WORCESTER POLYTECHNIC INSTITUTE
September 8, 2016

To: The WPI Faculty
From: M. Richman
                   Secretary of the Faculty

The first Faculty meeting of the 2016-2017 academic year will be held on **Thursday**, **September 8, 2016** at **3:15 pm** in **Olin Hall 107**, with refreshments at 3:00**.**

1. Call to Order   M. Richman

    - Approval of the Agenda
    - Consideration of the Consent Agenda (including Minutes from 5-10-16)

2. Welcome   M. Richman

3. President's Remarks   L. Leshin

4. Provost's Remarks   B. Bursten

5. Introduction of New Faculty (each brief!)   B. Bursten
                                                                                                            Dept. Heads
                                                                                                            Program Dirs.

6. Committee Business
    - Committee on Governance (COG)   T. Dominko
      Committee on Tenure and Academic Freedom (CTAF)   C. Clark
        - Motion to Modify Procedures for Stopping the Tenure-Clock

7. Committee Report
    - Committee on Appointments and Promotions (COAP)   P. Hansen
        - Update on Campus-Wide Discussion of Promotions Criteria and Professional Development Processes

8. New Business

9. Closing Announcements

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WORCESTER POLYTECHNIC INSTITUTE
Faculty Meeting Minutes
May 10, 2016

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3. Provost's Remarks
4. Committee Reports: CASL; COG
5. Committee Business: CAO; CGSR; COG/CGSR
6. Adjournment

Detail:

1. Call to Order and Approval of the Consent Agenda

The ninth meeting of the 2015-2016 academic year was called to order at 11:15am in OH 107 by **Prof. Richman** (ME). The minutes from April 14, 2016 and the other items on the consent agenda were approved as distributed.

2. Opening Announcements

Prof. Richman asked all those in attendance to participate in the open meetings for the remaining Dean of Engineering and Vice Provost for Research candidates and to provide their feedback on all the candidates through the appropriate myWPI websites. **Dean Snoddy** urged all faculty members to participate in any or all of the following: the graduate student Commencement on Thursday, May 12 at 4:15pm; the ROTC Commissioning on Friday, May 13 at noon; the Baccalaureate ceremony on Friday, May 13 at 5:30pm; and the undergraduate Commencement on Saturday, May 14th at 9:30am.

Prof. Richman thanked all those who participated in and attended the Faculty Convocation on April 22, and described lightheartedly the nature of the work required to plan the Convocation. He also thanked all those individuals who served on Faculty Governance committees throughout the year and observed that the wide participation of over 90 individuals is a sign of the strength of Faculty governance at WPI.

Finally, **Prof. Richman** expressed his appreciation to former Secretary of the Faculty, Prof. Kinicki who is retiring from WPI at the end of the current academic year.

> A great faculty colleague is not someone who tells you how to contribute to a campus. Instead, she simply sweeps you up with her own enthusiasm or with her own devotion to the place. Or, he makes you want to give up your time by giving all that he can possibly spare. And in those ways, a great faculty colleague teaches you to love your institution.
>
> Which brings me to our good friend and invaluable faculty colleague, Bob Kinicki.
>
> I have stood back and watched Bob from afar. I've seen him in the middle of every worthwhile campus battle long before I knew all the players or what exactly was at stake. And I've watched him on the floor of these Faculty meetings in his role as Secretary of the Faculty, long before I imagined ever being elected myself. He was a sensible advocate, and an impassioned spokesperson.
>
> Over time, I have gotten to know him well. Not as a buddy to have lunch with. Not even as a fellow basketball player at lunchtime. But rather, as someone whose perfect understanding of WPI has - over time - become a resource available to the whole campus.
>
> I will not recount here all of Bob's many accomplishments: as the Head of Computer Science at perhaps the most critical juncture for that growing Department; as Secretary of the Faculty; and most recently as an active advisor of global projects.
>
> Instead, I will just tell you what I admire most about him….
>
> It is not easy to be at a place for 38 years, as Bob has been here, and lend that place out - over and over again - to new Presidents and Provosts and others who know it less well but wield a certain higher level of authority. It requires a special mix of characteristics that Bob has blended beautifully: the passion to speak out forcefully when it is appropriate to do so;

the restraint to signal all the proper respect; the resiliency to know that the world doesn't end with every small setback; and the certainty that all the time spent caring about a place you love is well worth a lifetime of work.

So, on behalf of the Faculty at WPI, I want to first apologize to Bob, because we can't possibly repay him for all that he has given us. But mostly, I want to congratulate our cherished colleague Prof. Robert Kinicki – for putting his special stamp on an institution that many of us can now call our home.

3. Provost's Remarks

Provost Bursten expressed his gratitude to Prof. Kinicki for his willingness to stay connected to WPI in the next few years through a continued involvement with global projects. The Provost recognized **Kristin Tichenor** (Senior VP), who indicated that 850 undergraduate students and 450 graduate students will participate in commencements this week. In all for 2015-16 year, there will have been 905 Bachelor's degrees, 703 Master's degrees, and 35 Ph.D.s awarded. At this point in time, it appears that the incoming class for fall 2016 will include 90 valedictorians and salutatorians, 34 percent women, and more students from California than from Maine. As for incoming fall 2016 graduate students, we are about 10 percent ahead of last year in student confirmations, which include 12 Fulbright Scholars with another four offers pending.

Provost Bursten commented on the bittersweet nature of all graduations and encouraged all faculty members to attend the graduate and undergraduate commencement ceremonies. The Provost indicated that we have successfully concluded 15 of 17 tenured and tenure-track faculty searches, with 12 at the assistant professor level, two at the associate professor level, and one at the full professor level. The current Faculty headcount is 248. Taking into consideration 10 departures, the new headcount anticipated on October 1, 2016 will be 249, with five additional faculty members to join by January 1, 2017.

Provost Bursten thanked Prof. Richman and all faculty members for their cooperation during his first year at WPI, and expressed his pride, humility and gratitude to be part of the WPI Faculty.

4. Committee Reports

Committee on Advising and Student Life (CASL)

Prof. Olson (MA), for the Committee on Advising and Student Life, and **Ms. Aramento** (Director of Academic Advising) gave an overview of the Insight Advising Program, which is a coordinated effort between Academic Advising and Residential Services designed to ensure a smooth transition for students to the full culture of college life. Prof. Olson then recognized 22 faculty members who have advised in the Insight Program for between five and nine years, and she recognized another group of seven faculty members who have served as advisors for ten or more years. (See **Addendum #1** attached to the file copy of these minutes.)

