



MECHANICAL & MATERIAL COLLOQUIUM

A Journey through Industry and Academia

by Andres Tremante (MME/FIU)

The worlds of industry and academia are vastly different. Although the classroom setting of learning is important, there is only so much that can be taught using a textbook. Hands-on experience is one of the best ways to learn as engineers where one can grasp a better understanding of what is described by a textbook. Upon entering the academic world from working in industry as a Research Scientist & Specialist in the Oil & Gas Industries, I quickly saw the distinction between the two worlds. This highlighted a massive gap that I feel needs closing to develop better engineers for our future.

My career journey has included meaningful contributions and professional fulfillment without pursuing tenure track in academia in the United States. I am currently a Teaching Professor for FIU's Mechanical and Materials Department and the Senior Director for the Center for Development, Support, and Success in Engineering and Computing (CDSSEC). Additionally, research has played an active role in helping me bring some of my creative ideas to life. Throughout my academic career I have published research papers on topics including but not limited to fluid mechanics, thermodynamics, numerical simulation, aerodynamics, computational fluid dynamics simulation, and engineering. In this talk, I will share my experiences from working in the oil industry for about 10 years and how I navigated an academic career focused on teaching, supporting student success, mentorship, and research.

This seminar aims to provide graduate students with insights and encourage them to find fulfillment in any career path taken. In addition to providing advice based on my personal experiences, I would love to share how I've combined my passions and expertise gained through the years into an academic-industry model called ENGINE which stands for Engineering-Industry Innovation Ecosystem. The ENGINE model is a comprehensive framework that structures FIU College Engineering and Computing as a dynamic student-centered ecosystem. The model spans from K-12 through graduate education and into industry.



Dr. Andres Tremante grew up in Venezuela, earned his PhD from Arts et Métiers Paris Tech in France which motivated his work as a Research Scientist & Specialist in the Oil & Gas Industries for about 10 years. However, he always had a passion for teaching, so he began pursuing an academic career at Universidad Simon Bolivar (USB) in Venezuela in 1992 as an Assistant Professor at the Energy Conversion & Transportation Department and Chairperson for the Mechanical Energy Conversion Lab. In addition to teaching, in 1999 he was heavily involved in research as the Vice-President for Research and Development at USB. After becoming a Full Professor in 2004, he went on sabbatical leave as an Invited Professor by the Mechanical and Materials Engineering (MME) Department at Florida International University (FIU) in 2005.



Dr. Tremante then officially began his FIU career in 2008 as a Senior Research Specialist for the Applied Research Center (ARC). Later on, he also became an Assistant Teaching Professor for the MME Department where he then moved again through the ranks and was finally granted Teaching Professor status in 2020. Throughout his time lecturing at least four classes every semester, he recognized his passion in supporting students succeed beyond the classroom setting. He happily took the opportunity to become the Director for what used to be called Center for Diversity and Student Success in Engineering and Computing CD-SSEC in 2017. This allowed Dr. Tremante to grant more opportunities for FIU students to develop real world skills and experiences through the various programs offered by the center. Students involved with the center gain experience in areas such as teaching, public engagement, program coordination, curriculum development, and research skills.

Additionally, he has been able to connect industry partners to FIU through guaranteeing cooperate grants with companies like 3M, Lockheed Martin, Boeing, Microsoft, Chevron, Dell, BOSCH, and Stellantis. After taking an academic year long sabbatical leave in 2023 at George Mason University as an Affiliate Faculty at the College of Science and Adjunct Professor at the College of Engineering, he returned to FIU continuing his position as Teaching Professor for MME and was then promoted to Senior Director for the newly renamed Center for Development, Support, and Success in Engineering and Computing (CDSSEC).

Dr. Tremante's academic career has not only been focused on teaching, but he has also published over 30 research papers on various topics including but not limited to fluid mechanics, thermodynamics, numerical simulation, aerodynamics, computational fluid dynamics simulation, and engineering. Additionally, he has a patent for Active Aerodynamics Mitigation and Power Production System for Buildings and other Structures a technology in the efforts of developing smart cities of the future: US Patent 2018: 9,951,752 B2. He's even impacted student organizations through founding and mentoring the FSAE - Panther Motorsports, SAE - Aero Design and Eco Engineering Club.

<https://mme.fiu.edu/seminar-schedule>

Place:
EC 1113
Time:
2:00-3:15 PM
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For questions or suggestions, contact Colloquium Organizers Dr. Jihua Chen (chenj@fiu.edu) or Dr. Pezhman Mardanpour (pmardanp@fiu.edu)