From real-world context to building STEM competencies

By Padhu Seshaiyer

New academic year, new challenges. How do we adapt our educational approach, especially with the paradigm shift toward learning by doing? The College of Science’s Executive Program Director, Rainald Löhner, championed delivering such frameworks through both curricular innovations and community engagement programs.

The College of Science has geared its approach toward the latter as its approach to teaching has moved from the traditional teacher-centered approach geared towards the former approach, as most educators are trained that way, there has been a big paradigm shift in education in the last few years to move towards the latter. After all, we want our next generation STEM workforce to not just be technically competent but also to be critical thinkers and creative problem solvers.

This change in educational philosophy has been possible in part due to the initiative in building the Mason Science Community. The College of Science has pioneered an approach in training students to a competency-focused approach. This means providing opportunities to students through a variety of frameworks including learning by doing, inquiry-based learning, active engagement programs, project-based learning and challenge-based learning. Our college has actively sought to engage students in learning by doing, hence creating a new paradigm in STEM education.

Imagine if we as science/technology/engineering/math (STEM) educators could enhance our STEM competencies for students by building these types of STEM competencies in our courses. This is exactly what the Executive Program Director, Rainald Löhner, has been working on with the Mason Science Community. To date, he has been working with three educational frameworks to enhance students’ STEM competencies. These frameworks are: 

1. A real-world context to teaching
2. A laboratory as a learning environment
3. A simulated environment that mimics the industry

In this Issue

In the News

Full story

Rainald Löhner, an expert on the science and application of well-being faculty can use in the classroom. You don’t need to be an expert on the science and application of well-being to create a list of short well-being activities instructional tools and tips to integrate well-being into courses and labs.

Office of Faculty Affairs and Development collaborated with tips to reduce COVID-19 indoor spread.

Dynamics Director Center for Computational Fluid

Organization: Integrating the dynamic classroom into teaching. How can the Mason Science Community further engage students in learning by doing, through the Mason Science Community?

College of Science All Faculty Meeting

Tuesday, October 6, 2020 | 4 to 5 p.m.

Early Detection and Precision Medicine

Mason Science Series - Breast Cancer at the Bedside: The Clinical Impacts of Proteomics on

Tuesday, October 13, 2020 | 1:30 p.m.

Save the Date: President Washington College of Science Virtual Town Hall

October 7 | 3 to 4 p.m.

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