Committee on Governance (COG)

Prof. Gaudette (BME), for the Committee on Governance, gave an update on progress to date concerning academic promotions. He explained that a task force was formed in January 2015 to look into concerns raised in the COACHE survey about promotions at WPI. The task force report was sent to COG and COAP in October 2015, and disseminated to all faculty members in December 2015. COG and COAP have had two joint meetings on the matter, and COAP gave a report at the January 2016 Faculty meeting. COAP and COG plan to bring a motion to the Faculty in fall 2016 to add a seventh member to COAP so that COAP can institute a recusal mechanism for its deliberations of individual cases. To clarify current procedures, COAP will post the details of its procedures on the Faculty Governance website. Those procedures are not being modified now because COG anticipates that lengthy discussions next year about promotions may well result in the need for further changes. COG and COAP both believe that an effective mentoring system is essential and are discussing the best system to propose. The intention is to bring a proposal to the Faculty on this issue sometime during the next academic year. Prof. Gaudette explained that the issue of modifying the promotion criteria will require more extensive discussion at open meetings and Faculty meetings throughout next academic year.

Prof. Richman thanked the members of COAP for all their work hard work on these matters and expressed his expectation that COG and COAP would continue to work together to bring forward proposals that reflect broad campus input even if inviting a wide array of opinions required more time to do so.

5. Committee Business
Committee on Academic Operations (CAO)
Prof. Sturm (MA) for the Committee on Academic Operations, moved that the students identified in the distributed meeting materials (as well as two additional students), having completed all of the requirements for the degree designated in the department or program indicated, be approved for May 14, 2016 graduation. (See **Addendum #2** attached to the file copy of these minutes.) The motion **passed**.

Committee on Graduate Studies and Research (CGSR)
Prof. Demetriou (ME) for the Committee on Graduate Studies and Research, moved that the students identified in the distributed meeting materials (as well as one additional student), having completed all of the requirements for the degree designated in the department or program indicated, be approved for May 12, 2016 graduation. (See **Addendum #3** attached to the file copy of these minutes.) The motion **passed**.

Prof. Richman recognized all the work done in the Registrar's office, in general, and by the Registrar Heather Jackson, in particular. Prof. Richman summarized Ms. Jackson's accomplishments since coming to WPI as Registrar in January of 2010, and wished her well as she now departs WPI.

Committee on Governance (COG)/Committee on Graduate Studies and Research (CGSR)
Prof. Gaudette (BME), for the Committee on Governance, and **Prof. Demetriou** (ME), for the Committee on Graduate Studies and Research, moved that the description pertaining to membership composition of CGSR as written in the Faculty Handbook (Part One, Section Three, Bylaw One, Section IV) be modified as described in the meeting materials. (See **Addendum #4** attached to the file copy of these minutes.) Prof. Gaudette asked that **Prof. Dominko** (BBT), for the Committee on Governance, who presented the discussion of this motion at the April 2016 Faculty meeting, assist him in making the presentation and in taking questions. Prof. Demetriou explained that the proposed change is to convert the Provost's representative on CGSR to the Vice Provost for Research (VPR), and to replace the Director of Continuing Education with the Dean of Graduate Studies.

Prof. Dominko (BBT) explained that in the proposed CGSR membership structure, administrative input into all elements of the academic content of our graduate programs (M.S. and Ph.D., full-time and part-time, on-campus and off-campus, and on-line) would be provided primarily by the Dean of Graduate Studies, and administrative input into relevant research policies and practices would be provided primarily by the VPR. Such roles on CGSR are consistent with the responsibilities that the Faculty believes should reside with the Dean and the VPR. Prof. Dominko emphasized that, just as CGSR currently consults with several offices (such as Graduate Admissions, the Registrar's Office, and the Academic Technology Center), the current proposal would include regular consultations with and input from the Director of Corporate and Professional Education (CPE) on such issues as recruiting of on-line and off-campus students, and on-line and off-campus program delivery.

Prof. Gericke (CBC) expressed the view that removing the Director of CPE from CGSR would make Faculty governance less nimble and could result in generating less income by CPE. He also thought that keeping the Director of CPE on CGSR would firmly embed the CPE operation into the overall mission of the University, and he asked what the concern was about having the Director of CPE as a voting member of CGSR. **Prof. Demetriou** (ME) explained that the proposed committee membership was consistent with the evolution of the position of Dean of Graduate Studies from part-time to full-time. Now that the Dean is a full-time position, it should include responsibility for final oversight of all graduate programs. **Prof. Gaudette** (BME) explained that the intention was to see that the responsibility for all academic graduate programs flowed through the Dean of Graduate Studies.

Prof. El-Korchi (CEE/FPE) suggested that the Provost should have the option to choose his or her representative on the committee. **Prof. Gaudette** explained that, given CGSR'S charge, it was natural to have both the VPR and the Dean of Graduate Studies serve as ex officio members of the committee.

Prof. Orr (ECE) supported the addition of the Dean of Graduate Studies to the committee, but did not see the need to remove the Director of CPE given that CPE is a partner in delivering a major portion of WPI's graduate education. He pointed out that there is a difference between serving as a voting member of a committee and

serving as a resource for information. **Prof. Gaudette** suggested that the number of graduate credits delivered by CPE was comparable to the number delivered by some individual departments. He also explained that as a practical matter it was best not to increase the overall size of the committee. **Prof. Demetriou** stressed that CGSR would invite the Director of CPE to all meetings that addressed issues relevant to CPE.

Dean Wobbe (Undergraduate Studies) pointed out that if the Director of CPE were included as a voting member of CGSR, the elected faculty members on the committee would still constitute a majority of the committee. **Prof. Gaudette** explained that the proposal would maintain the current ratio of faculty members-to-administrators, and believed that this was especially important because it is quite common for faculty members to miss meetings due to travel conflicts.

Prof. Gennert (CS) asked if the possibility of splitting CGSR into two committees – one responsible for research and the other for graduate studies – had been considered. **Prof. Gaudette** indicated that COG had considered that very option, but decided that such a change should be considered as part of a larger more time-intensive re-evaluation and reorganization of several Faculty Governance committees. In the meantime, in the short-term, it is important to ensure that the Dean of Graduate Studies becomes a voting member of CGSR.

Prof. Kinicki (CS) moved to call the question. After a **second**, Prof. Kinicki's motion **passed**. A paper ballot was held on the original motion. By a vote of 68 in favor and 25 opposed, the motion (requiring a two-thirds majority) **passed**.

