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Welcome to the Online Learning Issue of Panorama!

After our last issue around corporate education was such a success, we couldn’t wait to bring together tips, tricks, and the latest news from online education for you.

WPI has been a leader in distance education for over 30 years: a number that shocked me when I was hired. The Internet wasn’t even really a thing 30 years ago! I remember thinking. It turns out, “distance learning” back then meant sending lectures and other coursework on VHS tapes—remember those?—to our students, via snail mail.

Times sure have changed! In 2018, WPI launched its 12th online master’s degree program in Bioscience Administration (you’ll hear more about that in this issue!). Add to that our certificate programs, and we now offer 24 graduate-level programs online to hundreds of students around the world.

Even in 2019, misconceptions about online learning abound, and that’s doubly true when it comes to a technological university like WPI. Can online programs offer the same rigor? The same leading-edge knowledge? Will my online degree be taken seriously in the STEM world? Do I have the ability and time to do this on my own?

That’s why WPI created the Faculty Institute of Online Teaching, which prepares our faculty and instructors to adapt the rigorous, research-based coursework for an online audience and ensures our distance learners earn the same degree as their on-campus peers (more on the FIOT inside!). That’s also why we have Student Success managers like Steph Papia—whose interview is included in this issue—who keep online students connected to campus and support them from application to graduation.

Lastly, because online programs have become such a centerpiece of Corporate & Professional Education at WPI, you may have noticed a change in our social media presence: we’ve combined our CPE and Online personae into one: WPI Online & Corporate Education (@WPIOCE on Twitter, Instagram, and Facebook). Follow us to stay up-to-date on new programs and other advancements in the online-learning space.

I hope you learn something new about the online experience in this issue.

Happy reading!

Kate Vogel
Panorama Editor
That’s why WPI’s online graduate programs offer something many universities don’t: a Student Success Team. We sat down with Steph Papia, one of WPI Online’s Student Success Managers, to find out more about this unique job.

**What is a Student Success Manager?**
The Online Student Success Manager is a student’s main point of contact. We’re a one-stop shop for answering questions, lending an ear to help on concerns, and celebrating success. From finding the right course to applying for graduation and everything in between, we’re here to help our students figure out their path forward.

**Why is this role so valuable for working students?**
We’re a trusted source for all of their questions. Students know they can contact us and they’ll get a response as quickly as possible. Also, we genuinely care about their success, and many of us have been in their shoes; I have been in the past, and now my husband is taking an online course, too. We offer invaluable support and individualized assistance. This term alone, I’ve made 169 outreach calls and emails to check on some of the students in my care.

**What does a normal day look like for you?**
It really varies, and that’s why I love this job. Usually the day includes answering student emails in 24 hours or fewer, working on process-improvement projects to improve the student experience, and taking phone calls from students. Sometimes, they even drop in to the office, which I love and many don’t realize is an option!

**What’s the best part of your job?**
Hands down, it’s graduation. Graduation is like Christmas for the Student Success team! We love getting students to that finish line, and when they come to campus to walk, we get to see them in person, sometimes for the very first time after years of phone and email exchanges. Also, any time I get to help someone, whether it’s on their master’s program or a single course or some personal obstacle in their way, that’s a great part of this job.

**What’s the question students ask most, and what’s your most helpful piece of advice when they ask it?**
“What’s my next course?” is definitely the question I get asked the most!
As for advice: you can do this. You can go back to school and finish. The more you talk to us about your situation, the more we can help you. Reach out when you need something, and we’ll figure it out together.
While it might not be obvious to the student, or even a professor based in a traditional classroom, a lot of careful consideration must be taken when delivering an online course. That’s why WPI has developed the Faculty Institute for Online Teaching (FIOT) to ensure students receive high-quality course instruction in their online courses. To date, 84 WPI faculty members have successfully completed the FIOT program at WPI, including some who joined a virtual FIOT group, since they are not local to Worcester. This program has improved student experience and instructor understanding of the unique needs of distance learners.

**Online Instruction: There is more to it than you think.**

Online instruction is a different world, and it’s important to adapt coursework with accessibility and understanding in mind. Lecture materials for online courses are successful when the focus is on the learning outcomes. In one example, an instructor noted that the overall run-time for a particular module was reduced from 120 minutes to 70 minutes. In reviewing the content, it was clear that nothing useful was removed, because the students actually had fewer questions on the material and provided higher quality submissions for the same related assignments. Course survey results indicate that the students appreciate the revised course delivery. Faculty report finding it easier to grade higher quality results.

**How do you teach someone to teach online? You make them an online student!**

The FIOT program is three phases, with a 2-3 month commitment from the instructor (see the graphic for details). Building community among the instructors is vital for the continuation of providing high quality online courses. The participants enjoy the relationship building with fellow faculty members who they have not met before and an opportunity to share their successes or failures when teaching an online course.

