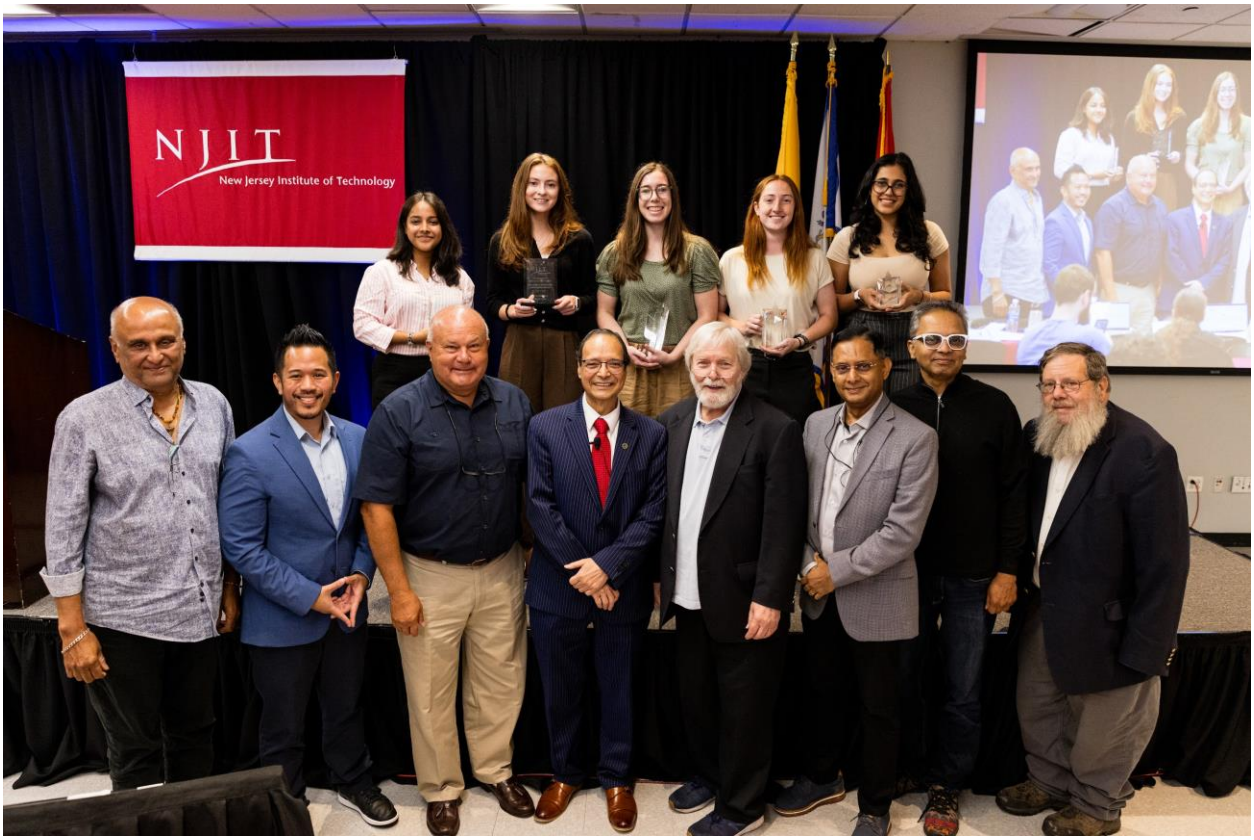

2025 Undergraduate Summer Research and Innovation Symposium

and

National Academy of Inventors (NAI) – NJIT Chapter Innovation Day

NJIT New Jersey Institute of Technology

Chapter of the National Academy of Inventors

July 23-24, 2025

PROGRAM

2025 UNDERGRADUATE SUMMER RESEARCH AND INNOVATION SYMPOSIUM AND NATIONAL ACADEMY OF INVENTORS (NAI) – NJIT CHAPTER INNOVATION DAY

Undergraduate research provides students with a unique opportunity to learn necessary and important skills to research and innovate towards taking a leadership role in society. As a student-centered research institution, NJIT is committed to providing research, innovation and experiential learning opportunities to undergraduate students for enhancing their education and success.

The 2025 NJIT Undergraduate Summer Research and Innovation Symposium integrated with the National Academy of Inventors (NAI) – NJIT Innovation Day being held on July 23-24, 2025, featuring distinguished keynote talk from Elizabeth Dougherty J.D., Regional Outreach Director of the United States Patent and Trademark Office's Northeast Regional Outreach Office. Provost John Pelesko will open the symposium with welcome remarks on July 23 and President Teik Lim will provide the welcome remarks on July 24. More than 170 undergraduate students will be presenting their summer research and innovation projects at the 2025 Summer Research Symposium. These students are from NJIT through NJIT URI programs including Provost Undergraduate research and Innovation Summer Fellowship & Grace Hopper Research Institute Artificial Intelligence Summer Fellowship Program, Honors Summer Research Institute, NJIT and other NSF REU sites grant. Best innovation projects will be awarded the Dr. James Stevenson Innovation Award: first, second and third prizes of $1,000, $750 and $500, respectively, along with 5 honorable mentions of $100 each.

The Symposium also features a special event, NAI-NJIT Chapter Induction Ceremony honoring and inducting NJIT faculty and recipients of Dr. James Stevenson Innovations Awards to the NAI-NJIT Chapter.

Congratulations to all of you for the successful completion of the 10-week long rigorous work on research and innovation projects. We are very proud of your accomplishments and engagement in research. I wish you all the best for your future endeavors and hope that you will pursue leadership roles to help our society move forward.

Atam P. Dhawan
Senior Vice Provost for Research
Executive Director, Undergraduate Research and Innovation

2025 Undergraduate Summer Research and Innovation Programs

Programs Included

Bergen Community College - Chemical & Materials Engineering Collaboration (BCC-CME)

Biomathematical Research Initiation Program (Biomath)

Heritage Institute of Technology Summer Research Program (HIT)

Honors Summer Research Institute (HSRI)

I-Corps Undergraduate Entrepreneurial Leads

Improving AANAPI Student Outcomes Through Opportunities and Engagement (ISOTOPE)

Mathematical and Computational Biosciences Collective (MCBC)

McNair Scholar Program

NSF Research Experience of Undergraduate (REU) Program for Cancer Diagnosis and Therapeutic Intervention

NSF Research Experience of Undergraduate (REU) Program for Optics & Photonics

NSF Research Experience of Undergraduate (REU) Program for Solar, Terrestrial, and Space Weather Sciences (ISWS)

Provost Undergraduate Research and Innovation Summer Fellowship & Grace Hopper Research Institute (GHRI) Artificial Intelligence Summer Fellowship Program

Undergraduate Translational Research Internship (UTRI) Program

2025 UNDERGRADUATE SUMMER RESEARCH AND INNOVATION SYMPOSIUM AND NATIONAL ACADEMY OF INVENTORS (NAI) – NJIT CHAPTER INNOVATION DAY

Wednesday, July 23, 2025: Campus Center Ballroom

8.30 AM – 9.00 AM:	Registration and Breakfast
9.00 AM – 9.30 AM:	Welcome Remarks and Introductions Atam Dhawan, Senior Vice Provost for Research John Pelesko, Provost and Senior Vice President for Academic Affairs
9.30 AM – 11.00 AM:	Student Session – Ballroom Bioscience and Bioengineering
11.00 AM – 11.15 AM:	Coffee Break
11.15 AM – 12.30 PM:	Student Session – Ballroom Bioscience and Bioengineering
12.30 PM – 1.30 PM:	Lunch and Networking
1.30 PM – 2.45 PM:	Student Session – Ballroom Bioscience and Bioengineering Environment and Sustainability
2.45 PM – 3.00 PM:	Coffee Break
3.00 PM – 3:45 PM:	Student Session – Ballroom Environmental and Sustainability

2025 Undergraduate Summer Research and Innovation Symposium

Parallel Student Sessions – Atrium, Campus Center (July 23, 2025 Only)

9.40 AM – 11.00 AM:	Student Session – Atrium Artificial Intelligence, Machine Intelligence & Robotics
11.00 AM – 11.15 AM:	Coffee Break
11.15 AM – 12.00 PM:	Student Session – Atrium Artificial Intelligence, Machine Intelligence & Robotics
12.30 PM – 1.30 PM:	Lunch and Networking – Ballroom

Thursday, July 24, 2025: Campus Center Ballroom

8.30 AM – 9.00 AM:	Registration and Breakfast
9.00 AM - 9.30 AM:	Introduction to the NAI-NJIT Workshop and Welcome Remarks Atam Dhawan, Senior Vice Provost for Research Teik Lim, President
9.30 AM – 10.45 AM:	Student Session – Ballroom Data Science and Management Materials and Science Engineering
10:45 AM - 11:00 AM:	Coffee Break
11:00 AM – 11.15 AM:	NAI-NJIT Chapter Innovation Day and Induction Ceremony Introduction to Distinguished Keynote Speaker Atam Dhawan, Senior Vice Provost for Research and President, NAI-NJIT Chapter
11.15 AM – 12.00 PM:	Distinguished Keynote Presentation: Elizabeth Dougherty, J.D., Regional Outreach Director of the United States Patent and Trademark Office's Northeast Regional Outreach Office and National Academy of Inventors (NAI)
12.00 PM - 12.15 PM:	Patent Awards and New NAI-NJIT Chapter Member Induction Ceremony
12.15 PM – 1.15 PM:	Lunch and Networking

2025 Undergraduate Summer Research and Innovation Symposium

Thursday, July 24, 2025: Campus Center Ballroom (continued)

1.15 PM – 2.15 PM:	Student Session – Ballroom Materials and Science Engineering
2.15 PM – 3:00 PM:	Break and Judges Session
3:00 PM	Dr. James Stevenson Innovation Awards Ceremony and Reception Awards Presentations: Elizabeth Dougherty, J.D. and URI External Advisory Board

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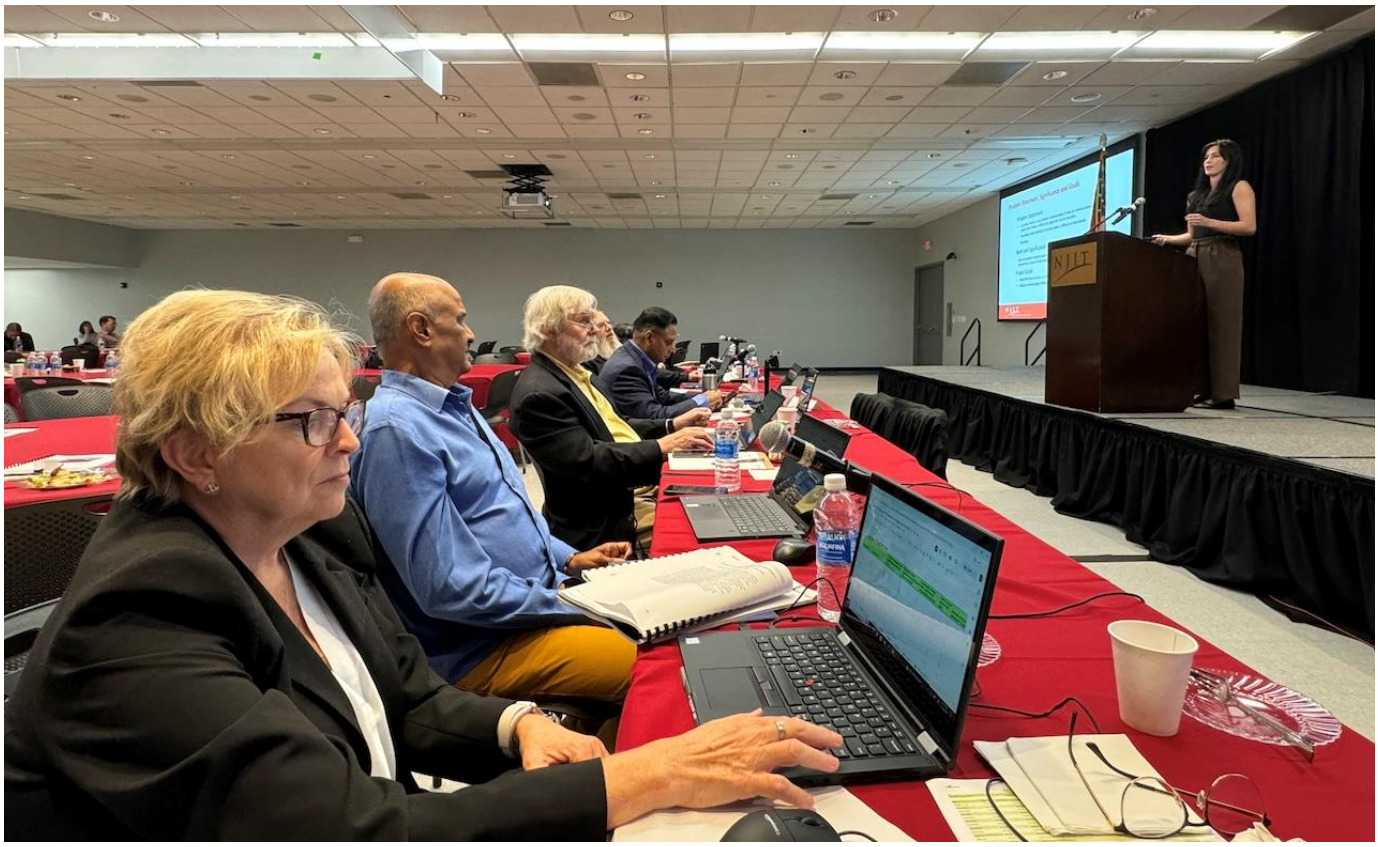


2025 Undergraduate Summer Research and Innovation Symposium

Sponsors

Brian Kiernan

Peggy McHale

DataBank

Integra Foundation

Needham

Provost Undergraduate Research and Innovation Summer Fellowship & Grace Hopper Research Institute (GHRI) Artificial Intelligence Summer Fellowship Program

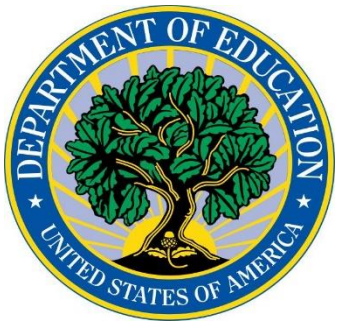
PSE&G

James Stevenson and Family Foundation

Hearst Foundation

National Science Foundation

Department of Education



2025 Undergraduate Summer Research and Innovation Symposium

Biographical Sketch of Dr. James Stevenson

Dr. Jim Stevenson was a Corporate Fellow at Honeywell International from 1996 until his retirement in March of 2011. His professional work at Honeywell focused on polymer and composite materials and applications for mechanical and electronic structures and enclosures in an aerospace environment. Nine patents and 17 publications followed from this work.