6. Adjournment
The meeting adjourned at 12:22pm.

Respectfully submitted,

Mark Richman
Secretary of the Faculty

Addenda on file with these minutes:
1. Addendum #1 CASL Presentation on Insight Long Service - May 10 2016
2. Addendum #2 CAO Undergraduate Student Graduation List - May 10 2016
3. Addendum #3 CGSR Graduate Student Graduation List - May 10 2016
4. Addendum #4 COG-CGSR Modification of CGSR's Membership - May 10 2016

Date: September 8, 2016
To: WPI Faculty
From: Committee on Governance (Chair, Prof. Dominko)
Committee on Tenure and Academic Freedom (Chair, Prof. Clark)
Re: Motion to modify procedures for stopping the tenure-clock

Motion:
The Committee on Governance (COG) and the Committee on Tenure and Academic Freedom (CTAF) recommend and I move that language concerning stopping the tenure-clock as currently written in the Faculty Handbook (Part Two, Section 1A on Academic Freedom and Tenure, subsection "*Stopping the Tenure Clock*") be modified as described below.

Description of the proposed modifications in language: (additions are in **bold**, deletions are ~~crossed out~~.)

A. Academic Freedom and Tenure

Stopping the Tenure Clock

1.~~2.~~ **New Child** ~~Child-Rearing~~ Provision
~~Whenever a tenure-track Faculty Member has or is expecting a child (biological or adopted) during her/his probationary appointment, she/he has the option~~ **Tenure-track Faculty members who undertake significant childcare responsibilities due to the arrival of a biological or adopted child during their probationary appointment are entitled** to stop the tenure clock for one year, thus postponing the academic year in which the tenure decision will be made. **The stopping of the tenure clock will be automatically granted by the Provost upon written notification by the Faculty member.**

Procedure
~~The faculty member must submit a notification to stop the tenure clock in writing to the Provost, with a copy sent to the Dean and the Department Head. The Provost will acknowledge the notification within 2 weeks, confirm that the exclusion will be granted, and provide the date on which his/her tenure review will be re-initiated. The Provost's communication will be copied to the Dean, the Department Head, and CTAF.~~ **Notification to stop the tenure clock must be submitted to the Provost in writing. A copy of the notification must also be sent to the appropriate Dean and Department Head. For a biological child, the notification may be made as early as the second trimester of pregnancy but no later than six months after the birth of the child. For an adopted child, the notification may be made as early as the date that the (**(deleted by friendly amendment: ~~**adoption is finalized**~~**) (**added by friendly amendment: ***child is legally placed in the home)*** **and no later than six months after the child's arrival at the adoptive home. If the birth or adoption of a child occurs during the academic year prior to the Faculty member's scheduled tenure review, then the notification must be submitted by January 15 of the academic year prior to the scheduled tenure review.**

The Provost will acknowledge the notification within 2 weeks, and will state the academic year in which the tenure review will occur. The Provost's communication will be copied to the Faculty member's Dean and Department Head and to CTAF.

~~Applicability~~
~~All notifications under this policy must be made prior to January 15 of the year before the tenure decision would normally be made. The notification must be made within 6 months of the~~

~~arrival of the child. Other terms and conditions of the appointment during this interval will be determined by the Provost.~~

2.~~1.~~ <u>Unpaid Leaves and Part-Time Employment</u>
Tenure-track Faculty Members are entitled to stop the tenure clock for unpaid full-time leaves or for intervals of part-time employment during which the Faculty Member's activity is at or below the half-time level. The need for such unpaid leaves or part-time intervals may arise from a variety of situations, including but not limited to **parenting,** ~~child bearing, child rearing,~~ extenuating circumstances related to a personal or family members' health, personal relations within a family which impose special or arduous burdens, or for other reasons as may be provided for in the "Family and Medical Leave Act of 1993." The terms and conditions of the leave are arranged by negotiation between the Faculty Member and the Provost. It is also understood that the leave or part-time interval is not to be imposed by the Administration, but that it is available at the election of the Faculty Member. (Exceptions to this policy must be approved by the Committee on Tenure and Academic Freedom.) The following Table gives the time intervals for which the tenure clock is stopped for these two types of leave.

Type of Leave	Duration	Period for which Tenure Clock is Stopped
Unpaid Full-time Leave	Less than 6 months	Not stopped
	6 to 18 months	One year
	More than 18 months	Two years
Half-time Activity Interval	Less than 12 months	Not stopped
	12-24 months	One year
	More than 24 months	Two years

3. <u>Effect on Tenure Review</u>
The tenure review of a Faculty Member who has exercised her/his entitlement to stop the tenure clock will be conducted under the same Criteria for Tenure as a candidate who has not stopped the tenure clock.

<u>**Rationale**</u>
The intent of the new child provision is to not place conflicts between having children and the demands of the probationary period. The current wording does not establish the stopping of the tenure clock as a clear entitlement, and there has been a perception that it involves individual negotiation with the Provost.

The New Child Provision was moved before the section on Unpaid Leaves and Part-time Employment, since the former is used more frequently. Additional changes were made to: 1) clarify the required timeline for notification in the cases of biological and adopted children; 2) be more inclusive of a variety of family arrangements, making it clear that the new child provision may be utilized by both mothers and fathers who undertake "significant" childcare responsibilities.

To develop the new wording, CTAF consulted the AAUP Statement of Principles on Family Responsibilities and Academic Work and the report entitled "Effective Policies and Programs for Retention and Advancement of Women" which was cited on the AAUP website. These references cited stop-the-clock policies at several universities, and these were reviewed by CTAF. Within the sample institutions, stop-the-clock provisions are enacted by a centralized decision-maker upon notification by the faculty member or the faculty member's department head.

A third provision to clarify the tenure review process was added to make explicit that there are no increased expectations or negative stigma associated with the eventual tenure review. CTAF treats the tenure review of all probationary Faculty Members in a consistent manner but there is no formal statement in the *Faculty Handbook* to convey this message to those Faculty Members who have exercised their entitlement to stop the tenure clock.

Date: September 8, 2016
To: WPI Faculty
From: Committee on Academic Operations (Prof. Sturm, Chair)
Re: Motion to change distribution requirements for ECE majors

Motion: On behalf of the ECE Dept., the Committee on Academic Operation recommends and I move that the distribution requirements for ECE majors be modified as described below.

Description of the proposed changes:

Existing Distribution Requirements:

"Note 2f. Must include at least 1/3 unit of engineering science (prefix ES) at the 2000-level or above. ES 3011 cannot be applied to this requirement.
Note 2g. Must include an additional 1/3 unit of engineering science and design at the 2000-level or above, selected from courses having the prefix AREN, BME, CE, CHE, CS (other than CS 2011, CS 2022, CS 3043), ECE, ES, FP, ME, or RBE."