One standout portion of the program is the four-week asynchronous online course in which the instructor becomes the student. The goal of this phase is to help the instructors take part in the online experience from the student’s perspective, with homework assignments included! Instructors get an
in-depth view of interacting in an online course, which helps them prepare how to adapt their coursework.

The FIOT cohorts end with instructional design consultation with WPI’s instructional designers. These professionals help the instructor develop their course syllabus and schedule for the Web, along with at least one online-ready deliverable they can use on their Canvas course site (an activity, lesson, or assessment).

As the FIOT becomes more established, new processes and features are emerging to continue the growth and development of the online instructors, such as the chance to give feedback on how their first online course went and a Community of Practice for all FIOT alumni to participate in; there are 64 members to date.

If you are a WPI faculty member interested in the next FIOT cohort, round 8 kicks off on May 2, 2019. Reach out to facultyinstitute@wpi.edu for information about joining the next cohort.
NEW AND UPCOMING
Online Graduate Programs at WPI

WPI is always developing new specializations and programs to stay current with industry trends and needs. Below you will find details about programs and specializations that are now and will soon be available online from WPI.

MS in Bioscience Administration – now available

2019 sees the launch of another new online graduate program at WPI: a Master of Science in Bioscience Administration. This 10-course, 30-credit master’s degree program can be earned completely online in an asynchronous format, although opportunities are available to combine online and onsite lab components for a blended learning experience. This degree has been specifically crafted by the needs of industry, providing students with practical knowledge in the areas of biotechnology, chemistry, and business.

MS in Robotics Engineering with Autonomous Vehicles (AV) Specialization – now available

After completing this program, the student is prepared to:

- Describe a complete systems architecture of an AV that can operate in real world environments
- Build a data description of the environment from sensor data fusion
- Construct a deep learning based, short time, self-driving system which provides real-time control from perceptual data and physical constraints
- Build a heterogeneous sensor fusion solution for largescale navigation
- Evaluate challenging problems in conventional control and their impact when applied to autonomous vehicles
**Master of Science in Computer Science – coming Fall 2019**

This program will offer crucial knowledge in Computer Science, with a focus on Cybersecurity. Topics include:

- The mathematical foundations of computing
- Design, analysis and proofs of algorithms
- Design of computer and communication networks
- And more!

To get more information about this program, email Susan Hicks (shicks@wpi.edu).

**Graduate Program in Cognitive Radio – coming soon**

These offerings will empower electrical and computer engineers to:

- Discover and contribute to emerging field of adaptive radio science.
- Develop new applications in M2M and M2I communication that break the current constraints impeding the emergence of the Internet of Things.
- And more

**Graduate Program in Positioning, Navigation and Timing (PNT) – coming soon**

A key component of Global Positioning Systems – (GPS)

This interdisciplinary program focuses on the ECE foundational topics of:

- Probabilistic Signals and Systems
- Digital Signal Processing
- Wireless Communications
- Digital Communications
- And more!

Please note: “coming soon” programs are under development. Courses and names of courses are subject to change pending final approval.

GET UPDATES ON UP-AND-COMING PROGRAMS
Most Popular Online Graduate Programs* at WPI

1. Power Systems
2. Electrical and Computer Engineering
3. Robotics

4. Systems Engineering
5. Mechanical Engineering
6. Fire Protection Engineering
7. Data Science
8. Environmental Engineering
9. Biotechnology
10. Construction Project Management
11. Cybersecurity
12. Bioscience Administration
13. Systems Thinking

*Based on total online student population by cohort program for the 2018-2019 academic school year
ONLINE GRADUATE PROGRAMS

- DESIGNED FOR THE WORKING PROFESSIONAL

What sets us apart

- Ranked #1 for faculty that combine research and teaching (Wall Street Journal)
- High-tech education with immediate relevance
- Flexible delivery with 24/7 access
- Dedicated student support team
VOCAB LESSON: Online Learning

Online programs vary greatly depending on the schools that offer them, but they still share some common terminology. Here are just a few of the most important terms in online education:

**Asynchronous learning**
An “on-demand” learning format that gives students the flexibility to participate in an online course when it is most convenient for them, within the course’s given deadlines. Conversely, *synchronous learning* requires all students to attend/participate at a specific time.

**Blended learning**
Instruction that combines online and in-person learning; also known as hybrid learning.

**Cohort**
A specific group of classmates who begin and finish a program at the same time.

**Learning management system (LMS)**
A platform students use to access course materials (lectures, readings, syllabi, etc.), contact professors, and communicate with classmates. WPI’s LMS is Canvas.

**Module**
A thematic group of course material (similar to a chapter) within a course.

**Webinar**
An online presentation. Typically, the facilitator (an instructor or professor) controls the visuals and can be heard narrating the presentation, while participants ask questions and answer polls via an online chat feature.

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GOT 7 MINUTES?
Take this short survey and help improve the grad-school-research experience for you and your peers.