Following a postdoctoral year at Columbia University, Dr. Stevenson joined the Chemical Engineering Department at Cornell University where he earned tenure in 1977. He was a founding member of the Cornell Injection Molding Project, was highly rated for his teaching, and prepared 17 publications. He earned his M.S. and Ph.D. degrees in Chemical Engineering at the University of Wisconsin, Madison and a B.S.Ch.E. from Rensselaer Polytechnic Institute.

Prior to joining Honeywell, Dr. Stevenson was Director of Research at Trexel, a start-up company near Boston commercializing microcellular foam technology. He proposed injection molding as the preferred foaming process, a result that led to nine patents. For the previous 19 years Dr. Stevenson served in technical and management positions with GenCorp, Inc. in Akron, OH. One development of the Extrusion Laboratory, which he supervised, was curved extrusion technology. While at GenCorp, Dr. Stevenson received eight patents and published 23 articles, two book chapters, and a book Innovation in Polymer Processing: Molding.

After retirement from Honeywell, Dr. Stevenson founded a consulting company, Stevenson PolyTech LLC, which specializes in polymer material/ process development and industrial short courses with more than 45 presentations worldwide. During his retirement, Dr. Stevenson helped to organize and fund the TechQuest competition which, now in its seventh year, awarded five innovation prizes and fellowships to NJIT undergraduates. He was also instrumental in setting up Innovation Day which celebrates the numerous technical awards won by NJIT undergraduates and hosts electronic presentations of their many innovative projects.

Jim served as a member of the URI External Advisory Board and predecessor organizations since 2012. Jim and his wife Steffi also supported endowed undergraduate scholarships for NJIT students primarily from Irvington and Newark high schools. In 2017, Jim received the Special Friend of the University award for outstanding contributions by a non-alumnus. He also served on the Board of Directors of the Honeywell retirees association.

2025 Undergraduate Summer Research and Innovation Symposium

Biographical Sketch of Keynote Speaker Elizabeth Dougherty, J.D.

As the Regional Director for the USPTO's Northeast Regional Outreach Officer, **Elizabeth Dougherty** carries out the strategic direction of the Under Secretary of Commerce for Intellectual Property and Director of the USPTO, and is responsible for leading the USPTO's Northeast stakeholder engagement. Focusing on the region and actively engaging with the community, Ms. Dougherty ensures the USPTO's initiatives and programs are tailored to the region's unique ecosystem of industries and stakeholders.

Ms. Dougherty has more than 25 years of experience working at the USPTO. She served as the Senior Advisor to the Under Secretary of Commerce for Intellectual Property and Director of the USPTO. In this role, she worked closely across the Agency's leadership to implement the policies and priorities for the USPTO. She began her career at the USPTO as a patent examiner after graduating from the Catholic University of America with a bachelor's degree in physics. While a patent examiner, Ms. Dougherty went on to obtain her J.D. from the Columbus School of Law at The Catholic University of America and served as a Senior Legal Advisor in the Office of Patent Legal Administration for a significant part of her career. Over the years, she has also served in the USPTO's Office of Petitions, the Office of Innovation Development, and the Office of Government Affairs.

Ms. Doughtery has dedicated much of her career to the USPTO's outreach and education programs focusing on small businesses, startups and entrepreneurs. In this effort she has developed, implemented, and supervised programs that support the independent inventor community, small businesses, entrepreneurs, and the intellectual property interests of colleges and universities. Similarly, Ms. Dougherty has spearheaded a number of special projects with federal, state and local governments, and private organizations to promote and support invention and innovation in the United States.

Ms. Dougherty is a member of the Virginia Bar, the Giles S. Rich American Inn of Court, the Pauline Newman American Inn of Court, the American Bar Association, the Federal Circuit Bar Association, the American Intellectual Property Law Association, the Patent and Trademark Office Society, the Supervisory Patent Examiners and Classifiers Organization, Women in Science and Engineering, Federally Employed Women, and the Network of Executive Women.

URI External Advisory Board Members and Judges:

Brian Kiernan, retired vice president and chief scientist of InterDigital Communications, LLC, possesses a dynamic combination of technical expertise and leadership savvy that has fueled his outstanding achievements in the development of computer and communication standards and systems. He received a B.S. in electrical engineering from Newark College of Engineering in 1970, and an M.S. in Management Science/Operations Research from Fairleigh Dickinson University. Kiernan, who was recognized at the 2016 NCE Salute to Engineering Excellence for his achievements since graduation, was directly responsible for InterDigital's worldwide technology and industry standards activities and aided in developing new market, product and technology initiatives by providing strategic technical and marketing support to InterDigital's sales, marketing and business development efforts as well as the company's worldwide patent and licensing programs.

Previously, Kiernan was president of USTC World Trade Corporation, an international sales and marketing subsidiary of InterDigital's predecessor company, International Mobile Machines (IMM). Having full P&L accountability for IMM's international business, he quadrupled revenues in two years and opened new markets—primarily in Asia and Latin America—that accounted for over 90 percent of InterDigital's past product revenue. Prior to his sales position, Kiernan was IMM's vice president of Engineering and Operations. His product line responsibilities covered all areas of product development and sales engineering, manufacturing, product support and quality assurance of IMM's UltraPhone® TDMA Wireless Local Loop product.

Under Mr. Kiernan's tutelage, IMM/InterDigital grew from an unknown tiny telecom company with a big idea and zero revenue to an acknowledged worldwide force in mobile communications with some 14,000 patents, annual revenue in excess of $500M and a $2B market cap. Before joining IMM, Kiernan was a senior staff engineer at GTE Products Corporation, where he generated and evaluated military communications systems concepts that included mobile and fixed station radio, circuit and message switching, and network management and control. Kiernan's program and technical management experience encompassed TDMA and CDMA voice and data systems, digital and analog switching, and VHF/UHF and microwave radio. He was also active in both communications and non-communications Electronic Warfare systems development. He has been a speaker at numerous industry conferences, published numerous papers and articles, and holds 30 patents.

He was awarded the IEEE Standards Medallion in 2006 and the IEEE Hans Karlsson Award in 2013 for his extraordinary skill and dedication in chairing the complex task groups that developed the IEEE 802.16a, 802.16e, and 802.16m WirelessMAN standards, the world's first 4G Wireless standards. The Hans Karlsson Award honors outstanding skills and dedication to diplomacy, team facilitation and joint achievement in the development of standards in the computer industry.

After retiring from InterDigital, Mr. Kiernan has put his extensive technical and managerial talents to work, serving as Chair of the Albert Dorman Honors College Interdisciplinary Design Studio (IDS) program which morphed into the NJIT Undergraduate Research and Innovation (URI) Program. In this capacity, Kiernan, along with other URI Board members, evaluates and guides numerous student projects, several of which have developed into student companies. As an active Angel Investor, Kiernan has invested in some of these student companies and continues to guide them as they develop. He is also an active member of the NJIT ECE Industry Advisory Board.

2025 Undergraduate Summer Research and Innovation Symposium

Govi Rao is a visionary thought leader and seasoned business growth architect with more than 25 years of leadership experience globally - scaling businesses and transforming eco-systems across several industries including specialty chemicals, coatings, building materials, lighting, energy and the rapidly evolving Fourth Industrial Revolution. In his current role as CEO of Phase Change Solutions, Govi leads a team of highly innovative and inspiring leaders, with a vision to decarbonize our footprint and enable human health with sustainable solutions to manage temperature in any environment. Govi is a co-founder of CARBON Group Global - a sustainable impact enterprise scaling transformational solutions, specifically to address education, total resiliency of women and resource efficiency (food, energy & water).

Prior to CARBON, Govi was the President and Chief Executive Officer of Noveda Technologies a leader in water and energy management solutions, based in Bridgewater, NJ. Govi is the former Chairman and Chief Executive Officer of Lighting Science Group Corporation, a leading LED lighting Solutions Company. Govi's experience includes several global leadership roles in Philips Electronics and Rohm and Haas Company (now part of Dow Chemical) – spanning a range of businesses across several geographies. In addition to his experience with a wide business portfolio, Govi has extensive functional expertise that includes strategic planning, product management, marketing, operations, leadership development and general management. Govi has built winning teams that achieved extraordinary goals in start-ups as well as mature businesses – pioneering and inspiring profitable and sustainable growth.

Manish Patel is the founder of **GetNoKudos.com**, a for-profit social venture built around one simple but powerful mission: amplifying everyday kindness. Through storytelling and sustainably produced apparel, GetNoKudos empowers people to *wear their kindness* with pride. The apparel line features responsibly manufactured fabrics like organic cotton, bamboo, and banana leaf, and meets rigorous OEKO-TEX standards for safety and sustainability. In addition, Manish leads TrickyWater, a business advisory and brand innovation firm. With a background in engineering and a talent for creative strategy, Manish has helped both global brands and local businesses reimagine their impact. He has a proven track record in product development, strategic planning, and innovation management.

Previously, Manish was Lead Project Manager at Arnell Group, an Omnicom agency, reporting directly to the chairman. He led cross-disciplinary teams of designers, engineers, and artists in developing groundbreaking brand strategies and product innovations. Key projects included: Home Depot: Project lead on the OrangeWorks innovation initiative, launching multiple products. Manish replicated that platform at Lowe's Home Improvement. Chrysler: Directed innovation programs in automotive design, EV strategy, and UI design for NAV systems; served as liaison to C-suite executives and managed collaborations with Italian design legends Pininfarina and Giugiaro. Fontainebleau Hotel: Contributed to the iconic hotel's rebrand, crafting a modern luxury experience that revitalized its standing in Miami's hospitality scene.

Manish also supports businesses at various stages of development or success, helping them reach new audiences with creative, cost-effective brand, business and marketing strategies. He has also worked for iconic brands like Mack Trucks, American Standard and Pepsi.

He holds a BS in Mechanical Engineering from Drexel University and a MS in Management from NJIT.

2025 Undergraduate Summer Research and Innovation Symposium

Marc Long, Ph.D. is currently Executive Vice President of R&D at MTF Biologics, leading the new tissue, product and technology development teams, clinical affairs, intellectual property and grants, and project management groups. Marc has also recently taken the lead for Strategy & Business Development at MTF, as well as Health Policy & Government Affairs. Marc's previous 20+ years of industry experience focused on evaluating and developing biologics products and technologies for device companies. His focus was to scout and transfer new technologies and companies within the Stryker portfolio through licensing, acquisition, and collaboration. Marc's previous roles with Stryker included leadership in the Spine, Orthobiologics, Sports Medicine, and Joint Reconstruction divisions. Before that, he worked at Smith & Nephew Orthopaedics and Biologics. Marc received his PhD in Bioengineering in 1999 and MSc in Materials Science & Engineering in 1992 from Clemson University after graduating from Arts et Métiers ParisTech in 1989 with an Engineering Diploma. Marc was born in Cannes, France.

Pallavi Madakasira is currently a Managing Consultant at Eunomia Research & Consulting. Pallavi served as the Vice President at the Phase Change Solutions, a smart and sustainable materials company with a mission to reduce carbon footprint. Previously, she served as the Managing Director, Clean Energy at the New Jersey Economic Development Authority (NJEDA). In her role she helped shape and lead the EDA's efforts to ensure the State's long-term competitiveness in the Clean Energy sector. Pallavi was the Head of Strategic Marketing at Solvay where she led the creation of new products and business models centered around sustainability. Prior to Solvay, Pallavi worked with Lux Research advising Fortune 500 companies to help define their strategies in the field of clean energy technologies including solar, wind, and EV transportation. She has also worked with institutional investors in her role as an equity research analyst at Piper Jaffray. Pallavi received her Master's degree in Physics from the University of Texas at Dallas.