The proposed change is to:

a) delete Note 2f;
b) change note 2g from a 1/3 unit requirement to a 2/3 unit requirement; and
c) add Aerospace Engineering (AE) to the list of course prefixes in existing note 2g. Since note 2f would be deleted, the existing Note 2g would also be relabeled as future Note 2f. (There are no other notes beyond 2g that would require re-labelling).

Proposed Distribution Requirements**:** (Changes shown in **bold,** and ~~strikethrough~~ fonts)

"~~Note 2f. Must include at least 1/3 unit of engineering science (prefix ES) at the 2000-level or above. ES 3011 cannot be applied to this requirement.~~
Note 2**f**~~g~~. Must include an additional **2/3**~~1/3~~ unit of engineering science and design at the 2000-level or above, selected from courses having the prefix **AE,** AREN, BME, CE, CHE, CS (other than CS 2011, CS 2022, CS 3043), ECE, ES, FP, ME, or RBE."

Rationale:
    The 1/3 unit ES requirement (existing Note 2f) has been in existence for several decades. The ECE faculty currently regards that requirement as a means to broaden the technical background of ECE majors. However, we currently find that our own department course offerings are much broader than they were a few decades ago, and the areas of student inter-disciplinary overlap are now spread out across course areas taught by a wider range of departments/majors. Thus, we would like to broaden this specific requirement. Increasing the existing Note 2g requirement (which permits ES courses, but also courses from several other majors) from its existing 1/3 unit to the proposed 2/3 unit provides this broader option for ECE majors. We also propose to add Aerospace Engineering (AE) courses to the list of acceptable courses.

If the requirements are changed, we anticipate that many (over time, perhaps most) ECE students will choose courses offered without the ES designation when satisfying the new requirements. The table below, with data provided by the Registrar's Office, shows ECE enrollment in ES courses over the past few years. The largest impacts (i.e., possible future reductions in ES class size) would seem to be to ES 2001 (Intro to Materials Science—ECE is 12% of overall enrollment) and ES 2501 (Intro to Static Systems—ECE is 7.1% of enrollment).

If the requirements are changed, we anticipate that ECE students will redistribute this 1/3 unit course selection over a variety of upper-level ECE courses and over a variety of lower-level courses from numerous other departments/majors. This redistribution is expected to be broad (depending on each ECE student's academic program) and not anticipated to strain any individual course.

The ME Dept., which teaches most of the ES courses, has been consulted on this proposed change. They are supportive of the change. ME Associate Dept. Head John Sullivan stated that the proposed change "… sounds like a fine modification." Brian Savilonis, for the ME Undergraduate Committee stated:

> …[T]he ME UG Committee approves this. We would not expect students to move into ME courses since those have suggested backgrounds heavy in ES. We concur that most likely students will not add a 2nd ES course, although they may; the migration to other departments, including ECE, is a good thing.

The full ME Department approved the change unanimously (19 April 2016 meeting) and provided the suggestion of also including Aerospace Engineering courses.

Implementation Date: Immediate (or as soon as can be practically implemented by the Registrar's Office). This proposed change is "forward compatible." All ECE majors who meet our current graduation requirements automatically meet these proposed changes, since ES courses meet the broader requirement proposed. However, some students might benefit immediately from the broader requirement proposed.

Appendix B
Brief Biographies of New WPI Faculty
Fall 2016

Tenured and Tenure-Track Faculty Members

Bernard Gordon Dean of Engineering
Department of Mechanical Engineering

Winston Oluwole Soboyejo, Professor
B.Sc., Mechanical Engineering, King's College, London University, England, 1985
Ph.D., Materials Science and Metallurgy, Churchill College, Cambridge University, England, 1988

> Prior to joining WPI, Prof. Soboyejo was a professor in Mechanical and Aerospace Engineering at Princeton University for approximately 17 years. He is a materials scientist whose research focuses on biomaterials and the use of nanoparticles for the detection and treatment of disease, the mechanical properties of materials, and the use of materials science to promote global development. His current projects include the use of nanomaterials for targeting and treating cancer; a sheer assay technique that may be able to measure the mechanical properties of organelles in the cell; and the Global Development Network, which engages students in the United States and other nations in research, development, and educational initiatives that explore new approaches to providing energy, clean water, affordable housing, and education for people in the developing world. Prof. Soboyejo brings to WPI an exceptional record of achievement in engineering research and academic leadership, as well as impressive accomplishments in international development and a noteworthy track record in building global research and educational partnerships. For example, he founded the U.S./Africa Materials Institute at Princeton, one of six international materials institutes supported by the National Science Foundation, and he has served as president and provost of the African University of Science and Technology (AUST) in Abuja, Nigeria, a pan-African university founded by the African Scientific Committee of the Nelson Mandela Institutes, which he has chaired since 2004. He held research positions at McDonnell Douglas Research Laboratories in St. Louis and the Edison Welding Institute in Columbus, Ohio, and faculty posts at The Ohio State University and MIT, before joining Princeton in 1999.

Department Head and Professor
Physics

Douglas T. Petkie, Professor
B.S., Physics, Carnegie Mellon University, 1990
Ph.D., Physics, Ohio State University, 1996

> Prof. Petkie joins us from Wright State University where he served as Chair of Physics since 2012 and Vice President of the Faculty Senate during this past academic year. At Wright State, he directed several undergraduate research programs, facilitated the transition of introductory physics courses to active learning pedagogies, led in the development of a Terahertz Research Cluster, and helped in the development and rollout of an Interdisciplinary Applied Sciences and Mathematics Ph.D. Program. Doug's research is focused in the millimeter-wave and terahertz region of the electromagnetic spectrum for sensing applications that utilize spectroscopy, imaging and radar techniques.

Department of Biomedical Engineering

Jeannine M. Coburn, Assistant Professor
B.S., Chemical Engineering, University of Massachusetts-Amherst, 2006
Ph.D., Chemical and Biomolecular Engineering, John Hopkins University, 2012

Since 2012, Prof. Coburn has been a Postdoctoral Fellow in Biomedical Engineering at Tufts University. Her research projects have spanned diverse areas with a common link based around biomaterial design for tissue engineering and drug delivery. She focused her research on projects that alter molecular properties, whether small molecules, synthetic polymers or biological polymers, to direct a desired biological response. Prof. Coburn's future research interests are at the interface between chemistry, biology, and engineering. She would like to launch a program that focuses on biomaterials and their modifications for the study of cancer treatments and for tissue regeneration.

