help guide them to become more adept researchers.

The course was taught previously as 580: Research Design & Ethics in D term 2017 with a class size of 14, and in B term 2018 with a class size of 15. The average responses to question #2 on the course evaluations were 4.6 and 4.8. Furthermore, separate surveys administered at the end of each course were utilized to assess the effectiveness of the courses, as shown in the table below.

Summary of D Term 2017 Course
Student survey results from CHE 580: Research Design & Ethics

Question	Average Score (1 to 5 scale)
Do you feel that the course objectives were met?*	4.6
How useful was the homework?	4.4
How effective were the lectures?	4.5
How useful were the class questions/discussions?	4.6

* See below for course objectives

Summary of B Term 2018 Course

Student survey results from CHE 580: Research Design & Ethics

Question	Average Score (1 to 5 scale)
Do you feel that the course objectives were met?*	4.8
How useful was the homework?	4.8
How effective were the lectures?	4.6
How useful were the class questions/discussions?	3.9

* See below for course objectives

Student Comments:

"I particularly like the statistics and data analysis knowledge this course provides. As a engineering student who pay limited attention to statistics, this course gives me better skills and insights of the importance of statistics."

"The things learned from this course are very useful in the daily study, like some software, Matlab, R. These software and analysis method can to better analyze our data, and this is one of the most important part of our research work."

"Learning how to present data in a professional way was really helpful especially using tools other than Excel."

Course Objectives

At the end of this course students should be able to:
- Utilize existing literature to guide research
- Understand best practices for collecting data
- Perform statistical analysis on data
- Develop statistical models to understand data and make quantifiable predictions
- Promote an argument using data and analysis
- Design experiments to minimize wasted time
- Make effective graphs from data
- Determine best ways to share/present data with an intended audience
- Understand rules and ethics of performing research

Impact on Degree Requirements: The course will be an elective course that chemical engineering students can take to fulfill their elective requirements.

Resources and Anticipated Instructors: No new resources are needed. The current chemical engineering faculty are capable of teaching these core courses.

Implementation Date: Implementation date for this action is the 2019-2020 academic year.

Recommendations of the Bylaws and Governance Working Group (BGWG)

Prof. J. Cocola

Prof. T. Dominko

Prof. S. Kmiotek

Prof. M. Richman

President L. Leshin (Chair)

Provost W. Soboyejo

Trustee A. Aberdale

Trustee M. Hall

Report of the WPI Bylaws & Governance Working Group
Submitted for Endorsement
April XX, 2019 *(First Release for Discussion, March 28, 2019)*

Introduction

The WPI Bylaws & Governance Working Group (BGWG) was formally established in December 2018 to provide a mechanism for faculty, administration, and trustees to consult on WPI's pending bylaws (approved by the board on November 2, 2018), and to make recommendations to enable more effective collaboration and increase trust between faculty, administration and trustees in the future.

This report contains the consensus recommendations of the BGWG, reached after significant discussion and deliberation. The intent is for this document, including recommendations for amending the pending bylaws, as well as additional recommendations, to be presented to the faculty for their endorsement ahead of Board action that will take place at the May, 2019 Board meeting, consistent with the agreement documented in the final (12/7/18) Working Group Charter.

The discussions of the BGWG revealed that while occasionally the views of trustees, administrators, and faculty members about what best serves WPI may differ, all approach their work with respect for one another. In addition, while the impact of actions may not always be as anticipated, actions taken emerge from positive intent to make WPI a better University in service to our students and to the communities in which we work.

In order to share our perspectives and understand our differences, we need to increase opportunities for communication between faculty, administration and trustees. Such occasions are critical to building the relationships, trust, and bridges that are essential as we all collectively work to share stewardship of WPI, and to establish a stronger foundation for effective collaboration. All faculty members, administrators, and trustees should embrace these opportunities regardless of whether the interactions are formal or informal, and whether they occur in large or small groups.

When misunderstandings and frustrations have occurred, oftentimes they have been caused by a lack of clarity and agreement on what would constitute appropriate consultation, collaboration, timelines, and decision-making processes on an issue. Working together to provide clear agreements on consultation and collaboration mechanisms for important decisions should take place early, so that progress can be made in the context of mutual understanding of process and within agreed upon timelines. Doing so should allow all constituencies to focus on their core responsibilities on behalf of the institution, and should enable each to contribute their time and expertise most effectively on behalf of WPI.

Recommended Updates to the Pending Bylaws

One of the main activities of the BGWG was to consult with faculty members on matters in the pending WPI bylaws that impact the academic enterprise. Each area of concern was discussed

among the BGWG, and consensus recommendations for modifying the bylaws are included below. Proposed changes to the pending bylaws that respond to the BGWG recommendations are provided separately as a redlined document. The BGWG endorses these changes.

Specific faculty concerns raised in the BGWG Charter about the pending bylaws and their disposition are summarized in the table below.

CONCERN RAISED IN BGWG CHARTER	RECOMMENDED ACTION
Authority to override the Faculty Handbook	Remove
Academic freedom placed in the Bylaws and within the framework of "society's norms"	Remove
Board's interpretation "controls" any ambiguities in the Bylaws	Remove
President and Provost written in as ex officio members of all Faculty committees	Remove
Provost "creates, reviews, and approves academic policies."	Remove
Global School established without faculty approval	Global School will be added to the academic structure after faculty endorsement and Board approval.

Inclusion in the bylaws of academic matters:
  • *Provost and Deans;*
 	
  • *Faculty;*
 	
  • *Academic Freedom*
	
	• Minor rewrites in sections on Provost and Deans;
	• Substantially rewrite section on the faculty;
	• Remove section on academic freedom

During the BGWG, additional concerns about the bylaws were also discussed. These include language about the role of the President and the principles of effective collaboration. Both of these discussions resulted in additional recommended updates to the pending bylaws.

ADDITIONAL CONCERN RAISED	RECOMMENDED ACTION
The statement in the pending bylaws on Effective Collaboration is unfocused. While the first half of the statement describes the principles, the second half goes beyond and specifies roles and responsibilities of different constituencies.	Remove the language dealing with roles and responsibilities and rewrite slightly
The language in the description of President's roles and responsibilities is unnecessarily specific	Minor rewrite and addition of AAUP language

Additional Recommendations for Action

As a result of the BGWG discussions, additional recommendations for improving the shared stewardship of WPI via collaboration between faculty, administration and trustees have emerged. In some cases, these additional recommendations came directly from a discussion of the pending bylaws, and in others they address issues of high concern to one or more of the constituent groups that, left unaddressed, stand in the way of effective collaboration. Addressing these issues is considered as important as modifying the pending bylaws. In most cases the BGWG is not suggesting a specific solution to the issue, but rather the mechanism and timeline for a

solution to be found after the work of the BGWG has concluded.

Ongoing Improved Communication and Collaboration Mechanisms
One significant outcome of the BGWG deliberations was in recognizing the need for an ongoing coordination mechanism to build on the foundational work of the BGWG. The resulting increase in communication, collaboration, and coordination between faculty, administration and trustees should enable vital building of trust, provide a forum to raise and address critical issues, and enable agreement on realistic approaches and timetables for action on those issues. Such a mechanism will allow both strategic and operational matters to be considered early and regularly, and will result in deeper understanding of issues from all the perspectives of all constituencies, and better decision-making.

To this end, the BGWG recommends the formation of a Joint Coordinating Council (JCC). The JCC would include the President (Chair), Provost, Secretary of the Faculty, Chair of the Faculty Committee on Governance (COG), and a full-time non-tenure track (NTT) faculty member and one member of the Board of Trustees. The NTT faculty member would be selected by their peers. The Trustee would be appointed by the Board Chair, with the understanding that they would not need to attend every meeting. The JCC would meet at least monthly during the academic year. The JCC would report to the faculty regularly through the Secretary of the Faculty and to the full Board of Trustees at least annually, either at a plenary session, in the Nominating & Governance Committee, or in the Meeting of the Corporation. Operational procedures for the JCC would be established in their early meetings, which would begin in the summer of 2019.

In addition to establishing this new formal coordination mechanism, the BGWG recommends that the President take full advantage of existing structures within faculty governance to advance coordination and collaboration between faculty and administration. These include regular attendance at monthly faculty governance Committee Chairs meetings whenever possible to interact and exchange ideas on matters of campus-wide concern, and the codified invitation in the Faculty Handbook to attend meetings of the Committee on Governance (or any other governance committee) conducting business of relevance to the President's direct interests or concerns.

Finally, the BGWG recommends that the President work to facilitate more numerous opportunities for interaction and increased understanding between faculty, administration, and board members. These could include but are not limited to: plenary sessions at Board of Trustees' meetings, informal small group or one-on-one interactions between faculty and board members on issues of interest, and opportunities to provide insights into the work of the Board of Trustees with the WPI community through more varied and frequent electronic communication.

Process for future updates to bylaws that impact the academic enterprise
The Board of Trustees realizes that making bylaws changes that could have an impact on the academic enterprise without consultation was a negative shock to the WPI faculty community. The Board does *not* anticipate frequent or significant additional changes in the bylaws that impact the academic enterprise once the version of the bylaws derived from the BGWG recommendations are passed by the Board of Trustees in May, 2019. However, whenever such

changes are contemplated, the process by which future updates are made will include consultation with faculty and administration, initiated through the JCC and with enough time to allow considered input to be provided before the changes are finalized. In addition, when possible proposed changes will be posted for at least a four-week comment period ahead of Board ratification of the changes. The Board of Trustees will provide responses to any submitted comments.

Role of Deans in the Appointment/Evaluation of Department Heads
The Deans and the faculty have important roles to play in such critical academic processes as formulating recommendations for tenure and promotion, and in appointing and evaluating Department Heads. While the role of Deans in the tenure and promotion processes is included in the Faculty Handbook, the appropriate roles for Deans in the appointment and evaluation of Department Heads are not currently well defined. The Provost will bring to the JCC for discussion a proposal for the role of the Deans in this area, and a formal proposal for updating the faculty handbook to reflect this updated role will be brought before the voting faculty through the Committee on Appointments and Promotions and the Committee on Governance. This process will be completed during the 2019-20 academic year.

Long-Term Commitments to and Greater Inclusion of NTT Faculty Members
The BGWG supports the increased recent focus on the rights of and WPI's commitments to our NTT faculty members, who are essential and highly valued members of the WPI community. Specifically, the BGWG supports the ongoing work of the "NTT Task Force" launched by the Secretary of the Faculty early this academic year. Options for providing NTT faculty members with longer-term commitments from the University, and an examination of the rights and representation of the NTT faculty through faculty governance are both critical subjects that the Task Force is considering. A framework for any recommendations that emerge from the Task Force work will be shared with the JCC early, so administration, faculty governance, and trustees can work towards alignment on this complex and important topic. This framework should be completed in the coming months, with actionable recommendations, including any updates to administrative processes and changes to the Faculty Handbook, being implemented during the 2019-20 academic year.

Mechanism for Ensuring Required Board Approval of Certain Sections of the Faculty Handbook
By existing practice, changes to the Faculty Constitution and to those sections of the Faculty Handbook dealing with University-wide policy require approval by the Board of Trustees. Once approved by the faculty, changes that require Board approval will take effect after they are endorsed by the Board, which would typically occur at its next meeting. The Secretary of the Faculty will coordinate with the Provost and the Secretary of the Corporation to ensure that the needed updates are brought to the Board through the appropriate board committee (normally Nominating & Governance or Academic Planning).

Addition of More Academic Expertise to the Board of Trustees
The Board of Trustees has a responsibility to bring together the diverse expertise required to oversee the University. Although some academic expertise and experience already exists on the

Board, and faculty appointees to board committees provide critical perspectives, the addition of more trustees with deep academic experience would be beneficial. The Board will commit to adding at least two such members over the next two years.

Revisit Approach for Faculty Appointees on Board Committees
To address the unintended impact of recent changes made by the Board to the process by which faculty members are selected to serve on board committees and to their roles and terms of appointment on those committees, the Board Chair, the President, and the Secretary of the Faculty will work together on modifications to the approach. Updates will be brought before the Trustee's Executive Committee for approval by the beginning of the 2019-20 academic year, in time to select the next set of faculty appointees using the revised approach.

Revisit Approach to Ensure Worthwhile Faculty Review of Administrators
The JCC will discuss changes to the current approach to faculty review of administrators to ensure that the process of obtaining feedback from faculty members on administrator performance provides valuable, actionable input. The Secretary of the Faculty will develop a proposal to update the process based on the JCC discussions and COG input, and the voting faculty will consider any changes needed to the Faculty Handbook through appropriate motions endorsed by COG by February, 2020.

Support for Time and Training of Faculty Governance Leaders
Effective governance requires investment in the leaders who take on critical responsibilities in our system of shared governance. The Secretary of the Faculty (with input from faculty members who are or have been active in faculty governance) and the Provost will examine benchmark data from peer institutions and make a recommendation to the President about providing stipends for key governance leaders, and will create a plan for the professional development of faculty governance leaders. The President commits to reviewing this plan when it is complete, and to providing a reasonable new investment in support of WPI faculty governance leaders.

Regular Assessment of the State of Governance at WPI
Regular assessment of the state of governance at WPI is aligned with good practice and contributes to the health of this critical part of our work. Both the Board of Trustees and faculty governance commit to evaluating the health of their governance processes and activities through surveys or other means that assess effectiveness and identify opportunities for improvement. The President, in consultation with the JCC, will investigate methods for regularly assessing the health of shared governance. The President will ensure that such an assessment is performed at least every three years, and that the overall results and any follow- on actions are shared with the entire campus community. The plan for regularly assessing shared governance at WPI will be completed by December, 2019.

Concluding Statement
The BGWG members are unified in their support for the aspirations of more effective sharing of effort, stewardship, and governance in support of WPI. Significant progress will be made by implementing the recommendations in this report.

WPI has great opportunities ahead. By embracing the potential of more significant collaboration in support of institutional goals, WPI can grow our reach and impact as a distinctive, project-based, STEM university focused on purpose-driven education and research.