Harry L. Moore is President of Graybeard Solutions LLC. Over 45 years' experience in Electromechanical Engineering and internationally recognized as a Subject Matter Expert in: High Voltage and High-Power electrical systems (MW and GW level), Sources, Antennas, EMI/EMP & REMP generation and protection from EMP/REMP. Energetic (propellent and explosives) expertise and non-linear physics. Rapid Acquisition Expertise, utilizing conventional and non-traditional contracting mechanisms. Providing consistent, exceptional service to the armed forces and intelligence community. Providing theoretical to physical hardware designs, to include root cause for complex electrical challenges.

Ridwana Isla As a trailblazing leader in the biopharmaceutical industry, Ridwana Isla brings over 20 years of expertise in drug development, regulatory affairs, and precision medicine to the table. With a proven track record of driving innovation and results-driven leadership, she has successfully guided teams across prominent companies like Boehringer Ingelheim, Bristol Myers Squibb, Merck, Johnson & Johnson, and Illumina.

A Global Regulatory Strategy Lead, Ridwana expertly navigates complex regulatory landscapes, secures FDA breakthrough designations and provides strategic guidance to enhance pharmaceutical product value. Her expertise spans oncology, hematology, cell therapy, neuroscience, and AI/ML in regulatory science, making her a pioneer in her field.

2025 Undergraduate Summer Research and Innovation Symposium

With a strong educational foundation in Molecular Biology from the University of Toronto and numerous graduate professional certifications, Ridwana has earned recognition for her work, including multiple awards and accolades. As a Woman of Firsts, she is now bringing her business acumen and leadership skills to the community, running for Bridgewater Township Council in New Jersey.

As a judge for the 2025 URI Summer Research and Innovation Symposium, Ridwana will leverage her expertise to evaluate innovative research and provide valuable insights to the next generation of scientists and leaders. Her presence will undoubtedly inspire and motivate participants to push the boundaries of scientific discovery and innovation.

Anthony Donofrio is currently the President of AJD PE Consulting LLC, a private markets consulting practice, and serves on the Board of Advisors of private equity firm Delta Capital Management Partners; as an Adjunct Professor at Villanova University's Charles Widger School of Law; and as a Professional-in-Residence at Fairfield University's Dolan School of Business. He also serves on the Boards of two non-profit organizations based in New York: CentsAbility, whose mission is teaching financial literacy to high school students; and the American Dog Society, whose goal is to create better, more educated dog owners.

Anthony is also a former Managing Director for Hamilton Lane Advisors, one of the largest allocators of private equity and private credit capital in the world, with over $900 billion in assets under advisement, management and supervision. During his 16 years there, Anthony served as the Chief Operating Officer of Hamilton Lane's Co-Investment Funds, managing resources and processes for the firm's $5 billion co-investment program, and as Head of Transactions, Legal, acting as the lead attorney for the firm's private equity and credit primary, secondary, and co-investments. He also sat on the firm's Co-Investment Valuation Committee.

Anthony received a J.D. degree from Northwestern University School of Law, and a B.A., *cum laude,* in Business Administration-Finance from Villanova University.

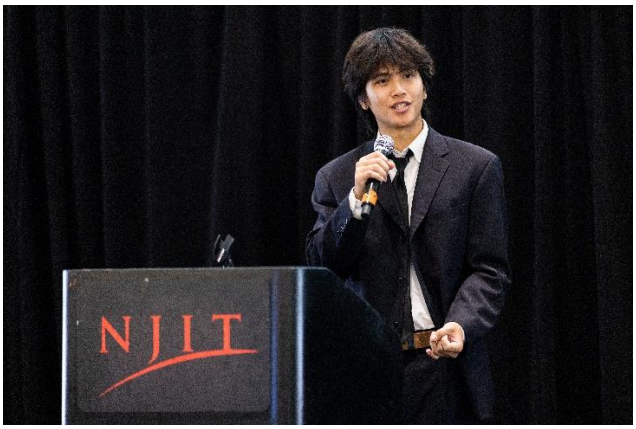
John Winston is Vice President for Health & Life Science Programs at American Defense International, Inc. Mr. Winston was a senior staff member at the Telemedicine and Advanced Technology Research Center (TATRC) at the United States Army Medical Research and Materiel Command (USAMRMC) employed as a contractor through The Geneva Foundation. Mr. Winston started with TATRC in 1999 and was involved in the development of most of TATRC's business and research processes, particularly as they relate to research review and adjudication. He has an extensive background in program management and business development.

As Chief of Research Review, Mr. Winston was primarily responsible for managing TATRC's research review and adjudication processes to include providing support to USAMRMC Joint Program Committees (JPCs) and Program Area Directorates (PADs) in the areas of Program Announcement ideation, creation, and execution. Mr. Winston worked closely with TATRC and JPC/PAD Subject Matter Experts (SMEs) to define research objectives, research strategies, and all matters relating to solicitation and funding of specific projects to meet TATRC/JPC/PAD priorities. Mr. Winston was responsible for managing all external review processes, and deliverables. As a function of his research review duties, Mr. Winston convened and chaired regular Proposal Review Board (PRB) meetings and produced summaries for the Director, TATRC. Mr. Winston's expertise extends to the execution of various, customized, review processes that address ad-hoc requirements.

2025 Undergraduate Summer Research and Innovation Symposium

As Program Manager for the AMEDD Advanced Medical Technology Initiative (AAMTI), Mr. Winston was responsible for the design, execution, and management of this annual Army Medical Department (AMEDD) technology demonstration program. Mr. Winston was responsible for establishing the AAMTI in 1999 and led this effort throughout his tenure at TATRC. Through the AAMTI, drawing on his program management, business development, and communication skills, Mr. Winston enabled the successful demonstration of medical technologies at all AMEDD Regional Health Commands, and has supported the development of medical innovators throughout the ranks of AMEDD personnel.

As Director for Business Development, Mr. Winston was responsible for communicating with entities wishing to do business with TATRC and USAMRMC. Mr. Winston advised industry and academia on matters relating to funding opportunities, research areas of interest, research proposal writing, military requirements and priorities, and other matters.



2025 Undergraduate Summer Research and Innovation Symposium

All times are tentative. If you are scheduled before lunch on Wednesday, you are expected to be there until the lunch break, if you are scheduled on Wednesday after lunch you are expected to be there all afternoon, if you are scheduled on Thursday you are expected to be there until the end of the presentations.

Day 1 - Ballroom

Welcome Remarks and Introductions 9:00 - 9:30 AM

Ballroom	First Name	Last Name	Co-presenter	Sponsoring Program	Research Project Title	Research Focus Area
9:30	Aditya	Sharma		HSRI	Modeling the Role of Nuclear Strain in Regulating Transcription Factor Transport: A Multiscale Computational Study	Bioscience & Bioengineering
9:33	Akshay	Guttikonda		HSRI	Spinal Cord Injury Recovery in Zebrafish Through Exercise and Immobilization	Bioscience & Bioengineering
9:36	Andrew	Yao		HSRI	Surface modification of lipids nanoparticles with ligands and click chemistry for targeted cellular delivery to cancer cells	Bioscience & Bioengineering
9:39	Atharva	Inamdar		NJIT I-Corps	Characterization of the Tumor Microenvironment Using Imaging Mass Cytometry	Bioscience & Bioengineering
9:42	Bansari	Mistry		URI / GHRI	Effects of Caffeine on the Collective Panic Responses of Larval Zebrafish Danio rerio	Bioscience & Bioengineering
9:45	Bhavna	Bangalore		HSRI	Targeting ST3GAL4 Gene in Glioblastoma Cells Using CRISPR-Cas9 to Investigate Sialic Acid's Role in Cancer Progression and Immune Evasion	Bioscience & Bioengineering
9:48	Bhavya	Deshaboina		HSRI	Absolute Quantitation of Phosphopeptides by Coulometric Mass Spectrometry (CMS)	Bioscience & Bioengineering
9:51	Colin	Salandy		MCBC	Understanding call interaction dynamics in vocalizing animals	Bioscience & Bioengineering
9:54	Connor	Linehan	Michael Cardona	Biomath	Comparing Methods for Predicting Circadian Gene Expression in scRNA-seq Data	Bioscience & Bioengineering
9:57	Daniel	Li		ISOTOPE	A 3D-Bioprinted Hydrogel-based Model of Chronic Fibrosis	Bioscience & Bioengineering
10:00	Diana	Saad		URI / GHRI	AI-Based Predictive Framework of Solid Tumor Cell Invasion Under Fluid-Pressure Gradients	Bioscience & Bioengineering
10:03	Diandra	Debnath		URI / GHRI	Using Light To Stimulate Dmrt3a Neurons, A Genetic Class of Spinal Interneuron, In Zebrafish Larvae To Determine Its Functional Role In Locomotor Behavior	Bioscience & Bioengineering
10:06	Eesha	Nair		HSRI	Optimization of freeze-gelation to fabricate aligned, mechanically robust scaffolds for Volumetric Muscle Loss (VML) repair.	Bioscience & Bioengineering
10:09	Elaria	Boutros		HSRI	Quantifying Instantaneous Base of Support During Gait to Determine Dynamic Postural Stability	Bioscience & Bioengineering
10:12	Fenny	Kayastha		URI / GHRI	Elucidating the cannabinoid biosynthesis in liverworts	Bioscience & Bioengineering
10:15	Gabrielle	Uskach		URI / GHRI	AI-Enhanced Optimization of Bioprinted Solid Tumor Models: Regulation of Bioink Biophysical Properties	Bioscience & Bioengineering
10:18	Gisselle	Ambrosio		McNair	Early-stage endometrial uterine cancer detection using an Electrochemical Sensor that utilizes a Shear-Enhanced, flow-through, nanoporous, Capacitive Electrode	Bioscience & Bioengineering
10:21	Gurnoor	Kaur		HSRI	Machine Learning Integrated with Molecular Modeling to Develop Inhibitors of the Mitochondrial LONP1 protease for Cancer Therapeutics and Chemical Probes	Bioscience & Bioengineering
10:24	Harry	Feng		URI / GHRI	Investigating the Role of Cytokines in Secondary Brain Injury: Neuroinflammation, Neuronal Death, and Cognitive Decline Following Traumatic Brain Injury	Bioscience & Bioengineering

2025 Undergraduate Summer Research and Innovation Symposium

Ballroom	First Name	Last Name	Co-presenter	Sponsoring Program	Research Project Title	Research Focus Area
10:27	Isabella	Delgadillo		HSRI	Currents in Control: Computational Characterization of Neuromodulated Co-Regulation	Bioscience & Bioengineering
10:30	Ishaakannan	Rajeshkannan		URI / GHRI	Optimizing Xenon Microbubble Therapy for Neuroprotection in a Rat Model of Traumatic Brain Injury	Bioscience & Bioengineering
10:33	James	John		URI / GHRI	Acute Neuronal Degeneration following Repeated Blast and Blunt Traumatic Brain Injuries	Bioscience & Bioengineering
10:36	Jane	Lederman		HSRI	Is Smartphone-based (Markerless) Motion Capture a Feasible Alternative to Marker-based Motion Capture Systems?	Bioscience & Bioengineering
10:39	Jasmine	Mudhar		HSRI	Cardiac Injury Treatment Using the Noble Gas Xenon Microbubbles	Bioscience & Bioengineering
10:42	Joseph	Stoveken		MCBC	Movement and reward are encoded in the cerebellar signals to the substantia nigra dopamine neurons	Bioscience & Bioengineering
10:45	Juana	Perez Sanchez		McNair	Fast Antibody Characterization via Microdroplet Digestion with Novel Enzymes and Mass Spectrometry	Bioscience & Bioengineering
COFFEE BREAK 11:00 - 11:15 AM						
11:15	Justin	Chen		URI / GHRI	Enhancing the Printability of Low-Viscosity Hydrogels for Soft Tissue Fabrication	Bioscience & Bioengineering
11:18	Kabir	Singh		HSRI	Development of a novel male contraceptive using lariat peptides to inhibit sperm function	Bioscience & Bioengineering
11:21	Khushi	Dengale		HSRI	Studying the Migration Dynamics of Cancer Cells in a 3D Model	Bioscience & Bioengineering
11:24	Luke	Bitting		HSRI	Leveraging AI to resurrect ancient life	Bioscience & Bioengineering
11:27	Maharshi	Vyas		HSRI	Assessing Joint Range of Motion During Passive Shoulder Exoskeleton-Assisted Lifting Using OpenSim	Bioscience & Bioengineering
11:30	Marcela	Rendon		URI / GHRI	Investigation of ST3Gal5 in Regulating Neutrophil Adhesion and Migration via Sialyl Lewis-x Expression	Bioscience & Bioengineering
11:33	Mariam	Ali		URI / GHRI	Impact of Combined Exposure to Nanoplastics and Phthalates on Placental Gene Expression	Bioscience & Bioengineering
11:36	Mason	Kovach		URI / GHRI	Effects of Robot Gait-Training on Walking in Patients Following Stroke	Bioscience & Bioengineering
11:39	Mauricio	Huapaya		McNair Scholar	Modeling in-vitro Releases of Crystalline API from HPMC Matrix Formulations	Bioscience & Bioengineering
11:42	Megan	Wong		HSRI	How is Microglia Morphology Related to Adolescent Social Isolation?	Bioscience & Bioengineering
11:45	Mukund	Maurya		URI / GHRI	Characterizing Diversity in Macrophage Immunometabolism Profiles With High-Throughput Automation	Bioscience & Bioengineering
11:48	Nancy	Natividad Cruz		URI / GHRI	Computational Analysis of the Reactivity of Polysulfides Toward Hydrolysis	Bioscience & Bioengineering
11:51	Nathan	Zhang		REU - Cancer	PVDF-Based Piezoelectric Sensors for Non-Invasive Cancer Therapy Monitoring	Bioscience & Bioengineering
11:54	Nidhi	Sakpal		URI / GHRI	Analyzing Interior Density in Army Ant Bivouacs Using Computer Vision	Bioscience & Bioengineering
11:57	Nilesh	Das		HSRI	Brain Network Connectivity in Epileptic Individuals	Bioscience & Bioengineering

