WORCESTER POLYTECHNIC INSTITUTE
September 2, 2021

To: The WPI Faculty
From: Mark Richman
            Secretary of the Faculty

The first Faculty meeting of the 2021-2022 academic year will be held on **Thursday**, **September 2, 2021** at 3:15pm via Zoom (join after 3:00 pm at https://wpi.zoom.us/j/96253667972).

1. Call to Order   M. Richman

    - Approval of the Agenda
    - Consideration of the Minutes from May 27, 2021

2. Welcome   M. Richman

3. President's Report   L. Leshin

4. Committee Business:

    Committee on Academic Operations (CAO)   L. Titova
    - August 2021 Undergraduate Student Graduation List

    Committee on Graduate Studies and Research (CGSR)   D. Korkin
    - August 2021 Graduate Student Graduation List

5. Introduction of New Faculty Members (each brief and _understandable_)   W. Soboyejo
                                                                          M. Richman

    - Department Heads/New Faculty Members (in their own words)

6. Brief Reports
    - Awareness of Student Mental Health   J. Sanbonmatsu
    - What happens when a student in my class tests positive?   J. McNeill

7. Provost's Report   W. Soboyejo

8. Closing Announcements

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WORCESTER POLYTECHNIC INSTITUTE
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Detail:

1. <u>Call to Order</u>
The ninth Faculty meeting of the 2020-2021 academic year was called to order at 11:00 am on Zoom by **Prof. Dominko** (BBT). The meeting agenda (as modified to remove COG's annual report on credits delivered) and the consent agenda (including the minutes from May 6, 2021) were approved.

2. <u>Committee Business</u>
<u>Committee on Academic Operations (CAO)</u>:
Prof. Mathisen (CEE), on behalf of CAO, moved that the Registrar's list of undergraduate candidates as distributed be approved for May 22, 2021 graduation. **Dean Heinricher** explained that the list contains only students who have completed their degree requirements, while by contrast participation in the graduation ceremony does not guarantee that the student has met the requirements. **Pres. Leshin** pointed out that diplomas will be mailed only to students who have met the requirements. The motion **passed**.

<u>Committee on Graduate Studies and Research (CGSR)</u>:
Prof. Korkin (CS), on behalf of CGSR, moved that the Registrar's list of graduate candidates as distributed be approved for May 20, 2021 graduation. The motion **passed**.

<u>Committee on Governance (COG)</u>;
Prof Richman (AE) recognized Prof. Tanja Dominko, who will be completing her term as Secretary of the Faculty on June 30, 2021.

When I first visited Tanja in the faculty governance office after she took over as our Secretary of the Faculty, it was in early July 2018, and I'd made the mistake of not responding to an email she'd sent to me a few days earlier. When I got there, she was throwing out a pile of open boxes filled with stuff that looked vaguely familiar.

"Wait a second," I said. "I think those belong to me." And she just looked back at me with this fun-loving but determined smile, and said very respectfully, "Not any more." It was all very collegial.

And that's Tanja in a perfect nutshell. Good natured. Hands-on. Efficient. And of course….punctual. Very. Punctual.

There's a joke in WPI faculty governance that goes like this: What does it mean when the faculty shows up for a meeting and Tanja's not there? It means that 200 people are wrong about the starting time.

Tanja's efforts as Secretary of the Faculty simply filled every space available, whether they opened to her by design or out of sheer necessity. When we were about to abandon the campus in March 2020, she hastily organized an emergency faculty meeting, overcoming all the challenges of our very first remote session. Despite all the many uncertainties, beginning with Tanja's spirit as our example, the meeting exuded a positivity on the part of the faculty that signaled our strength to overcome whatever challenges awaited us.

In those early days of the pandemic, Tanja responded, not by worrying, but by collecting supplies from labs across the campus that could be used by local health providers. She played an everyday role in WPI's effort to sterilize homemade masks. She collected summaries of vital information that she sent out by email as friendly newsletters. And - my sentimental favorite - she posted her own photos demonstrating that our campus was alive and beautiful even if we could not be there to experience it.

A full year later, faculty governance is stronger than ever, not despite of the circumstances created by COVID, but because Tanja has demonstrated that we have the strength to thrive in the face of those and any other obstacles. She has taught us how to conduct our regular business under these most irregular circumstances without missing a detail. But those details are just the backdrop to crowning achievements

so numerous they are in danger of seeming routine. From the discomfort of Zoom, Tanja led us as we approved the formation of not one, not two, but three new academic departments: Aerospace Engineering; Robotics Engineering; and Integrative and Global Studies. And in those quaint old days when we were still meeting in person – due in no small part to her quiet but painstaking work in revising the proposal to respond to faculty concerns - we approved the Global School in May 2019.

It's difficult not to process everything we've done (and not done!) in the recent past through the lens of COVID. But beginning in November of Tanja's very first year as Secretary of the Faculty we had a moment – well before COVID, mind you — that might have ended very badly for the Institution, but for Tanja's vigilance and familiarity with the norms of shared governance. Intuitively – because there were no precedents at WPI to compare - she guided the faculty through that crisis, kept us unified and staved off threats to the faculty's primary responsibilities. Under her clear-eyed leadership, she coordinated a team of faculty members that negotiated with the administration and the trustees to repair what would have been, at best, an unfortunate rewriting of the Trustees' bylaws. The outcome gave us all not only hope for future of the University, but with Tanja leading us, it also gave us confidence in the vital role to be played by faculty governance.

We're all familiar with the seemingly intractable problems in higher education, which include the erosion of tenure and academic freedom, and the exploitation of contingent faculty. In August 2018, Tanja set her eyes on this challenge, and since then has methodically overseen a three-year effort on the part of our whole faculty (both TTTs and TRTs) to solve these problem in a daring new way.

COVID only complicated matters. But Tanja was not deterred. On her watch, not only did WPI <u>not</u> lose any faculty to budget cuts, but we strengthened tenure by expanding it, and we strengthened academic freedom by extending job protections and security to our formerly contingent NTT colleagues. With those two pieces in place, the issue of full participation in faculty governance for our nontenure-track colleagues simply melted away. And like anything <u>but</u> magic, WPI has been transformed.

So, after a year of the bylaws, after <u>more</u> than a year of COVID, and after the three years of difficult campus-wide debate over tenure, security and full inclusion for our TRT colleagues, I came across a very serious quote that made me laugh out loud. Here it is: "Leaders are best measured by the peace and quiet of their times."

So on behalf of the entire WPI faculty, I express our gratitude to Prof. Tanja Domnko for her three years of service - during which we had <u>absolutely</u> no peace and <u>not a moment</u> of quiet. But what you gave us instead was the strength of your example, the clarity of your vision for faculty governance, and your determination to enhance the university even in the most challenging times. Thank you, Tanja.

Prof. Dominko explained that she had worked only toward goals strongly supported by the faculty, and she expressed her gratitude to all those who helped in accomplishing all that we have in the past three years.

Prof. Boudreau (HUA), on behalf of COG, moved that an Appendix B be added to Part Two of the Faculty Handbook to include a sample letter of appointment for Professors of Practice (PoPs), as provided in the faculty meeting materials. Prof. Boudreau pointed out that the three COG motions passed on May 6 had implications for appointments and reappointment of Professors of Practice, but the motions did not include a sample letter of appointment for them. Consistent with these motions, the proposed letter contains assurances that no PoP will be terminated without just cause, that PoPs are entitled to academic freedom, that their term lengths will be for five years with renewal subjected to COAP review, that general workload and responsibilities will be documented in writing, and that they can grieve non-reappointment through the Faculty Review Committee. The length of current five-year appointments for PoPs will remain unchanged, and, at the discretion of the Department Head, current three-year appointments will either remain unchanged or will be extended by two years. (See Addendum #1 attached to these minutes). The motion **passed**.

Prof. Dominko expressed her pride in the efforts and changes we have made to enhance the status of our teaching faculty, and she expressed her hope that our achievements will stand as an example for all of higher education in the U.S.

3. Special Reports
Faculty Activity Model, Budget Modeling, and Academic Program Evaluation: Dean Jackson; Dean King; Dean McNeill
Dean McNeill (Eng.) explained that the proposed budgeting model would allocate funds based on specific activities and performance measured by defined metrics (such as revenue generated) and defined goals (such as graduation rates) in order to incentivize desired behaviors. This approach will require robust tracking and data reporting. The primary anticipated benefit is that activities will be better aligned with our strategic goals. (See Addendum #2 attached to these minutes).

Dean Jackson (FSB) explained that the charge of the Program Performance Committee is to provide a framework by which programs can be evaluated from the perspective of delivering on the academic mission. The evaluations are

to be based on both quantifiable and qualifiable metrics that would be easily reviewed and used for continuous improvement. The evaluation process would itself involve a year-by-year assessment of how well recommendations are working. Evaluations of programs will be based on their growing, steady, or declining states, and recommendations will be made for increased, continued, or re-deployed investment. Dean Jackson anticipated that this process could be in place as soon as August or September 2021 in time for budgeting in November 2021. Programs would be evaluated objectively by program leaders and department heads. (See Addendum #3 attached to these minutes).

Dean King (A&S) explained that the charge of the Faculty Loading Model Workgroup is to look at the current faculty loads and make recommendations to better address workload. The only strong recommendation that came from the group was to call the faculty "load" model a faculty "activity" model. The group has been working for the past nine months and focused on guiding principles, activities that will count in the model, and current cost models informed primarily by data collected by Huron. The goal is that the model be transparent, equitable, and sensitive to activity indicators and quality. The model will provide knowledge of how faculty members spend their time and how their deployment aligns with departmental, programmatic, and institutional goals. Teaching (courses, projects, and advising), scholarship, and service all count in the model, and no one activity supersedes any other. Department heads have flexibility in releasing faculty from some teaching, and they have mechanisms to determine the quality of performance through annual reviews, the activity model, and professional development planning. Each faculty member will be expected to complete an activity template to be filled out by the faculty member and the department head for recordkeeping purposes. Special attention should be paid to findings that, compared to men, women spend more time on teaching and service, less time on research, and that faculty from minoritized racial groups spend more time on mentoring and diversity-related work than faculty who are white. Finally, the recommendation is that workload conditions be transparent, that credit be given for expending more effort in certain areas, and that different faculty strengths and interests be acknowledged in determining workloads. (See Addendum #4 attached to these minutes).

Prof. Sanbonmatsu (HUA) pointed out that in November, the WPI AAUP Chapter issued a statement concerning faculty workload guidelines, and asked if any of those recommendations had been incorporated into work of the Faculty Loading Model Workgroup. **Dean King** explained that those recommendations had been tabled until the committee did its initial work. Prof. Sanbonmatsu expressed his concern that faculty activities were becoming increasingly surveilled and commodified, and that the efforts so far had been done without collaboration with faculty governance. **Dean Jackson** explained that, while in this context she was thinking as a business leader, this was the opportunity to get thoughtful feedback to permit faculty to be their own best selves.

