



# Olsen College Newsletter

## DEAN'S MESSAGE

Welcome to the first edition of the Olsen College of Engineering and Science Newsletter! This marks an exciting moment for our college as we share the stories, achievements, and innovations that define our growing community.

As we begin a new academic year, Olsen College continues to build momentum through creativity, collaboration, and excellence. Our faculty and students are engaged in transformative work-advancing research, enriching the learning experience, and strengthening partnerships, that connect knowledge to real-world impact.

Through experiential learning, research, and interdisciplinary collaboration, our programs prepare students think critically, lead confidently, and contribute meaningfully to a rapidly changing world. I invite you to explore this inaugural issue and celebrate the accomplishments and energy that make Olsen College such a vibrant hub of discovery and leadership.

Interim Dean, Gregory H. Olsen College of Engineering and Science  
Laila Khreisat, Ph.D.

### Our Website:



[www.fdu.edu/academics/colleges-schools/olsen/](http://www.fdu.edu/academics/colleges-schools/olsen/)

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## COLLEGE HIGHLIGHTS

### A Transformative Year for the Gregory H. Olsen College of Engineering and Science

The newly formed Gregory H. Olsen College of Engineering and Science saw substantial growth and transformation during Summer and Fall 2025, marked by expanded research activity, new academic and industry partnerships, enhanced laboratory activities, and increased student engagement across programs. These changes reflect a strong foundation for innovation, interdisciplinary collaboration, and experiential learning as the College continues to evolve.

During Fall 2025, the newly formed Gregory H. Olsen College of Engineering and Science completed several key foundational initiatives such as:

- Finalized the College vision and mission
- Established the Math Reform Task Force
- Conducted college committee formation and elections
  - Launched the Interim College Educational Planning Committee (CEPC)
  - Formed the Interim Second-Level Peer Review (SLPR) Committee
  - Established the College Bylaws Committee

These efforts laid the organizational and governance framework for the College's future growth and academic excellence.

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### Center for Artificial Intelligence to Advance Ethical AI Education and Innovation



Fairleigh Dickinson University has launched the FDU Center for Artificial Intelligence (AI), a new initiative dedicated to advancing ethical AI education, interdisciplinary collaboration, and real-world innovation. The Center serves students, faculty, and staff across the University, with a mission to prepare students to design and deploy AI technologies responsibly, empower faculty through training and curriculum development, strengthen partnerships between academia and industry, and support administrative efficiency through ethical AI solutions.

The Center is directed by Christopher Stubbs, a faculty member in the Gregory H. Olsen College of Engineering and Science, who provides academic leadership for the Center's interdisciplinary and ethics-focused initiatives.

To mark the launch, the Center will host a full-day symposium, "The Intelligent Future: AI Across the Arts & Sciences," on Wednesday, April 15, 2026. Sponsored by Pfizer and the Independent Colleges and Universities of New Jersey, the hybrid event will take place on the Florham Campus and via Zoom, bringing together faculty, students, and researchers from across disciplines to share ideas, research, and innovative applications of artificial intelligence.

## FACULTY RESEARCH HIGHLIGHTS

### Biological Sciences Faculty Receive Honors and Leadership Recognition



*(Dr. Marion McClary Photo by Dean Janet Boyd.)*

Olsen College proudly congratulates faculty in FDU's Department of Biological Sciences, who were recognized for their leadership and contributions during the summer and fall terms. Dr. Richard Lo Pinto was re-elected Chair of the Columbia University Seminar on Pollution and Water Resources, continuing his role in guiding research and discussion on environmental issues.

Dr. Marion McClary received the 2025 Green and Healthy Places Leadership Award from the Northern New Jersey Community Foundation on June 5, 2025, in Hackensack, NJ, honoring his efforts to advance sustainable and healthy community initiatives.

These achievements highlight the department's ongoing commitment to environmental research, community impact, and professional leadership.

### Distinguished Faculty Award Highlight: Dr. Avimanyou Vatsa



Olsen College of Engineering and Science congratulates Dr. Avimanyou Vatsa from Department of Computer Science and Mathematics on receiving the Distinguished Faculty Award for Student Success and Belonging during Fall 2025. Throughout the term, Dr. Vatsa demonstrated sustained excellence in teaching and service, while leading funded and submitted grant initiatives, including an approved LOI for a \$1.015M Department of the Army proposal focused on improving the well-being of melanoma survivors. He also designed and delivered a new Risk Management course and expanded instruction in cloud-native systems and cybersecurity frameworks.

