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University of Miami, Physics Department Colloquium

Date: Wednesday, Sep 2, 2026
Time: 4:00 pm – 5:00 pm
Location: Physics Library – Rm 335, Knight Physics Building

From Nuclei to Neural Networks: A Physicist's Journey through Computational Discovery

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Abstract

Over the past three decades, computational science has transformed from a specialized tool into a foundational driver of discovery across nearly every discipline. Modern cyberinfrastructure brings together advanced computing technologies, including CPUs, GPUs, high-performance storage, high-speed networks, software platforms, and the expertise to accelerate scientific innovation.

In this colloquium, I will reflect on my journey from nuclear structure physics to leading initiatives that advance computational science, research cyberinfrastructure, and data-driven discovery. I will share lessons learned from building interdisciplinary research programs, fostering collaborations across academia, industry, and government, and developing strategic partnerships that strengthen institutional and regional research ecosystems.

I hope this conversation sparks new ideas and catalyzes collaborations at the intersection of physics, computational engineering, AI/ML, and domain sciences, creating opportunities for transformative research, workforce development, and training.

Biography

Ravi Vadapalli, Ph.D., serves as the Director of Advanced Computing Services at the University of Miami's Frost Institute for Data Science and Computing. With over 20 years of experience, Dr. Vadapalli leads high-performance computing and data science, AI, and research cyberinfrastructure services across science, engineering, medicine, and the humanities. He holds a Ph.D. in Nuclear Physics from Andhra University and an M.S. in Computational Engineering from Mississippi State University. He is actively engaged in fostering interdisciplinary collaborations through advanced computing, developing future workforce training programs, and building computing ecosystems that accelerate scientific discovery and innovation.