Prof. Roberts (ChE) asked about ways to balance transparency against privacy. **Dean King** emphasized that transparency related to general expectations rather than to revelations about individual personal details.

Prof. Sakulich (CEE) asked if the workload agreements reached by signed worksheets would be only between the faculty member and the department head or if the information would be used by the university to determine resource allocation, hirings, etc. **Dean King** emphasized that the information was to be shared only between faculty member and department head to ensure that the department could run properly, except in the case of a faculty grievance that might rise to the Dean. **Pres. Leshin** thought that it was important to aggregate data so we could see how departments and divisions were functioning and to shine light on inequities as they emerge.

Prof. Cowlagi (AE) wanted to know if the loading model would be specific to each department and what input has been received from department heads. **Dean King** was clear that each department would determine its own expectations, that she anticipated significant differences between departments, and that she had collected data from individual departments as input.

Prof. Billiar (BME) noted that for the past four years he has been using a highly quantitative activity model in BME. He also described a difference between activities that faculty members might want to do and activities which departments need to do, and thought that if a faculty member is heavily involved in university-wide activities, then resources should be provided to fill in appropriately at the department level. **Dean King** recognized that our first

priority is to teaching our students, and that generally faculty activities have to align with the mission of the university.

Prof. Reidinger (BME) wanted to know how the proposed model would fall within the annual report and annual review. In addition, she observed that the responsibilities for ensuring the success of our marginalized students fall overwhelmingly on our marginalized faculty members, which in turn results in increased service outside the department for these faculty members who do not receive proper credit for their efforts. **Dean King** recognized the tensions created by these situations and thought that the goal should be to permit faculty members to pursue their passions while also making sure that the department's specific needs and the faculty member's professional needs are met.

Prof. Neamtu (CS) wanted to know how activities, such as project center advising, that are done in support of the Global school and for the benefit of the whole campus would be captured as an activity by a single department that may have its own much more specific priorities. **Dean King** indicated that in her experience within Arts and Sciences, data concerning activities in support of IQPs and project centers has been collected and taken into consideration in the past.

Prof. Telliel (HUA) wanted to know if the working group had considered that inequities in loads might be unevenly distributed across departments. **Dean King** offered to meet with the HUA department to better understand the issue and she was aware that faculty in certain departments were more inclined to engage in activities that are not as easily measurable as research funding, for example.

Prof. Eddy (HUA), as a retiring member of the tenured faculty, observed that because of how separated we were, even before COVID, communication at WPI has always been a weakness. She described the enormous effort she expended last summer to prepare her fall courses for online delivery without any recognition or compensation for the extra work required. She thought that due to poor communication, she was not known to those who evaluated her, and that this was a major factor in her decision to retire. She encouraged people to be aware of such unquantifiable measures as the amount of communication any faculty member is required to juggle, and she emphasized the importance of having the time to communicate effectively with each other. **Prof. Dominko** thanked Prof. Eddy for all that she has done for WPI and apologized for all of us who have not managed to communicate our appreciation to her.

Prof. Dominko thanked the Deans for their presentations and the faculty for their thoughtful questions, and she expressed hope that the work that remains beyond these initial stages will be open and transparent.

Budget Overview for AY 2020-2021 and AY 2021-2022: VP Solomon
VP Solomon (CFO) acknowledged FAP for their hard work and guidance over the past year and a half. **Prof. Fehribach** (MA; Chair, FAP) explained the work of FAP in general terms.

VP Solomon (CFO) explained that the AY 20-21 budget was developed in spring 2020 during very uncertain times. The budget was based on assuming a 5 percent reduction in undergraduate enrollment, and a 20 percent reduction in graduate enrollment. An "essential-only" spending policy was put in place with reserves for COVID related costs and additional financial aid. In AY 20-21, our undergraduate revenues actually exceeded their pre-COVID levels, our graduate revenues were reduced but by less than assumed, we incurred $13.5M in COVID related expenses offset by $7M of federal funding, we made COVID relief payments to employees, and we funded high priority classroom and instructional upgrades. The result for the year was a $7M surplus.

VP Solomon (CFO) explained that the objectives for the AY 21-22 budget include increasing WPI's contribution level for 403B to a sustainable level, reestablishing salary and equity pools, changing the performance evaluation timeline, executing on approved faculty hires, adjusting operating the post-COVID budget including WPI Forward savings. Our new priorities are improving accessibility and affordability, making a down payment on the strategic plan, continuing COVID-related funding, opening a new academic building in Jan. 2022, and assessing and unfreezing open positions.

The parameters and assumptions for the AY 21-22 budget are as follows: operating expenses at 85 percent of pre-COVID levels; 1335 students in the first year class at a 48 percent discount rate while graduate enrollments are in slow decline; a 2.9 percent undergraduate tuition increase while graduate tuition is unchanged; a merit pool up to 2.5 percent with 0.5 percent for equity; a 9.5 percent contribution to retirement savings; hiring 10 new TTT faculty, 16 new TRT faculty and support for the tenure track for teaching faculty; unfreezing $2.6M of FY21 frozen positions; allocating $4.6M for increased access and affordability; maintaining $4M for COVID reserve expenses; and re-establishing a $3M operating contingency. (See Addendum #5 attached to these minutes).

A motion to extend the meeting by ten minutes was seconded and **approved**.

Prof. Boudreau (HUA) asked for clarification about the relation between the 16 new TRT hires and the support for the tenure track for teaching faculty. **Pres. Leshin** explained that the support for 16 TRT positions was separate from the support for the tenure track for teaching faculty.

Dean Rissmiller (GS) pointed out that VP Solomon is retiring from WPI, and he thanked him for his years of sound financial management of the University. **VP Solomon** reflected personally and positively on the significant growth and transformation of WPI since he arrived in 2005. **Prof. Fehribach** (MA), on behalf of FAP, expressed his appreciation for all of VP Solomon's work.

4. President's Remarks
President Leshin thanked Prof. Dominko for taking on the intense workload of the Secretary of the Faculty, for her dedication during the past three years, and for her collaborative spirit throughout. Pres. Leshin thanked VP Solomon for his service to WPI. She thanked the entire faculty for its determination in serving our students well. President Leshin reported that throughout the year, WPI had 350 positive tests for COVID out of about 250,000 tests. She also indicated that 75 percent of WPI employees have reported that they are vaccinated, and she encouraged anyone who has not done so already to upload their vaccination status.

Pres. Leshin reported that the Board of Trustees had unanimously and enthusiastically endorsed all the changes to our Faculty Handbook approved by the faculty related to our TRT colleagues, and she thanked Prof. Richman. Prof. Boudreau, Prof. Dominko, the TRT Council, and all others who contributed to the deep thinking that went into developing our institutional actions. Finally, Pres. Leshin thanked all those faculty members who participated in our six recent graduation ceremonies, and encouraged the faculty to get some rest during the summer.

5. Provost's Remarks
Provost Soboyejo thanked the entire WPI faculty and faculty governance for their work this year. He singled out Prof. Dominko for her three years of extraordinary work as Secretary of the Faculty. Provost Soboyejo thanked Prof. Richman, Prof. Boudreau, Prof. Dominko, and the TRT Council for their hard work on behalf of the TRT faculty. He recognized the President, the Board, and members of the administration for their commitment to this same effort, which he thought will be the hallmark of one of WPI's great accomplishments.

Provost Soboyejo thanked the Deans for presenting their reports on faculty resources with the sensitivity of academics. He explained that the intention was to create a holistic, data driven approach to our using resources in a manner that will permit all faculty members to pursue their interests with the institution's support. He echoed Prof. Eddy's emphasis on the importance of personal communication for a healthy campus life. Provost Soboyejo thanked VP Solomon for his many years of thoughtful financial management and his collaboration with FAP. Provost Soboyejo thanked the CERT team for navigating through COVID. Provost Soboyejo thanked Pres. Leshin for successfully conducting the "WPI symphony orchestra" with dedication and focus. Provost Soboyejo congratulated Dean McNeill for being named permanent Dean of Engineering and Prof. Gericke for being named the Associate Dean of Undergraduate Studies. He recognized three new interim department heads: Prof. Mattson (CBC); Prof. Olson (MA); and Prof. Rao (BBT). Finally, Provost Soboyejo encouraged all those in attendance to rejuvenate during the upcoming summer months.

6. Secretary of the Faculty's Concluding Remarks

Prof. Dominko expressed her deep appreciation for the support she had received from the entire WPI faculty over the past three years, including extra help from Profs. Boudreau and Prof. Richman. She expressed confidence in the future of faculty governance at WPI.

7. Closing Announcement

Prof. Servatius (MA) suggested that we get rid of Workday and hoped everyone would have an enjoyable summer.

8. Adjournment

The meeting adjourned at 1:05 pm.

Respectfully submitted,

Mark Richman
Secretary of the Faculty

Addendum on file with these minutes:

1. Addendum #1 - COG Motion on PoPs Letter of Appointment - Minutes 5-27-21
2. Addendum #2 - Academic Budget Modeling - Minutes 5-27-21
3. Addendum #3 - Academic Program Performance Evaluation - Minutes 5-27-21
4. Addendum #4 - Faculty Loading Model - Minutes 5-27-21
5. Addendum #5 - Budget Overview for AY 2020-21 and AY 2021-22 - Minutes 5-27-21

Date: Sept. 2, 2021
To: WPI Faculty
From: Committee on Academic Operations (Prof. Titova, Chair)
Re: Motion to approve the August 2021 undergraduate student graduation list

Motion: The Office of the Registrar reports that the following candidates have, as of August 30, 2021, completed all the requirements for the degree designated in the department or program indicated and are eligible to receive that degree. Therefore, as Chair of the Committee on Academic Operations, I move that these students be approved for August 30, 2021 graduation.