Dr. Vatsa's scholarly work continued alongside these efforts, with multiple journal manuscripts under review in venues such as IEEE Transactions on Neural Networks and Learning Systems, Pattern Recognition (Elsevier), Intelligent Systems with Applications, and Frontiers journals, emphasizing AI-driven melanoma detection and data-centric forecasting models

## FACULTY RESEARCH HIGHLIGHTS

### **Excellence in Teaching Distinguished Faculty Award Highlight: Dr. Brian Knorr**



Brian Knorr, Associate Professor of Physics in the Department of Chemistry, Biochemistry, and Physics at the Gregory H. Olsen College of Engineering and Science, has been recognized for his outstanding contributions to teaching. His dedication to student learning, engagement, and academic excellence continues to strengthen the College's physics program. Congratulations, Professor Knorr!

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### **Dr. Mohammed R. Elshaer Elected 2026 Chair of NJACS**



Congratulations to Dr. Mohammed R. Elshaer on his election as 2026 Chair of the North Jersey Section of the American Chemical Society (NJACS). As the section launches implementation of its 2025–2029 Strategic Plan, developed at Fairleigh Dickinson University, Dr. Elshaer will guide efforts to expand membership engagement, enhance community outreach, and strengthen governance to ensure the organization's long-term vitality and sustainability. We proudly congratulate Dr. Elshaer and wish him continued success in this distinguished leadership role.

*Dr. Mohammad R. Elshaer*

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### **Dr. A. R. Rao: Advancing AI in Education and Sustainability**

Dr. A. R. Rao continues to contribute to international scholarship and leadership in artificial intelligence through research and invited engagements. Alongside J. Liu and M. Liu, Dr. Rao presented the paper “Establishing the Effectiveness and Acceptance of AI-Based Feedback in an Engineering Course” at the IEEE TALE Conference on Teaching, Assessment and Learning for Education, highlighting the impact of AI-driven feedback on student learning in engineering education.

In 2026, Dr. Rao delivered an invited talk, “Staying at the AI Edge: Skills + Mindset for Thriving in the AI Era,” at the IEEE COMSNETS Conference and also served as an invited panel member at its DecarbX Workshop, contributing to discussions on the decarbonization and sustainability of AI systems.

## FACULTY RESEARCH HIGHLIGHTS

### Research and Academic Outreach Dr. Anitha Saravana Kumar

Dr. Anitha Saravana Kumar, Department of Computer Science and Mathematics, Vancouver campus, demonstrated strong scholarly and professional engagement during the Summer and Fall 2025 semesters through award-winning research, invited talks, and international academic outreach. She presented the paper “Adaptive Flow Rule Placement in Software Defined Networks” at TASME, University of Toronto, where it received the Best Paper Award in Session.

She also co-authored “An Empirical Study on Latency Reduction Techniques for Large Language Models,” with Dr. Vasudevan Janarthanan, Sagar Sharma, and Keerthana Palani, presented at AIxSET 2025, an IEEE conference, contributing to ongoing research on AI system performance optimization.

In addition to her research contributions, Dr. Saravana Kumar delivered an invited guest lecture, “From Data to Decisions: The Magic of Machine Learning Applications,” at SRM University, Chennai, India, and conducted a hands-on workshop, “Machine Learning in Connected Vehicles,” at Sona College of Technology, Salem, India, engaging students with real-world applications of machine learning and intelligent transportation systems.



### Dr. Jeeho Ryo Presents AI Research at IEEE FIE

Dr. Jeeho Ryo from Department of Computer Science and Mathematics Vancouver Campus, together with MSACS alumni Wenhao He and Seong Min Park, recently presented their paper, “Multi-Agent Artificial Intelligence Model to Enhance Self-Regulated Learning and Conceptual Understanding in Computer Science Education,” at the IEEE Frontiers in Education Conference in Nashville. The research introduces a multi-agent AI system to help computer science students strengthen problem-solving skills and self-regulated learning, showcasing FDU Vancouver’s leadership in educational innovation.

### Professors Mihaela Leonida and Ish Kumar Advance Nanoparticle Research and Mentorship

Professors Mihaela Leonida and Ish Kumar, from the Department of Biochemistry, Chemistry, and Physics at FDU, continued their innovative research in nanoparticle delivery systems during 2025. They co-authored the paper “Lupulone Delivered in Nanoparticles and the Promise to Defy Aging” in the Journal of the American Romanian Academy of Arts and Sciences and, together with three FDU undergraduate students (1 chemistry and 2 biology majors), published “Green ethanol-free antisolvent synthesis of zein-chitosan-gum arabic nanocomposites for controlled release of lupulone in topical antioxidant applications” in Colloids and Surfaces A: Physicochemical and Engineering Aspects (Elsevier, Volume 726, Part 2, 2025, 137817), in collaboration with a researcher from École Polytechnique, Paris.

The duo presented their work at the 50th ARA Conference at the University of Louisiana, Lafayette, and actively mentored students, resulting in six student presentations at FDU’s 26th Annual Student Research Symposium in April 2025. Their research exemplifies both cutting-edge scientific contributions and a strong commitment to hands-on student mentorship.