Songbai Ji, Associate Professor
B.S., Materials Science, Shanghai Jiaotong University, Shanghai, China, 1996
M.S., Materials Science, Shanghai Jiaotong University, Shanghai China, 1999
M.S., Computer Science, Washington University in St. Louis, 2003
D.Sc., Mech. Eng., Boeing Foundation Research Fellow, Washington University in St. Louis, 2003

Prior to coming to WPI, Prof. Ji was an Associate Professor of Engineering, Thayer School of Engineering, Dartmouth College, and an Adjunct Associate Professor of Surgery and of Orthopaedic Surgery, Geisel School of Medicine, Dartmouth College. His area of expertise is in computational modeling, biomechanics and medical imaging applied to the central nervous system. His current research in the brain focuses on the biomechanics of traumatic brain injury, and his intent is to develop deployable technology and methods for traumatic brain injury mitigation countermeasures.

Department of Chemical Engineering

Andrew R. Teixeira, Assistant Professor
B.S., Chemical Engineering, Worcester Polytechnic Institute, 2009
Ph.D., Chemical Engineering, University of Massachusetts Amherst, 2014

Prof. Teixeira comes to WPI from a postdoctoral position in Chemical Engineering at Massachusetts Institute of Technology. He aims to apply his strong experimental background in the fundamentals of reaction engineering to emerging challenges where catalysis and reaction engineering can unlock new applications in alternative fuels/chemicals, catalysis, and pharmaceutical syntheses. He is classically trained in heterogeneous catalysis, biomass pyrolysis, and microfluidic reactor design.

Eric M. Young, Assistant Professor
B.S., Biological Engineering, University of Maine, Orono, 2008
B.S., Chemical Engineering, University of Maine, Orono, 2008
Ph.D., Chemical Engineering, University of Texas at Austin, 2013

Prof. Young joins WPI following his appointment as a Post-doctoral Associate, at the MIT-Broad Foundry, in the Broad Institute of MIT and Harvard. His work includes accelerating the design-build-test-learn cycle for the large scale engineering of yeast by leveraging forward design, modeling, automation, and scale to advance gene expression control and massively parallel multi-part pathway assembly. He has extensive experience in synthetic biology, metabolic engineering, and protein engineering. His research focus will be on transformational advances in engineering diverse eukaryotes as cell factories, and large scale metabolic engineering for biomass conversions to biofuels.

Department of Chemistry and Biochemistry

Anita E. Mattson, Associate Professor
B.S., Chemistry, Northern Michigan University, Marquette, MI, 2002
Ph.D., Organic Chemistry, Northwestern University, Evanston, IL, 2007

Prof. Mattson comes to WPI from The Ohio State University, where she was recently promoted to Associate Professor. Her research is centered on new method development and complex molecule synthesis. One key focus of her research is the preparation of important synthetic building blocks using

new transformations catalyzed by small organic molecules. Of particular interest is the development of reactions catalyzed by organic molecules through non-covalent interactions. Her new methods are applied toward the synthesis of naturally occurring bioactive targets. Her research is funded by the National Science Foundation.

Carissa Perez Olsen, Assistant Professor

B.A., Biology, Cornell University, Ithaca, NY, 2005

Ph.D., Molecular and Cellular Biology, University of Washington, Seattle, WA, 2011

> Prof. Olsen comes to WPI from the Fred Hutchinson Cancer Research Center. She is the recipient of an NIH Early Investigator Award that allowed her to establish a laboratory focused on using *C. elegans* as model for quantifying membrane homeostasis. In her PhD thesis she studied the impact and genetic regulation of *de novo* fatty acid synthesis on fat storage, reproduction and longevity in *C. elegans.*

Department of Computer Science

Carlo Pinciroli, Assistant Professor

M.S., Computer Engineering, Politecnico di Milano, Milan, Italy, 2005

M.S., Computer Science, University of Illinois at Chicago, Chicago, IL, 2005

Ph.D., Applied Sciences, Universite Libre de Bruxelles, Brussels, Belgium, 2014

> Prof. Pinciroli's research interests focus on swarm robotics, and include software engineering, algorithm design, and programming languages. He is the author of a widely used multi-robot simulator, ARGoS, and of a novel programming language for robot swarms, Buzz. Before joining WPI, Prof. Pinciroli worked as a postdoctoral researcher at Ecole Polytechnique de Montreal (2015-2016) and at Universite Libre de Bruxelles (2014). He also worked for one year (2006) as a software engineer in several projects for Barclays Bank PLC group. Prof. Pinciroli published 47 peer-reviewed articles and 2 book chapters. In 2015, F.R.S.-FNRS awarded him the most prestigious postdoctoral scholarship in Belgium (Charge des Recherches).

Robert J. Walls, Assistant Professor

B.S., Computer Science, University of Texas at Arlington, Arlington, Texas, 2007

M.S., Computer Science, University of Texas at Arlington, Arlington, Texas, 2009

Ph.D., Computer Science, University of Massachusetts Amherst, Amherst, Massachusetts, 2014

> Prof. Walls' interests lie at the intersection of security and digital forensics. He seeks to analyze and secure the large-scale, complex, inter-connected systems underpinning critical internet services. The broader objective of his work is to derive general principles of security from empirical observation. His past efforts have focused on multiple aspects of this problem, including the development of novel data collection methodologies, the analysis of partially structured data, and the transition of research results into practical tools and techniques. Before joining WPI, Prof. Walls worked as a postdoctoral scholar at Penn State University. While there his research focused on developing a science of systems security. Previously, he attended the School of Computer Science at the University of Massachusetts where he focused on providing law enforcement with novel techniques for investigating crimes. In 2011, he received the Yahoo Key Scientific Challenges Award for his work in Security & Privacy.

Jacob Whitehill, Assistant Professor

B.S., Computer Science, Stanford University, Stanford, CA, 2001

M.Sc., Computer Science, University of the Western Cape, Bellville, South Africa, 2007

Ph.D., Computer Science, University of California, San Diego, La Jolla, CA, 2012

> Prof. Whitehill's research interests are in machine learning and data science, as well as their applications to affective computing and education. His work is highly interdisciplinary and frequently intersects cognitive science, psychology, and education. Before joining WPI, Jake was a research scientist at the Office of the Vice Provost for Advances in Learning at Harvard University. In 2012, he also co-founded

Emotient, a San Diego-based startup company for automatic emotion and facial expression recognition that was acquired by Apple in 2016. In addition to being a passionate researcher, Jake is an avid teacher and has lectured, mentored, and tutored students in the USA, South Africa, Rwanda, and Germany.