Bachelor of Arts

Interactive Media and Game Development:
  Nicola Amei Goldman
    Concentration in Technical Art

Bachelor of Science

Aerospace Engineering:
  Roberto Benjamin Clavijo
  Matthew Devlin Shriner

Biochemistry:
  Thuy Anh Thai Le
    Minor: Psychology
  Kylie Paige Sumner
    Minor: Biology
  Emily Sarah Vail

Bioinformatics and Computational Biology:
  Jordan Flores Hollands
  Parker Jahmil Simpson
    Minor: Computer Science
  Mir Sultan

Biology and Biotechnology:
  Sarah Rose Brown
  Domenica Guistine Ferrero
    Minor: Chemistry

Chemical Engineering:
  Madison E. Govaert
  Yanyi Su

Civil Engineering:
  Isaiah Aridou
  Spencer James Hoagland
  Isaac Stilwell
  Rebekah J. Vernon
  Kristophe Ngozi Zephyrin
    Double Major

Computer Science:
  Jesse Benjamin Abeyta
  Ellery John Buntel
  Thomas Brien Graham
  Wai Khumwang
  David Lloyd Martindale
  Rafael E. Pimentel
  Yared M. Taye
  Nicholas J. Wood
  Wenjing Ying

Electrical and Computer Engineering:
  James Richard McAleese
  Rosana Alexandra Pochat Garcia

Environmental and Sustainability Studies:
  Kristophe Ngozi Zephyrin
    Double Major

Management Engineering:
  Yadira Hilario
    Concentration in Operations
    Management

Management Information Systems:
  Sadie Aurora Dominguez
  Jacob Austin Schran
    Minor: Computer Science

Mathematical Sciences:
  Sarah Jayne Fleck
  Yuanchen Zhou

Mechanical Engineering:
  Connor R. Bourgeois
    Concentration in Mechanical Design
  Ana Gabriela Cano Zimmerman
    Double Major
  Nathan S. Kaplan
    Double Major
  Camden H. Kulczyk
  Thien Quoc Nguyen
  Kunjun Zou

Physics:
  Ana Gabriela Cano Zimmerman
    Double Major
  Corinne Elizabeth Rywalt

Psychological Science:
  Danielle K. Warren

Robotics Engineering:
  Arjun Gandhi
  Nathan S. Kaplan
    Double Major
  Chioma Margaret Onyenokwe

Date: Sept. 2, 2021
To: WPI Faculty
From: Committee on Graduate Studies and Research (Prof. Korkin, Chair)
Re: Motion to approve the August 2021 graduate student graduation list

Motion: The Office of the Registrar reports that the following candidates have, as of August 30, 2021, completed all the requirements for the degree designated in the department or program indicated and are eligible to receive that degree. Therefore, as Chair of the Committee on Graduate Studies and Research, I move that these students be approved for August 30, 2021 graduation.

Doctor of Philosophy

Aerospace Engineering:
Xin Tian

Biomedical Engineering:
Alycia Anne Abbott
Kianoosh Ghazi
Jonian Grosha
Emily Rose Robbins

Business Administration:
Mahtab Kouhizadeh

Chemical Engineering:
Yuhan Mei

Chemistry:
Katherine M. Pearce

Computer Science:
Sarun Paisarnsrisomsuk

Data Science:
Pitchaya Wiratchotisatian

Manufacturing Engineering:
Zhaotong Yang

Materials Science and Engineering:
Xiaotu Ma

Mathematical Sciences:
Yi Yu

Physics:
Kateryna Kushnir Friedman
Guangjiang Li

Master of Business Administration

Sharada Bhavanam

Master of Engineering

Biomedical Engineering:
Zhijie McClintick

Electrical and Computer Engineering:
Zheng Liang

Power Systems Engineering:
Kafoumba Doumbia
Jared C. Farley
Hector Duglas Granados, Jr.

Master of Mathematics for Educators

Sara Kathleen Egan

Master of Science

Aerospace Engineering:
  Kiernan Christopher Joyce
  Ian Anthony Mayer

Applied Mathematics:
  Bauyrzhan Yerzhigit

Applied Statistics:
  Jacob James Pardue

Biochemistry:
  Leila Renee Camplese
  Tristan B. Cano

Biology and Biotechnology:
  Boyuan Liu
  Krista Westermayer

Biomedical Engineering:
  Colin William Coutts

Bioscience Management:
  Richard Gabriel
  Michael A. Prata
  Anne Lorey Rusk
  Cazim Saracevic

Biotechnology:
  Gabrielle Jean Bitzas
  Nick Bizios
  Amanda Rose Iandoli
  Kim Thien Thuy Le
  Daniele Lowell Menard
  Abigayle Christine Mrozinski
  Gregory A. Porter

Chemical Engineering:
  Devin A. Hainsworth
  Max G. Moran
  Philip Smolitsky

Computer Science:
  Nicholas Andrew Delli Carpini
  Aritra Kundu
  Timothy James Loughlin
  Anand Ramakrishnan
  Roger Davis Wirkala

Data Science:
  Rahul Jakhmola
  Yueqin Liang
  Jianjun Luo

Electrical and Computer Engineering:
  Mawuli Stephen Karl Allorbi
  Franco Agustin Baudino
  Edward Pancratius Dunn IV
  Matthew Samir Farah
  Benjamin Eugene Leary
  Dario Martinovic
  Haoqi Zhang

Environmental Engineering:
  Colleen Grace Wyatt

Fire Protection Engineering:
  Victoria A. Cunningham
  Jeffrey Marquez Gonzales
  Adam M. Gribb
  Christopher David Nelson
  Nicholas Joseph Ostrowski
  Mary Elizabeth Sheehan

Information Technology:
  Pamela S. Roy

Interactive Media and Game Development:
  Qihuan Aixinjueluo
  Abdah A. St. Fleur

Management:
  Natasha W. Levey
  David Polson

Manufacturing Engineering:
  Gabriela De Jesus Rovi Ortega
  Kellsey Lynne Schaffer

Marketing and Innovation:
  Kimberly Elizabeth Elloian

Materials Process Engineering:
  Patricia Joanna Leach

Materials Science and Engineering:
  Justine Alana Davids
  Alec Geoffrey Maddaus
  Michele Claire Philpot

Mechanical Engineering:
  Edward Corey Doonan
  Christina Marie Ficaro
  Gargee Jadhav
  Malick D. Kelly III
  Mateusz Klimkiewicz
  Delssohn Lee
  Xinxiao Li
  Ricardo Llorente Ruiz
  Peter Harlan Osswald
  Lily Marie Ouellette
  Gabriel Alexis Torres Arosemena
  Kassidy Paige Utheim
  Samuel Jay Winslow

Physics:
  Edward J. Jarvis
  Megan E. Varney

Power Systems Management:
  Stephanie Ferrandino

Robotics Engineering:
  Dhirajsinh Rajendra Deshmukh
  John Dong
  Kyle Wyatt Erf
  Samantha Lee Grillo
  Dhruv Kool Rajamani
  Abhishek Ninad Kulkarni
  Xihan Ma
  Sabhari Natarajan
  Liam Patrick Shanahan
  Yang Wang
  Hao Yang

Systems Engineering:
  Dominic William Palermo
  Annika Isaac Swaim
  Derek S. Wung

Brief Biographies of New and Recently Appointed WPI Faculty Members
Fall 2021

Tenured and Tenure-Track Faculty Members

Professors of Teaching

Department of Chemistry and Biochemistry

Destin Heilman, Professor of Teaching
B.S., Microbiology, Penn State University, State College, Pennsylvania, 2000
Ph.D., Biomedical Sciences, UMass Medical School, Worcester, Massachusetts, 2006.
Visiting Assistant Professor, Worcester Polytechnic Institute, 2006-2008
Senior Instructor, Worcester Polytechnic Institute, 2008-2012
Assistant Teaching Professor, Worcester Polytechnic Institute, 2012-2013
Associate Teaching Professor, Worcester Polytechnic Institute, 2013-2020
Teaching Professor, Worcester Polytechnic Institute, 2020-2021

> Dr. Heilman is a Biochemist with sixteen years of teaching experience and extensive pedagogical innovation in both Chemistry and Biochemistry. His disciplinary research focuses on the discovery and characterization of novel virus proteins that have onco-selective toxicity. His focus on understanding these proteins has led to the development of new techniques for studying cell-selective activities and advances with novel pathways that induce programmed cell death in cancer. Leveraging his passion and talent for teaching alongside his research, he has advised over 100 MQP students with impactful projects leading to awards and publications, and propelling students into top graduate programs across the country. Dr. Heilman has developed and directed several local and national-level summer outreach programs including those dedicated to increasing opportunities for underrepresented students. He routinely delivers workshops on project-based learning, is the founder and Director of the UMMS Project Center, and was the recipient of the 2013 Trustees Award for Outstanding Academic Advising.

Department of Civil and Environmental Engineering

Soroush Farzin, Assistant Professor of Teaching
BS Architectural Engineering Melli University 2005
MS Architectural Engineering Tarbiat Modares University 2010
M.Arch and PhD in Regional Planning University of Massachusetts Amherst 2016
Assistant Teaching Professor, Worcester Polytechnic Institute (2017-2021)

> Soroush Farzin is a designer, researcher, and educator working at the interface of architecture, art, and science. Soroush Joined WPI as an Assistant Teaching Professor in the Architectural Engineering program in 2017, where he teaches Design Studios and Great Project Seminar. In WPI NeuroArch Lab, his current research focuses on adaptive architecture in understanding and regulating human emotional states. He collaborated with several architectural firms on international design competitions and projects ranging from residential complexes to airports. Before joining WPI in 2016, he was a green building researcher at the University of Massachusetts Amherst, where he earned a Ph.D. degree in Planning and a Master's degree in Architecture. In the UMass Building Technology Lab, he developed the Integrated Urban Metabolism Analysis Tool to simulate the flows of resources and quantify the overall sustainability within urban districts.

Department of Computer Science

Rodica Neamtu, Associate Professor of Teaching
B.S. and M.S., Computer Science, University of Craiova, Romania, 1991
Ph.D., Computer Science, Worcester Polytechnic Institute, Worcester, Massachusetts, 2017.
Associate Teaching Professor, Worcester Polytechnic Institute, 2017-2021

> Dr. Neamtu is a data-mining researcher who investigates how to develop and leverage groundbreaking techniques to explore time series datasets at the confluence of theoretical computer science and application domains like medicine, economics and education. She has a keen interest in tackling fundamental computing problems while also targeting the practical Big Data issues from index structures to query processing strategies. She has more than ninteen years of teaching experience in various academic institutions including Emmanuel College, Wentworth Institute of Technology and University of Craiova. She is committed to use her love and talent for teaching and research to empower others through education to make a difference in the world. Dr. Neamtu has a long history of involving underrepresented groups in research via service courses and mentoring programs.

Department of Electrical and Computer Engineering

Maqsood Ali Mughal, Assistant Professor of Teaching
B.S., Electronics Engineering, Sir Syed University of Engr. & Tech., Karachi, Pakistan, 2008
M.S., Industrial Engineering, Arkansas State University, Jonesboro, AR 2010
M.S., Environmental Sciences, Arkansas State University, Jonesboro, AR 2014
Ph.D., Semiconductor Physics, Arkansas State University, Jonesboro, AR 2015.
Assistant Teaching Professor, Worcester Polytechnic Institute, 2018-2021

> Dr. Mughal is an Electronics Engineer with eight years of teaching experience in the electrical engineering discipline as well as professional experience ranging in telecommunication, oil, and energy industries. His research interests revolve around forecasting power variability in photovoltaic (PV) systems. Currently working on developing an algorithm to detect clouds by implementing machine learning techniques. The idea behind is to detect clouds in advance and improve local and short-real-time forecasting of photovoltaic system performance. Dr. Mughal is a senior member of IEEE, and professional member of NSPE, IAENG, etc. and he review papers for Solar Energy, Environmental Progress and Sustainable Energy, and IEEE Industrial Application Society. He is also a recipient of the 2019 KEEN Rising Star award.