## FACULTY RESEARCH HIGHLIGHTS

### Dr. Guolong Zhu Publishes Recent Research Finding.

Dr. Guolong Zhu, Assistant Professor of Physics in FDU's Department of Biochemistry, Chemistry, and Physics, has made significant contributions to nanoscience and environmental catalysis with two publications in 2025.

His work includes "Control and Synchronization of Rapid Nanoscale DNA Heat Engine by Local Heating" in Science Advances, exploring advanced nanoscale energy systems, and "Facile Synthesis of a Single-Atom Cobalt Catalyst to Enhance Peroxymonosulfate Oxidation to Degrade Emerging Contaminants by Visible-Light Regulation: From Radical Pathway to Synergistic Pathway" in Journal of Colloid and Interface Science, advancing sustainable methods for environmental remediation.

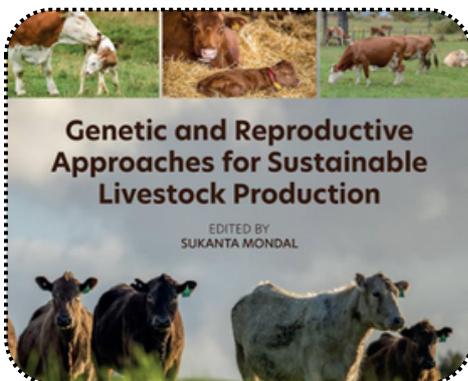
These publications highlight Dr. Zhu's ongoing research leadership in nanotechnology and applied physics, reinforcing FDU's commitment to innovative scientific discovery.

### Dr. Ihab Darwish: Continues to Foster Cybersecurity Learning

Associate Professor Ihab Darwish from Department of Computer Science and Mathematics at Fairleigh Dickinson University's Olsen College of Engineering and Science, continues his work as a Faculty Fellow of the University Honors Academy (2024–2026), co-developing courses on technology and society. He has continued mentoring students presenting research on blockchain, hardware hacking, and data security, supporting DoD CySP scholarship recipients, and advancing the ISC2 partnership that allows students to earn cybersecurity certifications alongside their degrees.



### Dr. McClary Publishes Book Chapter on Climate Change and Food Security



Prof. Marion McClary, Chair Department of Biological Sciences, has published a chapter titled "Climate Change Impact on Food Security" in the book Genetic and Reproductive Approaches for Sustainable Livestock Production, edited by S. Mondal and published by Academic Press, Elsevier. The chapter explores the effects of climate change on livestock production and sustainable food systems.

Book details: ISBN: 9780443248122 | eBook: 978044328139

## FACULTY RESEARCH HIGHLIGHTS

### Dr. Andre Wallace Presents at National Research and Mentoring Symposiums

Dr. Andre Wallace, from the Department of Biological Sciences, was invited to present as a panelist at the 2025 SSMN Research Symposium and the SREB Institute on Teaching and Mentoring in Atlanta, GA. His presentation, “Experiences with Mentorship and Leveraging Your Network,” shared insights on effective mentorship strategies and professional networking for students and early-career researchers.

Dr. Wallace’s participation highlights FDU’s engagement with national initiatives in research mentorship and professional development

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### Dr. Harvey Winters Presents Research on Membrane Biofouling in Malaysia

Dr. Harvey Winters, from the Department of Biological Sciences, presented an invited paper at the 15th Conference of the Aseanian Membrane Society (AMS15) held in Kuala Lumpur, Malaysia, from August 19 – 21, 2025. His presentation, “Importance of Membrane Concentration Polarization (CP) in Seawater Brine-Staged Reverse Osmosis in Controlling Membrane Biofouling,” focused on strategies to improve reverse osmosis efficiency and reduce biofouling in seawater treatment systems.

Dr. Winters’ participation highlights FDU’s global engagement in environmental and water research.

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### Dr. Salma Noor Publishes Book Chapter and Presents at ICITA Conference

Dr. Salma Noor from Department of Computer Science and Mathematics, recently contributed a book chapter titled “A Study on Procrastination Through Sentiment Analysis of Social Media Data Using NLP Techniques” in Lecture Notes in Networks and Systems, Vol. 1248 (Springer Natural, Chapter 38). The chapter explores how natural language processing and social media analytics can provide insights into procrastination behaviors.

Dr. Noor and collaborators were also accepted to present their paper, “Towards Understanding the Technical Challenges in AI- and ML-Driven Code Generation for Educational Applications: A Data-Driven Empirical Analysis,” at the 19th International Conference on Information Technology and Applications (ICITA 2025) in Oslo, Norway (October 17–19, 2025).

Dr. Noor also served as an organizer for ICITA 2025.