FEEDBACK

TAKE THE SURVEY
WPI CPE Instructor Publishes Textbook

OVERVIEW

Charles A. Gillis, P.E., WPI Continuing and Professional Education instructor and member of the class of 1995, is the author of a new textbook, titled *Hammer's Blueprint Reading Basics*, which has been published by Industrial Press.

With the publication of this 4th edition, Mr. Gillis takes over ownership of a work begun by Warren Hammer (deceased), a seasoned professional with more than 50 years of experience in manufacturing. Mr. Hammer originated the Blueprint Reading Basics book, and with this revision, his legacy lives on. The book is available in softcover and e-Book formats. An Instructor’s Resource Kit is sold separately.

ABOUT THE AUTHOR

Charles A. Gillis, P.E., has over 22 years of machine design experience in industry. For the last 8 years, he has taught Geometric Dimensioning & Tolerancing through Worcester Polytechnic Institute's Continuing and Professional Education Department.

His consulting company helps clients with product design, design for assemblability and manufacturability, design documentation, tolerance stack-up analysis, and related capability-building. He has designed and put into service numerous pieces of manufacturing equipment consisting of complex mechanisms of precision assembled components.

He is currently serving as a mechanical design engineer for the Blades & Razors division of Procter & Gamble, designing automated machinery for manufacturing Gillette's blade & razor products. He has designed equipment to manufacture the Mach3, Venus, Sensor3, Fusion, and Venus Embrace product lines.


Charles earned his Bachelor of Science Degree in Mechanical Engineering from Worcester Polytechnic Institute, and his Master of Science Degree in Mechanical Engineering from Northeastern University. He is a licensed Professional Engineer in the Commonwealth of Massachusetts, and holder of a Geometric Dimensioning and Tolerancing Professional Certificate-Senior Level (GDTP-S) from the American Society of Mechanical Engineering (ASME).

GET THE BOOK
TOP 5 TIME-MANAGEMENT TIPS FOR ONLINE LEARNING

If you’re worried whether you have enough time to read an entire issue of Panorama, you could definitely use the advice in this popular Catalyst entry. Caitlin Keller, an instructional designer at WPI, has compiled time-management tips that are useful for everyone—even people who aren’t online students.

HOW TO APPLY FOR GRADUATE SCHOOL: A STEP-BY-STEP GUIDE

Everyone loves a good to-do list! Read this blog to learn more about the basic prep that will simplify your grad school application process.
On November 6, WPI kicked off its first ever PracticePoint Collaborative Forum at WPI Seaport in Boston. PracticePoint Collaborative Forums are intended to bring together key stakeholders from industry, academia, healthcare, and user/patient groups to help identify, discuss, and address challenges in various healthcare technology fields.

PracticePoint is a membership-based R&D and commercialization alliance, made possible by the Massachusetts Technology Collaborative, that seeks to improve healthcare technologies and develop new medical cyber-physical systems. The inaugural forum, co-sponsored by MassMEDIC, began with a panel of assistive device users, including WPI student Jared Grier ’19 and alumnus Michael Conrad ’06, ’15 (MS MG), ’16 (MS SE), ’16 (MBA), ’18 (MS ECE), all of whom use assistive devices every day, and included two keynote speakers and panels led by medical device companies.

Get the full recap of PracticePoint’s first forum.

SAVE THE DATE: CPE SPRING CARNIVAL!

WPI's Corporate and Professional Education Department is hosting a Spring Carnival! Make plans to join us on Friday April 26 by the campus fountain to explore the world of WPI’s online & corporate graduate programs and institutional partnerships while you enjoy your favorite carnival games, snacks, and prizes!

- **Students**: Explore your options after graduation and get a taste of what online learning is really like.
- **Faculty**: Engage with our Faculty Institute of Online Teaching (FIOT), explore teaching opportunities, and what CPE offers.
- **Staff**: Learn more about CPE’s dynamic involvement in the WPI community.
Very honored to receive Product of the Year award for the #INCOSE #CompetencyFramework on behalf of all the hardworking folks on the Competency Working Group. Our success was a Team effort. They should be very proud!
@incose_org @WPIOCE
DATES TO REMEMBER

MARCH
5-7  Transmission Summit East, Arlington, VA
18-22 Upstream Processing of Animal Cell Culture Products (WPI BETC)

APRIL
3-4  NEWWA Annual Conference (New England Water), Worcester, MA
8    DOBLE Engineering, Boston, MA
8-11 Automate Conference, Chicago, IL
8-11 Downstream Principles and Techniques (WPI BETC)
26   CPE Events: Online Teaching Info Sessions & Spring Carvinal, WPI

MAY
1-2  4TH Annual Advanced Biomanufacturing Symposium, WPI
9    WPI Graduate Commencement
21   Column Packing Theory and Practice: Bench to Commercial

JUNE
4-6  Robotics Summit / Medical Device Talks, Boston, MA
11-13 Quality By Design (Q-b-D) for Biopharmaceuticals (WPI BETC)
17-20 NFPA (National Fire Protection Association) Conference, San Antonio, TX

▶ VIEW FULL LIST OF CONFERENCES