Department of Humanities and Arts

Esther Boucher-Yip, Associate Professor of Teaching
B.A., English Literature, University of Malaya, Malaysia, 1994
Dip. Ed., TESOL, University of Malaya, Malaysia, 1995
M.Phil., Education, University of Cambridge, United Kingdom, 1999
Ed.D., Applied Linguistic & TESOL, University of Leicester, United Kingdom, 2005
Associate Teaching Professor, Worcester Polytechnic Institute, 2016-2021

> Dr. Boucher-Yip specializes in teaching writing and communication, English, and pedagogy courses. Besides teaching, she has extensive examining and curriculum development experience. She directed the Professional Writing program and currently serves as Director of the Bangkok Project Center and the London Humanities & Arts Project Center. She has published extensively in diverse topics such as minority language maintenance, teacher agency, and English language teaching. She regularly presents her work at national and international meetings such as TESOL International and World Congress of Applied Linguistics. She is a Fellow and Chartered Linguist in the Chartered Institute of Linguists (UK). Dr. Boucher-Yip is the recipient of the 2021 Board of Trustees' Outstanding Teaching Award.

John Starosta Galante, Assistant Professor of Teaching
BS, Economics, Tufts University, 2000
MA, International Affairs, Columbia University, 2008
PhD, History, University of Pittsburgh, 2016
Assistant Teaching Professor, Worcester Polytechnic Institute, 2016-2021

> Dr. Galante is a Historian of Latin America and Migration whose scholarly work focuses on the impacts of homeland crisis on diasporic communities and networks created by transnational migration. He also examines immigrant and children-of-immigrant interactions with mainstream society to explore issues of ethnicity, race, exclusion, and belonging in North and South America. At WPI, he teaches History and International and Global Studies courses in the Humanities & Arts Department. He also leads WPI's Latin American and Caribbean Studies initiative, which seeks to diversify curriculum and campus programming while creating inclusive spaces for students from (or with origins in) that region. He is committed to helping WPI undergraduates enrich their lives and advance their careers through global and intercultural engagement.

Ryan Madan, Associate Professor of Teaching
B.A., English, UCLA, 2002
Ph.D., Composition, Literacy, Pedagogy, & Rhetoric, U. of Pittsburgh, 2012
Visiting Instructor, Worcester Polytechnic Institute, 2010-2012
Assistant Teaching Professor, Worcester Polytechnic Institute, 2012-2017
Associate Teaching Professor, Worcester Polytechnic Institute (2017-2021)

> Ryan Madan's research and teaching interests center on the ways that our institutional histories and social attitudes shape what is perceived as possible and desirable in the teaching of writing. Whether teaching students to improve their own writing practice or teaching them the disciplinary & theoretical underpinnings of the field of Writing Studies, he asks students to reflect on their unspoken assumptions about writing's role in their lives, both in school and beyond. As Director of WPI's Writing Center since 2014, he's mentored WPI student-tutors to support their peers in facing their writing challenges, a fitting role since he began his academic interest in writing pedagogy as an undergraduate Writing Center tutor at Pasadena City College in Southern California. He's published articles about composition studies in the journals *Reader*, *Writing on the Edge*, and *Harlot: A Revealing Look at the Arts of Persuasion.*

Department of Integrative and Global Studies

Courtney Kurlanska, Assistant Professor of Teaching
B.A., Anthropology, Journalism Program, Brandeis University, Waltham, Massachusetts, 1999.
M.S., Urban Studies, University of New Orleans, New Orleans, Louisiana, 2005.
Ph.D., Anthropology, State University of New York at Albany, Albany, New York, 2012.
Assistant Teaching Professor, Worcester Polytechnic Institute, 2017-2021

> Dr. Kurlanska is an economic anthropologist who conducts both interdisciplinary and applied research. Her work in livelihood studies, alternative economies, and development takes a mixed-methods approach to understand and promote holistic and sustainable strategies for addressing global problems at the local level. Her interest lies in exploring how local context shapes policy and program implementation. She has over a decade of teaching experience at a variety of institutions including the University of New Hampshire, Appalachian State University, and Rochester Institute of Technology. Her innovative and civic minded teaching has been recognized by the Center for a Public Anthropology and she strives to create a learning environment that promotes critical thought rooted in the lived experience of those both inside and outside the classroom.

Stephen McCauley, Associate Professor of Teaching

B.A. Economics, Loyola University of Maryland, 1996

M.A., Geography, University of Maryland, 2001

Ph.D., Graduate School of Geography, Clark University, Worcester MA 2009

Assistant Teaching Professor, Worcester Polytechnic Institute, 2015-2020

Associate Teaching Professor, Worcester Polytechnic Institute, 2020-present

> Dr. McCauley is a geographer who works at the interface of urban environmental research and community development & planning to advance justice-centered approaches to climate adaptation and sustainability transitions. His current projects include a strategy to mitigate extreme heat in Worcester and other US cities, and an investigation of trade-offs between multiple sectors concerned with sustainability in Massachusetts. He has advised over 70 IQPs, and finds great joy in this deeply collaborative work that spans research, mentoring and praxis. As co-director of WPI's Melbourne Project Center, he has developed partnerships in domains such as environmental education, transportation planning, and marine environmental governance. Dr. McCauley also served as an inaugural co-director of WPI's Global Lab, a position that highlights his commitment to advancing global projects at WPI as both high impact learning opportunities and avenues for positive social change.

Geoff Pfeifer Associate Professor of Teaching (Philosophy and Global Studies)

B.A. Philosophy, University of Colorado at Denver 2003

M.A. Philosophy, University of New Mexico 2005

Ph.D. Philosophy University of South Florida 2012

Assistant Teaching Professor, Worcester Polytechnic Institute, 2013-2017

Associate Teaching Professor, Worcester Polytechnic Institute, 2017-2021

> Prof. Pfeifer has been at WPI since 2011 and is both a member of the new Department of Integrative and Global Studies and he teaches for the Department of Humanities and Arts. He holds a Ph.D. in philosophy and specializes in social and political philosophy and theory, global justice, and critical pedagogies. In addition to a number of chapters in peer reviewed books, he has published articles in journals such as *Philosophy and Social Criticism, Globalizations, Human Studies, The European Legacy, Crisis and Critique, Continental Thought and Theory, Contemporary Perspectives in Social Theory*, *The Journal of Global Ethics,* and the conference proceedings of ASEE. He is also the co-editor (with West Gurley) of *Phenomenology and the Political* (Roman and Littlefield International, 2016), co-editor (with Agustin Columbo and Edward McGushin) of *The Politics of Desire: Foucault, Deleuze and Psychoanalysis* (Rowman and Littlefield. Forthcoming, 2021), and author of *The New Materialism: Althusser, Badiou, and Žižek* (Routledge, 2015). Pfeifer is also Co-Editor in Chief of *Philosophy in the Contemporary World: An International Journal*.

Elisabeth (Lisa) Stoddard, Associate Professor of Teaching

B.A., History, University of Vermont, 2001

M.S., Animals and Public Policy, Tufts University's Cummings School of Veterinary Medicine, 2008

Ph.D., Geography, Clark University, Worcester, Massachusetts, 2014.

Associate Teaching Professor, Worcester Polytechnic Institute, 2014-2021

> Dr. Stoddard is a human-environment geographer who is interested in the intersection of nature, society, and justice, particularly in the context of climate change, food systems, and environmental justice. Her work focuses on the vulnerability and resilience of food systems to climate disasters, and how we can design for climate resilience, in terms of power relations, public policy, infrastructure, location specific practices, and through community resilience. She looks at the ways in which social movements, technology, and policies can make powerful change to make food systems more resilient and just. Stoddard's interest and research on social justice extends into the classroom, including research on critical and culturally relevant pedagogies, integrating STEM and social justice in the curriculum, and in her efforts with colleagues

to create inclusive cultures and practices for learning on project teams. Stoddard and her fellow Associate Professor of Teaching, Geoff Pfeifer, have received multiple grants, delivered dozens of workshops, have published work, and collaborated with incredible staff, faculty, and student partners to develop and test a set modules and tools to create more equitable team dynamics for use by both students and faculty at and beyond WPI. Stoddard teaches in the GPS program, the Environmental and Sustainability Studies Program, and founded and directs the Farm Stay Project Center. She was awarded the 2020 Romeo L. Moruzzi Young Faculty Award for Innovation in Undergraduate Education.

Interactive Media and Game Development Program

Farley Chery, Associate Professor of Teaching
BA., Animation, Collins College, Tempe, Arizona, 2006.
M.F.A, Media Design, Full Sail University, Winter Park, Fl, 2009.
Assistant Teaching Professor, Worcester Polytechnic Institute, 2016-2021
Associate Teaching Professor, Worcester Polytechnic Institute, 2021

> Prof. Chery is a technical artist whose research areas, focus on alleviated time constraints in production, and creating knowledge in 3D animation support afro-futurist endeavors. He is most noted for creating novel approaches to character manipulation interfaces with pose prediction. The publication of his "Enhanced IK" system influenced some of the most important production artists in the animation space. He is synchronizing his interest in anti-racist empowerment with production craft to offer more opportunities in minority representation in animation media by focusing on inclusive curriculum development, software development and character design. He has taught at trade schools, community colleges and helped guided the creation and development of game programs at other Universities before joining WPI. As he prepares students for the world, he sees both technical proficiency and social activism as key factors for their long-term success.

Department of Mathematical Sciences

Marcel Blais, Professor of Teaching
B.S. Mathematics, Fairfield University, Fairfield, Connecticut, 1999
M.S. Applied Mathematics, Cornell University, Ithaca, New York, 2004
Ph.D. Applied Mathematics, Cornell University, Ithaca, New York, 2006
Visiting Assistant Professor, Worcester Polytechnic Institute, 2005-2008
Coordinator Professional Sci. Master's Programs / Adjunct Asst. Professor, WPI, 2008-2012
Assistant Teaching Professor, Worcester Polytechnic Institute, 2012-2014
Associate Teaching Professor, Worcester Polytechnic Institute, 2014-2021
Teaching Professor, Worcester Polytechnic Institute, 2021-Present

> Dr. Blais is a teaching professor in the Department of Mathematical Sciences. He specializes in operations research, financial mathematics, and calculus, and has over twenty years' experience teaching and innovating in these areas. Dr. Blais is committed to helping WPI students across various disciplines gain real world experience via project-based learning opportunities both in class and through industry sponsored projects. Since 2008, he has advised such projects through the WPI Center for Industrial Mathematics and Statistics (CIMS), the Boston Financial Services Leadership Council, and in the WPI FinTech Collaborative, an initiative he co-founded and co-directs. In addition, Blais coordinates the Financial Mathematics Professional Science Master's Program and advises students enrolled in it, serves on the board of the National Professional Science Master's Association (NPSMA), and has been Associate Head of the Mathematical Sciences Department since 2017.