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Ballroom	First Name	Last Name	Co-presenter	Sponsoring Program	Research Project Title	Research Focus Area
12:00	Oluwaseun	Adedeji		Integra Foundation	The Influence Rapid Repeated Fluid Percussion Injury	Bioscience & Bioengineering
12:03	Pragathi Selina Susan	Samuel		HSRI	The Impact of Bharatanatyam Expertise and Training on Visual Crowding: A Comparative Analysis of Dancers and Non-Dancers	Bioscience & Bioengineering
12:06	Pranav	Kurra		HSRI	Macrophage mediated efferocytosis regulates immune suppression in cancers	Bioscience & Bioengineering
12:09	Roma	Patel		HSRI	Effect of Theranostic Nanodroplet Phase-Separation On Cell Droplet Interaction	Bioscience & Bioengineering
12:12	Sachi	Rele		REU-Optics & Photonics	Portable Readout System for Microfluidic-Based Multiplex Biosensor for Alzheimer's Disease	Bioscience & Bioengineering
12:15	Salma	Mohammed		URI / GHRI	Quantifying Joint Forces during Exoskeletal-Assisted and Unassisted Stand-to-Sit and Sit-to-Stand Maneuvers to Reduce Fractures in Persons with Spinal Cord Injury	Bioscience & Bioengineering
12:18	Seth	Weaver		REU-Optics & Photonics	Entomological Photonic Sensing	Bioscience & Bioengineering
12:21	Shree Shruthi	Sankar		URI / GHRI	Evaluation of Bioactive Collagen Sponge Implantation for Muscle Regeneration and Scar Reduction in Volumetric Muscle Loss (VML) Injuries	Bioscience & Bioengineering
LUNCH AND NETWORKING 12:30 - 1:30 PM						
1:30	Shreyas	Bolla		URI / GHRI	Investigating the Effects of IGF-1- and IGFBP-5-Loaded Collagen Scaffolds for Treatment of Volumetric Muscle Loss In Vivo	Bioscience & Bioengineering
1:33	Siya	Gupta		HSRI	Establishing an Assay for Visual Desensitization in Larval Zebrafish for Understanding Synaptic Plasticity	Bioscience & Bioengineering
1:36	Soham	Shashikumar		HSRI	Quantitative Assessment Using Peak Velocity in Virtual Reality Vision Therapy for Convergence Insufficiency Patients	Bioscience & Bioengineering
1:39	Sophia	Jacob		HSRI	Are Neuronal Capacitance Changes due to Neuronal Size Changes. A Confocal Microscopy and Fiji Imaging Approach	Bioscience & Bioengineering
1:42	Stephen	Junger		URI / GHRI	The Search for Ctenophore Vitellogenins: Towards Understanding the Evolution of Lipid-Rich Animal Eggs	Bioscience & Bioengineering
1:45	Sudarshan	Ganapathy		HSRI	Tracking Changes in White Matter Functional Connectivity Throughout Pregnancy: A Longitudinal Study	Bioscience & Bioengineering
1:48	Valarie	Malty		URI / GHRI	Investigating the Impact of a Clickable Phthalate on Gene Expression in Ovarian Follicles	Bioscience & Bioengineering
1:51	Wendy	Pino		URI / GHRI	Engineering Tunable Protein-Only Nanoparticles with Multifunctional Capabilities for High-Efficacy Antifungal Therapy	Bioscience & Bioengineering
1:54	Youanna	Labib		URI / GHRI	Enhancing Language Learning with Transcranial Magnetic Stimulation	Bioscience & Bioengineering
1:57	Zoey	Wen		HSRI	The Effect of Exosomes on Collagen Production in Human Cardiac Fibroblasts	Bioscience & Bioengineering
2:00	Afsheen	Khan		HSRI	Project FloodLens: Holographic Flood Simulation for Disaster Risk Assessment	Environment & Sustainability
2:03	Alla	Morozova		URI / GHRI	The Role of Localized Weather Data in Urban Building Energy Efficiency and Compliance	Environment & Sustainability
2:06	Allison	Harbolic		HSRI	Impact of Combined Exposure to Nanoplastics and Phthalates on Placenta Morphology	Environment & Sustainability
2:09	Arena	Chowdhury		URI / GHRI	Assessing Toxicity of Benzyl Paraben (BzP) in Mouse Ovarian Follicles	Environment & Sustainability

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Ballroom	First Name	Last Name	Co-presenter	Sponsoring Program	Research Project Title	Research Focus Area
2:12	Cade	Parkinson-Gee		URI / GHRI	Interactive Characters in Simulated Environments to Promote Empathy for Endangered Animals	Environment & Sustainability
2:15	Divija	Gullapalli		HSRI	Life on the River: Exploring Water Toxicity and Its Health Impacts	Environment & Sustainability
2:18	Kyle	Villamayor		PSEG Fellowship	Investigation of the Mechanism of Solar Irradiance Variations	Environment & Sustainability
2:21	Laura	Nwanebu		URI / GHRI	First-Principles Study of Hydrogen Adsorption on Calcite in Shale and Its Role in Shale Softening	Environment & Sustainability
2:24	Lilith	Janevska		HSRI	A Clear Window into Bird Collisions: Inexpensive Devices for Monitoring Strikes	Environment & Sustainability
2:27	Lindsay	Burke		URI / GHRI	Bio-Inspired Routing for Dynamic Material Transport in the Construction Industry	Environment & Sustainability
2:30	Mariam	Naseer		URI / GHRI	Antiviral M-Xene-Laser-Induced Graphene for Composite Air Filters	Environment & Sustainability
Coffee Break 2:45 - 3:00 PM						
3:00	Matthew	Oliveira		REU-Optics & Photonics	Continuous Monitoring and Machine Learning Analysis of Lead Occurrence in Drinking Water	Environment & Sustainability
3:03	Matthew	Pritchard		HSRI	Assessing the Effectiveness of Biochar for Sediment and Water Treatment	Environment & Sustainability
3:06	Oluwanifemi	Fuwa		URI / GHRI	Applications of nanobubbles in circulating cooling water for scale prevention	Environment & Sustainability
3:09	Omar	Al-Zaman		URI / GHRI	Fabrication and Characterization of 2D MoS2-based Electronic Nanosensors for Harmful Algal Bloom Monitoring	Environment & Sustainability
3:12	Pooja	Datir		HSRI	Exploring Patterns of Pollutants in the Passaic River through a Map-Based Model	Environment & Sustainability
3:15	Ray	Sama		HSRI	How Interior and Plate Design for the Diner Can Be Strategically Used to Reduce Consumer Food Waste in University and Buffet-Style Dining Settings	Environment & Sustainability
3:18	Rohit	Datir		HSRI	An Analysis of Historical Development and Perspectives of the Lower Passaic River	Environment & Sustainability
3:21	Saidarsha	Karunakaran		PSEG Fellowship	Standardizing Historical Ca II K Spectroheliograph Images from the Kodaikanal Solar Observatory for Solar irradiance Analysis with Machine Learning	Environment & Sustainability
3:24	Tara	Magill		HSRI	Construction of an Anaerobic Biodigester Prototype	Environment & Sustainability
3:27	Tristan	Cunanan		HSRI	Establishing Anthropogenic and Other Site Contexts for the Effective Implementation of Built Interventions on the Second River	Environment & Sustainability
3:30	Tyler	Oberholtzer		HSRI	Biochar Water Remediation	Environment & Sustainability
3:33	Vimal Jai Kirithika	Vimalanathan Sankarapandian		HSRI	Developing Policy Solutions for the Passaic River Pollution: Synthesizing Health Research, Community Advocacy, and Legal Principles	Environment & Sustainability
3:36	Dev	Doshi		HSRI	Cross-Scale Analysis of the Protocadherin Gene Cluster: Serotonergic Self-Avoidance in PCDHαC2 Mouse Models and Mutation Enrichment in Human Populations	Bioscience & Bioengineering
END OF DAY 1						

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Day 1 - Atrium

Welcome Remarks and Introductions 9:00 - 9:30 AM

Atrium	First Name	Last Name	Co-presenter	Sponsoring Program	Research Project Title	Research Focus Area
9:40	Abdulrahman	Aljoudi		REU-Optics & Photonics	Automating Silicon Photonic Circuit Design Using Large Language Models	AI, MI & Robotics
9:43	Ananya	Raghunath		HSRI	Defending Latent Space Jailbreaking Attacks in Large Language Models	AI, MI & Robotics
9:46	Andrew	Azer		URI / GHRI	Ankle Exoskeleton Design Enhancement	AI, MI & Robotics
9:49	Arnesh	Banerjee		HIT	Safe Response from LLMs using RLHF	AI, MI & Robotics
9:52	Arunima	Paul		REU - Cancer	Utilizing Artificial Intelligence for Calibration-Free Predictions in Electrochemical Breath Sensors for Cancer Diagnostics	AI, MI & Robotics
9:55	Assaf	Izhar		REU-Optics & Photonics	Deep Neural Network Adaptation for Photonic Hardware	AI, MI & Robotics
9:58	Carlin	Verano	Forum Shah	HSRI	Enhancing Forensic Science Education through XR	AI, MI & Robotics
10:01	Carolyn	Toledo		URI / GHRI	Embracing the Empirical Advantages of AI-Driven Motion Capture	AI, MI & Robotics
10:04	Daniel	Tobar		URI / GHRI	Expedited Virtual Film Production: Enhancing Real-Time Feedback and Immersive Interaction with an emerging AI Tool	AI, MI & Robotics
10:07	Diya	Pottangadi		HSRI	Evaluating Sensor Configurations for Human Activity Recognition Using Machine Learning	AI, MI & Robotics
10:10	Emir	Hussain		URI / GHRI	Anomaly Detection and Event Prediction in Time Series Using Deep Learning and Large Language Models	AI, MI & Robotics
10:13	Emma	Lim		REU-Optics & Photonics	Optimization and Characterization of Low Power In-Memory Computing Devices	AI, MI & Robotics
10:16	Erica	Keklak		URI / GHRI	Predictive model of the spread of the spotted lanternfly in the continental United States using machine learning	AI, MI & Robotics
10:19	Erik	Lewis		HSRI	Machine Learning for Exploring Sounds for Live Music	AI, MI & Robotics
10:22	Esai	Jacobson		URI / GHRI	A Novel Method to Transfer Human Movement with Mobility Aids to Virtual Avatars	AI, MI & Robotics
10:25	Evan	Correa		URI / GHRI	Benchmarking and Implementing Gene Regulatory Network and Cell-Cell Communication Inference Pipelines for Single-Cell RNA-seq Data	AI, MI & Robotics
10:28	Hala	Kanaan		McNair	Deep-learning for the study of particle-cell interaction	AI, MI & Robotics
10:31	Ibrahim	Feknous		URI / GHRI	Cloud-Based Autonomous Driving: Leveraging Sensor Data and Machine Learning for Real-Time Driving Decisions	AI, MI & Robotics
10:34	Jada	Byfield		McNair	Evaluating Usability and Accuracy of Different Methods to Align and Place Digital 3D Wounds	AI, MI & Robotics
10:37	Jerry	Wang		REU-ISWS	Detection of Solar Radio Bursts with Machine Learning	AI, MI & Robotics