Respectfully submitted by the Bylaws & Governance Working Group, 4/XX/19

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<tr><td>_____</td><td>_____</td></tr>
<tr><td>Trustee Andy Aberdale</td><td>Professor Steve Kmiotek</td></tr>
<tr><td>_____</td><td>_____</td></tr>
<tr><td>Professor Jim Cocola</td><td>President Laurie Leshin (Chair, BGWG)</td></tr>
<tr><td>_____</td><td>_____</td></tr>
<tr><td>Professor Tanja Dominko</td><td>Professor Mark Richman</td></tr>
<tr><td>_____</td><td>_____</td></tr>
<tr><td>Trustee Marni Hall</td><td>Provost Winston Soboyejo</td></tr>
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WORCESTER POLYTECHNIC INSTITUTE
BYLAWS OF THE CORPORATION
(Amended ~~November 2, 2018~~May 15, 2019)

ARTICLE I - NAME

The name of the Corporation is Worcester Polytechnic Institute (the "Corporation"). It is intended that the Corporation shall have the status of a corporation which is exempt from federal income taxation under Section 501(a) of the Internal Revenue Code of 1986, as amended, or any corresponding provisions of any future federal tax laws (hereinafter referred to as the "Code"), as an organization described in Section 501(c)(3) of the Code.

ARTICLE II - OFFICES

A. CORPORATE OFFICE

The initial principal office of the Corporation shall be located at 100 Institute Road, Worcester, Massachusetts 01609. The Corporation may have such other offices, either within or without the Commonwealth of Massachusetts and within or outside the United States, as the Board of Trustees may designate or as the affairs of the Corporation may require from time to time.

B. REGISTERED OFFICE

The registered office of the Corporation required to be maintained in the Commonwealth of Massachusetts may, but need not, be identical with the principal office in the Commonwealth of Massachusetts. The address of the registered office may be changed from time to time by the Board of Trustees.

ARTICLE III - PURPOSE, MISSION AND USE OF FUNDS

A. PURPOSE AND MISSION

The Corporation educates talented students in engineering, science, management, and humanities in preparation for careers of professional practice, civic contribution, and leadership, facilitated by

active lifelong learning. This educational process is true to the founders' directive to create, to discover, and to convey knowledge at the frontiers of academic inquiry for the betterment of society. Knowledge is created and discovered in the scholarly activities of faculty and students ranging across educational methodology, professional practice, and basic research. Knowledge is conveyed through scholarly publication and instruction.

B. USE AND ADMINISTRATION OF FUNDS

In making distributions to effectuate the charitable and educational purposes of the Corporation, as delineated in Section A above, the Board of Trustees shall have the authority to make distributions of both income and principal in such proportions and amounts as the Board of Trustees, in its discretion, determines advisable, provided that all such distributions are consistent with all applicable federal tax laws and regulations, and with Massachusetts law governing acceptance, administration and distribution of charitable funds. The Corporation is not formed for financial or pecuniary gain; and no part of the assets, income, or profits of the Corporation shall be distributable to, or inure to, the benefit of its trustees or officers or any other private person, and except to make payments and distributions in furtherance of the purposes of the Corporation, as set forth in Chapter 214 of the Acts of 1865, as heretofore amended (the "WPI Charter") and Section A above. No substantial part of the activities of the Corporation shall be the carrying on of propaganda, or otherwise attempting to influence legislation; and no part of the activities of the Corporation shall be the participation in, or intervention in (including the publishing or distributing of statements), any political campaign on behalf of or in opposition to any candidate for public office. The Corporation shall not engage in any excess benefit transaction within the meaning of Section 4958 of the Code.

C. TERMINATION OF CORPORATION

The Board of Trustees shall have the authority to authorize a petition for the Corporation's dissolution to be filed in the Massachusetts Supreme Judicial Court, all in accordance with M.G.L. c. 180, Section 11A.

ARTICLE IV ~~MEMBERSHIP OF THE CORPORATION~~ MEMBERSHIP AND ELECTION OF TRUSTEES, TERM OF OFFICE, EMERITI TRUSTEES AND NOMINATIONS

A. MEMBERSHIP AND ELECTION OF TRUSTEES

The Corporation shall consist of members individually referred to as Trustees and collectively as the Board of Trustees. The number of Trustees shall be at least twelve, and may be as many as shall be elected by the Board of Trustees. Trustees shall be elected by a vote of a majority of the full Board of Trustees at any regular meeting or at any special meeting where a quorum is present, the call for which includes notice of the election.

B. TERM OF OFFICE

The term of office of any Trustee, except that of the President, shall be five years; all terms shall conclude on June 30. Any Trustee may be re-elected for an immediately succeeding term subject to a limit of fifteen (15) consecutive years of service. Any Trustee who shall have attained fifteen (15) years of consecutive service but is in the midst of a term, may complete that term. Any Trustee that is also the Chair, may serve beyond the fifteen (15) consecutive years of service, to the extent necessary to allow such Trustee to serve as Chair for three consecutive one-year terms that can be extended to up to a total of five years. Any Trustee who has served for fifteen (15) consecutive years may be re-elected following a three-year absence from the Board of Trustees. Notwithstanding the foregoing, the Board may, upon recommendation by the Nominations and Governance Committee, waive the limitation on consecutive years of service and the three-year

absence requirement for a Trustee whose continued service is in the bests interests of the Corporation to meet a particular need or purpose, provided that not more than one-tenth of the Trustees are serving beyond fifteen consecutive years of service at any time. Any Trustee may be removed from office with or without cause by the Board of Trustees at any regular meeting, or at any special meeting the call for which includes notice thereof, by an affirmative vote of two-thirds all of the Trustees at a meeting where a quorum is present.

C. EMERITI TRUSTEES

Upon recommendation of the Nominations and Governance Committee, Trustees who have served with distinction, ordinarily for two full terms, may be elected by the majority of Trustees as Trustees Emeriti. Terms shall be without limit. Emeritus Trustees may serve as members of Committees and may attend and participate in meetings of the Corporation but they are not members of the Corporation and shall not be entitled to vote or serve as officers or be included when calculating a quorum.

D. NOMINATIONS

The Nominations and Governance Committee shall recommend candidates for election or reelection to the Board of Trustees through procedures adopted by such committee and approved by the Board of Trustees. A slate of candidates, with biographical information for each prospective Trustee candidate, shall be provided to all Trustees in advance of the annual or regular meeting of the Board of Trustees at which an election is scheduled.

ARTICLE V – DEFINING THE ROLES AND RESPONSIBILTIES OF THE BOARD OF TRUSTEES, PRESIDENT, PROVOST, ACADEMIC DEANS AND FACULTY

A. THE BOARD OF TRUSTEES

The Board of Trustees (the "Board") is the governing board and final institutional authority of Worcester Polytechnic Institute ("WPI" or the "University"). The Board is authorized to carry out all functions permitted by law and these bylaws, including but not limited to:

1. Reviewing and approving the University's mission, purposes and organizational structure;

2. Appointing the President and setting appropriate terms of employment, including compensation;

3. Supporting the President and assessing the President's performance;

4. Approving institutional policies and decisions bearing on faculty appointment, promotion, tenure, discipline and dismissal;

5. Reviewing and approving new academic programs and major changes in existing programs, academic organization and structure;

6. Approving all earned and honorary degrees;

7. Approving the University's annual operating budget, capital budget, tuition and fees;

8. Monitoring the University's financial condition and establishing policies affecting institutional assets;

9. Authorizing any debt financing and approving the securitization of loans;

10. Authorizing the construction of new buildings, capitalization of deferred maintenance backlogs, and major renovations of existing buildings;

11. Authorizing the purchase, sale and management of land, buildings, or major equipment in excess of $1.0M;

12. Contributing financially to the University's fundraising goals and participating actively in strategies to secure sources of support;

13. Approving the terms of employment and compensation of vice presidents and administrative officers who serve at the pleasure of the President;

14. Electing Board members and officers;

15. Reviewing these Bylaws and undertaking or authorizing assessments of the Board's performance.

The Board, while maintaining a general overview of the University, entrusts the operation of the University to the President. The policies established or approved by the Board shall be administered by the President directly, or by delegation to others. In discharge of its responsibilities, the Board may make such formal and informal delegations of functions, responsibilities and authorities as it considers appropriate to the President and, through the President, to administrative officers and members of the Faculty.

B. THE PRESIDENT

The President is the chief executive officer of the University responsible for all of the University's affairs. The President is a Trustee, and a member of the Faculty, and an *ex officio* member of all committees of the Board and the Faculty (except joint tenure and promotion committees making recommendations to the Provost and the President). It is the duty of the President to see to it that the standards and procedures in operational use within the University conform to the policy established by the the Board and to the standards of sound academic practice. The President has full authority to:

1. Operate the University, including all of its academic, administrative and financial affairs;

2. ~~Set~~ Oversee institutional polic~~y-making~~ies;

3. Consult with the Faculty and other key stakeholders on important institutional matters~~concerns~~;

4. Maintain and grow the University's resources;

5. Prepare and submit for the Board's approval proposed operating and capital budgets for the ensuing fiscal year;

6. Establish an ~~organizational~~ administrative structure that will best enable the President to discharge the duties of the office effectively;

7. Lead the process of establishing the University's strategic priorities, recognizing that such a process should facilitate a shared effort between the Board, the administration, the Faculty, students and the University community;

8. Appoint vice presidents and other officials to carry out responsibilities for institutional activity.

C. THE PROVOST

The Provost is the University's chief academic officer after the President and is a member of the Faculty. In consultation with the Deans, Department Heads and members of the Faculty, the ~~The~~ Provost shall take ~~the~~ initiative in proposing plans and actions in academic matters, in reviewing and implementing educational programs and policies~~, and in meeting and consulting with Academic Deans, Department Heads, and members of the Faculty~~. The Provost:

1. Is appointed by the Board on nomination by the President;

2. Reports to the President;

3. ~~Is a member of the Faculty and shall be an *ex officio* a member of every Faculty committee and of all committees (except joint tenure and promotion committees~~

~~making recommendations to the Provost) or other bodies concerned with academic policy and appointments;~~

4.3.Appoints, supervises and evaluates the Academic Deans;

~~5. Creates, reviews and approves academic policies;~~

4. Collaborates with the Deans, Department Heads and members of the faculty on academic matters;

5. Develops, recommends and manages the budget of Academic Affairs;

6. Recommends ~~f~~Faculty candidates for tenure and promotion to the President and the Board of Trustees.

D. THE ACADEMIC DEANS

Academic Deans are members of the Faculty, reporting to the Provost, charged with responsibility to operate WPI's academic programs. ~~and its four Schools: The School of Arts and Sciences; The School of Engineering; The Foisie School of Business; and The Global School.~~ The Provost may also appoint other academic deans and administrators, including but not limited to deans of Undergraduate Studies and Graduate Studies, and a Vice-Provost for Research. Each School's budget is under the control of the Dean. The Provost ~~may~~ assign~~s~~ duties and responsibilities to the Academic Deans including responsibility for:

1. ~~Setting~~ Take initiative in proposing the strategic direction of teaching, scholarship, research, and new programs and initiatives;

2. Collaborating with the other Academic Deans, Department Heads, Program Directors and members of the faculty on academic matters ~~in order~~ to advance institutional goals;

3. Developing and recommending budgets to the Provost for their respective areas of responsibility;

4. Raising the visibility of the activities within their Schools through external engagements, fundraising and other activities;

5. Supporting and providing the Faculty with opportunities for professional advancement;

6. ~~Evaluating Faculty members and making recommendations to~~ Consulting with the Provost regarding recommendations for faculty hiring, tenure and promotion;

7. ~~Appointing,~~ Ssupervising and evaluating Associate Deans, Department Heads, Program Directors, ~~Faculty (in the case of a School with no Department Heads or Program Directors), or~~ and other direct reports, and making recommendations to the Provost on appointments to these roles;

8. Seeking and obtaining input and advice from Department Heads and Faculty members on important issues affecting their areas of responsibility;

9. Such other duties, responsibilities and authority as may be delegated from time to time by the President and the Provost.

E. THE FACULTY

~~The Faculty consists of the President, the Provost, the Vice-Provost for Research, the Academic Deans and all full-time professors of all ranks and titles, including those that are tenured, tenure-track, continuing non-tenure track, teaching professors, research professors, and professors of practice.~~ The faculty is understood to consist of such persons as shall be designated in the Faculty Constitution and Faculty Bylaws and approved by the Board of Trustees. Faculty members report to their respective Department Head and/or Program Director, as applicable. ~~Department Heads and Program Directors report to their respective Academic Dean(s).~~ The WPI fFaculty ~~is~~ are primarily responsible for advancing WPI's academic mission through instruction and expanding the boundaries of knowledge through scholarship and research. Faculty members also play critical

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service roles within and outside the University. The roles, responsibilities, and rights of faculty are documented in the WPI Faculty Handbook. ~~The Faculty's duties include:~~

1. ~~Educational, research, scholarly activities and service;~~

2. ~~Establishing academic standards, curricula, courses of study, and regulations pertaining thereto;~~

3. ~~Certifying candidates for degrees and recommendation to the Board of Trustees for award of degrees;~~

4. ~~Defining, subject to the Board's approval, the recognized titles of academic rank, and the criteria of eligibility thereto.~~

F. ACADEMIC STRUCTURE

The academic structure of WPI shall consist of four Schools: The School of Arts and Sciences; The School of Engineering; The Foisie School of Business[; and The Global School][1].

~~SECTION 2. ACADEMIC FREEDOM AND EFFECTIVE COLLABORATION~~
~~**ACADEMIC FREEDOM.** It is critically important that WPI Faculty members have freedom in carrying out their academic activities within the framework of WPI's policies and society's laws and norms. Consistent therewith, the University is committed to academic freedom in teaching, in the conduct of research and publication, and in service activities. Faculty members are entitled to freedom in the classroom in discussing their subjects and evaluating their students, but they should be careful not to introduce into their teaching controversial matter which has no relation to their subjects. Faculty members are citizens, members of learned professions, and members of an educational institution. When they speak or write as citizens, they should be free from institutional censorship or discipline, but their special position in the community imposes~~

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[1] The Global School will be added to the academic structure after faculty endorsement and Board approval.

special obligations. As persons of learning and as educational officers, they should remember that the public may judge their profession and institution by their utterances. Hence, they should at all times be accurate, should exercise appropriate restraint, should show respect for the opinions of others, and should make every effort to indicate that they are not institutional spokespersons.

G. EFFECTIVE COLLABORATION

Navigating the complex and dynamic requirements of sustaining a thriving university requires the focused and collaborative efforts of all members of the WPI community. Effective collaboration must be rooted in principles that reflect mutual respect, trust, integrity, academic freedom, creativity, flexibility, and agility,. where Effective collaboration should allow space for change through effective and timely decision-making where roles and responsibilitiesconsultation and decision--making processes are well-defined, where the Board fulfills its fiduciary duty of oversight, where the President effectively executes policies and leads the University's operations, and where the Faculty conducts world-class teaching, research, scholarship, and service within a supportive academic environment. Together, these outcomes create the conditions in which students can learn and grow as citizens and members of the WPI community. The President should periodically evaluate and report to the community on the state of effective collaboration at WPI.

