



Research Enterprise Update

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Presentation to the Faculty
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NSF CAREER Awards FY17&18

- **Michael Timko** (CHE): Inorganic-organic hybrid microreactors for fundamental study of cellulose hydrolysis by solid acids **\$499,836.00**
- **Scarlet Shell** (BBT): Post-transcriptional regulation of mRNA stability in mycobacterium smegmatis **\$1,073,223.00**
- **Craig Shue** (CS): Transforming residential networks into security assets **\$507,862.00**
- **Ivon Arroyo** (SSPS), Wearable tutors in the embodied mathematics classroom **\$688,431.00**
- **Kyumin Lee** (CS): Tracking, Revealing and Detecting Crowdsourced Manipulation **\$441,294.00**

NIH Awards FY17&18

- **Jagan Srinivasan** (Dirk Albrecht), Functional connectome of sex specific processing of social ques, **NIH R01 \$1.8M**
- **Songbai Ji**, Accumulated white matter fiber strain from repetitive head impacts in contact sports, **NIH R01 \$1.1M**
- **Anita Mattson**, Silanediol Enabled Drug Discovery, **NIH R35 \$1.7M**

NSF DRL Award FY18

- **E. Ryder**, (**R. Gegear, C. Ruiz, S. Weaver**) EI: Building Educational Bridges between Computer Science and Biology through Transdisciplinary Teamwork and Modular Curriculum Design, **NSF \$1.2M**

Intellectual Property and Innovation FY17

- **52 disclosures**
- **12 licenses**
- **11 issued patents**
- **Accelerate WPI Program**
- **WPI Chapter, National Academy of Inventors**

Strategic Plan

A. Large Initiatives

B. Research Infrastructure

C. Increased Visibility

Building the Foundation for **PRACTICEPOINT**

In April 2017, WPI was awarded a \$5M grant from the Commonwealth of Massachusetts to create PracticePoint, a membership-based R&D and commercialization alliance that seeks to improve healthcare technologies and develop new medical cyber-physical systems.

Working together, PracticePoint members will spearhead advances in digital medical technologies, robotics, cloud computing, wireless technologies, and data science—for the benefit of patients, providers, and companies.

WPI is supported by founding partners:

University of Massachusetts
Massachusetts Technology Collaborative
GE Healthcare
The MITRE Corporation

Consortium First, Facility Second

The scope of PracticePoint extends beyond a facility. Today, we aim to build teams of like-minded collaborators to accelerate product development and put Massachusetts first in the advancement of cyber-physical systems technology. Clinicians, patients, researchers, suppliers, investors, and medical device manufacturers are all invited to join us.

Let's share collective knowledge on:

- setting industry standards.
- discovering products primed for mergers and acquisitions.
- determining areas of pre-competitive research, and
- refining usability studies.

*Fact?
Segway into timeline?
Icons?*



21st Century Manufacturing Hub @ WPI

- Opportunities:
 - Develop new sources of funding for translational research and workforce training programs
 - Position WPI as a leader in manufacturing innovation in the Commonwealth and attract state matching funds
 - **Develop a state-of-the-art manufacturing facility in Gateway**
 - Re-Connect WPI to regional economic development
 - Take a leadership role in forging alliances with other colleges and universities, incubators, SMEs, large corporations (transformational rather than transactional activities)
 - Have a key role in knowledge creation, translation into innovative products and workforce development
 - Technical services support for SMEs (e.g. testing, prototyping)
 - Business consulting for SMEs
 - Incubation of spin-offs
 - Development of a qualified workforce

Research Solutions Institute (RSI)

Support faculty with:

- Discovering/pursuing large funding opportunities
- Preparing teams for large/complex proposals
- Assisting faculty with proposal strategy
- Helping to develop or revitalize research clusters and centers
- Assistance in forming consortia with industry and non-profits

Research Solutions Institute



- **Ellen Piccioli** – Director of Manufacturing Innovation
 - MIT, Leaders for Global Operations program
 - Intel
 - IT2Intel Program & Strategic Engagement Leader
 - Director, Eco-Technology Program Office
 - Director, Execution and Planning Quality – Architecture and Planning



- **Michael Wright**– Research Opportunity Development Lead
 - UMass Amherst
 - Business Development Specialist, Innovation Institute
 - Managing Director, Mass Center for Renewable Energy Science and technology,
 - Director of Operations, Planning and Development, Mass NanoTech Institute



- **Colleen McShea**– Grants Specialist
 - Summit Educational Group
 - Operations Manager
 - Classroom Programs Coordinator
 - Crossroads School for Children, ABA Counselor

Research Visibility & Development

- Development of partnerships
 - UMMS, NSRDEC, etc
- Collaboration with Marketing & Communications
 - Research website
 - Research stories (press releases, WPI Journal, Research@WPI e-newsletter)
- Organization of Workshops and Symposia
 - Health robotics, digital health, ...
 - Venture Forum
- Participation in high visibility events
 - Hill briefings: Manufacturing Caucus, Competitiveness Caucus
 - Deshpande Symposium
 - Advanced Materials sector study – Council on Competitiveness
- Support for faculty
 - Sponsorship of faculty trips to NSF, NIH, MIIs
 - Support with grant writers and grant reviewers

Some Future Initiatives

- 21st Century Manufacturing Hub in Gateway Park (Lincoln Square)
- Manufacturing Engineering Education in DOE
- Center funding
 - NSF STC, ERC
 - DOD, DOE, DHS
 - State
 - Consortia
- Partnerships with DOD
 - NSRDEC
 - ARL