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Atrium	First Name	Last Name	Co-presenter	Sponsoring Program	Research Project Title	Research Focus Area
10:40	Jude	Lahage		URI / GHRI	Optimizing Dielectric Layers for Power-Efficient RRAM Devices	AI, MI & Robotics
10:43	Karan	Kanda		HSRI	Developing a Terrain-Aware Reinforcement Learning Controller for Robotic Exoskeletons	AI, MI & Robotics
10:46	Keerthana	Venkatesh		ISOTOPE	Democratizing Quantitative Motion Capture for Ubiquitous Use: Evaluating an Artificial Intelligence-based OpenCap Markerless System in Comparison to a Traditional Marker-based Motion Capture System	AI, MI & Robotics
COFFEE BREAK 11:00 - 11:15 AM						
11:15	KETA	Williams		McNair	Mycelium to Machine: Exploring Hybrid Intelligence Through Cyberpsychology	AI, MI & Robotics
11:18	Kushagra	Verma		URI / GHRI	AI-Powered Carbon Credit Verification: A Data-Driven Approach to Optimizing Market Efficiency	AI, MI & Robotics
11:21	Marcela	Moura		URI / GHRI	Investigating EMIC Wave Conjunctions: Linking Ground-Based and Space Observations	AI, MI & Robotics
11:24	Mario	Urla		McNair	Mobile Edge Computing and the Integration of Machine Learning	AI, MI & Robotics
11:27	Melna	Abraham		HSRI	On Emergent Emitter Dynamics in the Covariance Matrix Adaptation MAP-Elites Algorithm	AI, MI & Robotics
11:30	Naevid-Lorenz	Sablay		HSRI	Crowdsourcing Closed Caption Quality Ratings with Intrinsic Motivation	AI, MI & Robotics
11:33	Nicholas	Sahu		URI / GHRI	Development Platform for Prototyping and Testing Swarm Robotic Algorithms	AI, MI & Robotics
11:36	Niko	Tietjen		URI / GHRI	Using self-organizing maps to decipher whale song battles	AI, MI & Robotics
11:39	Oscar	Callo von Platen		URI / GHRI	AI-Driven HPC Optimizations for Triangle Counting	AI, MI & Robotics
11:42	Piyush	Jain		HIT	Medical Ontology in Virtual Reality	AI, MI & Robotics
11:45	Prajwal	Shah		URI / GHRI	H-alpha Image Super Resolution at BBSO with Advanced Deep Learning	AI, MI & Robotics
11:48	Saanvi	Chougule		URI / GHRI	Collective Motion of Zebrafish: Effective Vision in Fish Panic Waves	AI, MI & Robotics
11:51	Sana	Anwar		URI / GHRI	Enhancing LLMs in Voice-Based Smart-Home Technologies for Users with Mild Cognitive Impairment (MCI)	AI, MI & Robotics
11:54	Suhrid Behari	Paul		HIT	Query Planning with Agentic AI	AI, MI & Robotics
11:57	Varsha	Narayanan		URI / GHRI	From Uniform Grids to Graphs: A Generalized Wavelet Diffusion Neural Operator Approach for PDE Modeling on Irregular Domains	AI, MI & Robotics
12:00	Victor	Jimenez		HSRI	Characterizing Mathematical Skills In Language Models	AI, MI & Robotics
	LUNCH AND NETWORKING 12:30 - 1:30 PM Ballroom					

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Day 2 - Ballroom

Introduction to the NAI-NJIT Workshop and Welcome Remarks 9:00 - 9:30 AM

Ballroom	First Name	Last Name	Co-presenter	Sponsoring Program	Research Project Title	Research Focus Area
9:30	Abdullah	Imran		URI / GHRI	Verifier Guided Refactoring for Nullability	Data Science & Management
9:33	Andrea	Pardo		McNair	Comparisons using simulations of copula graphic estimators of survival functions based on dependent censored survival data	Data Science & Management
9:36	Angelo	Bustamante		McNair	Beyond Usability: How Aesthetic and Functional Design Influence User Preference in Web Interfaces	Data Science & Management
9:39	Ankit	Kumar		HIT	Design and Implementation of a Secure Document Processing System Using Java and AWS	Data Science & Management
9:42	Bryce	Kim		REU-ISWS	Installation and First-light Observations of an He I 10830 Synoptic Telescope	Data Science & Management
9:45	Jainam	Shah		URI / GHRI	Leveraging Digital Twin Technology to Model Human-Geography Interactions	Data Science & Management
9:48	John	Mohring		HSRI	Unifying Design: Facilitating Interdisciplinary Collaboration with OpenUSD	Data Science & Management
9:51	Kate	Frederick		REU-ISWS	Investigating ionospheric activities during solar eclipse using radio observations	Data Science & Management
9:57	Leo	Barrientos		REU-ISWS	Inference of Line-of-Sight Magnetic Field and Velocity in the Weak-Field Regime from BBSO/NIRIS Observations	Data Science & Management
9:54	Logan	Schierholz		REU-ISWS	Exploring pre-erupting configuration of magnetic fields in solar active regions	Data Science & Management
10:00	Lucas	Holbrook	Mayukha Ajeesh Ramsha Nath	HSRI	Virtual Reality Ontology Object Manipulation (VROOM)	Data Science & Management
10:03	Natalia	Pena		HSRI	Informed Design of a Social Fitness Platform for the Visually Impaired	Data Science & Management
10:06	Neev	Chopra		URI / GHRI	Importance of Increase in Data Analysts For International Soccer and Their Expertiese Expanding Horizons To Formulate Predictions	Data Science & Management
10:09	Seda	Bowler-Tunick		REU-ISWS	Small-scale Ejections and Eruptions from the Solar Chromosphere	Data Science & Management
10:12	Steven	Nunez-Diaz		PSEG Fellowship	Resolving the Distribution of Ionospheric Irregularities	Data Science & Management
10:15	Adwaita	Laha		HIT	Developing a prototype sensor approach including membranes	Materials Science & Engineering
10:18	Aidan	Tufford		BCC-CME	Interaction of Liquid & Vapor Phase Diisopropyl Methyl Phosphonate (DIMP) With Combustion Products of Magnesium	Materials Science & Engineering
10:21	Ali	Salama		HSRI	Predicting Printability of Hydrogel Bioinks Using Machine Learning	Materials Science & Engineering
10:24	Alvin	Mathew		HSRI	A Numerical and Experimental Study of Faraday Waves on Two Free Surfaces in a Two-Fluid system	Materials Science & Engineering
10:27	Andrew	Jiang		ISOTOPE	Investigation on the Effects of Nitrogen-doped Graphene (N-G) Nanomaterials on Thermal Properties of Phase Change Materials (PCM)	Materials Science & Engineering
10:30	Camila	Martinez Castillo		McNair	Developing Biodegradable Mulch for Sustainable Agriculture	Materials Science & Engineering
10:30	Chadley	Gede		McNair	PFAS Sensor	Materials Science & Engineering

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COFFEE BREAK / WELCOME REMARKS /NAI-NJIT KEYNOTE SPEAKER /						
NAI-NJIT CHAPTER MEMBER INDUCTION CEREMONY / LUNCH 10:45 - 1:00 PM						
NAI-NJIT Introduction to Distinguished Keynote Speaker - Atam Dhawan 11:00 - 11:15 AM						
Distinguished Keynote Speaker, Elizabeth Dougherty, Regional Outreach Director of the United States Patent and Trademark Office's Northeast Regional Outreach Office, NAI 11:15 - 12:00 PM						
NAI-NJIT Chapter Member Induction Ceremony 12:00 - 12:15 PM						
Lunch & Networking 12:15 - 1:15 PM						
Ballroom	**First Name**	**Last Name**	**Co-presenter**	**Sponsoring Program**	**Research Project Title**	**Research Focus Area**
1:15	David	Pritchard		URI / GHRI	Towards Effective Numerical Methods for Earthquake Simulations	Materials Science & Engineering
1:18	Derek	Gonzalez	Nia Rodriguez	BCC-CME	Electrohydrodynamic co-jetting of particles for self assembly and drug delivery applications	Materials Science & Engineering
1:21	Gabriel	Correa		URI / GHRI	Predicting Crack Arrest Fracture Toughness of Structural Materials through Multimodal Data Analysis	Materials Science & Engineering
1:24	Geordy	Jomon		PSEG Fellowship	Molecular Mechanisms of Interaction between PFAS and Surfactants	Materials Science & Engineering
1:27	Kaylin	Koen		REU - Optics & Photonics	Miniature Peptide Synthesis	Materials Science & Engineering
1:30	Konstantina	Alamani		URI / GHRI	Microfluidic Production and Tg Analysis of PLGA Nanoparticles for Drug Delivery Applications	Materials Science & Engineering
1:33	Luis	Munoz		URI / GHRI	Theoretical Study of Droplet Electrophoresis	Materials Science & Engineering
1:36	Natalia	Albarracin Mora		DataBank	Developing Biodegradable, Safe, and Optimized 3D Printable Biomaterials for Alternatives to Consumer Product Applications	Materials Science & Engineering
1:39	Priyanka	Sunkara		HSRI	Analyzing Polymer Nanoparticles in Blood Plasma for Drug Delivery Applications	Materials Science & Engineering
1:42	Puja	Bhavsar		REU - Cancer	Microfluidic Device for Rapid and Sensitive Electrochemical Detection of RNA	Materials Science & Engineering
1:45	Samanyu	Kashyap		URI / GHRI	Chemical Vapor Deposition Synthesis of Nitride MXenes for Energy Storage Applications	Materials Science & Engineering
1:48	Simone	Nelson		REU - Optics & Photonics	Spectroscopic characterization of a microfluidic membrane mimic system under dynamic conditions	Materials Science & Engineering
1:51	Wonki	Chae		REU - Optics & Photonics	Infrared Photoconductive Photodetectors Based-on Colloidal Semiconductor Nanocrystals	Materials Science & Engineering
1:54	Yugyel	Lhamo		URI / GHRI	Digital Twin and Smart PPE for Enhancing Safety within Automated Construction	Materials Science & Engineering
1:57	Zaria	Stewart		REU - Cancer	Platinum Nanoparticles as a Therapeutic for Breast Cancer	Materials Science & Engineering
2:00	Ziyad	Hassan		URI / GHRI	Production of Vanadium-Based MXenes by Chemical Vapor Deposition for Zn-Ion Batteries	Materials Science & Engineering
Break & Judges Session 2:15 PM						
Dr. James Stevenson Innovation Awards Ceremony & Reception 3:00 PM						

Bioscience and Bioengineering

Name: Aditya Sharma **Department**: Biological Sciences **Project title**: Modeling the Role of Nuclear Strain in Regulating Transcription Factor Transport: A Multiscale Computational Study **Faculty advisor**: Farid Alisafaei **URI program**: Honors Summer Research Institute (HSRI)	**Name**: Akshay Guttikonda **Department**: Biological Sciences - Neurobiology **Project title**: Spinal Cord Injury Recovery in Zebrafish Through Exercise and Immobilization **Faculty advisor**: Dr. Kristen Severi **URI program**: Honors Summer Research Institute (HSRI)
Name: Andrew Yao **Department**: Chemicals and Materials Engineering **Project title**: Surface modification of lipids nanoparticles with ligands and click chemistry for targeted cellular delivery to cancer cells **Faculty advisor**: Dr. Xiaoyang Xu **URI program**: Honors Summer Research Institute (HSRI)	**Name**: Atharva Inamdar **Department**: Biological Sciences **Project title**: Characterization of the Tumor Microenvironment Using Imaging Mass Cytometry **Faculty advisor**: Dr. Binfeng Lu **URI program**: NJIT I-Corps Undergraduate Entrepreneurial Leads
Name: Bansari Mistry **Department**: Biological Sciences **Project title**: Effects of Caffeine on the Collective Panic Responses of Larval Zebrafish Danio rerio **Faculty advisor**: Dr. Kristen Severi **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Bhavna Bangalore **Department**: Department of Biomedical Engineering **Project title**: Targeting ST3GAL4 Gene in Glioblastoma Cells Using CRISPR-Cas9 to Investigate Sialic Acid's Role in Cancer Progression and Immune Evasion **Faculty advisor**: Dr. Alexander Buffone **URI program**: Honors Summer Research Institute (HSRI)

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Name: Bhavya Deshaboina **Department**: Chemistry and Environmental Science **Project title**: Absolute Quantitation of Phosphopeptides by Coulometric Mass Spectrometry (CMS) **Faculty advisor**: Dr. Hao Chen **URI program**: Honors Summer Research Institute (HSRI)	**Name**: Colin Salandy **Department**: Biological Sciences **Project title**: Understanding call interaction dynamics in vocalizing animals **Faculty advisor**: Dr. Julia Hyland Bruno **URI program**: Mathematical and Computational Biosciences Collective
Name: Connor Linehan **Department**: Electrical & Computer Engineering **Project title**: Comparing Methods for Predicting Circadian Gene Expression in scRNA-seq Data **Faculty advisor**: Casey Diekman **URI program**: Biomathematical Research Initiation Program **Partner**: Michael Cardona	**Name**: Daniel Li **Department**: Biomedical Engineering **Project title**: A 3D-Bioprinted Hydrogel-based Model of Chronic Fibrosis **Faculty advisor**: Dr. Amir K. Miri **URI program**: Improving AANAPI Student Outcomes Through Opportunities and Engagement (ISOTOPE)
Name: Dev Doshi **Department**: Neuroscience & Biomedical Engineering **Project title**: Cross-Scale Analysis of the Protocadherin Gene Cluster: Serotonergic Self-Avoidance in PCDHαC2 Mouse Models and Mutation Enrichment in Human Populations **Faculty advisor**: Dr. Flaherty & Dr. Tom Maniatis **URI program**: Honors Summer Research Institute (HSRI)	**Name**: Diana Saad **Department**: Biomedical Engineering Department **Project title**: AI-Based Predictive Framework of Solid Tumor Cell Invasion Under Fluid-Pressure Gradients **Faculty advisor**: Dr. Amir Miri **URI program**: URI / GHRI Summer Fellowship Program
Name: Diandra Debnath **Department**: Biological Sciences **Project title**: Using Light To Stimulate Dmrt3a Neurons, A Genetic Class of Spinal Interneuron, In Zebrafish Larvae To Determine Its Functional Role In Locomotor Behavior **Faculty advisor**: Kristen Severi **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Eesha Nair **Department**: Albert Dorman Honors College **Project title**: Optimization of freeze-gelation to fabricate aligned, mechanically robust scaffolds for Volumetric Muscle Loss (VML) repair. **Faculty advisor**: Dr. Jonathan Grasman **URI program**: Honors Summer Research Institute (HSRI)