ARTICLE VI – OFFICERS

A. OFFICERS

Upon recommendation by the Nominations and Governance Committee, the Board of Trustees shall elect a Chair, one or more Vice-Chairs, a President, a Treasurer, an Assistant Treasurer, a Secretary, and an Assistant Secretary of the Corporation. A vacancy in any of said offices may be filled by election at the next meeting of the Corporation.

B. OFFICERS NOT ELECTED FOR SPECIFIC TERMS

Unless elected for a specific term, the Chair, one or more Vice-Chairs, the President, the Treasurer, the Assistant Treasurer, the Secretary, and the Assistant Secretary shall hold their offices at the pleasure of the Board of Trustees.

C. CHAIR AND VICE-CHAIRS

The Chair shall be a member of the Corporation, shall preside at all meetings of the Corporation and shall perform the duties usually attached to that office. The Vice-Chairs shall be members of the Corporation and shall perform the duties of the Chair in the event of his or her absence or inability to serve. The Chair and Vice-Chairs shall be elected annually for a maximum of five (5) one-year terms for any individual in either of these positions. The Chair shall be *ex officio* a member of all committees of the Corporation.

D. SECRETARY

The Board of Trustees shall elect the Secretary from among the full-time employees of the Corporation. The Secretary shall perform the duties customary for the Clerk of any Corporation and shall keep a record of the minutes.

E. TREASURER

The Board of Trustees shall elect annually at the Annual Meeting of the Corporation the Treasurer from among the full-time employees of the Corporation. The Treasurer shall perform the duties usually attached to that office. The Treasurer may borrow money when authorized to do so by the Corporation and shall give in writing to the Corporation at the October meeting a full account of the financial condition of the Corporation. The Treasurer shall, with the authorization of the Corporation, have power to buy, sell or transfer from time to time securities and other property in which funds of the Corporation may be invested.

F. ASSISTANT TREASURER AND ASSISTANT SECRETARY

The Assistant Treasurer and the Assistant Secretary shall be elected annually at the Annual Meeting of the Corporation from among the full-time employees of the Corporation, shall assist the Treasurer and Secretary, respectively, in the discharge of their duties, and shall perform the duties of the Treasurer and the Secretary, respectively, in the event of their absence or inability to serve.

ARTICLE VII – COMMITTEES

A. EXECUTIVE COMMITTEE

The Board of Trustees annually shall elect an Executive Committee composed of at least seven (7) Trustees, which number shall include the President, the Chair, and the Vice-Chairs. The Chair of the Board of Trustees shall be the Chair of the Executive Committee. The Secretary of the Corporation shall staff the Executive Committee meetings. The Executive Committee shall hold regular meetings at such times and places as its members may from time to time determine, provided that any member who is absent when such determination is made shall be given notice of the determination. Special meetings of the Executive Committee may be held at such time and place as may be designated in a call by the President or the Chair. The President shall prepare an agenda for each meeting of the Executive Committee. A majority of the Executive Committee shall constitute a quorum. The affirmative vote of a majority of all of the members of the Executive Committee shall be required for the Executive Committee to act. The Executive Committee may create other committees, and shall keep records of its proceedings. Each Trustee shall be provided minutes of each meeting of the Executive Committee, with all actions to be reported at the next meeting of the Corporation. The Executive Committee shall have power during the intervals between the meetings of the Board of Trustees to exercise all powers of the Corporation except as

otherwise provided by law or reserved by these Bylaws to the Board of Trustees, and shall have the power to delegate to other committees such of its duties and powers as it may deem desirable. The Executive Committee may not: (a) change the number of the Board of Trustees, remove Trustees from office or fill vacancies on the Board of Trustees; (b) amend the WPI Charter; (c) adopt, amend or repeal Bylaws; or (d) remove officers or fill vacancies in office.

B. STANDING COMMITTEES

The following shall be the standing committees of the Corporation:

1. **Academic Planning Committee**

   The purpose of the Academic Planning Committee is to provide oversight of all matters relating to the undergraduate and graduate educational programs and all research programs. Committee members shall seek the commitment of faculty and administrators in ensuring that academic priorities are unambiguously stated, appropriately funded, and consistent with the overall educational mission of the Corporation.

2. **Advancement Committee**

   The purpose of the Advancement Committee is to assure the Corporation has effective development and alumni relations, and marketing and communications programs in place so as to maximize the philanthropic support for the Corporation and its proper recognition throughout the world.

3. **Audit and Risk Committee**

   The purposes of the Audit & Risk Committee shall be: (A) to provide oversight of the Corporation's financial practices, internal controls, financial management, compliance with laws and regulations, and its Business Ethics and Conflict of Interest policies; (B) to ensure the integrity of the Corporation's financial statements; (C) to interact directly with

and evaluate the performance of the Corporation's independent auditors, including to determine whether to engage or dismiss the independent auditors and to monitor the independent auditors' qualifications and independence; and (D) to promote and oversee development of broad risk management practices.

4. **Budget and Finance Committee**

The purpose of the Budget and Finance Committee is to maintain the fiscal stability and long-term economic health of the Corporation. The Committee oversees that financial planning for the Corporation is supportive of and fully integrated with the long-range plans and mission of the Corporation. The Committee provides oversight of fiscal management and guidance to those responsible for the Corporation's day-to-day operations.

5. **Leadership Development and Executive Compensation Committee**

The purpose of the Leadership Development and Executive Compensation Committee is to carry out the Board's responsibilities for designing and managing executive compensation. In discharging its duties, the Committee shall effectively and appropriately design and administer reasonable cash and non-cash compensation and benefit packages for the Corporation's key executives and take the steps or actions necessary to establish a presumption of reasonableness, as described in Internal Revenue Code Section 4958, as amended.

6. **Investment Committee**

The purpose of the Investment Committee is to maintain the prudent and effective investment of the endowment and to formulate and oversee the investment policies and management of the endowment and other investable assets of the University. It is

responsible for the endowment, planned gift annuities and life income funds, and other investment assets of the institution.

7. **Facilities Committee**

The purpose of the Facilities Committee is to broadly oversee the Corporation's physical assets: its land, buildings, equipment, and technology infrastructure. More specifically, to maintain the adequacy and condition of capital assets, to develop and periodically review policies, to advocate for new structures and rehabilitate or remove older structures, and to ascertain that adequate levels of funding exist for plant maintenance and operations, and technology infrastructure.

8. **Nominations and Governance Committee**

The purposes of the Nominations and Governance Committee are to attract, nominate, orient, organize, motivate and assess the performance of diverse and highly qualified group of trustees; to recommend to the Board the spring commencement speaker and candidates for honorary degrees and to ensure the continuing ability of the Board to exercise its responsibilities at the highest level of excellence. The Nominations and Governance Committee is committed to building and maintaining diversity among trustees.

9. **Student Affairs Committee**

The purpose of the Student Affairs Committee is to provide policy guidance to promote a safe and intellectually stimulating learning environment that encourages academic success, personal development, and student satisfaction.

10. **Economic Impact Committee**

The purpose of the Economic Impact Committee is to contribute leadership and strategic

vision to maximize the use of WPI's knowledge enterprises for driving regional

economic development.

Each standing committee shall consist of at least five Trustees, excluding ex officio members. The

chair and members of each committee shall be appointed annually by the Chair of the Corporation.

Regular rotation of Board members through various committees and regular rotation of committee

chairs ensures Board members exposure to the full panoply of areas of the Corporation's

operations. Vacancies in any committee shall be filled by the Chair of the Corporation. Each

committee shall regularly review its charter and amend when necessary. Amendments shall

be reviewed by the Nominations and Governance Committee and approved by the full Board.

C. OTHER COMMITTEES

The Corporation may establish such other committees as it deems appropriate for the transaction

of its business.

ARTICLE VIII – MEETINGS OF THE BOARD OF TRUSTEES

A. REGULAR MEETINGS

There shall be at least three regular meetings of the Board of Trustees each year. One of the

meetings shall be the Annual Meeting and shall be held between May 1 and June 30. The other

two regular meetings shall be held in or about October and February, respectively. All such

meetings shall be held on dates approved by the Executive Committee.

B. SPECIAL MEETINGS

Special Meetings of the Board of Trustees may be called at any time by the President, the Chair or

any twelve Trustees, to be held at such places and times as stated in the calls to the meetings. No

business may be transacted at a special meeting of the Board of Trustees other than that stated in the call to the meeting.

C. NOTICES AND MINUTES

Notice of each meeting of the Board of Trustees shall be sent by the Secretary (or if the Secretary is unable or unwilling, then the Assistant Secretary) to each Trustee at least seven days before the time of the meeting, and the notice of a special meeting shall state the object for which it is called. Trustees shall be provided minutes of each meeting of the Board of Trustees.

D. QUORUM

A majority of all of the Trustees shall constitute a quorum at all meetings of the Board of Trustees.

E. ORDER OF BUSINESS

The President and Chair in coordination shall prepare an agenda for each meeting of the Board of Trustees.

F. ACTION AT MEETING

If a quorum is present when a vote is taken, the affirmative vote of a majority of all Trustees is the act of the Board of Trustees. A Trustee who is present at a meeting of the Board of Trustees or a committee of the Board of Trustees when corporate action is taken is considered to have assented to the action taken unless: (a) he or she objects at the beginning of the meeting, or promptly upon his or her arrival, to holding it or transacting business at the meeting; (b) his or her dissent or abstention from the action taken is entered in the minutes of the meeting; or (c) he or she delivers written notice of his or her dissent or abstention to the presiding officer of the meeting before its adjournment or to the Corporation immediately after adjournment of the meeting. The right of dissent or abstention is not available to a Trustee who votes in favor of the action taken.

G. CONSENT IN LIEU OF MEETING; TELEPHONE CONFERENCE MEETINGS

In addition to any other method permitted by law, (1) the Board of Trustees and any committee of the Corporation may take any action by unanimous written consent in lieu of a meeting (including written consent delivered by email transmission or other electronic transmission), and (2) the Board of Trustees and any committee of the Corporation may take any action by means of a meeting conducted using a conference telephone, video conference or similar communications equipment, so long as all Trustees participating may simultaneously hear each other during the meeting.

ARTICLE IXVIII – CONFLICT OF INTEREST

Each Trustee shall be familiar with and comply with the Corporation's Conflict of Interest Policy, as it shall be approved and amended by the Board of Trustees from time to time.

ARTICLE IX – MISCELLANEOUS PROVISIONS

A. POWER TO ACQUIRE, MORTGAGE OR CONVEY REAL ESTATE

The power of the Corporation to acquire, mortgage or convey real estate shall be exercised by the Board of Trustees or the Executive Committee, provided, however, that the Board of Trustees or the Executive Committee may delegate limited authority to the President, Treasurer and Assistant Treasurers, specifying the extent of the authority so delegated.

B. INDEMNIFICATION

Each person who at any time has served as a member of the Corporation or of any committee of the Corporation or as an officer of the Corporation or who has served at the request of the Corporation as an officer, individual trustee, director or member of any organization in which the Corporation has an interest, including any trust or association established in connection with a retirement plan for employees of the Corporation shall, to the extent permitted from time to time by law, be indemnified by it against all expenses actually and necessarily incurred by such

individual(s) in connection with the defense of any action, suit, or proceeding to which he or she has been made a party by reason of his or her being or having been in such role, to the extent provided for in the WPI Charter. The Board of Trustees may, in its discretion, authorize from time to time the indemnification of any person not otherwise entitled to indemnification hereunder, who is an employee or other agent of the Corporation or who serves at the request of the Corporation as an employee or other agent of an organization in which the Corporation has an interest, but only to the extent permitted from time to time by law.

ARTICLE XI - FISCAL YEAR

The fiscal year of the Corporation be and hereby is fixed as the twelve month period ending on the last day of the month of June in each year.

~~ARTICLE XI – AUTHORITY~~

~~Nothing herein shall limit the President's authority to manage the University or to establish policies related thereto, subject to Board approval. In the case of any conflict between these Bylaws and other University policies, manuals or handbooks (e.g. Employee Benefits and Policies Manual; WPI Faculty Handbook) these Bylaws shall prevail. In the event of any ambiguities in these Bylaws, the interpretations of the Board shall be controlling.~~

ARTICLE XII - AMENDMENT

The Bylaws may be altered or amended at any meeting of the Board of Trustees by an affirmative vote of not less than two-thirds of all of the Trustees at a meeting where a quorum is present. A proposed amendment shall be referred to the Executive Committee for recommendation. The full text of a proposed amendment shall be sent to the Trustees at least seven days before the date of the meeting at which action thereon is to be taken. If for any reason the Executive Committee fails

to report at the next meeting following notice of a proposed amendment, the Board of Trustees

may proceed to act thereon without the Committee's report.

Amended and Approved by the Board of Trustees on November 2, 2018, effective November 12,

2018.

Date: April 11, 2019
To: WPI Faculty
From: Committee on Governance (Prof. Spanagel, Chair)
Re: Motion to endorse the WPI Administration's Global School proposal

Motion:

The Committee on Governance (COG) recommends and I move that the Faculty endorse the WPI Administration's plans to establish a Global School, as generally outlined in the attached "WPI Global School: A Proposal" document.

Rationale:

According to the Faculty Handbook "Policy on Initiating and Terminating Departments of Programs" (Part Two Section 2.D), [page 2-23], "*Should the Administration propose creating, merging, realigning, or eliminating an academic program or major academic or research facility, that proposal shall be conveyed to the Committee on Governance,*" COG is supposed to conduct a critical review of said proposal … [and then] "*frame a recommendation to the Administration, and present it to the Faculty for its approval.*"

The proposal that comes to the Faculty meeting today embodies recent efforts at WPI to engage in shared leadership, meaningful consultation, and critical feedback. Between December 2018 and March 2019, Provost Soboyejo met repeatedly with representatives of the faculty and staff who would be affiliated with the new academic unit. He consulted with other interested members of the campus community, and he continually revised this proposal in respectful appreciation for COG's criteria and iterative suggestions for how to express intentions with greater clarification and transparency.

