NJIT
New Jersey Institute of Technology

2021 Undergraduate Summer Research and Innovation Symposium

July 29-30, 2021

PROGRAM

A Sustainable Future

2021 NJIT Undergraduate Summer Research and Innovation Symposium

July 29-30, 2021, Ballroom A & B, Campus Center

https://drive.google.com/drive/folders/1vgyH4999G6fTcQqx0h2hXaET4Oaj1AOZ?usp=sharing

The 2021 NJIT Undergraduate Summer Research and Innovation Symposium integrated with the Innovation Day will be held on July 29-30, 2021, featuring a distinguished keynote talk from Daniel Henderson followed by URI External Advisory Board (EAB) panel to pay a tribute to Dr. James Stevenson, recognizing his great contributions and support to IDS, TechQuest Innovation URI programs and research presentations from undergraduate students who worked during the summer with various URI programs. More than 130 undergraduate students will present their summer research work at the symposium. Best innovation projects will be awarded Dr. James Stevenson Innovation Award: first, second and third prizes of $1,000, $750 and $500 respectively.

The event will also feature the inauguration of the National Academy of Inventors chapter at NJIT on July 30 from 11.00 AM - 12.30 PM. More than 45 faculty will be inducted as inventor members. Several administrators and technology innovation supporters will be inducted as honorary members. The inaugural ceremony will feature a keynote talk from Ms. Elizabeth Dougherty, Eastern Regional Outreach Director, U.S. Patent and Trademark Office (USPTO), and a member of the NAI Board of Directors.

Programs included:
URI Provost Summer Research Fellowships
McNair Achievement Program
Honors College Summer Scholar Program
NSF REU and iCorps NJIT Site Programs
Other Grant Funded Projects
Other UG Student Summer Researchers

James F. Stevenson, PhD
educator, engineer, philanthropist, role model
1943 – 2020

Honeywell — Corporate Fellow
GENCORP — Principal Technologist
Cornell University — Professor of Chemical Engineering

"We are very fortunate to have gained strength from the lives of our forebears and hopefully make our own lives, with the inevitable challenges, in some way exemplary."

2021 Undergraduate Summer Research and Innovation Symposium

Agenda

<u>July 29, 2021: Ballroom A&B, Student Campus Center</u>

10.00 AM - 10.10 AM:	Welcome Remarks Fadi Deek, Provost and Senior Executive Vice President Atam Dhawan, Senior Vice Provost for Research
10.10 AM - 10.30 AM:	Innovation to Applications Keynote Speaker: Dan Henderson, NJIT Board of Overseers, Inventor and Entrepreneur
10.30 AM – 11.00 AM:	Panel: Remembering Dr. James Stevenson URI External Advisory Board
11.00 AM - 12.30 PM:	URI Summer Research Symposium Session - 1 Bioscience and Bioengineering - 1
12.30 PM - 1.15 PM:	Lunch and Networking
1.15 PM – 1.30 PM:	Remembering Dr. Angelo J. Perna Laurent Simon and Durga Misra
1.30 PM – 2.30 PM:	URI Summer Research Symposium Session -2 Bioscience and Bioengineering - 2
2.30 PM – 2.45 PM:	Coffee Break
2.45 PM – 4.00 PM:	URI Summer Research Symposium Session -3 Robotics and Machine Intelligence, and Others: Architecture and Design

<u>July 30, 2021, Ballroom A&B, Student Campus Center</u>

9.30 AM - 11.00 AM:	URI Summer Research Symposium Session -4 Data Science and Management
11.00 AM - 12.30 PM:	NAI-NJIT Chapter Launch and Induction Ceremony

	11.00 AM – 11.15 AM:	Opening Remarks Fadi Deek, Provost and Senior Executive Vice President Atam Dhawan, Senior Vice Provost for Research
	11.15 AM – 11.30 AM:	State of the NAI-NJIT Chapter Atam Dhawan, Senior Vice Provost for Research
	11.30 AM – 11.45 AM:	Keynote Speaker: Elizabeth Dougherty, Eastern Regional Outreach Director, U.S. Patent and Trademark Office (USPTO), and NAI Board of Directors

11.45 AM – 12.00 PM:	NAI Chapter Induction Ceremony
12.00 PM – 12.30 PM:	Closing Remarks, Networking and Lunch
12.30 PM – 2.00 PM:	URI Summer Research Symposium Session -5 Environment and Sustainability
2.00 PM – 3.00 PM:	URI Summer Research Symposium Session -6 Material Science and Engineering

July 30, 2021, Atrium, Student Campus Center

3.00 PM- 3.30 PM:	Awards and Closing
3.30 PM – 4.30 PM:	Reception

Biographical Sketch of Dr. James Stevenson

Jim Stevenson, PhD: 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 funded 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.