Department of Electrical and Computer Engineering

Yousef Mahmoud, Assistant Professor
B.Sc., Electrical Power Engineering, Al-Balqaa Applied University, Amman, Jordon, 2009
M.Sc., Elect. Power Eng., Masdar Inst. of Sci. and Tech., AbuDhabi, UAE (with MIT), 2012
Ph.D., Dept. of Elect. and Comp. Eng., University of Waterloo, ON, Canada, 2016

Prof. Mahmoud's research interests include modeling, analysis and control of power electronic converters and their applications in grid integration of solar farms; maximum power point tracking, and modeling of photovoltaic systems; partial shading impact on photovoltaic systems; and mitigating the losses in partially shaded photovoltaic systems.

Foisie School of Business

Elizabeth Long Lingo, Assistant Professor
B.B.A., Finance, University of Massachusetts at Amherst, 1993
A.M., Sociology, Harvard University, 2002
Ph.D., Org. Behavior and Sociology, Harvard Business School and Harvard University, 2005

Prof. Lingo joined WPI as an assistant professor in July 2016. Elizabeth earned her PhD in Organizational Behavior and Sociology at Harvard University, where she was a fellow in Harvard's Program on Negotiation. Elizabeth's research focuses on the negotiated nature of collective creativity, and the relational brokerage work of leaders, entrepreneurs, and creative producers navigating across disciplines, cultures, and organizations to advance change and innovation. Elizabeth also focuses on gender and leadership outcomes—how we can support women innovators and entrepreneurs across the globe advance novel solutions and change. Prior to joining WPI as a tenure-track faculty member, Elizabeth was an assistant teaching professor in WPI's Foisie School of Business and a founding faculty member of Philadelphia University's Strategic Design MBA program. Over the past decade, Elizabeth has combined research with practice as she led the launch of new programs and curricula focused on entrepreneurship, social innovation, design thinking, and creative enterprise for the public good, and as a Senior Research Fellow at the Curb Center for Art, Enterprise, and Public Policy, the nation's premier public policy think tank focused on art, culture, creative enterprise, and the creative workforce.

Sara Saberi, Assistant Professor
B.S., Computer Engineering, Shiraz University, 2004
M.S., Socio-Economic Systems Engineering, Isfahan University of Technology, 2006
Ph.D., Industrial Engineering, University Putra Malaysia, 2011
Ph.D., Business Administration, University of Massachusetts Amherst, 2016

Prof. Saberi joined WPI in July 2016. Her primary interests are in pricing models, supply chain management, network optimization, and game theory. During her PhD at the University of Massachusetts Amherst, she contributed to the analysis, design, and management of the future Internet and supply chain networks with a focus on price and quality competition in service-oriented networks utilizing methodologies as optimization theory, network theory, game theory, and variational inequality theory. Her research agenda has been presented at multiple conferences and has already led to several publications and research awards including Eugene M. Isenberg Scholar Award in Fall and Spring 2014, Isenberg Outstanding Doctoral Student Researcher Award in April 2015, and Dissertation Support Award in May 2015.

Department of Mathematical Sciences

Padraig O'Cathain, Assistant Professor
B.A., Mathematics and History, National University of Ireland, Galway (N.U.I.G.), 2007
M.Litt., Mathematics, N.U.I.G., 2008
Ph.D., Mathematics, N.U.I.G., 2012
> Prof. O'Cathain will be joining WPI in B term of 2016, after having held Post-doctoral research positions at the University of Queensland in Brisbane, Australia (2012-2014), Monash University in Melbourne, Australia (2014-2015), and most recently at Aalto University in Helsinki, Finland (2015-2016). His research areas include algebraic design theory, group theory, computational algebra; algebraic, computational and probabilistic methods for existence and classification problems in design theory; and compressed sensing.

Department of Mechanical Engineering

Zhi (Jane) Li, Assistant Professor, Robotics Engineering Program
B.A.Sc., Mech. Eng. with minor in Comp. Sci., China Agricultural University, Beijing, China, 2006
M.A.Sc., Mechanical Engineering, University of Victoria, BC, Canada, 2009
Ph.D., Computer Engineering, University of California, 2014
> Since January 2015, Jane has been a postdoctoral Associate in Electrical and Computer Engineering at Duke University. She also has nearly 8 years of experience as a research & teaching assistant between University of California, Santa Cruz Bionic lab and at the Department of Mechanical Engineering, University of Victoria, BC, Canada. Her research interests are in bionics. She would like to apply the actuation, morphology, sensing, and motion control of biological systems to robotic systems and enhance their synergy, and would like to focus on medical robotic systems with teleoperation and shared autonomy.

Department of Social Science and Policy Studies

Patricia A. Stapleton, Assistant Professor
B.A., French, Ursinus College, 2002
M.A., French Literature, Rutgers University, 2004
M. Phil., Political Science, CUNY Graduate Center, 2010
Ph.D., Political Science, CUNY Graduate Center, 2012
> Prof. Stapleton joins the tenure track at WPI after three years as an Assistant Teaching Professor in the Department of Social Science and Policy Studies. She has extensive teaching experience in the areas of comparative policy, comparative politics, international relations, and environmental studies and serves as program director for the Society, Technology, and Policy major. Prof. Stapleton's research focuses on biotechnology regulation and governance, with a particular emphasis on comparative international studies of genetically modified organism (GMO) risk assessment and regulation. Her work has been published in *Agriculture and Human Values* and *Politics and the Life Sciences.* Her edited volume *Biopolitics and Utopia* appeared in 2015.

Continuing Non-Tenure Track Faculty Members, Visiting Faculty Members, and Others with Teaching Responsibilities

Department of Chemistry and Biochemistry

Amalene Cooper-Morgan, Assistant Teaching Professor
B.S., Long Island University, NY, Biology, 2001
M.A., Columbia University, New York, NY, 2004
M.Phil., Columbia University, New York, NY, 2007
Ph.D., Columbia University, New York, NY, 2009
> As a graduate student, Prof. Cooper-Morgan investigated 3'-end mRNA processing. In collaboration with a structural biology lab, her biochemical studies suggest that Rail/Dom3Z, the protein that stimulates Rat1 exoribonuclease activity, possesses pyrophosphohydrolase activity towards 5' triphosphorylated RNA. During her postdoctoral fellowship, she used her background in biochemistry to determine whether long-range interactions are important for regulation of *IGF2*. She interrogated long-range chromatin interactions between *IGF2* promoter(s) and other regions of the human genome.

Department of Civil and Environmental Engineering

Jose Ricardo Alvarez Corena, Assistant Teaching Professor
B.Sc., Civil Engineering, Universidad de Cartagena, Cartagena, Columbia, 1999
M.Sc., Environmental Engineering, Universidad Nacional de Columbia, Bogota, Columbia, 2004
Ph.D., Civil Engineering, Worcester Polytechnic Institute, 2015
> Since August 2015, Jose has been a WPI postdoctoral fellow with Professor John Bergendahl. His research interests include fate and transport of emerging contaminants in water, and evaluation and development of advanced oxidation process to remove contaminants of emerging concern in water.