Throughout this process of gathering input, the Provost has developed and refined his own vision of how a Global School could help WPI to achieve its current strategic planning initiatives. Unlike any Global School documents that existed before November 2018, this proposal also attempts to discuss risks and opportunities with some concrete reference to their anticipated financial consequences. COG insisted upon the provision of information needed to render an informed judgment about whether WPI should establish a Global School, as a prerequisite to the commitment of substantial resources from this point forward to support its implementation. Although it is impossible to predict the details of exactly how the Global School's new programs will roll out, the attached proposal delineates the scope of resource needs just to manage the transition to the proposed new structure, and outlines a plausible scenario for how WPI can hope to mitigate financial stress through an initial five-year period of the Global School's establishment and projected growth.

COG supports this endorsement motion at this time because we recognize the need to develop a more robust institutional framework for WPI's rapidly growing array of global project activities. Intentional expansion of the faculty's research expertise and teaching capacities in relevant fields of integrative and area studies will enhance our ability as an institution to make good on the

strategic plan's promise to offer meaningful global learning experiences to all interested WPI students (both at the undergraduate level and the graduate level).

Implementation:

For this new academic unit to succeed, steps toward its implementation require not only full compliance with all relevant Faculty Handbook policies, but also a redoubled spirit of genuinely shared leadership. The Faculty Handbook delineates how various standing committees must review and approve new courses and new academic or certificate programs, evaluate faculty, appoint faculty members to serve on search committees, appoint faculty members to serve in positions of academic administrative leadership, and so on.

Beyond existing mechanisms of faculty governance support and oversight, the Administration must remain committed to engage in sustained consultation with both TT and NTT faculty and staff constituencies to build out the new Global School. For example, some program development initiatives are likely to require the formation of collaborative, diversely representative Task Forces. Individual communications containing both critical and encouraging feedback will also continue to be highly valuable, and therefore must be invited consistently and warmly welcomed, in order to ensure that future decisions regarding emerging challenges and opportunities (while this ambitious endeavor unfolds) will be made in the most transparent and effective manner practicable.

The Global School

Proposal

Provost W. Soboyejo

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WPI GLOBAL SCHOOL

THE NEED

It is becoming increasingly more important that institutions of higher education embrace new educational practices as they strive to fulfill the needs for more diverse global workforce. In addition to rich curricula in science, engineering and business, a thriving university needs to provide skills and experiences, and instill values that characterize responsible global citizens. This philosophy has to permeate undergraduate and graduate programs alike.

Responsible global citizenship calls for critical thinkers that possess intercultural competence and sensibility, make informed decisions in the cultural, political, and economic contexts, communicate with diverse audiences across cultures and languages, and understand religious and ethnic customs that shape the opinions and actions of others from backgrounds different than one's own. They should understand our joint responsibility for resource stewardship. And lastly, they should be ethical and socially responsible and engage in public service to make the world a safer and better place.

The need for professionals with global skills is reflected in vacancies advertised on global online employment solutions platforms (Indeed.com, Monster.com., etc.). In particular, professionals with demonstrated knowledge and skills in international policy, international finance, foreign languages, global health care, and global data safety and security are in high demand.

THE OPPORTUNITY

WPI has a rich history of innovative undergraduate educational programs in which students and faculty have engaged with communities around the world. As the world is becoming increasingly smaller, global thinking needs to become increasingly intertwined across all university activities. Integrating existing resources with recent creation of new opportunities for expanding the reach of global activities and broadening the reach of project-based learning provides a foundation to expand into new areas of global graduate education, research, outreach and engagement.

THE VISION

The Global School will enhance WPI's position as a leader in scientific, engineering, educational and social innovation that addresses a variety of global challenges. The Global School will expand into new areas of global education, research, and outreach and engagement by:
- Adding undergraduate global MQP and Humanities and Arts programs to the global experience
- Developing new graduate programs that will integrate active classroom learning with intensive project-based experiences in diverse global settings
- Expanding global research programs
- Creating tools and mechanisms for global outreach and engagement

The Global School will also prepare scientists and engineers, STEM-oriented policymakers, innovators, and educators that are globally informed, culturally competent, and technically equipped to tackle the world's grand challenges from multiple dimensions.

INFRASTRUCTURE, EXPERTISE AND OTHER RESOURCES

WPI's project-based approach to problem-solving and education has nurtured a community of teachers, researchers, staff, and students with strong interests in global learning, community development, global studies, area studies, sustainability, and social justice to address the global grand challenges.

This community of globally-engaged scholars and teachers includes members of the Interdisciplinary and Global Studies Division (IGSD); faculty involved in the teaching of the Great Problem Seminars; faculty associated with International and Global Studies; and faculty and staff in many departments committed to project-based learning, STEM education, humanitarian engineering, and community/global development.

1. IGSD and Global Projects Program

WPI has committed substantial resources to create our Global Projects Program and to make global projects available to all students. The global programs have also enabled WPI to hire, mentor, and retain a critical mass of faculty and staff with global expertise in the humanities, arts, social sciences, natural sciences, engineering, and business.

At WPI, we know that the best way for students to understand and appreciate societal issues is to experience them firsthand. Through our Global Projects Program, WPI science, engineering, and business students immerse themselves in new cultures and tackle unstructured problems in ways that are meaningful to real communities. Our diverse project centers — strategically positioned in locations ranging from large international cities to small mountainside villages — are host to interdisciplinary and major capstone projects, and humanities and arts projects. Furthermore, students can participate in language immersion and exchange programs.

Figure 1. WPI Global Project Centers

Recognizing the importance of global project experience, WPI launched "Global Projects for All" initiative in 2017-2018. It increases the number of opportunities in the program and provides financial assistance to all students, while making inroads into *new* project center locations. We are also piloting and evaluating a comprehensive feedback process and working with faculty to define and measure impacts of WPI's global projects on students, faculty advisors, and the organizations and communities that partner with WPI.

2. Great Problems Seminar (GPS)

The Great Problems Seminar is a two-term course that immerses first-year students into university-level research and introduces them to the project-based curriculum at WPI. Established 10 years ago, the course gives students and faculty the opportunity to step outside their disciplines to solve

problems focused on themes of global importance, culminating in annual Poster Presentation Days that celebrate students' innovative research on a wide range of solutions to some of the world's most critical challenges, including: Extinction: Who Will survive?; Heal the World; Humanitarian Engineering: Past and Present; Shelter the World; Feed the World; Ignorance is Not Bliss: Can Schools and Technology Help?; Power the World; The World's Water; Livable Cities; and Living with Fire.

3. Grand Challenges Scholars Program (GCSP)

In August 2017 the National Academy of Engineering (NAE) named WPI a Grand Challenges Scholars School, recognizing the university's unique project-based curriculum—the core of the WPI Plan—that enables students to engage in real-world experiences across four years and around the globe.

Endorsed by the NAE in 2009, and motivated by NAE's 14 grand challenges for engineering, the GCSP is a global movement that advances a new engineering education paradigm—one that prepares engineers to change the world for the better. The GCSP is a combined curricular, co-curricular, and extracurricular program with five competencies that are designed to prepare students to address the grand challenges facing society in the 21st century, in areas including sustainability, health, security, and joy of living. Implemented at more than 50 schools around the world, each institution develops its specific program within the NAE framework.

4. Global Lab

The Global Lab has also become a focal point for global research at WPI by fostering connections between global research and project activities by faculty. The Global Fellows/Faculty-in-Residence program allows WPI faculty to focus on research or a creative project or program development. The involvement of external visiting fellows could be expanded to enhance research programs at WPI. The Global Lab is an excellent example of the wider impact on research at WPI that will result from the synergies created by the Global School. The Global Lab serves as a center for innovative research, documentation and dissemination of WPI's global impact. It promotes research and visibility and represents a collaborative hub at the center of our global programs.

5. Undergraduate Programs

Several current undergraduate programs with global emphasis have failed to attract robust cohorts of undergraduate students (**Figures 2 and 3**), either as first or second Major options. However, they do provide already developed courses, some of which could be enhanced to satisfy graduate program designations.
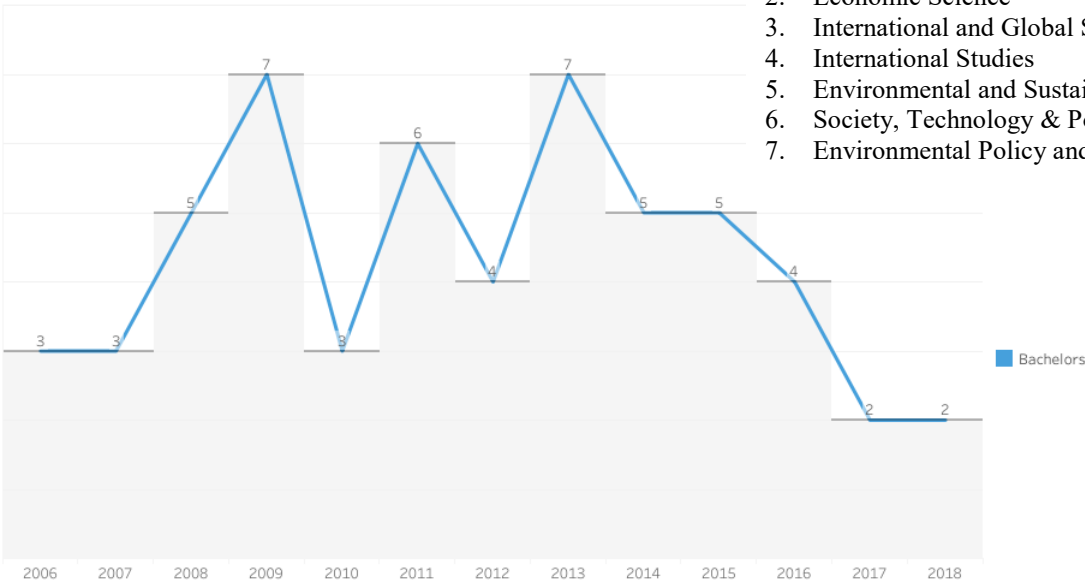
Degrees Awarded

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Bachelors	3	3	5	7	3	6	4	7	5	5	4	2	2
Total	3	3	5	7	3	6	4	7	5	5	4	2	2

Graduation Year
Multiple values

Degree Level
All

1. Economics
2. Economic Science
3. International and Global Studies
4. International Studies
5. Environmental and Sustainability Studies
6. Society, Technology & Policy
7. Environmental Policy and Development

Data Source: Completions
Created by: Institutional Research
Last Updated: 10/2018

Figure 2. Cumulative number of **first Majors** awarded per year in 7 undergraduate programs since 2006.

Degrees Awarded

	2006	2008	2009	2010	2011	2012	2013	2014	2016	2017	2018
Bachelors	3	5	2	3	3	3	2	1	6	7	6

Graduation Year
(Multiple values)

Degree Level
(All)

Department
(All)

Major
(All)

Gender
(All)

Diversity Status
(All)

Figure 3. Cumulative number of **second Majors** awarded per year in 7 undergraduate programs since 2006.

PROPOSED ACADEMIC ACTIVITIES

Education and training

Undergraduate programs

There is a need to critically review and restructure our existing undergraduate degree offerings (See **Figures 2 and 3**) with global emphasis to better reflect the needs of our undergraduate students. As global studies are inherently interdisciplinary, we will focus on infusing "global" components into our other robust undergraduate programs.

In addition to providing the Interactive Qualifying Projects (IQPs) curriculum, the Global Project experience will expand to include global Major Qualifying Projects (MQPs) and global Humanities and Arts programs.

Faculty in the Global School currently coordinate the Great Problems Seminars as well as the majority of project preparation and project advising in the Global Projects Program. Those responsibilities will continue as the school examines new ways to integrate these offerings with existing or new academic programs. The Global School will work collaboratively with other units to support the development of multi-cultural and global learning across the curriculum and the Grand Challenge Scholars Program. The Global Studies department also will collaborate with other units to enhance the curriculum in area studies.

Graduate programs

WPI currently does not offer graduate programs in any areas of global engagement. Exploring collective expertise between Arts and Sciences, Business, and Engineering and combining it with successful undergraduate initiatives and curricular offerings we will create several graduate programs. New graduate programs will be demand-driven and customized for the needs of professionals across different stages of their careers – from recent graduates, working professionals and aspiring scholars:

1. BS/MS to complement WPI undergraduates with aspirations for global engagement
2. Certificate and MA programs for working professionals
3. MS for working professionals in need of global engagement expertise
4. PhD for professionals with aspirations for research and scholarship across a spectrum of global competencies

Courses and programs in the Department of Global Studies will be unified by interdisciplinary participation between the Department faculty and affiliated faculty members and will draw on current and future expertise to satisfy market needs. Starting with existing cross-campus strengths (described under **Research and Scholarship** and the efforts of InSTeD), initial programs will focus on already well-defined areas of market needs that can be fulfilled with WPI's collective expertise.

1. **Smart Cities and Urban Policy** – Department of Global Studies will offer MS and PhD programs with a focus on smart, sustainable cities. It is anticipated that these demand-driven programs could help to prepare future WPI graduates that are well prepared to engage in

public policy, technology, smart cities, sustainability and urban policy to address local/global challenges Current areas of faculty scholarship include:
- Governance of urban spaces, livable cities and social justice
- Green infrastructure in cities esp. with regard to equity of environmental services
- Public participation in decision making with regard to urban climate adaptation and facility siting
- Democracy in policy processes (public participation), implications of authoritarianism
- Green city initiatives and sustainable urban infrastructure
- Urban and regional planning

2. **Science and Technology for Sustainable Development and Developmental/ Humanitarian Engineering** – Department of Global Studies faculty have strong interests in community development. The group will develop curricula for interdisciplinary certificates/minors, and graduate degrees (MA/MS/PhD) degrees in community/global development, humanitarian/development engineering. The program will also work closely with ongoing efforts at Clark University. Current areas of faculty scholarship include:
   - **Sustainable Food Systems and Food Security**
     - Political, economic and environmental change as impacting small agricultural producers and good security especially in developing countries
     - Urban agriculture and appropriate technology for small producers [Projects at the American Farm School in Thessaloniki, Greece support this research.]
     - Agro-ecology
   - **Environmental Sustainability**
     - Natural resource management, especially water
     - Energy policy, energy transition and green energy
     - Environmental risk assessment and risk perception
     - Global conservation
   - **Sustainable Development**
     - Development theory
     - Science and Technology for Sustainable Development
     - Development Engineering
     - Humanitarian Engineering

3. **Community Engagement and Global Social Justice -** Current areas of faculty scholarship include:
   - **Civic Engagement**
     - Public participation in urban policy decision making
     - Alternative economies and development networks (Community economy, cooperatives, microfinance, small producers and entrepreneurs)
     - Citizen science in documenting urban and environmental change
   - **Learning**
     - Integrating sustainability studies into experiential learning
     - Using peer mentors to advance globally engaged students
     - Alternative pedagogies and action learning in higher education
     - Bias and stereotyping on student teams
   - **Global Social Justice**
     - Health
     - Urbanization

- Human migration
- Human Rights
- Climate Justice
- Economic Justice

The unique component of proposed graduate programming would be the inclusion of a mandatory project-based component at one of WPI's global project centers.

