# SE&T Colloquium Series-Fall 2019

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| Speaker | Dr. Patrick Pan<br>Department of Mathematical Sciences |
| Title | ***Not All Kernels Are Created Equal*** |
| Abstract | First, I would like to invite you for an adventure in the wonderland of "Operator Theory." I will give a brief tour of the wonderland and demonstrate its importance using basic examples that are common in STEM disciplines. I will then discuss some local approximation properties of kernels of elementary operators. These kernels give rise to many interesting classes of operators, including Toeplitz and Hankel matrices, and centralizers, which are related to commutators and the uncertainty principle in quantum mechanics. For this talk, the operators are mostly matrices. I will also introduce a game (similar to Sudoku and KenKen), which can be a research project for interested students. Finally, I will share some of my recent discoveries and tools used, including analytic functions, tensor product of matrices, and matrix pencils. |
| Date | Tuesday, October 29 |
| Time | 4:10-5:00pm |
| Place | Pioneer 240 |
| | Refreshments will be served at 4:00pm. |