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Name: Elaria Boutros **Department**: Biomedical Engineering **Project title**: Quantifying Instantaneous Base of Support During Gait to Determine Dynamic Postural Stability **Faculty advisor**: Dr. Saikat Pal **URI program**: Honors Summer Research Institute (HSRI)	**Name**: Fenny Kayastha **Department**: Biology **Project title**: Elucidating the cannabinoid biosynthesis in liverworts **Faculty advisor**: Dr Jimenez Aleman **URI program**: URI / GHRI Summer Fellowship Program
Name: Gabrielle Uskach **Department**: Biological Sciences **Project title**: AI-Enhanced Optimization of Bioprinted Solid Tumor Models: Regulation of Bioink Biophysical Properties **Faculty advisor**: Dr. Amir Miri **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Gisselle Ambrosio **Department**: Jordan Hu College of Science and Liberal Arts (JHCSLA) **Project title**: Early-stage endometrial uterine cancer detection using an Electrochemical Sensor that utilizes a Shear-Enhanced, flow-through, nanoporous, Capacitive Electrode **Faculty advisor**: Nellone Reid **URI program**: McNair Scholar Program
Name: Gurnoor Kaur **Department**: Biology Department **Project title**: Machine Learning Integrated with Molecular Modeling to Develop Inhibitors of the Mitochondrial LONP1 protease for Cancer Therapeutics and Chemical Probes **Faculty advisor**: Dr. Carolyn Suzuki **URI program**: Honors Summer Research Institute (HSRI)	**Name**: Harry Feng **Department**: Biomedical Engineering **Project title**: Investigating the Role of Cytokines in Secondary Brain Injury: Neuroinflammation, Neuronal Death, and Cognitive Decline Following Traumatic Brain Injury **Faculty advisor**: Dr. Ying Li **URI program**: URI / GHRI Summer Fellowship Program
Name: Isabella Delgadillo **Department**: Biology **Project title**: Currents in Control: Computational Characterization of Neuromodulated Co-Regulation **Faculty advisor**: Jorge Golowasch **URI program**: Honors Summer Research Institute (HSRI)	**Name**: Ishaakannan Rajeshkannan **Department**: Department of Biomedical Engineering **Project title**: Optimizing Xenon Microbubble Therapy for Neuroprotection in a Rat Model of Traumatic Brain Injury **Faculty advisor**: Rajarshi Chattaraj **URI program**: URI / GHRI Summer Fellowship Program

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Name: James John **Department**: Biomedical Engineering **Project title**: Acute Neuronal Degeneration following Repeated Blast and Blunt Traumatic Brain Injuries **Faculty advisor**: Bryan Pfister **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Jane Lederman **Department**: Biomedical Engineering **Project title**: Is Smartphone-based (Markerless) Motion Capture a Feasible Alternative to Marker-based Motion Capture Systems? **Faculty advisor**: Dr Saikat Pal **URI program**: Honors Summer Research Institute (HSRI)
Name: Jasmine Mudhar **Department**: Biology **Project title**: Cardiac Injury Treatment Using the Noble Gas Xenon Microbubbles **Faculty advisor**: Eun Jung Lee **URI program**: Honors Summer Research Institute (HSRI)	**Name**: Joseph Stoveken **Department**: Mechanical Engineering **Project title**: Movement and reward are encoded in the cerebellar signals to the substantia nigra dopamine neurons **Faculty advisor**: Farzan Nadim; Rotstein, Horacio G **URI program**: Mathematical and Computational Biosciences Collective
Name: Juana Perez Sanchez **Department**: Chemistry and Environmental Science **Project title**: Fast Antibody Characterization via Microdroplet Digestion with Novel Enzymes and Mass Spectrometry **Faculty advisor**: Dr. Hao Chen **URI program**: McNair Scholar Program	**Name**: Justin Chen **Department**: Chemical & Materials Engineering **Project title**: Enhancing the Printability of Low-Viscosity Hydrogels for Soft Tissue Fabrication **Faculty advisor**: Dr. Murat Guvendiren **URI program**: URI / GHRI Summer Fellowship Program
Name: Kabir Singh **Department**: Biomedical Engineering **Project title**: Development of a novel male contraceptive using lariat peptides to inhibit sperm function **Faculty advisor**: Dr. Vivek Kumar **URI program**: Honors Summer Research Institute (HSRI)	**Name**: Khushi Dengale **Department**: Biomedical Engineering **Project title**: Studying the Migration Dynamics of Cancer Cells in a 3D Model **Faculty advisor**: Dr. Amir K. Miri **URI program**: Honors Summer Research Institute (HSRI)

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Name: Luke Bitting **Department**: Biological Sciences **Project title**: Leveraging AI to resurrect ancient life **Faculty advisor**: Phillip Barden **URI program**: Honors Summer Research Institute (HSRI)	**Name**: Maharshi Vyas **Department**: Biomedical Engineering **Project title**: Assessing Joint Range of Motion During Passive Shoulder Exoskeleton-Assisted Lifting Using OpenSim **Faculty advisor**: Dr. Xianlian Zhou **URI program**: Honors Summer Research Institute (HSRI)
Name: Marcela Rendon **Department**: Otto H. York Department of Chemical and Materials Engineering **Project title**: Investigation of ST3Gal5 in Regulating Neutrophil Adhesion and Migration via Sialyl Lewis-x Expression **Faculty advisor**: Alexander Buffone **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Mariam Ali **Department**: Biological Sciences **Project title**: Impact of Combined Exposure to Nanoplastics and Phthalates on Placental Gene Expression **Faculty advisor**: Genoa Warner **URI program**: URI / GHRI Summer Fellowship Program
Name: Mason Kovach **Department**: Biomechanical Engineering **Project title**: Effects of Robot Gait-Training on Walking in Patients Following Stroke **Faculty advisor**: Dr. Saikat Pal **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Mauricio Huapaya **Department**: Otto H. York Department of Chemical and Materials Engineering **Project title**: Modeling in-vitro Releases of Crystalline API from HPMC Matrix Formulations **Faculty advisor**: Dr. Rajesh Dave **URI program**: McNair Scholar Program
Name: Megan Wong **Department**: Center for Molecular and Behavioral Neuroscience, Rutgers-Newark **Project title**: How is Microglia Morphology Related to Adolescent Social Isolation? **Faculty advisor**: Elizabeth Holly **URI program**: Honors Summer Research Institute (HSRI)	**Name**: Mukund Maurya **Department**: Newark College of Engineering **Project title**: Characterizing Diversity in Macrophage Immunometabolism Profiles With High-Throughput Automation **Faculty advisor**: Dr. Jason Yang **URI program**: URI / GHRI Summer Fellowship Program

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Name: Nancy Natividad Cruz **Department**: Department of Chemistry and Environmental Science **Project title**: Computational Analysis of the Reactivity of Polysulfides Toward Hydrolysis **Faculty advisor**: Dr. Pier Alexandre Champagne **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Nathan Zhang **Department**: Electrical Engineering **Project title**: PVDF-Based Piezoelectric Sensors for Non-Invasive Cancer Therapy Monitoring **Faculty advisor**: Professor Lin Dong **URI program**: Undergraduate Research and Innovation Experience in Cancer Diagnosis and Therapeutic Intervention (REU-Cancer)
Name: Nidhi Sakpal **Department**: Ying Wu College of Computing **Project title**: Analyzing Interior Density in Army Ant Bivouacs Using Computer Vision **Faculty advisor**: Dr.Petras Swissler **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Nilesh Das **Department**: Biomedical Engineering **Project title**: Brain Network Connectivity in Epileptic Individuals **Faculty advisor**: Bharat Biswal **URI program**: Honors Summer Research Institute (HSRI)
Name: Oluwaseun Adedeji **Department**: Engineering, NCE **Project title**: The Influence Rapid Repeated Fluid Percussion Injury **Faculty advisor**: Bryan Pfister (Dr.) **URI program**: Integra Foundation Biomedical Award	**Name**: Pragathi Selina Susan Samuel **Department**: Department of Biological Sciences **Project title**: The Impact of Bharatanatyam Expertise and Training on Visual Crowding: A Comparative Analysis of Dancers and Non-Dancers **Faculty advisor**: Dr. Yelda Semizer **URI program**: Honors Summer Research Institute (HSRI)
Name: Pranav Kurra **Department**: Department of Biological Sciences **Project title**: Macrophage mediated efferocytosis regulates immune suppression in cancers **Faculty advisor**: Dr. Raymond Birge **URI program**: Honors Summer Research Institute (HSRI)	**Name**: Roma Patel **Department**: Biomedical Engineering Department **Project title**: Effect of Theranostic Nanodroplet Phase-Separation On Cell Droplet Interaction **Faculty advisor**: Dr. Rajarshi Chattaraj **URI program**: Honors Summer Research Institute (HSRI)

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Name: Sachi Rele **Department**: Department of Mechanical and Industrial Engineering **Project title**: Portable Readout System for Microfluidic-Based Multiplex Biosensor for Alzheimer's Disease **Faculty advisor**: Dr. Eon Soo Lee **URI program**: REU - Optics & Photonics	**Name**: Salma Mohammed **Department**: Biomedical Engineering **Project title**: Quantifying Joint Forces during Exoskeletal-Assisted and Unassisted Stand-to-Sit and Sit-to-Stand Maneuvers to Reduce Fractures in Persons with Spinal Cord Injury **Faculty advisor**: Dr. Saikat Pal **URI program**: URI / GHRI Summer Fellowship Program
Name: Seth Weaver **Department**: Physics **Project title**: Entomological Photonic Sensing **Faculty advisor**: Benjamin Thomas, Topu Saha (REU director: Abdallah Khreishah) **URI program**: REU - Optics & Photonics	**Name**: Shree Shruthi Sankar **Department**: BME **Project title**: Evaluation of Bioactive Collagen Sponge Implantation for Muscle Regeneration and Scar Reduction in Volumetric Muscle Loss (VML) Injuries **Faculty advisor**: Jonathan Grasman **URI program**: URI / GHRI Summer Fellowship Program
Name: Shreyas Bolla **Department**: Department of Biological Sciences **Project title**: Investigating the Effects of IGF-1- and IGFBP-5-Loaded Collagen Scaffolds for Treatment of Volumetric Muscle Loss In Vivo **Faculty advisor**: Dr. Jonathan Grasman **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Siya Gupta **Department**: Biology **Project title**: Establishing an Assay for Visual Desensitization in Larval Zebrafish for Understanding Synaptic Plasticity **Faculty advisor**: Dr. Severi **URI program**: Honors Summer Research Institute (HSRI)
Name: Soham Shashikumar **Department**: Biomedical Engineering **Project title**: Quantitative Assessment Using Peak Velocity in Virtual Reality Vision Therapy for Convergence Insufficiency Patients **Faculty advisor**: Tara Alvarez **URI program**: Honors Summer Research Institute (HSRI)	**Name**: Sophia Jacob **Department**: Biology **Project title**: Are Neuronal Capacitance Changes due to Neuronal Size Changes. A Confocal Microscopy and Fiji Imaging Approach **Faculty advisor**: Jorge Golowasch **URI program**: Honors Summer Research Institute (HSRI)

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Name: Stephen Junger **Department**: Federated Department of Biological Sciences **Project title**: The Search for Ctenophore Vitellogenins: Towards Understanding the Evolution of Lipid-Rich Animal Eggs **Faculty advisor**: Allison Edgar **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Sudarshan Ganapathy **Department**: Biomedical Engineering **Project title**: Tracking Changes in White Matter Functional Connectivity Throughout Pregnancy: A Longitudinal Study **Faculty advisor**: Dr. Bharat Biswal **URI program**: Honors Summer Research Institute (HSRI)
Name: Valarie Malty **Department**: Department of chemistry and environmental science **Project title**: Investigating the Impact of a Clickable Phthalate on Gene Expression in Ovarian Follicles **Faculty advisor**: Genoa warner **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Wendy Pino **Department**: BME **Project title**: Engineering Tunable Protein-Only Nanoparticles with Multifunctional Capabilities for High-Efficacy Antifungal Therapy **Faculty advisor**: Dr. Rajarshi Chattaraj **URI program**: URI / GHRI Summer Fellowship Program
Name: Youanna Labib **Department**: Biomedical Engineering **Project title**: Enhancing Language Learning with Transcranial Magnetic Stimulation **Faculty advisor**: Dr. Elisa Kallioniemi **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Zoey Wen **Department**: Jordan Hu College of Science and Liberal Arts **Project title**: The Effect of Exosomes on Collagen Production in Human Cardiac Fibroblasts **Faculty advisor**: Dr. Eunjung Lee **URI program**: Honors Summer Research Institute (HSRI)