Department of Mechanical Engineering

Sarah Wodin-Schwartz, Associate Professor of Teaching
B.S., General Engineering, Smith College, 2007
M.S. and Ph.D., Mechanical Engineering, UC Berkeley, Berkeley, California, 2009 and 2013.
Assistant Teaching Professor, Worcester Polytechnic Institute, 2015-2021
Associate Teaching Professor, Worcester Polytechnic Institute, 2021

> Dr. Wodin-Schwartz is an associate teaching professor who focuses on bringing high impact practices including project based and hands-on learning into her large enrolment courses. She designs her courses and assignments to help students understand the environmental, social, ethical, and physical impacts of engineering projects on individuals and communities. She has received the Board of Trustees' Award for Outstanding Teaching and the Romeo L. Moruzzi Young Faculty Award. In addition to classroom teaching, she advises both MQP and IQP teams. She is currently developing a gamified mobile app to improve students' abilities to draw free body diagrams.

Department of Social Sciences and Policy Studies

Gbetonmasse Somasse, Associate Professor of Teaching
B.A., Statistics, National University of Benin, 1996;
M.Sc., Economic Statistics, ENSEA, Cote d'Ivoire, 2001;
Ph.D., Economics, Clark University, 2011; Ph.D., 2015.
Assistant Teaching Professor, Worcester Polytechnic Institute, 2015-2021
Associate Teaching Professor, Worcester Polytechnic Institute, 2021-Present

> Dr. Somasse is an economist and applied econometrician whose research focuses on public policy, development, and impact evaluation, with an interest in education, technology, environment, inequality, and Africa. In teaching and learning, Somasse is interested in student motivation, experiential learning, and critical reflection to promote active and more intentional learning. He has more than 8 years of professional work in the financial and development sectors in Africa. He co-directs WPI's Cape Town Project Center in South Africa. Somasse integrates social justice issues in his research and teaching using available data and economic analysis. One of his current projects, as part of the Public Interest Technology network, is to create tools for engineers and technical experts to become more engaged with the public policy process.

Dean of the Global School
Department of Integrative and Global Studies

<u>Mimi Sheller, Professor</u>
AB, History and Literature, Harvard University, 1988
MA, Historical Studies and Sociology, The New School for Social Research, 1993
Ph.D., Sociology, The New School for Social Research, 1997

> Prior to joining WPI, Dean Sheller was Professor of Sociology, Head of the Sociology Department, and founding Director of the Center for Mobilities Research and Policy at Drexel University in Philadelphia. She is founding co-editor of the journal *Mobilities* and past President of the International Association for the History of Transport, Traffic and Mobility. She is an interdisciplinary scholar with interests in Caribbean Studies and Mobilities Research. Sheller has published more than 125 articles and book chapters, and is the author or co-editor of fifteen books, including *Advanced Introduction to Mobilities* (Edward Elgar, 2021); *Island Futures: Caribbean Survival in the Anthropocene* (Duke University Press, 2020); *Mobility Justice: The Politics of Movement in an Age of Extremes* (Verso, 2018); and *Aluminum Dreams: The Making of Light Modernity* (MIT Press, 2014).

> She has received research funding from the National Science Foundation, the British Academy, the Arts and Humanities Research Council, the Macarthur Foundation, the Mobile Lives Forum, and the Graham Foundation in Advanced Studies in the Fine Arts. She has held Visiting Fellowships at the University of Miami (2019); the Annenberg School of Communication at University of Pennsylvania (2016); the Penn Humanities Forum (2010); the Center for Mobility and Urban Studies at Aalborg University, Denmark (2009); Media@McGill, Canada (2009); the Davis Center for Historical Studies at Princeton University (2008); and Swarthmore College (2006-2009). She serves on the international Advisory Boards for the Society for Caribbean Research, the Center for Advanced Research in Global Communication at University of Pennsylvania, the Bauman Institute at the University of Leeds, the Asia Mobilities Research Network at Konkuk University, South Korea, and the Global Partnership for Informal Transportation.

Associate Dean of Arts and Sciences

<u>Carolina Ruiz, Professor, Associate Dean of Arts and Sciences</u>
BS, Computer Science, University of The Andes, 1988
BS, Mathematics, University of The Andes, 1989
MS, Computer Science, University of The Andes, 1990
PhD, Computer Science, University of Maryland College Park, 1996

> Associate Dean Ruiz joined the WPI faculty in 1997. Her research is in Artificial Intelligence, Machine Learning, and Data Mining, and their applications to Medicine and Health. She has worked on several clinical domains including sleep, stroke, obesity, and pancreatic cancer. She and her research group have developed novel, high-performing machine learning methods, including deep learning networks, for analyzing physiological and behavioral data. She has also worked on interdisciplinary research at the intersection of Artificial Intelligence, Computational Thinking and Education. Prof. Ruiz has authored over 80 peer-reviewed research publications. Her research has been supported by the National Science Foundation and the Henry Luce Foundation. She is a founding and core member of the Bioinformatics and Computational Biology (BCB), the Data Science (DS), and the Neuroscience (NEU) Programs, and a member of WPI's Center for Project-Based Learning. Prof. Ruiz has served as Associate Department Head of Computer Science. She has also served as an elected member on several WPI Faculty Governance committees including the Committee on Tenure and Academic Freedom (CTAF), the Committee on Academic Policy (CAP) and the Committee on Academic Operations (CAO). She currently serves as faculty appointee on the WPI Board of Trustees' Academic Planning Committee.

Associate Dean of Graduate Studies

Alexander M. Wyglinski, Professor, Associate Dean of Graduate Studies
B.Eng., Electrical Engineering, McGill University, 1999
M.Sc.(Eng.), Electrical Engineering, Queen's University at Kingston, 2000
Ph.D., Electrical Engineering, McGill University, 2005

> Associate Dean Wyglinski joined WPI in 2007 at the rank of Assistant Professor, awarded tenure and promoted to the rank Associate Professor in 2012, and promoted to the rank of Professor in 2018. An internationally recognized expert in wireless communications, Wyglinski made numerous high impact research contributions in the areas of cognitive radio, 5G/6G, connected vehicles, software-defined radio, spectrum coexistence, vehicular technology, Internet-of-Things, autonomous vehicles, and cyber-physical systems. Throughout his entire academic career, Wyglinski has published approximately 48 journal papers, over 121 conference papers, nine book chapters, and three textbooks, including the first-ever cognitive radio textbook: *Cognitive Radio Communications and Networks: Principles and Practice* (Elsevier, 2010). According to Google Scholar, Wyglinski's citation count is 4957 and possesses an h-index equal to 38 as well as an i10-index equal to 88. Wyglinski possesses an extensive track record of serving both the WPI community as well as his own professional community, including participation on the *WPI Committee on Graduate Studies and Research* (CGSR), *WPI Committee on Tenure and Academic Freedom* (CTAF), and the Board of Governors for the *IEEE Vehicular Technology Society* (IEEE VTS). In particular, Wyglinski served as the IEEE VTS President from 2018 to 2020, during which time he launched numerous initiatives in emerging technical areas including autonomous vehicles, 5G, drone networking, and electric railways. Wyglinski is a Senior Member of the IEEE, as well as a member of Sigma Xi, Eta Kappa Nu, and the American Society of Engineering Education (ASEE).

Associate Dean of Undergraduate Studies

Arne Gericke, Professor, Associate Dean of Undergraduate Studies
Diplom-Chemist, Chemistry, University of Hamburg, Germany 1988
Dr. rer. nat., Chemistry, University of Hamburg, Germany, 1994

> Associate Dean Gericke joined WPI as the Head of the Department of Chemistry and Biochemistry in 2011. He transitioned this summer to the position of Associate Dean of Undergraduate Studies. In this new function he will oversee the operation of the Office of Undergraduate Research and Creative Activity and will work on improving the academic experience of transfer and non-traditional students. His research is concerned with the biophysical characterization of lipid mediated protein functions. Phosphoinositide lipids have been shown to influence or even control physiological processes like cell migration, survival and division. Dysregulation of global or local cellular phosphoinositide levels leads to a range of disease states, most notably cancer, diabetes and various neurological diseases. In addition to obtaining financial support for his research, he has received throughout his career several educational and scholarship grants and he has been director for NSF REU sites at his previous institution and WPI.

Department of Biomedical Engineering

Solomon Mensah, Assistant Professor
B.S., Biomedical Engineering, City College of New York, City University of New York, 2014
Ph.D., Bioengineering, Northeastern University, 2019

Prior to joining the department of biomedical engineering at WPI; first as a future faculty postdoc and later as an assistant professor, Solomon worked for over 10 years in clinical operations and surgical instrumentation at Jacobi and Boston medical centers. Solomon is also the CEO of Therapeutic Innovations, a medical device startup focused on redesigning medical devices for developing countries. His research interest is focused on understanding the role of the vascular endothelial glycocalyx in the onset and progression of cardiopulmonary diseases. He is currently developing glycocalyx regeneration techniques to restore the glycocalyx to prevent diseases progression. His research achievement is documented in multiple peer-reviewed journals including Atherosclerosis, FASEB, and Plos One. He has received multiple awards which include the most downloaded research article from the American Institute of Chemical Engineers Journal(AIChE), 2020, and was recently awarded a new faculty diversity award at the just-ended Summer Biomechanics, Bioengineering, and Biotransport Conference(SB^{3}C). Solomon has instructed multiple courses, his passion for medical device development has been translated into a graduate-level course where he instructs graduate students on medical device development for global health. He is also a founding member for the virtual internship program at the Biomedical Engineering Department called the VIBE.

Department of Chemical Engineering

Christina Bailey-Hytholt, Assistant Professor
BS, Chemical Engineering, Worcester Polytechnic Institute, 2015
Ph.D., Biomedical Engineering, Brown University, 2020

Dr. Bailey-Hytholt's research interests focus on drug and gene delivery, biomaterials, and non-invasive diagnostics particularly for applications towards prenatal and women's health. She has expertise in lipid-based systems, including cell-mimicking models to study molecular interactions and formulating lipid nanoparticles for non-viral gene delivery. Dr. Bailey-Hytholt has also previously developed non-invasive techniques for prenatal screening. She completed her Ph.D. at Brown University in 2020 followed by a Postdoctoral Fellowship in Biologics Drug Product Development and Manufacturing at Sanofi.

Department of Computer Science

Brandon Boher, Assistant Professor
BS, Computer Science, Carnegie Mellon University, 2014
MS, Computer Science, Carnegie Mellon University, 2017
Ph.D., Computer Science, Carnegie Mellon University, 2021

Dr. Bohrer's academic interests lie where logic meets computer science: formal methods (the study of software correctness) and programming language theory. His dissertation focuses on computer-assisted theorem-proving for cyber-physical systems: systems where computers are responsible for keeping physical things and people safe. His favorite thing about these research topics is the connection to many fields, including robotics, security, machine learning, medicine, and even games. He was a recent visiting researcher at the National Institute of Informatics (Tokyo, JP) and past visitor at TU Munich (Munich, DE).