New graduate programs will leverage the expertise of the faculty in the Global School and faculty in the science, technology, business, humanities, arts, social sciences and policy. WPI will benefit by engaging faculty in the Global School and elsewhere—who are not currently involved in graduate education—in the teaching and mentoring of graduate students. Vibrant graduate programs that utilize WPI's talented faculty will build on our extensive experience in global education to enhance our reputation and heighten the visibility and impact of WPI's education and research.

Research and Scholarship

Leveraging WPI's long tradition of global engagement and faculty research portfolio, we propose to create an Institute of Science and Technology for Development (InSTeD). InSTeD will bring together faculty with expertise in development studies, engineering design, and scientific innovation in the service of historically under-resourced communities (as described in Graduate Programs above). Working in collaboration with academia, local governments, NGOs, and industry, InSTeD plans to engage in research at the nexus of healthcare, water, STEM education, and international development. This program is initially focusing on Ghana and Ecuador and offers a model for additional research collaborations at the frontier of global development and humanitarian challenges.

InSTeD researchers will seek funding to collaborate with various institutional and community partners at home and around the globe. The academic goal of the Institute will be to employ creative design thinking and develop innovative solutions that support a community's needs and aspirations for a better life. The center will, for the first time, bring together an academic program that includes critical development studies, engineering design, and scientific innovation.

In doing so, we will not only fill a gap in the current research/development market, but also will leverage the research to design project experiences for our graduate students. The following needs will be addressed:
- There is a surge in interest in "development engineering" across the US and Western Europe;
- While "development engineering" represents something new, the process for determining need has scarcely changed; development has approached challenges to human well-being as technical issues to be addressed through intervention;
- There is the need to extend existing efforts in the global safety arena from a focus on developed countries to an engagement of developing countries in the Middle East, Africa, Latin America and South America.

We envision that InSTeD will become a catalyst for foundation, NSF, and agency funding (e.g., US AID). Prof. Rob Krueger is establishing strong connections in the development arena. He will lead the team in developing funding opportunities. In addition, the faculty members in the center will develop collaborative proposals for foundations (e.g. Spencer, Rockefeller), NSF and US AID and the World Bank. We expect that the center will be one of the nation's top centers focusing on science, technology, and development in ~5 years. The research results will also make significant impacts in the academy and society.

The most encompassing theme at the present focuses on Sustainability Studies, with a variety of sub-interests: environmental sustainability, resource management, urban resiliency (livable cities and related policy), and food systems and food security. Our interests also include Civic Engagement (community participation in decision making) in urban/community settings and Globalization and Social Justice, including project-based learning.

Project-based learning is not only an educational practice but also an area of research and scholarship. WPI's international reputation for project-based learning has been recognized by the Gordon Prize from the National Academy of Engineering. The Center for Project-Based Learning's consulting and summer institute with the American Association of Colleges and Universities (AAC&U) have also elevated the visibility of WPI's contribution to this area of the scholarship of teaching and learning. The recently published *Project-Based Learning in the First Year* (2019) also exemplifies the high quality and impact of the research undertaken by faculty in the Global School. While project-based learning remains a calling card for all programs at WPI, the Global School provides a cluster of highly talented scholars who will provide leadership in this field of research that also bridges teaching and engagement.

Faculty of the Global School also contribute actively to other research areas such as sustainable development, urban policy, area studies, food security, global health, shared-action learning, social justice, and globalization. Many faculty involved in the Global Projects Program are making significant contributions to the scholarship of engagement. The Global School will facilitate ongoing research through applications for external, collaborative research grants.

Global Outreach and Engagement

The Summer Institute for Project Based Learning has trained educators from hundreds of universities across the US and other parts of the world in state-of-the-art approaches to project-based learning and STEM education.

In addition, WPI has a robust and mature network of Global Project Centers founded upon faculty interest in community development and a commitment to project-based education, research, and innovation. Many first-year projects are devoted to some of the world's most challenging problems in education, food, water, energy, health, social justice and community/global development. Faculty in the Global School will be well positioned to demonstrate that global projects are not just educational endeavors but significant contributions to the scholarship of engagement. The Global School could lead an effort for WPI to earn the Carnegie Community Engagement Classification.

Furthermore, the Global School will support Global Initiatives that will include: Visiting Scholar Positions/Professorships; Group Projects to develop sustainable solutions to local/global

problems; special programs that enrich our undergraduate/graduate programs; programs that expand the global impact of our STEM and project-based culture, and collaborations between WPI faculty, staff and students and external collaborators that can translate our projects into sustainable activities that address global grand challenges.

CHALLENGES

Internal

The growth of the Global Project Program has posed multiple challenges:
- The need to increase the number of projects, identify additional sponsors and faculty advisors during a period of growth in undergraduate enrollment
- The need to increase resources for selection and preparation of students, and advising of student teams
- Logistic challenges to ensuring safety and well-being of our students and faculty while at global project centers

Project advising has been a unique opportunity for faculty professional development, and many WPI faculty have become international leaders in the scholarship of project-based learning.

The dominance of the IQP model of global studies as practical problem-solving has limited wider possibilities for envisioning global studies at WPI. Undergraduate opportunities in the humanities and arts, area studies, or in the major field are also available but underdeveloped. The Global School will become a central forum for the wider discussion of what global studies should be at WPI beyond the IQP.

Establishment of The Department of Global Studies, of new undergraduate and graduate programs and degrees, associated courses, student learning outcomes, and other academic matters will be submitted for endorsement to relevant Faculty Governance Committees and to the WPI faculty.

External

Other universities have tried classical approaches to tackle global challenges in education and research. Many global studies programs are dominated by policy experts without a holistic view of the connections between science, technology, business, arts and humanities. Although the competition in the Global School space includes leading universities, there are several factors that make WPI's approach very compelling. The Global School will create programs that reflect engagement with local and global communities.

While there are programs that integrate engineering and public policy, such as Carnegie Mellon University, University of California at Berkeley, and The Ohio State University, these programs tend to base interventions on narrowly defined economic constraints.

ORGANIZATIONAL STRUCTURE OF THE GLOBAL SCHOOL

The Global School will be managed by a Dean that will coordinate the different components of the school, as shown in **Figure 4**.
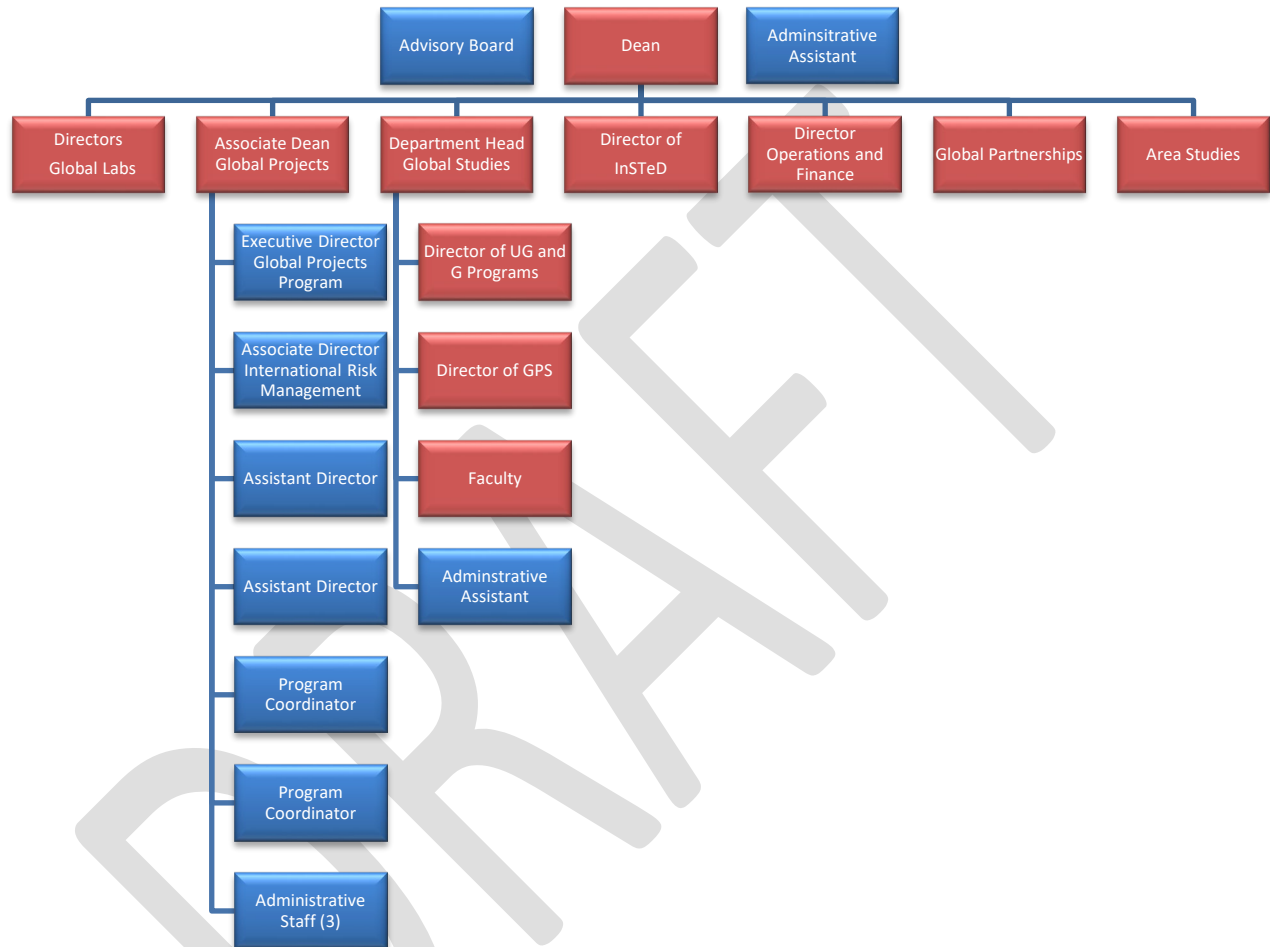

Figure 4. Organization of Global School (Faculty held positions; Staff held position)

Administration, operations and management

Dean of the Global School will be responsible for the coordination and implementation of the vision of the Global School. He or she will be an internationally-recognized scholar with administrative experience. Experience with international projects/policy would also be helpful. The Dean of the Global School will assume responsibility for promoting and enhancing WPI's existing global programing and for developing new initiatives consistent with our vision for the School. We envision a Global School that will dramatically increase WPI's ability to address

critical global challenges through knowledge generation, collaborations across the entire campus and the wider academy, and with communities and organizations around the world.

Associate Dean of the Global Projects Program will coordinate the Global Projects Program. This will include coordination of all the local/global centers and the faculty and staff engaged in WPI's Interactive Qualifying Projects (IQPs). The Associate Dean will also coordinate the interactions with sponsors and the formation of new project centers, and the teaching of ID2050, the preparatory course for the off-campus IQP.

> Executive Director of the Global Projects Program will oversee the operations of the Global Project Program, including supervision of the GPP staff (assistant directors, program coordinators, and administrative staff), the selection and placement of students in the global programs, and the health and safety of WPI's off-campus programs.

Director of Global School Operations and Finance will oversee the budget and operations of the school, equivalent to similar positions in Arts and Sciences, Business, and Engineering.

Head of the Department will be a tenured professor in the Department of Global Studies. The department will include professors whose primary WPI affiliations are with the Global School.

> Director of Undergraduate and Graduate Programs will be responsible for the Great Problems Seminar (GPS) and major and minor programs of the Global School. The Director will also coordinate masters and PhD programs and the professional and graduate certificate/minor programs in the Global School. The Director will coordinate the activities of all faculty members teaching in the graduate programs at the Global School.
> Responsibility for the Great Problems Seminars will be overseen by a GPS Program Director, a position that would rotate among faculty affiliated with the program. The GPS Program Director will recruit faculty to teach in the GPS Program, organize course schedules, and coordinate assistance by undergraduates.

Director of the Institute of Science and Technology for Development (InSTeD) will work with faculty and administrators from across WPI to coordinate the research, teaching and outreach of WPI in the areas of Science and Technology for Development. The InSTeD director will bring together collaborators from around the campus. Currently, there are 30 faculty members from 12 Departments from Arts & Sciences, Engineering and Business that have declared interests and three grant proposals are in various stages of development.

Director of Global Partnerships will assist with the development, coordination and implementation of strategic Memoranda of Understanding (MOUs) and strategic alliances between WPI and other universities. These will be implemented by the different units within WPI, in accordance with the strategic vision of WPI, and the terms of the MOUs. By facilitating faculty-led alliances and partnerships, this position will enable WPI to monitor and develop its global relationships more strategically and systematically. The Director of Global Partnerships will also submit an annual summary of activities and MOUs to the Dean of the Global School and the WPI Provost.

Directors of Area Studies initiatives will develop and coordinate educational and research programs with a focus on particular regions. The China Hub is an example of strategic focus in area studies, and similar initiatives could be formed for Latin America or other areas of priority for WPI.

Directors of the Global Lab provide leadership of programs for students and coordinating global research and the Global Fellows Scholars-in-Residence program.

Faculty

Tenured and Tenure-Track (TTT): There are two current TTT faculty members that will be affiliated with the Department at its launch in the fall 2019. Searches for two TTT faculty are underway (starting in the fall 2019) and we propose to hire additional four TTT faculty over the next 5 years. The tenure homes for new faculty appointments will reside in the Department as well.

Non-Tenure Track (NTT): Eighteen current IGSD and UGS/GPS faculty members will be directly reporting to the Department of Global Studies.

Affiliated faculty: Additional faculty will be recruited for affiliation with the Global school from existing academic departments at WPI. Affiliated faculty members are expected to play a critical role of development of the Schools' interdisciplinary educational, research and outreach programs.

Advisory Board

The Global School Dean will be guided by an Advisory Board that will include: notable alumni with relevant high level global experience; representatives from industry, government, development organizations, civil society and academia. The Board will meet twice a year to provide advice on education, research and outreach efforts of the Global School.