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### Faculty Research and Student Engagement Dr. Yaoqing Liu

During Spring and Summer 2025, Dr. Yaoqing Liu Associate Professor of Cybersecurity and Information from Department of Computer Science and Mathematics was actively involved in research, scholarly presentations, and student supervision. He supervised Mohmad Mubeen on a digital forensics research project at the newly established Dennis Turpan Research Lab, with a paper currently in preparation.

Dr. Liu also delivered research presentations on Future Internet Architecture and Blockchain Technology at ZJIPC and SPTC in China. In addition, he supervised multiple senior projects in Spring 2025 covering topics such as automated security operations, honeypot deployment on AWS, network threat analysis, cybersecurity trends, and healthcare data breaches.

## RESEARCH GRANTS

### Dr. Naira Chaouch Receives NOAA Grant to Advance Ice-Jam Flood Prediction



Dr. Naira Chaouch, Assistant Professor of Civil Engineering at the Gildart Haase School of Engineering, is leading a multi-year NOAA-funded project to improve monitoring and prediction of river ice jams, a major cause of flooding and economic loss in northern watersheds. Fairleigh Dickinson University's portion of the grant totals \$138,762 and will support research from July 2025 through March 2027.

Conducted in partnership with Stevens Institute of Technology, the project integrates remote sensing, machine learning, and hydrological modeling to enable near real-time detection of ice conditions from satellite imagery. The research aims to incorporate ice-monitoring data into the National Water Model, enhancing NOAA's forecasting capabilities and helping communities prepare for extreme winter flooding events.

This grant highlights the impact of combining academic research with operational systems, demonstrating how FDU-led projects contribute to community resilience and advanced environmental monitoring.

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### Dr. Avimanyou Vatsa Secures Major Grant for Melanoma Survivor Research



Dr. Avimanyou Vatsa, Associate Professor in the Department of Computer Science, has been awarded an approved Letter of Intent for a \$1,015,000 Department of the Army – USAMRAA grant to support research aimed at improving the health and well-being of melanoma skin cancer survivors. The project, submitted during Summer–Fall 2025, highlights the application of data-driven approaches and computational modeling to address challenges in patient care and recovery.

In addition, Dr. Vatsa received funding from the IEEE Systems Council (\$500) to support ongoing research activities in Fall 2025. These awards underscore his continued commitment to advancing student-centered research and impactful healthcare applications.

## STUDENT HIGHLIGHTS & ACHIEVEMENTS

### FDU Students Showcase Innovative Chemistry Research at National ACS Meeting



Students **Hrithika Subramanian** and **Ava DeFino**, mentored by Dr. Justin Bogart, Associate Professor of Inorganic Chemistry, presented their research at the American Chemical Society (ACS) Fall 2025 National Meeting and Exposition in Washington, D.C. Representing FDU's Gregory H. Olsen College of Engineering and Science, the students showcased work focused on developing more efficient and sustainable pathways for converting methane into methanol. Their research, spanning experimental, computational, and materials-based approaches not only advanced solutions with potential environmental and energy-sector impact, but also provided valuable opportunities for national-level scientific networking and professional growth.

### Biology Student Elizabeth Kulesa Accepted to Rutgers Doctor of Physical Therapy Program

The Gregory H. Olsen College of Engineering and Science is pleased to share exciting news about **Elizabeth Kulesa**, a junior Biology student who has been accepted into the Doctor of Physical Therapy (DPT) program at the Rutgers School of Health Professions. Through her participation in the accelerated 3+1 degree track, Elizabeth will begin her senior year by transitioning directly into the Rutgers SHP program.

Elizabeth's acceptance reflects her strong academic performance, dedication, and commitment to pursuing a career in health professions. The college community proudly congratulates her on this outstanding achievement and wishes her continued success as she takes this important next step in her professional journey.

### Students Receive 2025 ICUNJ Undergraduate Research Symposium Awards

Several FDU students from the Department of Biochemistry, Chemistry, and Physics, working under the mentorship of their faculty sponsors, have been awarded 2025 Undergraduate Research Symposium grants from the Independent College Fund of New Jersey (ICUNJ). These competitive awards provide research funding and scholarship support, enabling students to carry out independent research projects and present their findings at the ICUNJ Undergraduate Research Symposium, to be held at Bell Works this spring.

From the Department of Biochemistry, Chemistry, and Physics, the following students and research projects have been supported through this award:

- Alyssa Grant and Hrithika Subramanian  
Project: The Design and Computational Evaluation of 1,4-Benzoquinone Bioisosteres  
Faculty Sponsor: Dr. Robert Barrows
- Melanie Perez  
Project: Analysis of the Physical Traits of Artificial Cellular Machines Built of and Powered by DNA  
Faculty Sponsor: Dr. Guolong Zhu
- Sofia Vaina  
Project: Towards the Synthesis of Artificial Diiron Metalloproteins Using Biotin–Streptavidin Technology through the Anchoring of Bis(catecholpyridylmethyl)amine Frameworks onto Biotin  
Faculty Sponsor: Dr. Justin Bogart

These awards highlight the strength of undergraduate research and faculty mentorship at FDU. Photos and presentation highlights will be shared following the students' presentations at the spring symposium.