Xiaozhong Liu, Associate Professor
B.S., Computer Science, Beijing University of Technology, 2002
Ph.D., Information Science and Technology, Syracuse University, 2011

Prior to Dr. Liu joining the faculty at WPI, he spent 10 years at School of Informatics, Computing, and Engineering, Indiana University Bloomington, as associate professor. His research interests include information retrieval, natural language processing, text/graph mining, digital library, metadata, and

computational social science. His dissertation at Syracuse University explored an innovative ranking method that weighted the retrieved results by leveraging dynamic community interests. He has published more than 100 publications in the leading computer science and information science venues. He also served as the NLP Director and Senior Consultant at Alibaba DAMO Academy from 2018 to 2021.

Department of Electrical and Computer Engineering

Bashima Islam, Assistant Professor
B.SC., Computer Science and Engineering, Bangladesh University of Engineering and Technology, 2016.
Ph.D., Computer Science, University of North Carolina at Chapel Hill, 2021.

> Bashima Islam focuses on understanding and enhancing the usability, intelligence, and processing capabilities of tiny low-power edge computing devices to realize their full potential in our daily lives. Her aim is to develop a new set of intelligent edge computers that provide sustainable and scalable sensing solutions in various application domains ranging from health wearable to smart agriculture. The interdisciplinary nature of her research involves diverse domains including Internet of Things, Machine Learning, Mobile Computing, Cyber Physical Systems, and Ubiquitous Computing. She currently is a Visiting Postdoctoral Research Associate at the University of Illinois at Urbana Champaign.

Shahin Tajik, Assistant Professor
BS, Electrical Engineering, K.N. Toosi University of Technology, 2010
MS, Electrical Engineering, Technical University of Berlin, 2013
Ph.D., Electrical Engineering, Technical University of Berlin, 2017

> Shahin Tajik joined Worcester Polytechnic Institute in July 2021 as an Assistant Professor after a one year appointment as an Assistant Research Professor. Before joining WPI, Dr. Tajik was an Assistant Research Professor at Florida Institute for Cybersecurity (FICS) Research at University of Florida. Dr. Tajik received his Ph.D. degree in Electrical Engineering in 2017 from the working group SECT, a collaboration of the Technical University of Berlin and Deutsche Telekom Innovation Laboratories in Germany. His field of research mainly includes non-invasive and semi-invasive side-channel analysis, Physically Unclonable Functions (PUFs), machine learning, FPGA security, and designing anti-tamper mechanisms against physical attacks. His ACM CCS'17 paper with the title "On the Power of Optical Contactless Probing: Attacking Bitstream Encryption of FPGAs" was awarded 1st place in the Applied Research Competition of European Cyber Security Awareness Week (CSAW) in 2017. Dr. Tajik has served as a reviewer for IEEE and ACM journals as well as a technical program committee member of many hardware security conferences, including Conference on Cryptographic Hardware and Embedded Systems (CHES), Symposium on Hardware Oriented Security and Trust (HOST), and Workshop on Fault Diagnosis and Tolerance in Cryptography (FDTC).

Department of Humanities and Arts

Jeanne Essame, Assistant Professor
B.A., English, Université François Rabelais, France, 2000
M.A., English, Université François Rabelais, France, 2006
M.A., Afro-American Studies, UW Madison, 2011
Ph.D., History, UW Madison, 2019

> Jeanne Essame is a scholar of the experience of people of African descent in the Americas with specialization in the movement of people and ideas, cultural productions, gendered experiences, and oral history. I doctoral degree was in African Diaspora History, Caribbean History, and Visual Culture. Using an interdisciplinary methodology grounded in historical analysis, her research examines how the racialization of people of African descent operates transnationally and asks how these people, regardless of national histories, have rallied against racial marginalization on a global scale. Her teaching mirrors her research interests. She has taught classes on African American history, activism within the Black Diaspora, and Caribbean-US relations. Prior to joining WPI, she held a Visiting Assistant Professor position at Bates College.

Department of Integrative and Global Studies

Laureen Elgert, Associate Professor, Department Head, Department of Integrative and Global Studies
BA Honors, International Development and Anthropology, Trent University, 1999
MSc, Health Promotion, University of Alberta, 2003
PhD, International Development, London School of Economics, 2011
> Laureen Elgert joined WPI as Assistant Professor in Social Science and Policy Studies in 2011 and was promoted to Associate Professor in 2017. Her research examines the politics of expertise, knowledge and discourse in relation to issues at the intersection of environment and development, including agriculture, mining, urban sustainability, and the circular economy. She has joined colleagues across campus to establish and grow the Ecuador Project Center, to create community around Public Interest Technology, and to develop academic and scholarly initiatives in Latin American and Caribbean Studies. Prof. Elgert serves as Editor of the *Journal of Critical Policy Studies* and on the Board of Directors of the Association for Environmental Studies and Sciences.

Department of Mechanical Engineering

Lin Cheng, Assistant Professor
B.S.E. Mechanical Engineering, Xi'an Jiao Tong University, Xian, China, 2011
M.S.E. Mechanical Engineering, Shanghai Jiao Tong University, Shanghai, 2014
Ph.D. Mechanical Engineering, University of Pittsburgh, Pittsburgh, 2019
> Lin Cheng has been working as a postdoctoral researcher in the Department of Mechanical Engineering at Northwestern University since 2019. His research interests lie in physics-informed deep learning and its applications for additive manufacturing, with specific focus on data-driven smart manufacturing techniques and intelligent robotic material design. The design optimization methods developed by him have been commercialized by ANSYS in their engineering simulation software. Dr. Cheng has 23 peer-reviewed journal publications in journals such as *Additive Manufacturing*, *Computer Methods in Applied Mechanics and Engineering*, etc. He won 1st place in a poster competition at the RAPID conference in 2017 for presenting his work on lattice infill optimization and received the Best RA Award in Mechanical Engineering at the University of Pittsburgh in 2018. In 2021, Dr. Cheng won the fellow competitors in the workshop "*New Trends and Open Challenges in Computational Mechanics: from Nano to Macroscale*", and has been selected to present his work on fully convolutional neural networks for accelerating RVE analysis and data-driven microscale material identification, and defect characterization.

Zhu Mao, Associate Professor
B.S., Tsinghua University, 2002
M.S., University of California, 2008
Ph.D., University of California, 2012
> Prof. Mao's research interests include dynamics and vibration, intelligent systems, noncontact sensing, signal processing and machine learning, uncertainty quantification, risk analysis, and condition-based monitoring for a variety of applications. He has published about 100 papers on top tier journals and internationally-recognized conference proceedings. He is the Chair of the Technical Division of Model Validation and Uncertainty Quantification at the Society for Experimental Mechanics (SEM), and on the Editorial Board of *Experimental Techniques*. He is elected on the Advisory Board of the International Modal Analysis Conference, and is on the Program Committee and serves as the Session Chairs for a number of international conferences. Dr. Mao's research has been continuously funded by the National Science Foundation, Department of Defense, Department of Energy, Department of Transportation, as well as various industry sponsors. In addition to three best conference paper awards, he is an Honorary Member of Pi Tau Sigma, the winner of SEM 2011 D. J. DeMichele Scholarship Award, the recipient of 2018 Air Force Office of Scientific Research (AFOSR) Young Investigator Program Award, and the SAGE Publishing Young Engineer Lecture Award presented by SEM in 2019. He is also enthusiastic in teaching, and has taught 5

courses at both undergraduate and graduate levels. He is the winner of 2021 Teaching Excellence Award at UMass Lowell.

Department of Social Science and Policy Studies

Mahamadou Lamine Sagna, Associate Professor
BA, Sociology, University of Lyon (Universite Lyon II), France, 1990,
BA, Ethnology, University of Lyon (Universite Lyon II), France, 1991
MA, Sociology, University Lyon II, France, 19991
MBA, Ecole des 3 A, Lyon, France 1992
DEA (Diploma for Advanced Studies) in Sociology, University of Caen, 1993
Ph.D. Sociology, University of Caen - Normandy, France, 1998

Mahamadou Lamine Sagna has taught courses in anthropological economics and social science methodologies in French and American Universities. Sagna has also taught at Schiller University in Paris, the American University of Nigeria, and has also been a Research Fellow at the Laboratory of Social and Political changes at University Paris Sorbonne – Paris VII. Prior to these engagements, he taught for ten years at Princeton University in the departments of Sociology in African American Studies and in African Studies. He has also been visiting Professor at the University of Maryland. His interdisciplinary approach always enriches his pedagogy. Sagna continues to work with an international team of scholars about social meaning of exchanges and money in globalization. His research focuses on sociology of poverty as well as monetary and financial practices in relation to economic innovation and the dynamics of social trust and risk. In most of his writings, he always invites the reader to think about western economic paradigms vis-à-vis Africa and to discuss methods and approaches regarding African economic culture. Sagna's multidisciplinary background provides him thoroughness and fluidity as he addresses complex intersections between economics, culture, and power. He says *"my commitment is not only to improving the lives of those who live in poverty but also an appreciation of the richness of other cultures and the value of the individual."*

WPI Business School

Dr. Rosanna Garcia, Paul R. Beswick Professor of Innovation and Entrepreneurship
B.S., Chemical Engineering, University of California, Santa Barbara 1984
B.A., Economics, University of California, Santa Barbara 1984
M.B.A., Marketing and Finance, University of Rochester, 1988
Ph.D., Marketing, Michigan State University, 2002

Dr. Rosanna Garcia was most recently the Koch Endowed Chair of Entrepreneurship in the Daniels College of Business at the University of Denver. She previously held tenured positions at North Carolina State University and Northeastern University in Boston, as well as visiting positions at the University of Münster, Germany and the University of Groningen in the Netherlands. Her current research focuses on women and minorities in entrepreneurship. Her publications have appeared in the best journals in management across a variety of research areas including benefit corporations, sustainability, product innovation, and resistance to innovation. Her innovation research includes international studies and a variety of industries including the maritime, nanotechnology, wine, and alternative fuel vehicle industries. She has founded and led organizations in support of women and minorities as entrepreneurs, and has been a mentor to hundreds of student and local-community start-ups. She believes in theory and practice, evidenced by co-founding and running two technology-based start-up companies as the CEO. She worked in the telecommunications industry for 10 years prior to joining academia and was awarded three patents from this time in industry.