TIMELINE

Timeline	Task
2018-2019	Development of Vision and Strategy of Global School
2018-2019	Consultations with WPI faculty, staff, and administration
Spring 2019	Consultation with Faculty Governance and endorsement by faculty
Spring 2019	Endorsement by the Board of Trustees
Summer 2019	Advertisement of Dean of Global School Position
Fall 2019	Launch of Global School
Fall 2019	Recruitment of Dean, Faculty, Directors and Administrative Assistants
Spring 2020	Graduate Programs developed and endorsed by faculty
Summer 2020	Initiation of Summer Institutes and Professional Programs by Global School
Fall 2020	Recruitment of Graduate Students
Fall 2021	Initiation of Graduate Programs by Global School

The proposed plan is to sequentially obtain the support for the new academic unit from the President, Faculty Governance and the Board of Trustees. This will be followed by the recruitment of a Dean of the Global School through a national search (**Appendix A**). During the recruitment period, Prof. Kent Rissmiller will continue to serve as the Dean of IGSD. Following the appointment of the Dean of the Global School, Prof. Rissmiller will continue as the Associate Dean of Global Projects Program. Anne Ogilvie will remain as the Executive Director of the Global Projects Program, while Prof. Kris Wobbe will serve as the Undergraduate and Graduate Program Director.

Significant effort will be made to use the administrative positions in the Global School to develop the leadership capabilities of WPI faculty. Hence, with the exception of the recruitment of the Dean of the Global School, all of the other leadership positions will be filled initially by WPI faculty, and appointed by the Provost following an open nomination and interview process.

BUDGET AND BUDGET JUSTIFICATION

Funding of the Global School will be included in the WPI Operational Budget as part of the Annual Planning and Budgeting Process (APBP) and will combine the existing IGSD budget with new requests (**Table 1**). The needs for additional resources is described below.

Personnel
1. Dean of Global Studies*
2. Director of Operations and Finance of the Global School
3. Administrative Assistant to the Dean and to the Director of Operations and Finance
4. Administrative Assistant to the Department Head
5. Associate Director for International Risk Management
6. 6 TTT faculty in the Global School hired over a 5 year period**.
   *Funding for the Dean's Office was included in the FY19 budget.
   **The AY20 budget contains funds for the two tenure–track IGSD faculty which were approved in the APBP process last winter.

While resources for the Dean (since 2018-2019 academic year) and two new TT faculty members (for 2019-2020 academic year) have already been included in WPI operating budget, they nevertheless represent new financial commitments to the program of the Global School and have been included in the budget as such.

One month summer salary (or stipend) is requested for faculty that will hold the following roles:
1. Head of Department of Global Studies
2. Director of Graduate and Undergraduate Programs
3. Director of Global Partnerships
4. Director of the Institute for Science and Technology for Development (InSTeD)
5. Directors of area studies initiatives

The budget assumes 2 TA positions in the first year and an increase of two in each of the following years is anticipated. Funds are requested for five PLA undergraduate students at 5 hours/week ($15/hour). Stipends are requested for 30 affiliated faculty members ($5,000/faculty).

Other operating costs
Tuition and health fees for new TAs are presented as an expense. Other operating costs include expenses associated with office supplies, travel, advisory board meetings and workshops; and subcontracts for legal, travel insurance and program evaluation.

Table 1. Projected expenditures

Expenditures	Effort in months	Year 1	Year 2	Year 3	Year 4	Year 5	Cumulative
A. Senior/Key Personnel	**Effort in months**						
Dean (New)	12.00						
Associate Dean (Rissmiller)	12.00						
Department Head (Fac)	12.00						
Exec Dir Global Projects (A. Ogilvie)	12.00						
Dir Global Partnership (Fac)	1.00						
Assoc Dir Int Risk Mgt (new)	12.00						
Ass Dir (E. Bell)	12.00						
Ass Dir (J. Wilson)	12.00						
Prog Coord (D. Fussaro)	12.00						
Prog Coord (C. Ruta)	12.00						
Dir Instead (Fac)	1.00						
Dir Global lab (S. McCauley)	12.00						
Dir Global lab (L. Dodson)	12.00						
Director UG programs (K. Wobbe)	1.00						
Director G programs (Fac)	1.00						
Director Area studies (Fac)	1.00						
Director Area studies (Fac)	1.00						
TTT Faculty 1	12.00						
TTT Faculty 2	12.00						
TTT Faculty 3	12.00						
TTT Faculty 4	12.00						
TTT Faculty 5	12.00						
TTT Faculty 6							
Total Senior/Key Personnel							
B. Other Personnel	**Effort in months**						
Admin Assist to the Dean (new)	12.00						
Admin Assist to the Department Head (new)	12.00						
Admin Ass (R. McKeogh)	12.00						
Admin Ass (N. Fay)	12.00						
Admin Ass (D. Farmer)	12.00						
Dir of Finance and Operations	12.00						
TAs (2, increase of 2 every year)							
PLAs 5 students at 70 hours	5.00						
C. Fringe Benefits (27.2% of faculty/staff salaries)							
Total Personnel		1,356,330	1,589,835	1,830,406	2,080,389	2,340,185	9,197,145
D. Equipment >$5000 per unit							
Item A.		0	0	0	0	0	0
E. Travel							
Domestic		100,000	100,000	100,000	100,000	100,000	500,000
Foreign		250,000	250,000	250,000	250,000	250,000	1,250,000
Total Travel		350,000	350,000	350,000	350,000	350,000	1,750,000
F. Participant Support Costs (PLEASE CONTACT OSP IF YOU HAVE QUESTIONS REGARDING PARTICIPANT SUPPORT COSTS.)							
Stipends for Affiliated Faculty - 30		150,000	150,000	150,000	150,000	150,000	750,000
Total Participant Support Costs		150,000	150,000	150,000	150,000	150,000	750,000
G. Other Direct Costs							
1.) Materials and Supplies		20,000	20,000	20,000	20,000	20,000	100,000
2.) Workshops		20,000	20,000	20,000	20,000	20,000	100,000
3.) Advisory Board meetings		10,000	10,000	10,000	10,000	10,000	50,000
4.) Advertising, printing, publications		10,000	10,000	10,000	10,000	10,000	50,000
7.) Subawards (Total) see categories below		60,000	60,000	60,000	60,000	60,000	300,000
		Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	
Legal		20,000	20,000	20,000	20,000	20,000	100,000
Travel Insurance		10,000	10,000	10,000	10,000	10,000	50,000
Evaluation		30,000	30,000	30,000	30,000	30,000	150,000
Subaward D		0	0	0	0	0	0
6. Other (Total) see categories below		56,972	117,184	180,852	248,048	319,060	922,116
Tuition Fee for MS(*Use Worksheet Below*)		0	0	0	0	0	0
Tuition Fee for PhD(*Use Worksheet Below*)		54,468	112,176	173,340	238,032	306,540	884,556
Health Fee (*Use Worksheet Below*)		2,504	5,008	7,512	10,016	12,520	37,560
Total Other Direct Costs		176,972	237,184	300,852	368,048	439,060	1,522,116
Total Direct Costs		2,033,302	2,327,019	2,631,258	2,948,437	3,279,245	13,219,261
Indirect		1,126,508	1,259,606	1,396,731	1,539,222	1,687,305	7,009,373

Projected Revenues

Graduate Tuition
An estimate of tuition revenues generated from new graduate programs is presented in **Table 2**. It assumes that six new Master of Sciences degrees will be gradually introduced over the next five years, each with an initial cohort of 10 students and a steady state of 20 students per degree when the program is fully developed.
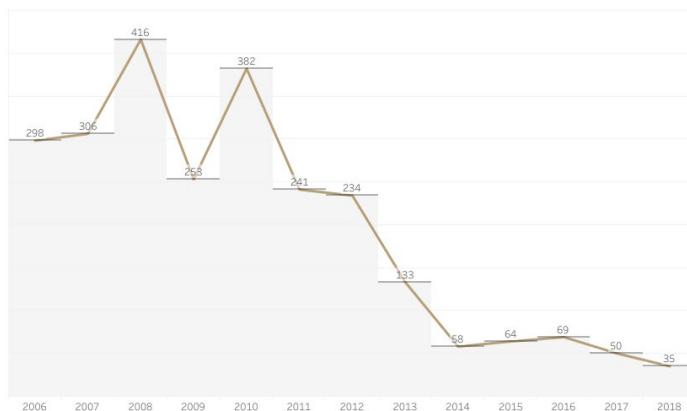
Table 2. Projected Revenues

REVENUE PROJECTIONS	Year 1	Year 2	Year 3	Year 4	Year 5	*Cumulative*
Program - Graduate						
Masters - Urban Policy/Smart Cities	10	20	20	20	20	
Masters - Science, Technology and Policy	10	20	20	20	20	
Masters - Community Engagement and Development		10	20	20	20	
Masters - Development/Humanitarian Engineering			10	20	20	
Masters - Environmental Policy				10	20	
Total Students	**20**	**50**	**70**	**90**	**100**	
Totala Credits Certificates; 10 st/year, 12 cr each	**120**	**126**	**132**	**139**	**146**	**663**
Revenues						
Tuition Fee for Masters	544,680	1,402,200	2,022,300	2,677,860	3,065,400	*9,712,440*
Tuition from credits other Masters	0	0	0	0	0	*0*
Tuition from Certificates	181,560	187,007	187,007	187,007	187,007	*929,588*
Total Revenue	*726,240*	*1,589,207*	*2,209,307*	*2,864,867*	*3,252,407*	*10,642,028*

Two certificate programs (Science, Technology and Policy; Environmental Policy) have been assumed for budgeting purposes. The model assumes that 5 students would enroll in each certificate program each year. The number of certificates awarded each year has been steadily decreasing (**Figure 5**), indicating that this particular degree may be becoming of less value as a revenue source and needs to be evaluated. At the same time, demand for Master's programs overall has been steadily growing (**Figure 6**). We anticipate that several distinct Master's programs will be introduced gradually over the next five years. The Master's programs described in **Table 2** reflect current aspirations of our faculty.

New graduate programs will be considered in areas that build on WPI's institutional

Figure 5. Awarded Certificates between 2006-2018

Degrees Awarded

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Masters	267	310	328	313	384	446	551	566	661	681	705	747	765
Total	267	310	328	313	384	446	551	566	661	681	705	747	765
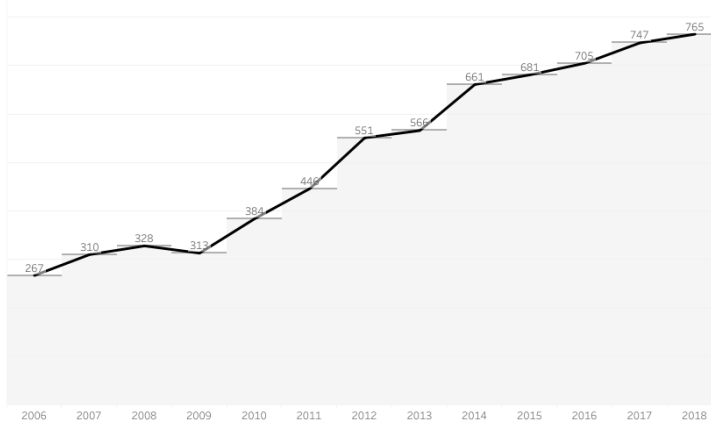
Dashboard Definitions

Graduation Year
Multiple values

Degree Level
Masters

Department
All

Major
All

Gender
All

Diversity Status
All

■ Masters

Data Source: Completions
Created by: Institutional Research
Last Updated: 10/2018

Figure 6. Awarded Masters between 2006-2018

strengths, demonstrate a strong potential for student enrollment, and bring additional revenue to WPI. Development of additional graduate programs would, over time, provide a stronger financial base for the operation of the Global School.

Capital Campaign
The President has made assurances that support for the Global School will be a part of the new Campaign. Both the new School and the inaugural Dean present opportunities for fundraising, and we are assured that donors are interested in supporting these initiatives.

Operating Budget
Incremental increase in funding for the Global School will be sought during the Annual Planning and Budget Process. The School will request support for faculty, staff and operational expenses in the same manner as all other units on campus.

Sharing of New Resources
While the details of the resource sharing still need to be worked out, it is understood that the available resources will be limited to the sum of the additional revenue from new graduate degree programs, teaching activities as well as outreach to government, industry, and development partners.

Funding for participation of available faculty in the teaching and research mission of the Global School will be provided to home departments and the participating faculty. Funding will support individual and team-taught courses, and individual/group research efforts by affiliated and core faculty.

SUMMARY

This proposal for the Global School has included brief descriptions of the need, opportunity, vision, areas of new educational, research and outreach activities, challenges, organizational structure and personnel, and the budget.

The proposed interdisciplinary programs bring together WPI's strengths in the arts and sciences, social sciences, business, engineering and global studies into undergraduate, graduate and

continuing education programs that will prepare future generations of WPI students to have even greater impact in the world.

The Global School will also introduce new demand-driven graduate programs in ways that will contribute to the long-term financial sustainability of WPI. The proposed graduate programs would enable WPI to benefit from the scholarly capabilities of our faculty who are often leading scholars in their fields but not currently engaged in graduate education. Their absence from graduate education at WPI reduces our ability to train a critical mass of graduate students. The possibility of graduate teaching will make WPI a more attractive place for top scholars in these areas.

The proposed Global School combines our existing strength in global partnerships, centers and labs with world-class undergraduate/graduate programs in order to enhance WPI's impact on local/global development.

SELECT PUBLICATIONS AND CONFERENCE PRESENTATIONS

2020

Pfeifer, G. *State, Subject, Global: Globalization, Justice, and State Power* (working book title). Transcript Press (forthcoming 2020), under contract.

2019

M. Belz. (2019) Integrating Sustainability and Global Engagement into the Curriculum, *The Interdisciplinary Global Engagement Symposium*, San Jose, Costa Rica (Jan 2019).

Pfeifer, G. (2019) "Ethnic Politics and Global Justice" in *The Global Handbook of Ethnicity.* Edited by Steven Ratuva and Joseph Rudolph. London: Palgrave (Forthcoming, 2019).

Wobbe, K and E. Stoddard (eds). (2019) *Project-Based Learning in the First-Year: Beyond all Expectations*. Stylus Publishing, Sterling, VA.

2018

Bakermans, M.H., and G. Pfeifer (2018) A model for translational science in undergraduate courses. *Frontiers in Ecology and the Environment* 16:319-321.

Foo, Katherine (2018) Examining the Role of NGOs in Urban Environmental Governance, *Cities* v. 77 (July 2018), 67-72.

