FACULTY SPOTLIGHT

Dr Vinodh Chellamuthu
Assistant Professor of Mathematics
Dr. Vinodh Chellamuthu is an assistant professor of mathematics who does a remarkable job at fostering a classroom revolving around Active Learning. Active Life. Dr. Chellamuthu cares deeply about his students and his overarching goal is to help his students internalize the material they are learning and gain skills that will be useful in their future careers. He contributes to active learning beyond the classroom, such as having students enter math competitions and mentoring students doing undergraduate research.

When it comes to teaching, Dr. Chellamuthu takes his job seriously and is constantly looking to improve the classroom experience with non-traditional math pedagogy. In his classroom, students don’t learn by lectures and solving textbook problems because this is repetitive and doesn’t prepare students for the real world. Instead, Chellamuthu has students collaborate in groups, work on the board in front of the class, and interact in hands-on experiments that connect the math concepts.

As Dr. Chellamuthu says, “No job will say ‘Do problem 10 from chapter five’ It’s more like, ‘Here is a problem and now go fix it.’”. Creating a fun, yet realistic learning environment drives his students to be independent learners, which is far more valuable than being a student who is good at memorization by doing routine homework problems.

In Dr. Chellamuthu’s Discrete Mathematics course, students give numerous presentations, are responsible to share their own ideas in class, and build their communication skills—which typically aren’t associated with math. He wants to emphasize that math is in the world around us through these experiences. In his Calculus III course, students step directly on the top of eggs at home and
video record their findings. Students get a hands-on demonstration of the strength of certain shapes when those eggs don’t break! With visual assignments like these, Dr. Chellamuthu strives to bring meaning to the math that his students learn. In turn, they later will be able to apply the math more easily in real life situations.

Many students think of statistics as a “General Education check mark class” and simply try to pass it instead understanding its application to their major. Dr. Chellamuthu wanted to move away from that mindset and did this through teaching his Fall 2018 MATH 1040 class in a new and unique way: for the entirety of the semester, his students worked on a semester long project derived from data which
they had interest in. They created their own hypothesis, wrote a summary about their findings, and presented at a Poster Showcase, where their work was judged. He met one-on-one with each student to check in a few times over the semester, and it was a great way to interact with them outside the classroom. Two other instructors are now using this project-based pedagogy and the goal is to get more of the DSU math department to do the same. Even though the semester long project took some prep time, the results were satisfying and the students understood the strategy behind it.

Dr. Chellamuthu wants to see all of his students succeed and hopes to impact their education positively. He is especially proud of those who have participated in math competitions and received awards for their research. Last year, Dr. Chellamuthu advised three of his students who represented Dixie State at the “The Interdisciplinary Contest in Modeling” (ICM). They had ninety-six hours to solve an open-ended industrial research problem and used their skills from various educational backgrounds to do so. The team, Alexander Mitchell, Rashe Elliot and Neil Duncan, along with Dr. Chellamuthu, received an Honorable Mention—the first time in Dixie State history. Dr. Chellamuthu is a strong advocate for student research and “Preparing his students as future scientists”. Knowing the importance of teaching and research for undergraduates at DSU, Dr. Chellamuthu developed a mentoring formula that has produced remarkable results. He has passionately mentored many students through the Math 4890R course with the aim of indulging them in an intensive and transformative research experience in applied mathematics, in which they learn to view themselves as producers of knowledge as opposed to consumers of knowledge. He has mentored over fifteen students on their individual research projects, and his research students have given 24 presentations in international, national, state and regional conferences. These mentoring efforts have resulted in impressive student achievements.

A student, Alexander Mitchell, is a math prodigy who enrolled in Math 2280 Differential Equations class with Dr. Chellamuthu at age 15! Under Dr. Chellamuthu’s guidance, he created a formula that models Ebola outbreaks and received a Dixie Award: Undergraduate Researcher of the Year in 2018. Several of his students, Colton Smith, Craig Peterson, Jake Skinner, and Noelle West received Outstanding Poster Awards from the Mathematical Association of America (MAA) at the largest math conference in the world. Doing research solidifies one’s understanding and engages a student into mathematics more than anything else.

Dr. Chellamuthu contributes to our campus outside of his classroom. He received a national grant from the MAA called the PIC Math grant, which allowed him to create a new course and teach it at DSU. According to Dr. Chellamuthu, this course, Math 4800 – Industrial Careers in Mathematics, “will provide DSU students the chance to use the skills they learn in classes to solve messy and complex real-world problems.” Dr. Chellamuthu is also part of an Innovation Mini-Grant from the Center for Teaching and Learning and is using it for his “Project C3” (Connecting Class and Community). He is implementing Project C3 this semester and the purpose is for calculus students to interact with the community, identify a problem to solve, and then propose a solution. We look forward to seeing the results of these grants and are proud to have such an exemplary faculty member at Dixie State.
“I though the poster was a great experience having students present is typically something only found in upper division classes. It always increases learning when students must teach, giving us a long-term goal to accomplish was also very pragmatic. It prepares us for real life when we will have a set amount of time to organize and present our findings.”

- Student

“The presentation of projects has helped me understand how statistics work in real life situations especially with in my major.”

- Student