Ali Fallahi, Assistant Teaching Professor
Bachelors, Architecture at Department of Art & Architecture, Yzard University, Iran, 2002
Masters, Architecture at Department of Art & Architecture, Yzard University, Iran, 2002
Ph.D., Building Engineering, Civil & Env. Eng., Concordia University, 2009
> Prof. Fallahi joins WPI from Fraunhofer USA, where he was a Building Science Engineer. Some of his responsibilities included conducting research and development work in the areas of sustainable energy, building energy efficiency and high performance thermal insulation technology; numerical modeling of hygrothermal building components and energy systems; experimental evaluation and field testing of thermal systems; feasibility studies, conceptual design and cost estimation; and business development and grant proposal preparation.

Computer Science

Tian Guo, Assistant Research Professor
B.S., Software Engineering, Nanjing University, Nanjing, China, 2010
M.S., Computer Science, University of Massachusetts Amherst, Amherst, MA, 2013
Ph.D., Computer Science, University of Massachusetts Amherst, Amherst, MA, 2016
> Prof. Guo is broadly interested in distributed systems, cloud computing, and cloud-enabled IoT devices. In particular, her current research focuses on developing model-driven approaches to optimize performance for cloud-based applications. Before joining WPI, Tian worked on systems to handle workload dynamics introduced by new cloud applications and emerging cloud platforms. She was awarded Graduate School Dissertation Writing Scholarship at UMass Amherst. She also has spent time working at AT&T Research and NEC Labs.

Department of Humanities and Arts

Mohamed Brahimi, Instructor
B.A., Suffolk University, 2002
M.A., Suffolk University, 2008

Mr. Brahimi kicked off his academic career by earning an associate degree in Law and Islamic jurisprudence. He then went on to earn a degree in Journalism from Suffolk University in Boston, as well as a graduate Degree in Political Science with a concentration in International Relations. Brahimi went on to receive a certificate in Civic Leadership as part of a scholarship program. Mr. Brahimi has extensive background in community organizing and advocacy work. He led efforts to increase political and civic engagement among the Boston Muslim community and has consulted in numerous research endeavors as a voice for the Muslim community. Mr. Brahimi worked as a member of the Harvard University "Islam in the West" research team. Mr. Brahimi was also involved in a number of social science research projects with Cambridge Institute of Health producing research that bolsters advocacy tools for Immigrant and minority community. Mr. Brahimi taught at several Institutions of higher learning such as Providence College, Emmanuel College, and Worcester State University. Mr. Brahimi's achievements span many areas, chief amongst them being the founder and managing editor of Al Arab News. Mr. Brahimi has led efforts to increase political and civic engagement among the local Muslim community; to that end, he founded The Moroccan American Civic and Cultural Association, a volunteer organization that emphasizes the importance of participatory citizenship. Mr. Brahimi also serves as a Board Director in one of Massachusetts largest cap agency whose mission is to fight poverty, eradicate homelessness. Mr. Brahimi has also worked with other advocacy groups on issues of great relevance such as hunger, poverty, and racism. In 2009, Mohamed was named as a Muslim Leader of Tomorrow (MLT), a prestigious title bestowed on young Muslim with a track record of community organizing.   Mr. Brahimi is currently working on the topic of Bi-cultural Stress disorder.

Althea Danielski, Assistant Teaching Professor
B.A., English, Wesleyan University, 1992
M.A.T., TESOL Concentration, SIT Graduate Institute, 2004
Adult Basic Education (ABE) License, 2009

Prof. Danielski joins WPI from Saint Paul College, where she taught developmental reading to non-native speakers of English. A teacher of English-language acquisition for 15 years, she began that career with a 7-year stint living and teaching English in West Africa. Her overseas experience with English Language Learners includes time in Ecuador, Haiti, Senegal, Niger, and Benin. In addition to teaching English for non-native speakers, she also understands and helps foreign students adapt to their new culture, not only mastering a new grammar and vocabulary but also recognizing and working with "the internal friction you feel when you cloak yourself in the new culture's way of expression." At WPI, Althea has already helped raise our standards and expectations for English Language Learners while helping them realize their own high standards. She looks forward to Project Advising in WPI's Global Perspective Program.

John Galante, Assistant Teaching Professor
B.S., Economics, Tufts University, 2000
M.A., International Affairs, Columbia University, 2008
M.A., History, University of Pittsburgh, 2010
Ph.D., History, University of Pittsburgh, 2016

Prof. Galante joins WPI from the University of Pittsburgh, where his dissertation focused on the impacts of World War I on Italian communities in Buenos Aires, Montevideo and São Paulo. The project pays particular attention to the effects of homeland crises on social relations within immigrant communities and on the transnational networks in which immigrant groups are situated. John has also worked as a market analyst and journalist covering the global energy sector, most recently for consultancy ESAI Energy

in Wakefield, Massachusetts. He will teach topics in World History and Global Studies in the Department of Humanities and Arts.

Interactive Media and Game Development

Farley Chery, Assistant Teaching Professor
B.A., Animation, Collins College, 2006
M.F.A., Media Design, Full Sail University, 2010
> Farley is a 3D artist and animator with specialties in Motion Capture and Character Rigging. He has published training materials in rigging for Digital Tutors. He has taught at Northeastern University and Fitchburg State University, among many other area universities.

Edward Gutierrez, Assistant Teaching Professor
B.F.A., Cal-Arts, 1988
M.F.A., Academy of Art University, 2007
> Ed is an artist with extensive experience in Animation and Drawing. He has worked as an animator at Warner Brothers and Walt Disney Feature Animation. He comes to us from California College of the Arts. Ed has an MFA from Academy of Art University in San Francisco.

Jeffrey Kesselman, Instructor/Lecturer
B.S., University of Wisconsin-Madison, 1987
> Jeff is a game software developer with extensive professional and technical expertise. He was the Chief Technical Officer at 4d North, Blue Fang Games, Rebel Monkey, and Entertainment Games. He was also a senior software engineer and "Chief Instigator" working on Java game technologies at Sun Microsystems Laboratories. He has taught at WPI, Becker, Northeastern, and Daniel Webster College. Jeff has a BS in Computer Science and Film Production from University of Wisconsin-Madison.