## STUDENT HIGHLIGHTS & ACHIEVEMENTS

### Students Accepted into Competitive RISE at Rutgers Research Program

FDU students Hrithika Subramanian and Dylan Bariexca were accepted into the highly competitive RISE at Rutgers summer research program, which provides undergraduate STEM students the opportunity to conduct original research alongside Rutgers faculty. The program includes compensation and on-campus housing at Rutgers–New Brunswick for the duration of the experience.

During the program, Dylan Bariexca worked with Dr. Adam J. Gormley, Associate Professor of Biomedical Engineering, on a project focused on the automated testing of polymers to solubilize proteins in organic solvents using machine learning techniques. Hrithika Subramanian collaborated with Dr. Sagar D. Khare on the computational design of proteins capable of detecting petroleum-derived food dyes. Both students successfully presented their research at a Rutgers-sponsored poster symposium, highlighting the impact of their work and professional growth.



## STUDENT HIGHLIGHTS & ACHIEVEMENTS

### Student Spotlight: Biology Student Awarded Schering-Plough Undergraduate Research Grant



Gianna Buscarino, a senior Biology major at Fairleigh Dickinson University's Florham Campus, has been awarded a Schering-Plough Undergraduate Research Endeavors Grant from the Independent Colleges of New Jersey (ICUNJ). The competitive grant will support her undergraduate research focused on studying the effect of a compound on alpha-synuclein aggregation using a *C. elegans* model of Parkinson's disease.

Gianna is conducting her research under the mentorship of Dr. Edith Myers, Associate Professor and Deputy Chair of the Department of Biological Sciences. The award highlights Gianna's strong commitment to scientific research and reflects the continued emphasis on undergraduate scholarship and faculty mentorship within the Gregory H. Olsen College of Engineering and Science.

### Student Spotlight: Cybersecurity Scholar and Board of Trustees Alumna Representative Ourania Rahman

Ourania Rahman, a standout student in the BS in Computer Science program with a concentration in Cybersecurity and Information Assurance, brings an exceptional record of leadership and academic excellence to Fairleigh Dickinson University. Prior to joining FDU, she distinguished herself at Bergen Community College, where she graduated with a 4.0 GPA, conducted undergraduate research, and was elected by her peers as the alumni representative to Bergen's Board of Trustees, a role that reflects her strong commitment to service and governance.

At FDU, Ourania is building on this foundation through an accelerated academic pathway that will allow her to earn her bachelor's degree in 2027 and a master's degree one year later. She is deeply engaged in campus life, competing as a member of the Division I women's fencing team and demonstrating entrepreneurial leadership as the founder of the Motorsports Engineering Club. In parallel, she is actively pursuing professional development opportunities in cybersecurity, including scholarships and industry-recognized certifications.

Ourania's journey highlights the blend of technical rigor, leadership, and initiative that defines student success within the Gregory H. Olsen College of Engineering and Science, and she continues to serve as a strong role model for aspiring computing and cybersecurity students.



## STUDENT HIGHLIGHTS & ACHIEVEMENTS

### Undergraduate Research Spotlight: Summer Presentations at FDU

During the Becton College Summer Research Program at Fairleigh Dickinson University's Florham Campus, students showcased their research under faculty mentorship, demonstrating strong engagement in scientific inquiry.

On July 24, 2025, Johnna Mainhart, mentored by Dr. Andre Wallace (Department of Biological Sciences), presented her project "Investigating the Role of PMK-1 in Cell Migration During *C. elegans* Development".

On the same day, Sri Vastava Sydam, guided by Dr. Ish Kumar and Dr. Mihaela Leonida (Department of Biochemistry, Chemistry, and Physics) and Dr. Alice Benzecry (Department of Biological Sciences), presented "Exploring the Mechanism of Binding of Catechol Derivatives".

These presentations highlight the dedication of FDU students and faculty to advancing hands-on research and developing critical scientific skills.

### Faculty–Student Project Uses Virtual Reality to Teach Programming Concepts

Dr. Gurjot Singh and student Shakir Tempelman are developing CodeVR, an innovative project that uses virtual reality to help students better understand abstract computer programming concepts. By transforming topics such as variables, control structures, loops, and methods into interactive 3D objects and environments, CodeVR enables learners to visualize algorithms and data flow in an engaging, hands-on way. The project aims to strengthen comprehension, retention, and student engagement in introductory programming courses, with future plans to expand into advanced topics such as pointers and data structures.



