As we round into the homestretch of the semester, I'm reminded what a privilege it has been to see students on campus-- sometimes masked in person, sometimes via Zoom. Finding opportunities to build relationships between faculty, staff, and students that focus on forming the mind, soul, *and heart* is what makes the Institute such a unique place to work.

I've also found several opportunities to explore intellectual and even spiritual themes in surprising places this terms. We're excited to host Dr. Francis Su as our second Pathways to Purpose speaker today.

If you were in a classroom and overheard a conversation about things like beauty, playfulness, truth, justice, and love, you might assume you were eavesdropping on a class in philosophy, religion, or perhaps literature. But our guest today argues that these basic concepts are fundamental to the discipline of mathematics.
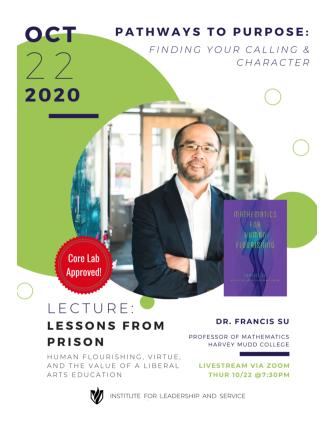
In 2015, Su became president of the Mathematical Association of America. He was the first person of color to hold that honor in the MAA's 100-year history. In his outgoing presidential address, he talked about the ways in which various practices, habits, and virtues obtained through the study of mathematics could help students flourish as human beings—to enjoy the happiness, peace, or shalom that ancient philosophers in the Jewish, Christian, and Muslim traditions described as the ultimate goal of human life.

Many people in the audience, including two of my own friends, described Su's talk as packing an emotional punch—hardly your typical academic lecture. To hear someone, particularly in the harder sciences, talk about the beauty and elegance of a mathematical

proof, the necessity of playfulness in solving mathematically puzzles, or the racial or gendered injustices often present in the classroom, was a novel experience.

Su's address was expanded into a book titled, *Mathematics for Human Flourishing*, published this past year by Yale University Press. We hope you have a chance to catch his Pathways lecture ([7:30pm tonight, Registration link here](#)), or his [podcast interview on Call & Character.](#)

David Henreckson, Director of Valparaiso University's Institute for Leadership and Service.

October: Science and Imagination

This October, our compendium theme is Science and Imagination in honor of our Pathways to Purpose speaker, Dr. Francis Su.

Jonah Koetke (Former ILAS staff member) wrote [an essay on science and the imagination](#). We love our ILAS alumni! ~Emily Friedman, Student Coordinator, Civic Reflection Initiative, ILAS

The BBC series [*Fun to Imagine*](#) with physicist and Nobel laureate Richard Feynman features Feynman sharing his passionate thoughts from the comfort of his home about how science stretches our imagination Feynman is revered among many for his ability to communicate to non-scientists the beauty and order of the universe as he saw it. ~Bharath Ganesh Babu, Associate Professor of Geography, Valparaiso University

[*The Secret Lives of Glaciers* by M. Jackson](#) discusses the social relationship between locals in southern Iceland and their local glaciers. It goes into detail about people's mental

relationships with them as natural objects, their historical and cultural significance, views on climate change, and ultimately the future they offer for the local inhabitants. ~Jon-Paul McCool, Assistant Professor of Geography

John Dyer is both a computer programmer and a theologian who also has been one of the unique voices in recent years examining ethics and technology from a Christian perspective. His latest blog post features a data analysis of women in the Old Testament using the Bechdel Test to highlight how the Bible does or does not center women's experiences. ~Aaron Morrison, Assistant Director, ILAS

A classic problem in probability states, "Suppose a family has two children and you know one of the children is a boy. What is the probability that the other child is a boy?" Many people answer ½, but the correct answer is ⅓ (try to think about why!). A twist on this class probability problem states "Suppose a family has two children and you know one of the children is a boy *born on a Tuesday*. What is the probability that the other child is a boy?" You may initially think "What does Tuesday have to do with it?", but surprisingly the extra twist does change the probability! You can find an elegant solution to the problem here. ~Tiffany Kolba, Associate Professor of Mathematics and Statistics

Famed Mathematician Roger Penrose won one half of the 2020 Nobel Prize in Physics for his work on black hole formation and relativity. The occasion for his award has also highlighted his previous work in Penrose tiling, which is reminiscent of *girih* — the geometric patterns used in Islamic architecture. Muslim mathematicians and architects, likely drawing on Islamic theology, were able to create quasi-crystalline patterns some 500 years before similar patterns were described in the West. ~AM

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