Stoddard, E, and G. Pfeifer (2018) Working Towards More Equitable Team Dynamics: Mapping Student Assets to Minimize Stereotyping and Task Assignment Bias. *Proceedings from ASEE Conference: 2018 CoNECD - The Collaborative Network for Engineering and Computing Diversity Conference*. Crystal City, VA.

2017

Jiusto, S. and **S. McCauley** (2017) Energy and Place-Making in Informal Settlements: A View from Cape Town. In: V. Broto, S. Bouzarovski, and M. Pasqualetti, eds. *Ashgate Research Companion to Energy Geographies*. Chicago. 6th edition.

Hager, S., B. Cosentino, M. A. Aguilar, M.L. Anderson, **M.H. Bakermans**, T.J. Boves, et al. (2017). Continent-wide analysis of how urbanization affects bird-window collision mortality in North America. *Biological Conservation* 212: 209-215.

2015

Elmes, M., Mendoza-Abarca, K, and **Hersh, R**. (2015) "Food Banking, Ethical Sensemaking, and Social Innovation in an Era of Growing Hunger in the United States, *Journal of Management Inquiry*, 25(2).

2013

Jiusto, S., J. Stephens, and **S. McCauley** (2013) Integrating shared action learning into higher education for sustainability. *Journal of Sustainability Education.* Vol. 5.

McCauley, S. and J. Murphy (2013) Smart growth and the scalar politics of land management in the greater Boston region, USA. *Environment and Planning A*. 45(12): 2852-2867.

2012

McCauley, S. and J. Stephens (2012) Green Energy Clusters and Socio-Technical Transitions: Analysis of a Sustainable Energy Cluster for Regional Economic Development in Central Massachusetts, USA. *Sustainability Science*. 7(2)

APPENDIX A

SCOPE OF RESPONSIBILITIES OF THE DEAN OF THE GLOBAL SCHOOL

Worcester Polytechnic Institute has embarked on a plan to unify its global educational programing, expand its global partnerships, and elevate its impact to become the premier global polytechnic university. To accomplish this mission, WPI is launching the Global School under new leadership.

The Dean of the Global School will assume responsibility for promoting and enhancing WPI's existing global programing and for developing new initiatives consistent with our vision for the School. We envision a Global School which will dramatically increase WPI's ability to address critical global challenges through knowledge generation and collaborations across the WPI campus, the wider academy, and with communities and organizations around the world.

The first step in achieving this vison is leading the integration of our existing undergraduate and graduate offerings: The first-year Great Problems Seminar, the Global Projects Program, the International and Global Studies major and our area studies minors (esp. China Studies, Latin America Studies, etc.) and Graduate Programs in related areas. We also envision opportunities for development and growth in the undergraduate and graduate curricula in areas such as civic engagement, smart cities and urban policy, sustainability, economic development and public health and social justice. In addition, the WPI Strategic Plan calls for the Global Projects Program to provide off-campus project experiences to all undergraduates, which requires additional growth in the program to keep pace with growth in the student body. In leading this effort, the Dean will work closely with the Associate Dean and the Executive Director of the Global Projects Program to develop project center opportunities and to ensure that policies and practices are in place to safeguard the health and welfare of all program participants. The Dean will also work with Undergraduate Studies to expand offerings in the Great Problem Seminar to make this first-year project experience available to more students.

WPI aspires to provide students with the tools they require to contribute to society as effective global citizens. We envision a Global School that will offer undergraduate and graduate opportunities for global learning and the development of intercultural competencies regardless of the major or program in which they are enrolled. To accomplish this goal, the Dean must collaborate with the Deans of Engineering, the Arts and Sciences, and Business to provide all faculty with opportunities to participate in global education and research. Our vision for the Global School and the University cannot be met without the participation of faculty from disciplines and departments across the University. The Dean must be prepared to work collaboratively with the faculty and staff in the Global School to envision, plan, support and execute new initiatives in education and research at WPI.

The Dean will promote the visibility of the School by guiding the research and teaching mission of the School. To this end, the Dean will participate actively in the hiring of faculty and in their professional development. The Dean will participate in decisions regarding faculty evaluations, tenure and promotion.

With the opening of the Foisie Innovation Studio, WPI has also opened the Global Lab as a center for innovative research, documentation and dissemination of WPI's global impact. The Dean will work with the Lab's director(s) to promote its research and visibility, increase opportunities for

faculty and students to work in the Lab, and achieve its full potential as a collaborative hub at the center of our global programs.

The Dean is also expected to take the lead in implementing and developing existing and new global partnerships to support graduate and undergraduate education and research. WPI currently has a significant network of Global Project Centers, but a comparatively small number of student exchange programs, and several international research collaborations. The Dean will work with the Deans of Engineering, Arts and Sciences and Business to enhance opportunities for faculty exchange and collaborative research with other institutions. The Dean should seek to bring new global resources to campus, whether through international scholars in residence, visiting NGOs, or collaborative programing with our International House.

The Dean of the Global School is expected to recruit members of an advisory board to lend external expertise to the Dean and faculty of the School. The advisory board can assist in refining the School's vision and in making recommendations for growth areas and new initiatives.

Finally, the Dean is expected to work collaboratively with university leadership to support the mission of WPI and advance the strategic goals of the School in tandem with those of the University. The Dean will represent WPI to external audiences including global partners, alumni, donors, peer institutions and professional organizations. The Dean will foster high impact teaching and research, and be an advocate for the faculty to internal and external audiences. The Dean will oversee day-to-day operations of the school, including hiring with respect for WPI's goals of diversity and inclusion, budget planning and supervision, faculty and staff development, and the strategic development of the Global School.

Committee Business

Date: April 11, 2019
To: WPI Faculty
From: Committee on Information Technology Policy (Prof. Paffenroth, Chair)
Committee on Governance (Prof. Spanagel, Chair)
Re: Motion to establish a WPI Research Data Retention and Maintenance Policy

Motion: The Committee on Governance and the Committee on Information Technology Policy recommend, and we move that a new WPI Research Data Retention and Maintenance Policy (included as an attachment to this motion) be adopted by the WPI faculty.

Rationale: Currently WPI has no formal research data retention policy in place. However, researchers have very specific obligations to record, maintain and retain research records, and to make those records available for grant monitoring and auditing purposes, as well as to enable investigators and the University to respond to questions of research integrity and stewardship. At the same time, the University and its researchers are accountable for ensuring the integrity of, and access to, research data and materials and documents.

The purpose of the proposed Policy is to have in place systems and procedures for maintaining essential Research data in order to protect researchers, students, trainees and the University. The Policy ensures accountability in sponsored research projects and research integrity in all research conducted at, or under the auspices of, the University. This Policy assures that research data are appropriately recorded and archived, and are available for review under appropriate circumstances.

Research data is at the very core of research quality and integrity, and it is vital that robust research data management policies and procedures are in place to ensure that research conducted by and under the auspices of WPI meets the highest standards to comply with legislative, regulatory, audit, funding body, partner (stakeholder) and internal requirements. The proposed policy underlines the University's commitment to support research integrity, by highlighting the importance of the management of research data to good governance and best practice.

Specifically, the proposed policy clarifies that all datasets required by faculty which are kept on WPI research storage arrays will be maintained indefinitely unless deleted by faculty or students with access to the data. It also ensures:

- *Compliance with the terms of sponsored project agreements*
- *The rights of researchers to their data*
- *Confidentiality of research data, where appropriate*
- *Compliance with applicable state and federal laws and regulations*

WPI Research Data Retention and Maintenance Policy

1. Purpose

Researchers have certain obligations to record, maintain and retain research records, and to make those records available for grant monitoring and auditing purposes, as well as to enable investigators and the University to respond to questions of research integrity and stewardship.

The purpose of this Policy is to have in place systems and procedures for maintaining essential Research data in order to protect researchers, students, trainees and the University. The Policy ensures accountability in sponsored research projects and research integrity in all research conducted at, or under the auspices of, the University. This Policy assures that research data are appropriately recorded and archived, and are available for review under appropriate circumstances.

The University and its researchers are accountable for ensuring the integrity of, and access to, research data and materials and documents. This responsibility continues even after researchers who originally collected those data and materials have left the University.

All datasets required by faculty which are kept on WPI research storage arrays will be maintained permanently unless deleted by faculty or students with access to the data. Microsoft one drive is not a long-term storage option for research data since it is backed up by Microsoft for 30 days only.

2. Policy Scope

WPI's legal responsibilities with respect to access and retention of data generated by research extend to research conducted with WPI's own funds, as well as to research conducted with funds received by WPI from federal or other sources.

This Policy does not address ownership of intellectual property, which is governed by WPI's Patent and Invention and Copyright Policies https://www.wpi.edu/about/policies .

3. Audience

All Principal Investigators (PIs), all WPI faculty members, staff members, students, and all other members of WPI's research community.

4. Research Data and Materials: Definitions

Research Data include recorded, tangible, or intangible research information regardless of form or the media on which it may be recorded that is created or collected in the process of performing research, whether supported by University resources or by external funders.

Research Data and Materials include, but are not limited to, the following: computer software (computer programs, computer databases, and documentation thereof); materials such as unmodified and modified biological specimens; original or modified biological and environmental samples, gels, spectra, cell lines, reagents, protocols; new or modified chemical entities; laboratory notebooks and notes of any type; materials (e.g., applications, outreach/advertising materials, consent forms, survey routines/questionnaires and debriefing

scripts) submitted to and/or approved by WPI's Institutional review Board (IRB) or other research oversight committees; photographs; films; audio recordings; digital images; algorithms; graphs; charts; numerical raw experimental results; instrumental outputs; other deliverables under sponsored agreements; intangible data such as statistics, findings, conclusions, other deliverables under sponsored agreement; and any other records of, or in any form that could be used for, reconstruction and evaluation of reported or otherwise published results of research.

5. Administration

The Chief Information Officer and the Executive Director of Research Computing are the individuals in charge of the administration of this Policy and the implementation of relevant processes and procedures.

Attached as an Appendix to this Policy is a Data Retention Schedule that is the initial maintenance, retention and archiving schedule for electronic records of Worcester Polytechnic Institute.

6. Policy Responsibilities

WPI's responsibilities with respect to research data include, but are not limited to:
1. complying with the terms of sponsored project agreements.
2. ensuring the appropriate use of project resources.
3. protecting the rights of researchers, including, but not limited to, their rights to access data from research in which they participated.
4. securing intellectual property rights.
5. facilitating the investigation of charges, such as research misconduct or conflict of interest.
6. maintaining confidentiality of research data, where appropriate.
7. complying with applicable state and federal laws and regulations.

The PI's responsibilities with respect to research data include, but are not limited to:
1. ensuring proper management and retention of research data in accordance with this Policy.
2. establishing and maintaining appropriate procedures for the protection of research data and other essential records, particularly for long-term research projects.
3. ensuring compliance with program requirements.
4. maintaining confidentiality of research data, where appropriate.
5. complying with applicable state and federal laws and regulations.

7. Retention

Research data must be retained for a minimum of three years after the final report for the project period has been submitted or, for non-sponsored projects, a minimum of three years after the project has ended and, if applicable, the budget reconciled.

In addition, any of the following circumstances may justify longer periods of retention:
1. Research data and other project records must be kept for as long as may be necessary to protect any intellectual property resulting from the work.

2. If litigation or other dispute resolution, claims, financial management review, or audit related to the research project is started before the expiration of the three-year period described above, or if such actions are commenced after the three-year period but before the relevant data and records have been

destroyed, then the research data and other project records must be retained until all such litigation/dispute resolution, claims, financial management review, or audit findings involving the records have been resolved and final action has been taken.

3. If any allegations regarding the research arise, such as allegations of research misconduct, then research data must be retained consistent with WPI's Data classification and Usage Policy (https://www.wpi.edu/about/policies) or as otherwise instructed by WPI's Office for Vice Provost for Research or Office of General Counsel consistent with WPI's Research Misconduct Policy.

4. If a student is involved, then the research data and other project records must be retained at least until the student's degree is awarded (or the student otherwise leaves WPI) and any resulting papers are published.

5. If the research is funded by an award to or through a contract with WPI that includes specific provision(s) regarding ownership, retention of, and access to technical data, then the provision(s) of that agreement will supersede this Policy.

6. Research data from human participant research studies must be maintained consistent with the IRB guidelines.

7. If other regulations, federal oversight, sponsor policies or guidelines, journal publication guidelines, or other University policies require longer retention, then all applicable sources must be reviewed, and the research data must be kept for the longest period of time applicable.

WPI encourages faculty members, staff members, and students to retain only the data that is needed, to periodically review all the data collected, and discard the information that is no longer necessary to retain. The Academic Research Computing (ARC) team will provide reports for the faculty and students to quickly assess the location, size and type of files under their jurisdiction.

7.0 Approval and Revisions

Approved by Committee on Information Technology Policies (CITP) on March 13, 2019

Approved by the Committee on Governance (COG) on March 25, 2019

Approved by WPI's Vice Provost for Research on xx/xxxx.

This program will be reviewed and updated as needed, at least annually.

Appendix - Data Retention Schedule

Functional Area	Data Class	Record Types	Retention	Backup and Archive
Research	Non-Sensitive	unstructured data, data destined for public domain.	*Permanent	Up to 6 years or up to 3 years after the final report to Granting agencies (barring any litigation or research misconduct)
	Sensitive	Research data that is NOT identifiable or protected under a Confidentiality Agreement. Research awards notifications (time sensitive); RFP processes (time sensitive);	Permanent	Up to 6 years or as required by granting agencies or Federal and State laws.
	Confidential	Identification Numbers (Social Insurance Number (S.I.N.), Award Number); Human participant information (demographic and personal); Unpublished research information after it has transitioned to administrators (grant applications, grant proposals); Research data that is identifiable (i.e. includes participant identifiers); Information which could affect patent processes, proprietary data, and intellectual property; Contracts and agreements; CVs.	Permanent	Up to 6 years or as required by granting agencies or Federal and State laws.
	Data under DUA (data usage agreement)	Collaboration with External companies, export control (Itar) which might require the data to be deleted at the completion of the project	DUA Specific	DUA Specific

	Intellectual Property	Intellectual Properly & Trade Secrets	Life of trade secret	Up to 6 years or up to 3 years after the final report to Granting agencies (barring any litigation or research misconduct)

*(Recommended to remain on the main storage arrays. Should not be deleted)

Date: April 11, 2019
To: WPI Faculty
From: Committee on Information Technology Policy (Prof. Paffenroth, Chair)
Committee on Governance (Prof. Spanagel, Chair)
Re: Motion to establish an Academic and Research Computing (ARC) User Account Policy

<u>Motion:</u> The Committee on Governance and the Committee on Information Technology Policy recommend, and we move that a new Academic and Research Computing (ARC) User Account Policy (included as an attachment to this motion) be adopted by the WPI faculty.

