A Passion for Student Opportunities

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Utah State University is thrilled to welcome Assistant Professor Jackson Kulik, a passionate mathematician and engineer who began his career in higher education this year. His path to academia, rooted in his love for math and engineering, shows his dedication for teaching the next generation of scientists and engineers.

New USU Assistant Professor Jackson Kulik is researching ways to make equations and laws in astrodynamics and applied mathematics more efficient and easier for engineers.

Kulik's fascination with numbers led him to Texas Tech University, where he earned his undergraduate degree in mathematics. During his time there, he interned at The Aerospace Corporation, which shifted his interests from pure mathematics toward practical engineering problems in defense in and space exploration. This experience laid the groundwork for his future in astrodynamics, the branch of applied mathematics that would become his research focus.

Kulik continued his education at Cornell University, earning a Ph.D. in applied mathematics. During a conference he was introduced to a USU professor who encouraged him to consider the university for future opportunities. Initially set on a career in industry, Kulik’s plans shifted due to industry layoffs, prompting him to take the leap and apply at USU — a decision he describes as one of the best of his life.

“Sometimes the universe just aligns, and you find the door that’s meant for you,” he said.

Kulik’s research centers around how satellites know where they are and how to guide them to their destinations, touching on astrodynamics, guidance, navigation and control. His background in applied mathematics assists him in focusing on optimizing how satellites operate with limited onboard computing hardware. His work won’t break new scientific ground, but rather will make advanced calculations more efficient.

“Everything in this field comes back to understanding the underlying rules and computing something meaningful from them,” Kulik explains. “We’re not discovering new laws, but instead applying known laws to solve modern problems more effectively.”

Beyond his research, Kulik looks forward to mentoring the next generation of scientists. Starting next semester, he plans to recruit students to engage in astrodynamics and applied math research. He is particularly passionate about connecting students with industry opportunities, helping them gain valuable work experience while they’re still in school. He credits the scientific progress made in the 1960s and how those pioneering achievements still guide today’s research in astrodynamics.

"Opportunities present themselves to you in unexpected ways, and it's important to take advantage of them," he said. “Look at scientists back then. In a sense, we’re building on the shoulders of giants, using math to understand and predict how things will behave in space, based on principles discovered long ago,” he said.

Kulik's ultimate goal is to foster a collaborative environment where students can learn, innovate, and find their own paths, whether in industry or academia.

“Math will take you far,” said Kulik. “What sets you apart is your ability to bring knowledge from different areas into your own. That’s what leads to breakthroughs.”

As Kulik settles into his new role, he is excited to make new discoveries in astrodynamics and continue exploring the vast possibilities of applied mathematics. He values the flexibility that his academic role affords, allowing him to focus on the aspects of his job that bring him joy — math, research and the freedom to explore new ideas.

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