Full-time Non-Tenure Track (TRT) Faculty Members, Visiting Faculty Members, and Others with Teaching and Research Responsibilities

Department of Biomedical Engineering

Taimoor Afzal, Assistant Teaching Professor
BS, Computer Engineering, COMSATS Institute of Information Technology, Islamabad, Pakistan, 2003
MSE, Control Systems, The University of Sheffield, UK, 2007
Ph.D., Engineering Science and Systems (Elec. and Comp Eng.), Univ of Arkansas, Little Rock, 2015

> Dr. Afzal's academic interests lie in human movement control, machine learning, and neural engineering. His PhD dissertation focused on developing a machine learning algorithm based on the notion of muscle synergies for classification of different walking modes. Later in his career, he worked at the University of Texas Health Science Center at Houston where he examined the feasibility of exoskeletons for walking in patients with neurological disorders. Recently, he was working as a postdoctoral researcher at Northwestern University, where he examined the mechanisms of muscle weakness in stroke and bilateral effects of stroke on motoneuron excitability.

Department of Chemical Engineering

Alex Maag, Assistant Research Professor
BS, Chemical Engineering, University of Massachusetts Amherst, 2011
Ph.D., Chemical Engineering, Worcester Polytechnic Institute, 2019

> Prof. Maag's research focuses on processes that use biomass as a source of renewable energy or in the production of more sustainable commodities. His dissertation evaluates thermochemically converting biochemicals in compressed liquid water with the use of heterogenous catalysts; reaction conditions that can lead to many process engineering benefits such as increased product throughput and reduced energy usage. Prof. Maag has several years of experience in catalysis, high pressure and temperature process design, surface science and spectroscopic characterization. He is also passionate in mentoring students by applying chemical engineering fundamentals through hands-on projects and making connections using active learning strategies. Before rejoining WPI, he was a postdoctoral associate at Cornell University.

Department of Civil & Environmental Engineering

Jessica Rosewitz, Assistant Teaching Professor
B.S., Civil Engineering, WPI, 2007
M.S., Civil Engineering, WPI, 2016
Ph.D., Civil Engineering, WPI, 2020

> Dr. Jessica Rosewitz brings to WPI a wealth of past WPI experiences, teaching and project advising, industry and community engagement, a passion for WPI's project-based education, and focus on continual improvement of engineering education at all levels. Her P.E. license and experience in Accelerated Bridge Construction enables her to draw upon regional engineering firms, and her dedication to early engineering education drives her outreach with local vocational schools, community organizations, and pre-K-12 programs. Her goal is to provide an outstanding classroom education and opportunities to solidify understanding of theory with visits to local construction sites and plants. Her experience allows her to develop advanced IQP and MQP opportunities for design and research with local companies, having researched self-activated healing concrete and participated in the NSF iCorps program. She founded the student chapter of the Associated General Contractors (AGC) at WPI and has guided students in the ASCE/AISC steel bridge team, and hosts the AR Sandbox exhibit at the annual Touch Tomorrow event.

Department of Computer Science

Shubbhi Taneja, Assistant Teaching Professor
BS, Information Technology, Maharishi Dayanand University, Gurgaon, India 2012
Ph.D., Computer Science, Auburn University, Alabama, USA, 2018

Prior to joining WPI, Dr. Shubbhi Taneja worked as a tenure-track faculty for three years in the Department of Computer Science of California State University, Sonoma. She completed her Ph.D. in Computer Science from Auburn University, Alabama in 2018. Her primary research interests lie in energy-efficient computing and big data systems. She collaborates actively with researchers at national labs, faculty engaged in pedagogical research and other disciplines of computer science, particularly computer architecture, machine learning, and cloud computing. She is a member of Women in High-Performance Computing (WHPC), National Center for Women in Information Technology (NCWIT), and Association of Computing Machinery Women (ACM-W).

Data Science Program

Torumoy Ghoshal, Assistant Teaching Professor
B.E., Electronics & Telecommunication, University of Pune, 2011
Ph.D., Engineering Science (Computer Science), University of Mississippi, 2020

During his doctoral research efforts, Dr. Ghoshal developed three novel methods to expand the usability of convolutional neural networks beyond image data. He earned his Ph.D. in Engineering Science with a Computer Science major from the University of Mississippi in 2020. He then joined Lyon College as a Visiting Assistant Professor and led the development of their brand new data science program. His research interests include feature engineering, deep learning, and natural language processing. He also worked at Dow Jones where he developed machine learning models for the Wall Street Journal journalists and the ad-tech team for real-world use.

Department of Humanities and Arts

Gizem Arslan, Assistant Teaching Professor
BA, English and German, Franklin and Marshall College 2003
MA, German Studies, Cornell University 2009
PhD, German Studies, Cornell University 2013

Gizem Arslan's research and teaching interests include post-war literatures in German, French and Turkish, translation studies, migration studies, theories of language, literary-mathematical experiments, and writing systems of the world. She enjoys teaching German at all levels and learning new languages. Particularly important to her teaching are exploring connections between German and other languages, integrating culture and intercultural learning into her courses, and continually educating herself on diversity, equity and inclusion issues in language programs.

Her current work in progress includes article projects on Spanish-German poet José F. A. Oliver and his literary muse Paul Celan, the influence of Paris-based OuLiPo group's interlingual dictionary games on German-American poet Uljana Wolf's play with German and English false friends, and a book project on literary experimentation with writing systems as a form of resistance to ethno-nationalist ideas about language. Like the authors in her research projects, she enjoys playing with language. She is continually trying to think of new ways to encourage her students to do the same.

Laura Eckelman, Associate Teaching Professor
BA, Theatre, Middlebury College, 2005
MFA, Design, Yale University School of Drama, 2011

Laura J. Eckelman is a theatrical lighting designer, production manager, and educator. She has worked professionally with theater companies, schools, and other institutions across the country, including Yale

Repertory Theatre, Studio Theatre, Theater J, Keegan Theater, Triad Stage, The Welders, Perseverance Theatre, the Bearded Ladies Cabaret, Bang on a Can's Asphalt Orchestra, Capital Fringe, the New York Urban Theatre Festival, PTP NYC, the Byrdliffe Arts Festival, the International Festival of Arts & Ideas, University of the Incarnate Word, Connecticut College, the Bard College Vocal Arts Program, and many others. Laura comes to WPI from Washington College, where she was chair, associate professor, production manager, and resident designer in the Department of Theatre & Dance. She is a 2012 recipient of the S&R Washington Award.

Emily Gioielli, Assistant Teaching Professor
BA, History, Mount Vernon Nazarene University, 2002
MA, History, University of Cincinnati, 2004
PhD, Comparative History, Central European University (Budapest), 2015

> Prof. Gioielli is a historian of modern Europe specializing in Central and Eastern European history (especially Hungary), the history of women, gender, and sexuality, and the history of violence and regime change from a transdisciplinary perspective. She received her PhD in Comparative History from Central European University (Budapest, now in Vienna), and has taught and conducted research at a number of institutions in both the United States and Central Europe, most recently as a fellow at Imre Kertész Kolleg in Jena (Germany) and a Visiting Researcher the Rachel Carson Center for Environment and Society in Munich.

Abigail Koo, Assistant Teaching Professor/Director of Orchestral Activities
BM (Bachelor of Music), Piano, Manhattan School of Music, 2003
MM, Piano, Indiana University Jacobs School of Music, 2006
PD (Performer's Diploma), Piano, Indiana University Jacobs School of Music, 2013
DM (Doctor of Music), Instrumental Conducting, Indiana University Jacobs School of Music, 2014

> Born in South Korea and educated in New York, Abigail Koo began her professional music training at La Guardia High School of Music and Arts & Performing Arts. After receiving a bachelor of music degree, she studied at Indiana University with world-renown pianist Menahem Pressler and further pursued her piano studies there, as well.
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> Prof. Koo has performed twice in Carnegie Weill Recital Hall by winning the New York Young Artist Competition. A prolific solo pianist, chamber musician, orchestral violinist, and conductor. She has performed in major concert halls of New York and France, including the Carnegie Isaac Stern Hall, 92nd Street Y, Cami Hall, Alice Tully Hall, New York Steinway Hall, and Avery Fischer Hall. Her musical composition has received a 3rd place award from the prestigious Bertlesmann World of Expression Scholarship. As an orchestra conductor, she has worked with maestros David Effron, Arthur Fagen, Leonard Slatkin, and Herbert Blomstedt. In 2017 and 2018 Abigail studied with the master of classical music maestro Bruno Weil at the Mozarteum University in Salzburg, Austria. She was also invited by maestro Bernard Haitink to participate in the fiercely competitive Lucerne Festival Masterclass in 2015.
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> Prof. Koo has given masterclasses and lectures throughout the United States. She has held teaching appointments at Indiana University for three years as an adjunct and part-time faculty prior to accepting the full-time faculty position at Sahmyook University, South Korea. Passionate for humanitarian work, Abigail founded two music schools, one in Cambodia and another branch in Myanmar, to help underprivileged students. She continues to work with NGOs to provide relief for Cambodia and Myanmar through music education and food assistance.

Lina Muũoz Márquez, Assistant Teaching Professor
BA, Translation (English - French - Spanish), University of Antioquia, 2008
MA, Spanish, University of Arkansas, 2014
Ph.D., Spanish Literary and Cultural Studies, University of Kansas, 2021

Born and raised in Colombia, Dr. Lina Muñoz completed her Ph.D. in Spanish with an emphasis in Latin American Cultural and Literary Studies at the University of Kansas, where she also earned a Graduate Certificate in Indigenous Studies and studied Ecuadorian Kichwa.

Working from the intersection of culture, race, class, and gender, Dr. Muñoz brings a transnational and interdisciplinary approach to the study of Latin American cultures and literatures. Her research explores the links among culture, race, mobility, and politics in Latin America. She is particularly interested in narratives and aesthetics in Latin American indigenous films and audiovisual productions in South America with an emphasis on the Andean region. She considers indigenous cinema as a space to explore the role that mobility has had in the participation, reconfiguration, and rearrangement of indigenous communities in the contemporary world. In Latin American countries, particularly in the Andean region, the mobility of indigenous communities has generally been understood as the result of Western oppression and associated with forced displacements. However, she argues that the repositioning of the indigenous gaze in film productions has allowed indigenous peoples to register, explore, and produce different processes of physical and symbolic mobility. These processes have in turn enabled them to rethink or reconstruct elements considered inherent to their subjectivities such as identity, race, space, fixity, and oppression.

Adrien Stoloff, Assistant Teaching Professor
BA, Liberal Arts, St. John's College, 2000
MA, East Asian Languages and Cultures, Columbia University, 2012
Ph.D., Religious Studies, Brown University, 2019

> Prof. Stoloff has taught courses on Asian religions, religion and sexuality, and philosophy of religion. Prof. Stoloff's research focuses on Chinese religious beliefs and practices from the late Warring States Period (ca. 475-221 BCE) to the Western Han dynasty (202 BCE-9 CE). Specifically, he studies the classical Daoist idea of *wuwei* (effortless action).