<u>Rationale:</u>
WPI currently provides many high performance computational and data storage resources for the purpose of supporting legitimate academic and research activities at the University. Despite the importance of these resources and their widespread use among WPI faculty members, staff members, students, and other members of WPI's academic and research community, WPI currently has no formal ARC user account policy in place. The absence of such a policy has created confusion among users on all matters ranging from establishing to properly using accounts. The proposed policy (included as an attachment to this motion) eliminates this confusion, as described below.

The proposed policy outlines the proper use of these computational and data storage resources and requires all users to familiarize themselves with the procedures and processes described in the policy. The policy clearly describes the procedures by which academic and research accounts are and should be approved, created, maintained, secured, and removed.

The proposed policy also articulates ten principles of accountability to which all account-holders must adhere. It clearly describes conduct and usage that is considered to abuse ARC resources and outlines the steps that will be taken when such abuses are discovered.

Academic & Research Computing User Account Policy

1. Purpose

The purpose of this policy is to ensure appropriate use of WPI Academic & Research Computing (ARC) user accounts. All users (referred to herein as "users") must read and understand the WPI Academic & Research Computing policy outlined below before using any computing or storage resources provided by ARC.

All users of ARC resources are also required to read and understand the WPI Acceptable Use Policy (AUP), as well as other (https://www.wpi.edu/about/policies) institutional security policies governing use of data.

2. Policy

An Academic & Research Computing (ARC) user account provides access to various ARC computer systems, networks, applications, data, and/or other technology assets at WPI. By using any ARC resources, the user agrees to abide by the ARC usage policy, and to use ARC resources in a responsible and ethical manner. Violations of the ARC usage policy or WPI Technology Policies can result in removal of access to ARC resources, the reporting of suspicious activities to the appropriate authorities, and disciplinary action taken according to the appropriate disciplinary policy.

This Policy, WPI Acceptable Use Policy, and other IT policies and procedures constitute the base level of policies, procedures, and security rules around ARC resources. Additional requirements, policies, procedures, and security rules governing the use of specific ARC resources may exceed those found in the WPI AUP or IT policies and procedures.

3. Audience

All Principal Investigators ("PIs"), all WPI faculty members, staff members, students, and all other members of WPI's academic and research community.

4. Definitions

- Academic & Research Computing (ARC) is a division of Information Technology that supports Academic and Researching computing needs at WPI.
- ARC Resource Account is an account or access to specific resources or data on an ARC-managed system.
- WPI Active Directory System (AD) is a system that maintains credentials for access to resources.
- Sponsor is a WPI Principle Investigator (PI), faculty member, or staff member who has the authority to grant access to specific ARC resources.

5. Policy Implementation

Account Approval

Accounts and access to ARC resources are "sponsored" by an appropriate Research PI, faculty and/or staff member. Account and access requests are made by, or under the direction of, the sponsor by emailing arcaccount@wpi.edu. All account requests are reviewed by the ARC team, and resource requests are granted on an "as needed" basis. A sponsor can only grant access to those resources and data for which they have privilege to do so.

Account Creation

- A user identifier (username) and an associated password are required of all ARC users. Usernames and passwords are managed through the WPI Active Directory (AD) system, and must conform to password requirements (length, strength, duration between changes) enforced by WPI.
- An ARC Resource Account will be provided based on the WPI AD credentials and may be used only by the person who registered for the account.
- Each ARC account holder is responsible for keeping their login credentials secret. These credentials include, but are not limited to, passwords and private FULL DESCRIPTOR (SSH) certificates.
- Users are not permitted to share account credentials with anyone under any circumstances. The ARC systems provide many mechanisms for sharing data and computer resources with collaborators without the necessity of account sharing.

Account Maintenance

- Passwords must be periodically updated consistent with WPI policies.
- Sponsors must verify approval for all ARC accounts at least once every 365 days. If a sponsor has not verified approval for an account within this time period, ARC will revoke approval. In such a case, the sponsored account holder must either obtain approval or select a new sponsor to continue using ARC resources.

- Users should promptly inform ARC of any changes in contact information.

Account Removal

- When a user leaves the University, their WPI credentials are deactivated and access to ARC resources are terminated.
- Student accounts may be deactivated and/or students may have their access to specific resources removed upon request by the student's faculty advisor or account sponsor. When a student account is deactivated, data will remain in the student's directory for 90 days. If the PI

wants to retain the data, the PI should have it moved or copied to the PI's directory. Any data not transferred in this way within 90 days will be deleted.

- Any and all accounts may be suspended whenever a security event occurs in which resources may be compromised.

Account Security

- Research Data that is classified as "Restricted Use" under the [Data Classification and Usage Policy](#) must be encrypted at rest and in transit, and is subject to all other requirements described in that policy.

- Users must immediately notify infosec@wpi.edu and the ARC team, archelp@wpi.edu, immediately upon becoming aware that any of the accounts used to access ARC resources have been compromised.

- Upon actual or suspected loss, disclosure, or compromise of the user's password, account holders must immediately notify archelp@wpi.edu and infosec@wpi.edu.

6. Accountability

Users granted access to ARC resources must adhere to the following principles:

- Principal Investigators are responsible for ensuring that WPI policies, procedures, and security rules are followed for their research teams and organizations, and for ensuring that ARC users working under their supervision fulfill these responsibilities.

- Users are accountable for their actions. Violations of WPI, IT, or ARC policies, procedures, and security rules may result in loss of resource access and/or applicable administrative sanctions or legal actions.

- The proper use of the tools each computer system provides, and the confidentiality of any sensitive information is entrusted to users.

- ARC resources must not be used for illegal or malicious purposes such as harassment, disrupting communications or services, unauthorized monitoring of communications or crypto currency mining.

- Users must refrain from unethical use of ARC resources, including unauthorized use of computer accounts and resources assigned to others, use of computing facilities for private business or political purposes or private gain, academic or scientific dishonesty, or violation of software license agreements.

- Users must respect the confidentiality and privacy of individuals whose records are accessible to the user in accordance with ARC/WPI policy, WPI ethical standards, and state and federal laws and regulations.

- Users should immediately report any suspected breach of security, policy violation, or suspicious activity to infosec@wpi.edu and their supervisor, PI, or sponsor.

- No attempt should be made to subvert or circumvent any system security features.

- No attempt should be made to subvert or circumvent any system that allocates resources.

- All users should be aware that all computer activity and files on these systems may be monitored by WPI system administrators and appropriate authorities.

Accounts may be terminated by ARC/WPI staff for failure to follow these principles.

Abuse of ARC resources

ARC resources are abused by any user who negatively impacts any ARC resource by;

- making the resources difficult for others to use.
- exhausting or placing an undue demand on shared resources.
- circumventing established controls to their benefit.

If a user is found abusing ARC resources in any way, the following steps will be taken;

- After the first offense, the user will be directed to the appropriate tutorials.
- After the second offense, an email warning will be sent to the user. Computational simulations or system access may be suspended until the user meets or corresponds with ARC staff regarding the incident.
- After the third offense, the user's access to ARC resources will be suspended indefinitely.

7. Enforcement

Any person who violates any of the measures found in this policy will be subject to the same disciplinary actions outlined in WPI's Confidentiality Agreement for employees, or the Acceptable Usage Policy and Code of Conduct for students.

8.0 Approval and Revisions

Policy Category: Academic and Research Computing
Policy Approved By: Committee on Information Technology Policy (CITP) on March 13, 2019
Policy Approved By: Committee on Governance (COG) on March 25, 2019
Policy Reviewed Annually By: Exec. Director Academic and Research Computing
Related University Policies: AUP
Data Classification and Usage Policy
Last Modified: March 10, 2019

Date: April 11, 2019
To: WPI Faculty
From: Committee on Academic Policy (D. Olinger, Chair)
Undergraduate Outcomes Assessment Committee (J. DeWinter, Chair)
Re: Motion to replace WPI Undergraduate Learning Outcome #8

<u>**Motion**</u>: The Committee on Academic Policy (CAP) and the Undergraduate Outcomes Assessment Committee recommend, and we move, that the current Undergraduate Learning Outcome #8 language be replaced by a learning outcome addressing global and intercultural competency, as described below.

<u>**Details of the motion**</u>:

Currently, WPI has ten undergraduate learning outcomes that were approved by the Faculty in 2004.

Graduates of WPI will:

1. have a base of knowledge in mathematics, science, and humanistic studies.

2. have mastered fundamental concepts and methods in their principal areas of study.

3. understand and employ current technological tools.

4. be effective in oral, written and visual communication.

5. function effectively both individually and on teams.

6. be able to identify, analyze, and solve problems creatively through sustained critical investigation.

7. be able to make connections between disciplines and to integrate information from multiple sources.

8. be aware of how their decisions affect and are affected by other individuals separated by time, space, and culture.

9. be aware of personal, societal, and professional ethical standards.

10. have the skills, diligence, and commitment to excellence needed to engage in lifelong learning.

CAP is proposing to **remove** the current outcome #8:

Graduates of WPI will be aware of how their decisions affect and are affected by other individuals separated by time, space, and culture.

That removal will be **replaced** with a new learning outcome specifically addressing global and intercultural competency:

Graduates of WPI will demonstrate global and intercultural competency by developing the capacity to identify, explain, and critically analyze the forces (such as cultural, historical,

political, economic) that shape the self and others as they engage with local and global communities.

Rationale:
The world demands more than knowledge; it requires understanding across boundaries of nation, ethnicity, language, gender, religion, and class. The ability to recognize the meaning of commonalities and differences and then navigate them comes not from a single course or even a set of courses, but rather from a life-long process. The WPI experience can provide the foundation to pursue this continuing exploration.

While the current undergraduate learning outcome #8 addresses competencies in this area that WPI graduates should achieve, it suffers from a lack of clarity and is difficult to assess. The proposed new learning outcome language is the result of extensive work by the Global and Multicultural Competency Taskforce[1], which was established by the Undergraduate Outcomes Assessment Committee (UOAC) in spring 2017 and submitted a final report to CAP and UOAC in fall 2017. One of the Taskforce's most significant conclusions was that "…the current learning outcome is not sufficiently specific as to be meaningful; is not aligned with current and best practice; and is not measurable for assessment purposes."

The Taskforce developed the new learning outcome language after extensive research into both scholarly and institutional definitions of the terms "intercultural competency" and "global competency", and current learning outcomes at peer institutions that address one or both of these competencies. Global and intercultural competency refers to the skills, knowledge, and dispositions enabling one to engage in open, peaceful, and productive interactions with diverse peoples and ideas on the basis of a shared respect for human dignity.

After much discussion, the Taskforce arrived at the proposed new language, which more accurately describes the skills and competencies that we wish our graduates to have. It is measureable ("will demonstrate…competency") and provides a mechanism by which competency can be assessed ("…the capacity to identify, explain, and critically analyze…"). The Taskforce recommended that the language of the new learning outcome include both global (referring to challenges that are not bound by geopolitical location but that affect people around the world) and intercultural (dynamics associated with interactions between people of different cultures) competency, because the curriculum at WPI allows multiple pathways to achieve the corresponding learning outcome. For example, participation in the Global Projects Program may be a good mechanism for the achievement of global competence, while other experiences (including coursework) may facilitate the sorts of study and experiences that foster intercultural competency.

Pathways to achieving the new learning outcome:
There are a number of mechanisms already in place at WPI whereby students engage in activities that are likely to help them achieve global and intercultural competency. These include, but are not limited to, participation in the Great Problems Seminars; completion of project work at one or more of the many off-campus project centers; and coursework, especially in the Humanities &

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[1] The members of the Taskforce were Michael Brooks ('19), Leslie Dodson, Michael Elmes, Aarti Madan, Anne Ogilvie, Jennifer Rudolph, Aaron Sakulich (Chair), and Seth Tuler.

Arts and Social Science & Policy Studies departments. The Taskforce recommended, and UOAC has discussed, other pathways for students to achieve the learning outcome, but at this time we are not proposing any curricular changes, new activities, or additional requirements for students. Our intent is to gather information on how successful our current requirements and opportunities are in helping students to achieve global and intercultural competency, and to use that information to explore opportunities for improvement as necessary.

Assessment:
When the faculty approved the original set of Undergraduate Learning Outcomes in 2004, they also approved an assessment plan. That plan identified data sources and criteria for measuring WPI student achievement of this particular learning outcome. The full assessment plan will be accessible on the Faculty Governance website under the materials for the Undergraduate Outcomes Assessment Committee (UOAC).

The Task Force did not develop an assessment plan and UOAC will take up this next step in its work to revise the assessment plan for all of the learning outcomes.

For the original Outcome #8, the assessment used course completion in Humanities and Arts and the Social Sciences along with selected questions from the National Survey of Student Engagement (NSSE). The plan also asked for regular comparison between the mean response of WPI students (graduating seniors) and graduating seniors from our AITU peer institutions who participated in the NSSE survey on some relevant questions.

As a starting point, UOAC will continue to use the NSSE survey as part of the assessment for student achievement of the new learning outcome. We note that the NSSE Survey has changed significantly since the assessment plan was adopted in 2004 but the survey still includes relevant questions. For example, graduating seniors are asked:

During the current school year, about how often have you done the following?
- Included diverse perspectives (political, religious, racial/ethnic, gender, etc.) in course discussions or assignments.

During the current school year, about how often have you had discussion with people from the following groups?
- People of a race or ethnicity other than your own.
- People form an economic background other than your own
- People with religious beliefs other than your own
- People with political views other than your own.

Which of the following have you done or do you plan to do before you graduate?
- Participate in a study abroad program

The Undergraduate Outcomes Assessment Committee will also consider the following opportunities for assessing achievement of the global and intercultural competency learning outcome:

- Discussing with CAP and the IGSD the possibility of including global and intercultural competency as a learning outcome for the IQP
- Discussing with the Humanities & Arts and Social Science & Policy Studies departments the possibility of assessing global and intercultural competency in appropriate courses and some Inquiry Seminars and Practicums
- Using the AAC&U VALUE rubrics on Intercultural Competence and/or Global Learning to assess artifacts such as course assignments, project reports, and ePortfolios.
- Adding a question related to global and intercultural competency to the Student Report on IQP Learning and Advising, the Advisor Report on IQP Learning, and alumni surveys that address learning outcomes.