Department of Mathematical Sciences

Lucia Carichino, Post-Doctoral Scholar
B.S., Mathematical Engineering Politecnico di Milano, 2008
M.S., Mathematical Engineering, Politecnico di Milano, 2010
Ph.D., Applied Mathematics, Purdue University, 2016
> Lucia's research focuses on the mathematical and computational modeling of biological fluids and tissues. During her PhD work, she developed mathematical models to investigate the relevance of mechanical and vascular factors in the pathophysiology of glaucoma, a neurodegenerative disease affecting the eye.

Simone Cassani, Post-Doctoral Scholar
B.S., Mathematical Engineering, Politecnico di Milano, 2008
M.S., Mathematical Engineering, Politecnico di Milano, 2011
Ph.D., Applied Mathematics, Purdue University, 2016
> Simone's research includes the field of applied mathematics studying biological applications. His PhD work focused on the study of ocular blood circulation and aqueous humor flow in relation to ocular diseases, with a particular interest in glaucoma, a degenerative ocular disease which is the second leading cause of blindness all over the world. His BS and MS theses focused on turbulence.

Kelum Gajamannage, Post-Doctoral Scholar
B.S., Mathematics, University of Peradeniya (Sri Lanka), 2007
M.S., Applied Statistics, University of Peradeniya, 2011
Ph.D., Mathematics, Clarkson University, 2016
> Kelum's research is mainly focused on manifold learning and dimensionality reduction in collective

motion. As a secondary focus, he uses the aid of image processing frameworks for pattern recognition to study collective motion with transitions, and also has a broad interest in mathematical modelling of dynamics of multi-agent systems. His research outputs range from theoretical results to algorithms.

F. Patricia Medina, Post-Doctoral Scholar

B.Sc., Mathematics, Universidad Central de Venezuela, 2001

M.S., Mathematics, Universidad de los Andes, 2003

M.A., Mathematics, Bowling Green State University, 2009

Ph.D., Mathematics, Oregon State University, 2014

> Patricia's research areas include adsorption models, methane hydrates models, non-complementarity constraints, applied functional analysis, and numerical analysis.

Xiaodan Zhou, Post-Doctoral Scholar

B.S., Mathematics, Beijing Normal University, 2011

Ph.D., Mathematics, University of Pittsburgh, 2016

> Xiaodan's research areas include analysis on metric spaces, nonlinear partial differential equations, sub-Riemannian geometry, and differential games.

Department of Mechanical Engineering

Daoru (Frank) Han, Assistant Research Professor

B. Eng., Aeronautical Propulsion, Nanjing Univ. of Aero. and Astro, Nanjing, Jiangsu, China, 2009

M.S., Aerospace Engineering, Missouri University of Science and Technology, 2011

Ph.D., Astronautical Engineering, University of Southern California, 2015

> Prof. Han joins WPI following his position as a postdoctoral scholar at University of Southern California, where he worked with a 3D parallel immersed finite element and particle-in-cell framework for simulations of plasma dynamics with astronautical applications. His experience is in particle-in-cell modeling of space plasma interactions, immersed finite element method, ion propulsion plume contamination, ion thruster grid erosion and ion optics, plasma environment at the lunar terminator, and parallel programming/computing.

Undergraduate Studies

Leslie Dodson, Assistant Teaching Professor

B.A., Psychology, Lake Forest College, Lake Forest, Illinois. 1982

M.S., Journalism, Northwestern University, Evanston, Illinois. 1987

Ph.D., Tech., Media and Society, ATLAS Inst., Coll. Of Eng. & Appl. Sci., Univ. Col., Boulder. 2014

> Dodson's research focuses on fogwater harvesting in southwest Morocco, where she studies the social, cultural and gender implications of delivering potable water from fog to rural Berber communities. She has expertise in Information and Communication Technology for Development (ICTD), international development, social entrepreneurship, conservation biology, user-centered design and participatory development. At WPI, she develops and delivers experimental humanitarian engineering curricula and interdisciplinary courses including Transmedia Storytelling. Prior to joining WPI, Dodson was an international correspondent for CNBC, MSNBC, NHK-Japan and Reuters (London, Tokyo, New York) covering international finance and environmental issues. She is Executive Director of Tifawin Institute, a non-profit humanitarian engineering organization focusing on Science, Technology, Engineering, Arts and Media in the context of international development.

Military Personnel

Air Force and Aerospace Studies

(Capt.) Cynthia Archambeau, Assist. Prof. of Aerospace Stud., AF Res. Offs. Train. Corps, Det. 340
 B.S., Mechanical Engineering, University of Massachusetts, Amherst, 2012

> Captain Cynthia L. Archambeau is an Assistant Professor of Aerospace Studies for the Air Force Reserve Officers Training Corps, Detachment 340 at Worcester Polytechnic Institute, Worcester, MA. Her responsibilities include leading detachment recruiting and training efforts as well as teaching Introduction to the Air Force and Air Force Leadership Studies courses.   Captain Archambeau completed her Bachelor of Science Degree in Mechanical Engineering from UMass Amherst in 2012. She commissioned through the ROTC program at UMass Amherst and entered the Air Force in 2012 as Lead Systems Engineer of the Joint Service Aircrew Mask for Strategic Aircraft program. During this time she led the development effort of the chemical-biological protective mask.

(Lt. Col.) Patrick O'Sullivan, Prof. of Aero Stud., Commander, AF Res. Offs. Train. Corps, Det. 340
B. S., Industrial Technology, Southern IL University, Carbondale, 1995
Squadron Officer School, Maxwell Air Force Base (AFB), Ala., 2002
M.B.A., Webster University, St. Louis Mo., 2004
Air Comm. and Staff Coll., Masters of Operational Arts and Sci., Air Univ., Maxwell AFB, Ala., 2009
Air War College, Maxwell AFB, Ala., 2012

> Lt Col Patrick M. O'Sullivan is the Air Force Reserve Officers Training Corps Detachment 340 and Professor of Aerospace Studies at Worcester Polytechnic Institute, Worcester, MA. His responsibilities include leading a cadre of professionals that recruit, educate, and train cadets to become officers in the United States Air Force. Lt Col O'Sullivan entered the Air Force in 1993 as a C-141B Crew Chief at Travis AFB, CA. He received his commission through Officer Training School after graduating from Southern Illinois University Carbondale with a Bachelor of Science Degree in Industrial Technology. He currently has 23 years of active duty service in the Air Force and has served in a variety of positions in Air Mobility Command, the Pentagon, and Headquarters International Assistance Security Assistance Force (ISAF). He is also a graduate of Air Mobility Command's PHOENIX HAWK leadership development program. Prior to his current position, the Lt Col was the Commander, 43d Operations Support Squadron, Pope Army Airfield, N.C.