**INFORMS TEC 2022 Presentations**

|  |  |  |
| --- | --- | --- |
| **Presenter** | **Title** | **Abstract** |
| **Jill Hardin Wilson**  *Assistant Department Chair and Director of Undergraduate Studies*  *Professor of Instruction*  *Department of Industrial Engineering and Management Sciences Northwestern University* | Considerations for Flipping the OR/MS/Analytics Classroom | We will discuss practical issues around flipped classroom models, including making the content valuable and accessible to all students, and motivating students to engage.  Part of the session will be devoted to small-group discussion of courses that participants hope to convert to a flipped classroom model. |
| **Larry Snyder**  *Professor, Dept. of Industrial and Systems Engineering*  *Director, Institute for Data, Intelligent Systems, & Computation*  *Lehigh University* | Gamifying Learning in Mathematical Optimization: The Burrito Optimization Game | Classroom games are a great way to engage students and demystify abstract topics. In this talk, I will discuss the [Burrito Optimization Game](https://nam10.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.burritooptimizationgame.com%2F&data=05%7C01%7Csxk70%40psu.edu%7C691efa3a384c4e8ba2b908da43e05f30%7C7cf48d453ddb4389a9c1c115526eb52e%7C0%7C0%7C637896928191794594%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=L5xrMSa6tYDmMus3TnN9VS8PhJBjoV9vu%2F%2B7CvcnXkc%3D&reserved=0), an educational game that I developed in collaboration with Gurobi Optimization. The free, web-based game is designed to act as an entry point for data scientists and problem solvers who would benefit from optimization. The game teaches users why optimization is valuable and important, why it’s difficult, and why solvers and other optimization algorithms are essential in finding an optimal solution. I'll introduce the game and discuss ways to use it for teaching, in a data science class, an intro to OR class, or even a K-12 setting. |
| **Abdullah Konak**  *Distinguished Professor of Information Sciences and Technology*  *Penn State Berks* | Collaborative Creative Problem-Solving Techniques | Innovation means coming up with new products, services, solutions, and ideas that improve the status quo. Although creativity is one of the most basic human traits, it sometimes seems challenging to innovate. Solution design teams, especially in larger, established organizations, frequently fail to develop innovative solutions. Research shows that a structured approach to innovation can improve the productivity and creativity of innovation teams. This hands-on workshop introduces several techniques that can help innovation teams in finding (a) facts, (b) new ideas, and (c) creative solutions in classroom settings. This workshop will introduce several collaborative innovation and problem-solving methods and how to apply them to better engage all students in group work. |
| **Susan Martonosi**  *Professor of Mathematics*  *Harvey Mudd College* | Boosting student learning with a more inclusive classroom | In this session, participants will engage with three tools for course design that foster a more inclusive classroom and have been proven to improve the learning of all students.  1) In Universal Design for Learning, the instructor designs the course to be accessible and effective to as many individuals as possible.  2) Active Learning teaching methods help to make courses more inclusive and have been proven to improve students’ sense of belonging and decrease performance gaps. 3) Classroom Assessment Techniques (CATs) are low-stakes, easy-to-implement activities that provide the instructor and students with rapid feedback on student understanding. |
| **Destenie Nock**  *Assistant Professor, Civil & Environmental Engineering | Engineering & Public Policy*  *Carnegie Mellon University* | Integrating Social justice and equity into operations research classes | This talk will discuss methods for integrating social justice topics into classroom instruction. Dr. Nock has adapted homework and active learning games to help engineering students evaluate the social justice implications of technical decisions. Participants will leave with strategies for integrating social justice topics into their courses, which can increase student's critical thinking ability. |