Environment and Sustainability

Name: Afsheen Khan **Department**: Data Science **Project title**: Project FloodLens: Holographic Flood Simulation for Disaster Risk Assessment **Faculty advisor**: Salam Daher **URI program**: Honors Summer Research Institute (HSRI)	**Name**: Alla Morozova **Department**: New Jersey School of Architecture **Project title**: The Role of Localized Weather Data in Urban Building Energy Efficiency and Compliance **Faculty advisor**: Hyojin Kim **URI program**: URI / GHRI Summer Fellowship Program
Name: Allison Harbolic **Department**: Chemistry and Environmental Science **Project title**: Impact of Combined Exposure to Nanoplastics and Phthalates on Placenta Morphology **Faculty advisor**: Dr. Genoa Warner **URI program**: Honors Summer Research Institute (HSRI)	**Name**: Arena Chowdhury **Department**: Biological Sciences **Project title**: Assessing Toxicity of Benzyl Paraben (BzP) in Mouse Ovarian Follicles **Faculty advisor**: Genoa Warner **URI program**: URI / GHRI Summer Fellowship Program
Name: Cade Parkinson-Gee **Department**: School of Art and Design (HCAD) **Project title**: Interactive Characters in Simulated Environments to Promote Empathy for Endangered Animals **Faculty advisor**: Andrzej Zarzycki **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Divija Gullapalli **Department**: Jordan Hu College of Science and Liberal Arts **Project title**: Life on the River: Exploring Water Toxicity and Its Health Impacts **Faculty advisor**: Emily Tancredi-Brice Agbenyega, William Pennock, Ashish Borgaonkar **URI program**: Honors Summer Research Institute (HSRI)

2025 Undergraduate Summer Research and Innovation Symposium

Name: Kyle Villamayor **Department**: Department of Physics **Project title**: Investigation of the Mechanism of Solar Irradiance Variations **Faculty advisor**: Alexander Kosovichev **URI program**: PSEG Fellowship	**Name**: Laura Nwanebu **Department**: Newark College of Engineering **Project title**: First-Principles Study of Hydrogen Adsorption on Calcite in Shale and Its Role in Shale Softening **Faculty advisor**: Prof. Jay Meegoda **URI program**: URI / GHRI Summer Fellowship Program
Name: Lilith Janevska **Department**: Federated Department of Biological Sciences **Project title**: A Clear Window into Bird Collisions: Inexpensive Devices for Monitoring Strikes **Faculty advisor**: Dr. Gareth Russell **URI program**: Honors Summer Research Institute (HSRI)	**Name**: Lindsay Burke **Department**: Department of Computer Science **Project title**: Bio-Inspired Routing for Dynamic Material Transport in the Construction Industry **Faculty advisor**: Dr. Simon Garnier and Dr. Petras Swissler **URI program**: URI / GHRI Summer Fellowship Program
Name: Mariam Naseer **Department**: School of applied engineering and technology **Project title**: Antiviral M-Xene-Laser-Induced Graphene for Composite Air Filters **Faculty advisor**: Mark Zhao **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Matthew Oliveira **Department**: Department of Civil and Environmental Engineering **Project title**: Continuous Monitoring and Machine Learning Analysis of Lead Occurrence in Drinking Water **Faculty advisor**: Dr. William Pennock **URI program**: REU - Optics & Photonics
Name: Matthew Pritchard **Department**: Chemistry and Environmental Science **Project title**: Assessing the Effectiveness of Biochar for Sediment and Water Treatment **Faculty advisor**: Dr. Emily Tancredi-Price Agbenyega **URI program**: Honors Summer Research Institute (HSRI)	**Name**: Oluwanifemi Fuwa **Department**: Civil and Environmental Engineering Department **Project title**: Applications of nanobubbles in circulating cooling water for scale prevention **Faculty advisor**: Dr. Wen Zhang **URI program**: URI / GHRI Summer Fellowship Program

2025 Undergraduate Summer Research and Innovation Symposium

Name: Omar Al-Zaman **Department**: Biological Sciences **Project title**: Fabrication and Characterization of 2D MoS2-based Electronic Nanosensors for Harmful Algal Bloom Monitoring **Faculty advisor**: Mark Zhao **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Pooja Datir **Department**: Albert Dorman Honors College (ADHC) **Project title**: Exploring Patterns of Pollutants in the Passaic River through a Map-Based Model **Faculty advisor**: Dr. Emily Tancredi-Brice Agbenyega **URI program**: Honors Summer Research Institute (HSRI)
Name: Ray Sama **Department**: Hillier College of Architecture and Design: School of Art and Design **Project title**: How Interior and Plate Design for the Diner Can Be Strategically Used to Reduce Consumer Food Waste in University and Buffet-Style Dining Settings **Faculty advisor**: Dr Prabhakar Shrestha **URI program**: Honors Summer Research Institute (HSRI)	**Name**: Rohit Datir **Department**: Albert Dorman Honors College (ADHC) **Project title**: An Analysis of Historical Development and Perspectives of the Lower Passaic River **Faculty advisor**: Dr. Emily Tancredi-Brice Agbenyega **URI program**: Honors Summer Research Institute (HSRI)
Name: Saidarsha Karunakaran **Department**: Computer Science **Project title**: Standardizing Historical Ca II K Spectroheliograph Images from the Kodaikanal Solar Observatory for Solar irradiance Analysis with Machine Learning **Faculty advisor**: Jason Wang, Haimin Wang **URI program**: PSEG Fellowship	**Name**: Tara Magill **Department**: Department of Mechanical and Industrial Engineering; Department of Civil and Environmental Engineering **Project title**: Construction of an Anaerobic Biodigester Prototype **Faculty advisor**: Jay Meegoda **URI program**: Honors Summer Research Institute (HSRI)
Name: Tristan Cunanan **Department**: NJ School of Architecture **Project title**: Establishing Anthropogenic and Other Site Contexts for the Effective Implementation of Built Interventions on the Second River **Faculty advisor**: Dr. Emily Tancredi-Brice Agbenyega **URI program**: Honors Summer Research Institute (HSRI)	**Name**: Tyler Oberholtzer **Department**: Otto H. York Department of Chemical and Materials Engineering **Project title**: Biochar Water Remediation **Faculty advisor**: Dr. William Pennock **URI program**: Honors Summer Research Institute (HSRI)

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Name: Vimal Jai Kirithika Vimalanathan Sankarapandian

Department: Department of Chemistry and Environmental Science

Project title: Developing Policy Solutions for the Passaic River Pollution: Synthesizing Health Research, Community Advocacy, and Legal Principles

Faculty advisor: Emily Tancredi-Brice Agbenyega

URI program: Honors Summer Research Institute (HSRI)

Artificial Intelligence, Machine Intelligence and Robotics

Name: Abdulrahman Aljoudi **Department**: Electrical Engineering and Computer Science **Project title**: Automating Silicon Photonic Circuit Design Using Large Language Models **Faculty advisor**: Shaahin Angizi **URI program**: REU - Optics & Photonics	**Name**: Ananya Raghunath **Department**: Ying Wu College of Computing **Project title**: Defending Latent Space Jailbreaking Attacks in Large Language Models **Faculty advisor**: Dr. Hai Phan **URI program**: Honors Summer Research Institute (HSRI)
Name: Andrew Azer **Department**: Biomedical Engineering Department **Project title**: Ankle Exoskeleton Design Enhancement **Faculty advisor**: Dr. Xianlian Alex Zhou **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Arnesh Banerjee **Department**: Computer Science Engineering(Data Science) **Project title**: Safe Response from LLMs using RLHF **Faculty advisor**: Arnob Ghosh **URI program**: Heritage Institute of Technology (HIT) Summer Research Program
Name: Arunima Paul **Department**: Biomedical Engineering **Project title**: Utilizing Artificial Intelligence for Calibration-Free Predictions in Electrochemical Breath Sensors for Cancer Diagnostics **Faculty advisor**: Dr. Sagnik Basuray **URI program**: Undergraduate Research and Innovation Experience in Cancer Diagnosis and Therapeutic Intervention (REU-Cancer)	**Name**: Assaf Izhar **Department**: ECE **Project title**: Deep Neural Network Adaptation for Photonic Hardware **Faculty advisor**: Dr. Shaahin Angizi **URI program**: REU - Optics & Photonics

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Name: Carlin Verano **Department**: Ying Wu College of Computing **Project title**: Enhancing Forensic Science Education through XR **Faculty advisor**: Margarita Vinnikov **URI program**: Honors Summer Research Institute (HSRI) **Partner**: Forum Shah	**Name**: Carolyn Toledo **Department**: School of Art & Design **Project title**: Embracing the Empirical Advantages of AI-Driven Motion Capture **Faculty advisor**: Richard Thompson **URI program**: URI / GHRI Summer Fellowship Program
Name: Daniel Tobar **Department**: Hillier College of Art and Design **Project title**: Expedited Virtual Film Production: Enhancing Real-Time Feedback and Immersive Interaction with an emerging AI Tool **Faculty advisor**: Richard Thompson **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Diya Pottangadi **Department**: Albert Dorman Honors College, HSRI **Project title**: Evaluating Sensor Configurations for Human Activity Recognition Using Machine Learning **Faculty advisor**: Dr.Petras Swissler **URI program**: Honors Summer Research Institute (HSRI)
Name: Emir Hussain **Department**: Ying Wu College of Computing **Project title**: Anomaly Detection and Event Prediction in Time Series Using Deep Learning and Large Language Models **Faculty advisor**: Jason Wang **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Emma Lim **Department**: Electrical and Computer Engineering **Project title**: Optimization and Characterization of Low Power In-Memory Computing Devices **Faculty advisor**: Durgamadhab Misra **URI program**: REU - Optics & Photonics
Name: Erica Keklak **Department**: Department of Mechanical and Industrial Engineering **Project title**: Predictive model of the spread of the spotted lanternfly in the continental United States using machine learning **Faculty advisor**: Dr. Wenbo (Selina) Cai **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Erik Lewis **Department**: Ying Wu College of Computing **Project title**: Machine Learning for Exploring Sounds for Live Music **Faculty advisor**: Amy Hoover **URI program**: Honors Summer Research Institute (HSRI)

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Name: Esai Jacobson **Department**: Hillier College of Architecture and Design **Project title**: A Novel Method to Transfer Human Movement with Mobility Aids to Virtual Avatars **Faculty advisor**: Mathew Schwartz **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Evan Correa **Department**: Federated Department of Biological Sciences **Project title**: Benchmarking and Implementing Gene Regulatory Network and Cell-Cell Communication Inference Pipelines for Single-Cell RNA-seq Data **Faculty advisor**: Zhi Wei **URI program**: URI / GHRI Summer Fellowship Program
Name: Hala Kanaan **Department**: Electrical and Computer Engineering **Project title**: Deep-learning for the study of particle-cell interaction **Faculty advisor**: Xuan Liu **URI program**: McNair Scholar Program	**Name**: Ibrahim Feknous **Department**: Electrical and Computer Engineering **Project title**: Cloud-Based Autonomous Driving: Leveraging Sensor Data and Machine Learning for Real-Time Driving Decisions **Faculty advisor**: Tao Han **URI program**: URI / GHRI Summer Fellowship Program
Name: Jada Byfield **Department**: Department of Informatics **Project title**: Evaluating Usability and Accuracy of Different Methods to Align and Place Digital 3D Wounds **Faculty advisor**: Dr.Salam Daher **URI program**: McNair Scholar Program	**Name**: Jerry Wang **Department**: Mechanical and Aerospace Engineering **Project title**: Detection of Solar Radio Bursts with Machine Learning **Faculty advisor**: Dr. Peijin Zhang **URI program**: REU-ISWS
Name: Jude Lahage **Department**: Electrical and Computer Engineering **Project title**: Optimizing Dielectric Layers for Power-Efficient RRAM Devices **Faculty advisor**: Durgamadhab Misra **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Karan Kanda **Department**: Ying Wu College of Computing **Project title**: Developing a Terrain-Aware Reinforcement Learning Controller for Robotic Exoskeletons **Faculty advisor**: Dr. Xianlian A. Zhou **URI program**: Honors Summer Research Institute (HSRI)

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Name: Keerthana Venkatesh **Department**: Biomedical Engineering **Project title**: Democratizing Quantitative Motion Capture for Ubiquitous Use: Evaluating an Artificial Intelligence-based OpenCap Markerless System in Comparison to a Traditional Marker-based Motion Capture System **Faculty advisor**: Dr. Saikat Pal **URI program**: Improving AANAPI Student Outcomes Through Opportunities and Engagement (ISOTOPE)	**Name**: KETA Williams **Department**: Humanities & Social Sciences **Project title**: Mycelium to Machine: Exploring Hybrid Intelligence Through Cyberpsychology **Faculty advisor**: Dr. Daniel Estrada **URI program**: McNair Scholar Program
Name: Kushagra Verma **Department**: YWCC **Project title**: AI-Powered Carbon Credit Verification: A Data-Driven Approach to Optimizing Market Efficiency **Faculty advisor**: Dr. SangWoo Park **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Marcela Moura **Department**: Department of Data Science **Project title**: Investigating EMIC Wave Conjunctions: Linking Ground-Based and Space Observations **Faculty advisor**: Dr. Hyomin Kim **URI program**: URI / GHRI Summer Fellowship Program
Name: Mario Urla **Department**: ECE **Project title**: Mobile Edge Computing and the Integration of Machine Learning **Faculty advisor**: Dr. Tao Han **URI program**: McNair Scholar Program	**Name**: Melna Abraham **Department**: Computer Science **Project title**: On Emergent Emitter Dynamics in the Covariance Matrix Adaptation MAP-Elites Algorithm **Faculty advisor**: Dr. Amy Hoover **URI program**: Honors Summer Research Institute (HSRI)
Name: Naevid-Lorenz Sablay **Department**: Ying Wu College of Computing **Project title**: Crowdsourcing Closed Caption Quality Ratings with Intrinsic Motivation **Faculty advisor**: Mark Cartwright **URI program**: Honors Summer Research Institute (HSRI)	**Name**: Nicholas Sahu **Department**: Ying Wu College of Computing **Project title**: Development Platform for Prototyping and Testing Swarm Robotic Algorithms **Faculty advisor**: Petras Swissler **URI program**: URI / GHRI Summer Fellowship Program