### FDU Undergraduate Presents Research at SNAS Conference

Undergraduate student John Giglio represented Fairleigh Dickinson University at the Society of North American Scholars (SNAS) Conference on October 10, 2025. He presented his Becton College Summer Undergraduate Research Project, which focuses on applying AI and machine learning techniques to the early detection of Alzheimer's disease.

John's presentation highlights both the strength of FDU's undergraduate research programs and the impactful ways students are using emerging technologies to address real-world health challenges.



## STUDENT HIGHLIGHTS & ACHIEVEMENTS

### Student and Faculty Achievements Highlighted Through CAHSI LREU Program

Through the Computing Alliance of Hispanic-Serving Institutions (CAHSI) Local Research Experiences for Undergraduates (LREU) Program, Dr. Neelu Sinha mentored an undergraduate student from the University of Illinois, Fatima Mora Garcia, who earned first place in the Undergraduate Computing Research Poster Competition at the Great Minds in STEM (GMIS) 2025 Conference on October 4.

In addition, FDU student Daniel Brooksbank has been selected to participate in the CAHSI LREU Program for Fall 2025–Spring 2026 and has begun his research this semester. His selection reflects FDU’s continued engagement in nationally recognized research and mentorship initiatives that support undergraduate success in computing.

### Great Minds in STEM (GMIS 2025) Conference (Oct 1-4, 2025)

Ten of our students, Alina Betances, Joseph Cusumano (FA25, now a graduate student at Stevens Institute of Technology), Jordan Dasher, John Giglio, Anthony Gonzalez (graduate student in our 4+1 program), Weronika Przedworska (FA25, now a graduate student at Carnegie Mellon University), Todd Marsh, Matthew Silva, Drilon Toska (graduate student in our 4+1 program), and Justine Zangara—represented FDU at the Great Minds in STEM (GMIS) 2025 Conference, held in San Diego from October 1–4, 2025.

Alina Betances (undergraduate), Weronika Przedworska (undergraduate), and Joseph Cusumano (graduate) also presented their research in the poster competition, with Joseph earning second place in the Graduate Computing/Engineering Research Poster Competition.

We are also proud of our alumni accomplishments. Weronika Przedworska, now pursuing graduate studies in Computer and Civil Engineering at Carnegie Mellon University, and Joseph Cusumano, now a graduate student in AI and ML at Stevens Institute of Technology, presented posters based on research they began as undergraduates at FDU and continue to collaborate on research with FDU faculty member Dr. Neelu Sinha, including Joseph’s current interdisciplinary work applying AI/ML models to chemistry data for Dr. Gloria Anderle’s Hydrogen Bond research project.

In addition, faculty member Dr. Neelu Sinha was invited to participate in an invitation-only Artificial Intelligence (AI) Ideation Session at GMIS.



From L to R: FDU Grad students - Anthony Gonzalez and Drilon Toska



From L to R: Prof. Sinha, Justine Zangara, alumna Weronika Przedworska, Alina Betances, Todd Marsh, Jordan Dasher, John Giglio

## LAB HIGHLIGHTS

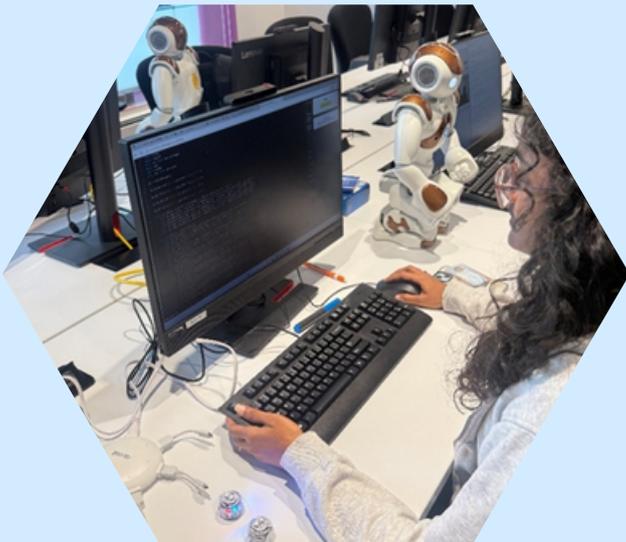
### Robotics Innovation in the Becton 200 R&D Lab

The Becton 200 Research and Development Lab is emerging as a dynamic hub for hands-on learning and innovation in robotics, offering students access to cutting-edge robotic platforms that bridge theory, programming, and real-world application.

Students in the lab are actively working with the Nao V6 humanoid robot, a versatile and programmable platform widely used in robotics education and research. Programmable in Python, C++, and Java, the Nao V6 supports advanced capabilities such as face recognition, speech-to-text, text-to-speech, and other AI-driven features, making it an ideal tool for experimentation in human-robot interaction and intelligent systems.