Department of Integrative and Global Studies

Zoe Eddy, Assistant Teaching Professor
B.A., Anthropology, East Asian Studies, Bowdoin College, 2010
Ph.D., Anthropology (Social Anthropology and Archaeology Integrated Program), Harvard University, 2019

> Dr. Eddy is an anthropologist who focuses on global Indigenous studies, human/environment relationships, and the intersections of material culture, history, and community activism. Her doctoral research examined how the *kibori kuma*—a carved wooden bear souvenir common in Hokkaido Japan—demonstrated the historical trajectory of the Japanese colonization of Ainu Mosir and this history's manifestation in contemporary markets. During her postdoctoral work at Harvard University, she investigated how Indigenous beaders navigate popular media, commercial markets, and digital activism. She has published on various topics including live-action roleplaying communities, the "Native Baby Yoda" phenomenon, museums and spectrality, and Indigenous gender activism. Her teaching has included coursework in anthropology, literature, history, gender studies, performing and visual arts, and environmental studies. As an archaeologist, she has served as both an educator and researcher on various archaeology sites; she also worked in museums as a public educator, co-curator, archivist, and researcher. In addition to her work as a scholar, she is an activist for various Indigenous issues related to sex and gender violence.

Interactive Media and Game Development Program

Ben Schneider, Professor of Practice
B.A., English, Columbia University, 1999

> Prof. Schneider is a video game writer and designer with over twenty years of industry experience. He has worked as a content creator on titles such as *Empire Earth*, *Titan Quest*, *Dawn of War* (expansion), and *Kingdoms of Amalur: Reckoning*, and as Lead Designer on *Lord of the Rings Online* (Gondor through Mordor). Career accomplishments include historical and literary adaptation, quest and dialogue system

design, and the creation and management of live events and social systems in games. As a manager, Prof. Schneider studied and co-developed best practices for healthy, happy teams and sustainable game development. He has written a number of trade articles (*Game Developer*, *Gamasutra*) and given occasional talks (*Narrascope*, Fitchburg State University, WPI's own IMGD) on narrative design, game writing, and interactive storytelling. His creative interests include procedural narrative systems, conventional prose, folklore, and experimental interactive narrative. Outside of his vocation, he enjoys cooking and baking, gardening, reading, and sharing his love of books, boardgames, and video games with his two children.

Walt Yarbrough, Professor of Practice
BS, Civil Engineering - Virginia Polytechnical Institute and State University

> Prof. Yarbrough joins WPI after a decade teaching at Becker College, where he was a Visiting Digital Fellow. A management and production specialist, at Becker he revised and expanded the Production curriculum in the Interactive Media degrees, developing and teaching classes on the Agile/Scrum, Kanban and Waterfall/CPM production methodologies. A problem solver, Prof. Yarbrough often accepted the challenge of covering other courses, as needed, including Programming, Data Analytics, and Design. He was also responsible for creating his signature Live Studio classes, partnered with industry professionals to refine and update released software at professional levels. Before joining Becker, he had a long career in AAA software development, managing large international teams on such projects as Dark Age of Camelot, Ultima Online, the Sims Online and Lord of the Rings Online. His professional work continues today, serving as Executive Producer for Massdigi in their dozens of shipped games and applications. In his spare time, Walt gravitates towards cooperative and competitive online games, such as World of Warships Legends and Smite, often playing with his adult children. He also enjoys hiking, camping and fixing up older houses with his partner.

Department of Mathematical Sciences

Nicholas Chisholm, Assistant Research Professor
BS, Chemical Engineering, University of Rochester, 2012
PhD, Chemical Engineering, Carnegie Mellon University, 2017

> Dr. Chisholm's research interests lie in the use of mathematical modeling and simulation to understand of important problems in fluid mechanics, interfacial phenomena, colloidal systems, active matter, and biomechanics. From a technical perspective, his work involves the application of partial differential equations, integral equations, asymptotic methods, and numerical analysis to predict the behavior of (bio)physical systems. His current research project with Prof. Sarah Olson assesses the role of fluid mechanics and fluid-structure interaction in dividing eukaryotic cells. Dr. Chisholm was previously a post-doctoral researcher at the University of Pennsylvania.

Abby Pekoske Fulton, Assistant Research Professor
B.A., Mathematics, Carthage College, 2013
M.S., Mathematics, Oregon State University, 2015
Ph.D., Mathematics, University of Pittsburgh, 2021

> Dr. Pekoske Fulton's research interests include mathematical biology, dynamical systems, and computational mathematics. Her dissertation focuses on modeling dynamics of DNA knots and links in a fluid. She uses deterministic and stochastic immersed boundary methods to dynamically study the energy landscape of DNA knots and links.

Sixian Jin, Post-Doctoral Scholar
B.S., Mathematics, Beijing University, 2011
Ph.D. Mathematics, Claremont Graduate University, 2017

> Dr. Jin's research interest includes stochastic calculus, stochastic differential equations, and related applications in quantitative finance. Specifically, he works in the Malliavin calculus of Brownian motion,

fractional Brownian motion, and Lévy processes; he establishes new series representations of martingales, which are widely applicable in pricing and hedging problems in finance. He is also concerned with stochastic differential equations driven by non-Markovian time-changed Brownian motion and the approximation schemes for their solutions.

Michael Smith, Assistant Teaching Professor
B.S., Mathematics, WPI, 2015
Ph.D., UC, Berkeley, 2021

Prof. Smith's research interests include geometric analysis and partial differential equations, in particular the Ricci flow, a quasilinear parabolic evolution in time for Riemannian manifolds, as well as applications of mathematics to the growing field of theoretical computer science, and in particular the theory behind deep learning.

Qiao Zhuang, Post-Doctoral Scholar
B.Sc., Mathematics, Shandong University, 2012
M.Sc., Applied Mathematics, Shandong University, 2015
Ph.D., Mathematics, Virginia Tech, 2020

Dr. Zhuang's research during PhD. study focused on unfitted/immersed finite element methods for interface problems, including both algorithm design and error analysis. Recently he is especially interested in interface problems governed by Navier-Stokes equations. He also accumulated teaching experience as a teaching assistant/course instructor when he was a PhD. student. His research at WPI will focus on, but not be limited to, studying stochastic and deep neural networks for moving boundary problems.

Department of Mechanical Engineering

Alireza Ebadi, Assistant Teaching Professor
B.S., Mechanical Engineering, Sharif University of Technology, 2010
Ph.D., Mechanical Engineering, University of New Hampshire, 2016

Dr. Ebadi served as a lecturer and researcher at the University of New Hampshire before joining WPI. As a lecturer he delivered the Experimental Measurement and Modeling lab, advised several Capstone senior projects, served on various committees, and advised undergraduate students. As a researcher he developed two reduced-order models of high Reynolds number turbulent flows and investigated them experimentally and numerically. Dr. Ebadi will be teaching courses in Mechanical Design, Kinematics, and Computer Aided Design, advise MQP's, and advise students. He will also pursue his research interests in experimental and analytical fluid dynamics.

Department of Physics

Benjamin Pollard, Assistant Teaching Professor
B.A., Physics and Computer Science, Pomona College, 2011
M.S., Physics, University of Colorado Boulder, 2014
Ph.D., Physics, University of Colorado Boulder, 2017

Prior to joining WPI, Prof. Pollard was a postdoctoral researcher in physics education at the University of Colorado Boulder. His research focus is on teaching and learning in laboratory courses. He is also involved in community building and organization to promote diversity, equity, inclusion, and social justice in STEM, including as a core organizer in The Access Network and as a member of the Committee on Diversity in Physics of the American Association of Physics Teachers.

Department of Robotics Engineering

Siavash Farzan, Assistant Teaching Professor
B.S., Electrical Engineering, Shahid Beheshti University, 2010
M.S., Electrical Engineering, University of Missouri-Columbia, 2013
Ph.D., Robotics, Georgia Institute of Technology, 2021

> Prof. Farzan's academic interests lie in solving fundamental challenges for autonomous robots to operate in unstructured and dynamic real-world environments. His doctoral research focused on safety-critical motion planning and control of underactuated robotic systems, while providing formal guarantees on their performance in the presence of uncertainties and disturbances. Prof. Farzan brings several years of experience in industry as an embedded systems engineer into classroom. He has an interest in innovative instructional technologies, and has co-developed the first lab-based online Mechatronics course (hosted on edX) which brings hands-on mechatronics education to students around the world.

Department of Social Science and Policy Studies

Barfuor Adjei-Barwuah, Assistant Teaching Professor
B.A., Geography, University of Ghana, 1965
M.S., Geography, University of Wisconsin-Milwaukee, 1968
Ph.D., Geography, Indiana University, Bloomington, 1972

> Dr. Adjei-Barwuah is the current Ambassador of Ghana to the United States with concurrent Accreditation to Mexico, El Salvador, Guatemala, Honduras, Belize, Costa Rica and Dominican Republic. His first Ambassadorial assignment was Ambassador to Japan with concurrent accreditation to Singapore, Australia, New Zealand and Papua New Guinea. Dr. Adjei-Barwuah previously served in the following capacities: Development Advisor in the Learning and Skills Development Agency of England, Head of Access and Development at London's Hackney Adult Education Institute; Senior Lecturer at Erith College of Technology in Bexley, England; part-time Lecturer at the London Open College.

> Dr. Adjei-Barwuah was for eight years the Executive Director of the Ghana Tourist Board. He had previously served as a Lecturer and Research Fellow at the University of Ghana. He was also a part-time Lecturer at the United Nations Regional Population Institute in Accra, Ghana besides being the host for a weekly discussion programme on Ghana Television from 1972 to 1975. He served as the inaugural Dean of the Business School of African University of Communications in Accra, Ghana. He has a counselling qualification from London's Centre of Advancement of Counselling and runs his own consultancy firm - Learning Works Consult- in Accra, Ghana. He is also a certified chaplain.

WPI Business School

Sébastien Bossu, Visiting Assistant Professor of Finance
B.S., Applied Mathematics, Sorbonne Université 1999
M.S., Management, Concentration in Finance, HEC Paris 2001
M.S., Financial Mathematics, University of Chicago 2002
M.S., Columbia University 2011
Ph.D., Quant. Finance, Université de Paris-Évry / Paris-Saclay expected 2021

> Sébastien Bossu is currently completing his Ph.D. in Quantitative Finance, studying the static replication of European options and the dynamic replication of correlation swaps. He has been principal at his startup investment and consulting company in New York City since 2011. He also served as an Adjunct Professor of Finance at Fordham University, Pace University, and most recently at NYU Courant and Johns Hopkins Carey Business School. Prior to moving to the U.S., Sébastien was a Director and Head of the Equity Derivatives Structuring team at Dresdner Kleinwort (now Commerzbank) in London, an Associate at J.P. Morgan in London, and a Jr. Trader at Goldman Sachs in Paris. He has written two textbooks on Equity Derivatives and several industry and academic articles in his field.