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Name: Niko Tietjen **Department**: Biology **Project title**: Using self-organizing maps to decipher whale song battles **Faculty advisor**: Julia Hyland Bruno **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Oscar Callo von Platen **Department**: Computer Science **Project title**: AI-Driven HPC Optimizations for Triangle Counting **Faculty advisor**: David A. Bader **URI program**: URI / GHRI Summer Fellowship Program
Name: Piyush Jain **Department**: Computer Science and Engineering **Project title**: Medical Ontology in Virtual Reality **Faculty advisor**: James Geller **URI program**: Heritage Institute of Technology (HIT) Summer Research Program	**Name**: Prajwal Shah **Department**: Ying Wu College of Computing **Project title**: H-alpha Image Super Resolution at BBSO with Advanced Deep Learning **Faculty advisor**: Dr. Bo Shen **URI program**: URI / GHRI Summer Fellowship Program
Name: Saanvi Chougule **Department**: Ying Wu College of Computing **Project title**: Collective Motion of Zebrafish: Effective Vision in Fish Panic Waves **Faculty advisor**: Lushi Enkeleida **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Sana Anwar **Department**: NJIT Department of Informatics **Project title**: Enhancing LLMs in Voice-Based Smart-Home Technologies for Users with Mild Cognitive Impairment (MCI) **Faculty advisor**: Dr. Alisha Pradhan **URI program**: URI / GHRI Summer Fellowship Program
Name: Suhrid Behari Paul **Department**: INFORMATION TECHNOLOGY **Project title**: Query Planning with Agentic AI **Faculty advisor**: Senjuti Basu roy **URI program**: Heritage Institute of Technology (HIT) Summer Research Program	**Name**: Varsha Narayanan **Department**: Department of Computer Science **Project title**: From Uniform Grids to Graphs: A Generalized Wavelet Diffusion Neural Operator Approach for PDE Modeling on Irregular Domains **Faculty advisor**: Mengjia Xu **URI program**: URI / GHRI Summer Fellowship Program

2025 Undergraduate Summer Research and Innovation Symposium

Name: Victor Jimenez

Department: Department of Data Science

Project title: Characterizing Mathematical Skills In Language Models

Faculty advisor: Akshay Rangamani

URI program: Honors Summer Research Institute (HSRI)

Data Science and Management

Name: Abdullah Imran

Department: YWCC/CSLA

Project title: Verifier Guided Refactoring for Nullability

Faculty advisor: Kellogg

URI program: URI / GHRI Summer Fellowship Program

Name: Andrea Pardo

Department: The Department of Mathematical Sciences

Project title: Comparisons using simulations of copula graphic estimators of survival functions based on dependent censored survival data

Faculty advisor: Antai Wang

URI program: McNair Scholar Program

Name: Angelo Bustamante

Department: Department of Informatics

Project title: Beyond Usability: How Aesthetic and Functional Design Influence User Preference in Web Interfaces

Faculty advisor: Salam Daher

URI program: McNair Scholar Program

Name: Ankit Kumar

Department: Computer Science and Engineering

Project title: Design and Implementation of a Secure Document Processing System Using Java and AWS

Faculty advisor: Dr. Shantanu Sharma

URI program: Heritage Institute of Technology (HIT) Summer Research Program

2025 Undergraduate Summer Research and Innovation Symposium

Name: Bryce Kim **Department**: Natural Sciences, Engineering **Project title**: Installation and First-light Observations of an He I 10830 Synoptic Telescope **Faculty advisor**: Wenda Cao **URI program**: REU-ISWS	**Name**: Jainam Shah **Department**: Department of Computer Science **Project title**: Leveraging Digital Twin Technology to Model Human-Geography Interactions **Faculty advisor**: Shantanu Sharma and Laramie Potts **URI program**: URI / GHRI Summer Fellowship Program
Name: John Mohring **Department**: Hillier College of Architecture and Design **Project title**: Unifying Design: Facilitating Interdisciplinary Collaboration with OpenUSD **Faculty advisor**: Richard Thompson **URI program**: Honors Summer Research Institute (HSRI)	**Name**: Kate Frederick **Department**: Institute for Space Weather Sciences, Physics **Project title**: Investigating ionospheric activities during solar eclipse using radio observations **Faculty advisor**: Dr. Surajit Mondal, Dr. Lindsay Goodwin **URI program**: REU-ISWS
Name: Leo Barrientos **Department**: Jordan Hu College of Science and Liberal Arts **Project title**: Inference of Line-of-Sight Magnetic Field and Velocity in the Weak-Field Regime from BBSO/NIRIS Observations **Faculty advisor**: Qin Li **URI program**: REU-ISWS	**Name**: Logan Schierholz **Department**: College of Engineering **Project title**: Exploring pre-erupting configuration of magnetic fields in solar active regions **Faculty advisor**: Dr. Vasyl Yurchyshyn **URI program**: REU-ISWS
Name: Lucas Holbrook **Department**: Biomedical Engineering **Project title**: Virtual Reality Ontology Object Manipulation (VROOM) **Faculty advisor**: Margarita Vinnikov **URI program**: Honors Summer Research Institute (HSRI) **Partner**: Mayukha Ajeesh Ramsha Nath	**Name**: Natalia Pena **Department**: NCE **Project title**: Informed Design of a Social Fitness Platform for the Visually Impaired **Faculty advisor**: Dr. Roni Barak Ventura **URI program**: Honors Summer Research Institute (HSRI)

2025 Undergraduate Summer Research and Innovation Symposium

Name: Neev Chopra

Department: Martin Tuchman School of Management

Project title: Importance of Increase in Data Analysts For International Soccer and Their Expertiese Expanding Horizons To Formulate Predictions

Faculty advisor: Jinghua Wang

URI program: URI / GHRI Summer Fellowship Program

Name: Seda Bowler-Tunick

Department: Institute for Space Weather Sciences

Project title: Small-scale Ejections and Eruptions from the Solar Chromosphere

Faculty advisor: Dr. Jeongwoo Lee

URI program: REU-ISWS

Name: Steven Nunez-Diaz

Department: Electrical & Computer Engineering

Project title: Resolving the Distribution of Ionospheric Irregularities

Faculty advisor: Lindsay Goodwin

URI program: PSEG Fellowship

Materials Science and Engineering

Name: Adwaita Laha **Department**: Chemical Engineering **Project title**: Developing a prototype sensor approach including membranes **Faculty advisor**: Dr. Sagnik Basuray **URI program**: Heritage Institute of Technology (HIT) Summer Research Program	**Name**: Aidan Tufford **Department**: Otto H. York Department of Chemical and Materials Engineering **Project title**: Interaction of Liquid & Vapor Phase Diisopropyl Methyl Phosphonate (DIMP) With Combustion Products of Magnesium **Faculty advisor**: Swapnil Das **URI program**: Bergen Community College (BCC)-Chemical and Materials Engineering (CME) Summer Research Program
Name: Ali Salama **Department**: Department of Chemical and Materials Engineering **Project title**: Predicting Printability of Hydrogel Bioinks Using Machine Learning **Faculty advisor**: Dr. Guvendiren **URI program**: Honors Summer Research Institute (HSRI)	**Name**: Alvin Mathew **Department**: Electrical and Computer Engineering **Project title**: A Numerical and Experimental Study of Faraday Waves on Two Free Surfaces in a Two-Fluid system **Faculty advisor**: Dr. Wooyung Choi **URI program**: Honors Summer Research Institute (HSRI)
Name: Andrew Jiang **Department**: Mechanical and Industrial Engineering **Project title**: Investigation on the Effects of Nitrogen-doped Graphene (N-G) Nanomaterials on Thermal Properties of Phase Change Materials (PCM) **Faculty advisor**: Eon Soo Lee **URI program**: Improving AANAPI Student Outcomes Through Opportunities and Engagement (ISOTOPE)	**Name**: Camila Martinez Castillo **Department**: Otto H. York Department of Chemical and Materials Engineering **Project title**: Developing Biodegradable Mulch for Sustainable Agriculture **Faculty advisor**: Lisa Axe **URI program**: McNair Scholar Program

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Name: Chadley Gede **Department**: MIE **Project title**: PFAS Sensor **Faculty advisor**: Dr.Eon Soo Lee **URI program**: McNair Scholar Program	**Name**: David Pritchard **Department**: Mathematical Sciences **Project title**: Towards Effective Numerical Methods for Earthquake Simulations **Faculty advisor**: Dr. Travis Askham **URI program**: URI / GHRI Summer Fellowship Program
Name: Derek Gonzalez **Department**: Chemical and Materials Engineering **Project title**: Electrohydrodynamic co-jetting of particles for self assembly and drug delivery applications **Faculty advisor**: Dr. Kathleen McEnnis **URI program**: Bergen Community College (BCC)-Chemical and Materials Engineering (CME) Summer Research Program **Partner**: Nia Rodriguez	**Name**: Gabriel Correa **Department**: Mechanical & Industrial Engineering **Project title**: Predicting Crack Arrest Fracture Toughness of Structural Materials through Multimodal Data Analysis **Faculty advisor**: Xing Liu **URI program**: URI / GHRI Summer Fellowship Program
Name: Geordy Jomon **Department**: Helen and John C. Hartmann Department of Electrical and Computer Engineering **Project title**: Molecular Mechanisms of Interaction between PFAS and Surfactants **Faculty advisor**: Gennady Gor **URI program**: PSEG Fellowship	**Name**: Kaylin Koen **Department**: Chemical Engineering **Project title**: Miniature Peptide Synthesis **Faculty advisor**: Dr. Nellone Reid **URI program**: Undergraduate Research and Innovation Experience in Cancer Diagnosis and Therapeutic Intervention (REU-Cancer)
Name: Konstantina Alamani **Department**: Federated Department of Biological Sciences **Project title**: Microfluidic Production and Tg Analysis of PLGA Nanoparticles for Drug Delivery Applications **Faculty advisor**: Kathleen McEnnis **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Luis Munoz **Department**: Department of Mathematical Sciences **Project title**: Theoretical Study of Droplet Electrophoresis **Faculty advisor**: Michael Booty **URI program**: URI / GHRI Summer Fellowship Program

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Name: Natalia Albarracin Mora **Department**: School of Art and Design **Project title**: Developing Biodegradable, Safe, and Optimized 3D Printable Biomaterials for Alternatives to Consumer Product Applications **Faculty advisor**: Hye Yeon Nam **URI program**: DataBank URI Summer Fellowship	**Name**: Priyanka Sunkara **Department**: Chemistry and Environmental Science **Project title**: Analyzing Polymer Nanoparticles in Blood Plasma for Drug Delivery Applications **Faculty advisor**: Kathleen McEnnis **URI program**: Honors Summer Research Institute (HSRI)
Name: Puja Bhavsar **Department**: Federated Department of Biological Sciences **Project title**: Microfluidic Device for Rapid and Sensitive Electrochemical Detection of RNA **Faculty advisor**: Dr. Sagnik Basuray **URI program**: Undergraduate Research and Innovation Experience in Cancer Diagnosis and Therapeutic Intervention (REU-Cancer)	**Name**: Samanyu Kashyap **Department**: Department of Chemical and Materials Engineering **Project title**: Chemical Vapor Deposition Synthesis of Nitride MXenes for Energy Storage Applications **Faculty advisor**: Mengqiang Zhao **URI program**: URI / GHRI Summer Fellowship Program
Name: Simone Nelson **Department**: Chemical and Material Engineering **Project title**: Spectroscopic characterization of a microfluidic membrane mimic system under dynamic conditions **Faculty advisor**: Sagnik Basuray **URI program**: REU - Optics & Photonics	**Name**: Wonki Chae **Department**: Electrical & Computer Engineering Department **Project title**: Infrared Photoconductive Photodetectors Based-on Colloidal Semiconductor Nanocrystals **Faculty advisor**: Dong Kyun Ko **URI program**: REU - Optics & Photonics
Name: Yugyel Lhamo **Department**: School of Applied Engineering and Technology (SAET) **Project title**: Digital Twin and Smart PPE for Enhancing Safety within Automated Construction **Faculty advisor**: Yanxio Feng **URI program**: URI / GHRI Summer Fellowship Program	**Name**: Zaria Stewart **Department**: Biological Sciences **Project title**: Platinum Nanoparticles as a Therapeutic for Breast Cancer **Faculty advisor**: Dr. Kathleen McEnnis **URI program**: Undergraduate Research and Innovation Experience in Cancer Diagnosis and Therapeutic Intervention (REU-Cancer)

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Name: Ziyad Hassan

Department: Department of Biology

Project title: Production of Vanadium-Based MXenes by Chemical Vapor Deposition for Zn-Ion Batteries

Faculty advisor: Mengqiang Zhao

URI program: URI / GHRI Summer Fellowship Program