*(Student working on programming the Nao V6 humanoid robot.)*



*(Student working on Ozobot robots)*

The lab also features Ozobot robots, where students apply their Python programming skills using the Ozobot SDK. These compact robots provide an engaging way for students to translate coding concepts into physical movement and behavior, strengthening their ability to develop practical, real-world solutions through programming.

In addition, students are exploring advanced mobility and perception using the Unitree Go2 quadruped robot, a powerful robotic platform equipped with an NVIDIA processor and a high-performance 4D LiDAR system. This robot enables students to design and test applications related to autonomous navigation, sensing, and AI-driven decision making.



*(Unitree Go2 robot)*

## LAB HIGHLIGHTS



*(Unitree Go1 Humanoid Robot)*

Complementing this lineup is the Unitree Go1 humanoid robot, featuring 31 degrees of freedom and sophisticated force–position hybrid control. Outfitted with 3D LiDAR, an Intel RealSense depth camera, microphone array, and high mobility, the Go1 allows students to experiment with precise object manipulation, perception, and human-like motion—key areas in modern robotics research.

Together, these platforms make the Becton 200 R&D Lab a vibrant environment for experiential learning, preparing students to engage with robotics and artificial intelligence in an era increasingly shaped by intelligent, autonomous systems.

## Deep Chain (DC) Lab Showcases Student Success at HSI Battle of the Brain 2025

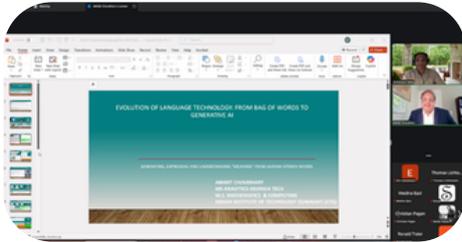
Under the leadership of Dr. Avimanyou Vatsa, the Deep Chain (DC) Lab guided an interdisciplinary team of FDU students to a strong performance at the HSI Battle of the Brain 2025, held in Austin, Texas, from September 30 to October 5, 2025. Dr. Vatsa served as the Lead Faculty Advisor and Team Leader, mentoring students throughout the competition and research preparation.



The FDU team comprising eight students from the Gregory H. Olsen College of Engineering and Science (4 students) and the Silberman College of Business (4 students) was recognized for delivering one of the best business solutions. The team placed second overall based on written submissions and was selected to advance to the pitch presentation round. In addition, student Jonathan Nunez earned the prestigious Dell Scholarship, highlighting individual excellence within the group.

## EVENTS & COMMUNITY ENGAGEMENT

### GAP 0.1 Talk Series Brings Industry Perspectives on Language Technology and Generative AI



Dr. Avimanyou Vatsa has launched GAP 0.1, a new talk series designed to connect students and faculty with industry leaders and emerging trends in artificial intelligence and computing.

The series opened on September 24, 2025, with a talk by Abhijit Choudhary, seasoned Data Scientist at ADP, titled “Evolution of Language Technology: From Bag of Words to Generative AI.” Building on this momentum, the series continued on October 29, 2025, with Naveen Kumar, Founder and CEO of Truxt.ai, who presented “Building a Generative AI Product.” Both sessions were held from 12:00 PM to 1:00 PM.

The GAP 0.1 talk series highlights FDU’s commitment to experiential learning and industry engagement by offering students firsthand exposure to real-world AI applications, product development, and evolving technology landscapes.

### 26th Annual Student Research Symposium and Awards Night



The 26th Annual Student Research Symposium and Awards Night was held on April 18, 2025, at Fairleigh Dickinson University, and was proudly co-sponsored by the Henry P. Becton College of Arts and Sciences (HBCS).

The event showcased outstanding undergraduate and graduate research across disciplines. Students mentored by Dr. M. Leonida and Dr. I. Kumar made a strong showing, delivering a total of six research presentations during the symposium. Their work reflected both academic rigor and a commitment to scholarly inquiry, highlighting the strength of student-faculty collaboration within the college.

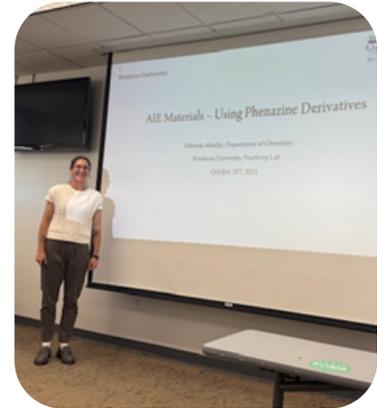


## EVENTS & COMMUNITY ENGAGEMENT

### National Chemistry Week Celebration

Fairleigh Dickinson University hosted a National Chemistry Week Celebration on October 16, 2025, in an event co-sponsored by the Henry P. Becton College of Arts and Sciences (HBSCS).

The celebration featured a guest speaker who is an FDU alumna and former student-athlete, offering students an engaging perspective that connected chemistry with academic achievement, professional growth, and lifelong learning. The event highlighted the diverse career paths made possible through a strong foundation in chemistry and emphasized the value of interdisciplinary experiences during undergraduate education.



### Student Participation in StormHack 2025 (HUAWEI Hackathon)

Xiyu Gao, a student from the FDU MSACS program, Vancouver Campus, along with her team participated in a hackathon featuring a variety of projects and workshops led by industry mentors. The event provided hands-on exposure to foundational skills across multiple technical areas.

During the hackathon, the student along with her team chose to focus on C++, aligning with industry interest from organizations such as Huawei, Safe Software, and AMD, which emphasize C/C++ expertise. The experience reinforced the importance of strong low-level programming skills and fundamental problem-solving abilities, particularly as industry demand grows for engineers with deep technical foundations.

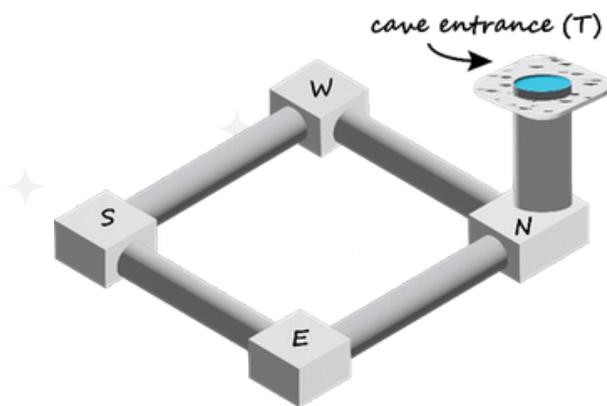


## THE CHALLENGE CORNER

### Underwater Spelunking Challenge

Dr. Slaby ([mslaby@fdu.edu](mailto:mslaby@fdu.edu)) is offering \$20 reward for the first student who will submit a complete written solution of the problem below before June 1, 2026, deadline.

Jacques is a famous explorer. For his next adventure he is planning to explore an underwater cave system composed of 4 air-filled caverns connected by flooded tunnels. There is only one entrance, marked T on the map below. The entrance leads to a vertical shaft. At the bottom of the shaft there is an air-filled cavern marked N. Two horizontal tunnels come out from cavern N. The left tunnel leads to another cavern marked E. From E another horizontal tunnel leads to cavern S, from S there is a tunnel leading to cavern W and from W there is a tunnel leading back to cavern N. Jacques' team will dive with scuba tanks that each have a capacity of 4 liters of breathing air. Each diver will require 1 liter of air to descend from T to N (or to ascend from N to T), and 2 liters of air to cross any horizontal tunnel NE, ES, SW or WN.



In each of the caverns (N, E, S and W) there is enough air for divers to wait there for any necessary deliveries. Divers can transfer any amount of air from one tank to another while in one of the caverns. While crossing a tunnel, divers can also transfer some air from one tank to another tank in a negligible amount of time. Special equipment allows the team to refill scuba tanks only at the cave entrance (T). A diver can use a rope to lower a scuba tank from T to N, or lift a tank from N to T. Jacques' team has a large supply of compressed air and scuba tanks. Determine the minimum total number of divers, the minimum number of scuba tanks, and the minimum volume of compressed breathing air that Jacques' team will need to complete this project.

### Math Competition

The New Jersey Undergraduate Mathematics Competition (NJUMC) started in 2004 and continued every year except for 2020 and 2021 due to COVID-19 pandemic. It is a part of the Garden State Undergraduate Conference (GSUMC), a one-day meeting for undergraduate students organized annually in conjunction with the Spring Meetings of the New Jersey Section of Mathematical Association of America (MAA). The meetings take place on different university campuses in Northern New Jersey.

The competition consists of two components: Individual Part and Team Part, both lasting one hour. A complete team consists of three students. Since at least 2008 FDU has been represented by one or two teams.

In Spring 2025 FDU team consisting of Weronika Przedworska, Shannon Geiger and Emirlan Asanakunov competed at Rowan College against teams from Caldwell, Kean, Monmouth, Montclair, Ramapo, RCBC, RCSJ, Rowan, Rutgers, Stevens, TCNJ, and William Paterson. Participating teams must be sponsored by a faculty person. In the past Dr. Robert Mayans typically sponsored FDU teams. Since he retired this year, interested students should contact Dr. Slaby ([mslaby@fdu.edu](mailto:mslaby@fdu.edu)). Since 2018 Dr. Marek Slaby has been a co-director of NJUMC responsible for writing competition problems.

## CLOSING NOTE AND CREDITS

### **Credits:**

We sincerely thank Dr. Laila Khreisat, Interim Dean, and Dr. Mohammed R. Elshaer, Interim Associate Dean, of the Olsen College of Engineering and Science for their leadership and support in launching this newsletter, which highlights the achievements of our students, staff, alumni, and faculty.

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