Biographical Sketches: Keynote Speakers and Panelists

Daniel Henderson: Daniel Henderson is an American innovator, entrepreneur, and artist. He was Assistant to Kazuo HASHIMOTO, a prolific Japanese inventor with over 1000 patents worldwide and he met and briefly worked with Jack Kilby, inventor of the integrated circuit. Dan's 1993 prototype objects for wireless picture and video messaging were

received in the permanent collection by the National Museum of American History at the Smithsonian Institution in 2007 (https://americanhistory.si.edu/press/releases/national-museum-american-history-acquires-wireless-picturephone-prototypes

Dan's extensive research for wireless objects also resides there (https://invention.si.edu/daniel-henderson-portable-electronic-devices-documentary-collection-1968-2002). He was named a mobile technology innovator for video sharing in cellular phones when he appeared in a 2012 Super Bowl commercial for Best Buy along with Ray Kurzweil and Neil Papworth. His invention of wireless picture and video messaging in cellular telephones is covered by U.S. Patent 8,160,221, "*Cellular telephone with the ability to display and store picture and video messages and Caller ID received from a message originator*" and US Patent 8,472,595, "*Method and Apparatus for providing a portable communication device with the ability to selectively display picture and video*".

His 1993 inventions are utilized today in nearly every cellphone in the world. He has received 30 US Patents that have cumulatively been cited in other patents over 1000 times. He has had extensive experience in intellectual property, licensing to over 170 of the largest companies in the world.

Prior to starting his career at IBM Corporation, Dan received a Bachelor of Science degree in Business from Southern Oregon University, where he is an Emeritus Board member for the Foundation there.

Dan currently serves on the Board of Overseers and the Dorman Honors College Board of Visitors for NJIT. Several of his large-scale stone sculptures may be seen on the NJIT campus. He received an honorary Doctor of Science degree from NJIT in 2012 and remains committed to the importance of innovation to improve society and the world we live in.

Elizabeth Dougherty, JD, Eastern Regional Outreach Director, USPTO: As the Eastern Regional Outreach Director for the U.S. Patent and Trademark Office (USPTO), 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 East Coast 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. Dougherty 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.

Brian G. Kiernan: 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, Brian served as the 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 27 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 and the NJIT Highlander Angel Network, where he has invested in several NJIT-related companies.

Govi Rao: Govi has over 25 years of experience globally, across several industries, including specialty chemicals, coatings, building materials, lighting, energy and the rapidly evolving IoT space. As co-founder and Managing Partner of Carbon Group Global (CGG), Govi is currently leading CGG's vision to scale transformational solutions, specifically to address education, total resiliency of women and resource efficiency. Prior to CGG, Govi was the President and Chief Executive Officer of Noveda Technologies, a pioneer in water and energy management solutions, based in Bridgewater, NJ. In 2007, Govi was instrumental in envisioning and pioneering one of the earliest LED lighting solutions providers, Lighting Science Group Corporation as the Chairman & CEO.

Previously, Govi was Vice President and General Manager of the Philips Solid State Lighting business in North America. He also held several leadership roles at Philips, including Vice President of Business Creation & Brand, where he was responsible for product management, strategic marketing, branding and sustainability. Prior to joining Philips, Govi spent over a decade with specialty chemicals leader Rohm and Haas Company (now part of Dow Chemicals) in various leadership roles across a range of businesses and geographies. In addition to his experience with a wide business portfolio, Govi has extensive functional expertise that includes strategic planning, business innovation, product management, marketing, operations, leadership development and general management. Widely traveled across Asia, Europe and the Americas, Govi has a keen sense of value creation in emerging markets and technologies, grounded on the principles of sustainability. Govi has built winning teams that achieved extraordinary goals in start-ups as well as mature businesses – pioneering and inspiring profitable and sustainable growth.

Govi serves on several boards including the Undergraduate Research and Innovation at NJIT and the department of Chemistry and Chemical Biology at Rutgers University. Govi also serves as an advisor to Hellothinkster, an AI based educational technology company. Govi is active in discussions with various Governments, NGOs and investment groups to drive market adoption of social impact solutions and is a contributing author of the Sustainable Enterprise Fieldbook (AMACOM 2008). Govi has testified to the U.S House of Representatives on IP and Innovation.

Manish Patel: Manish Patel, founder of TrickyWater, a small business advisory firm, is currently Director of Brand Innovation at Princeton Partners, a strategic brand marketing firm.

Manish is a skilled engineer and leader with creative and innovative capabilities. He is a successful entrepreneur with proven consultancy, product development, management, and strategic analysis skills. Analytical skills vital in referencing developmental, production, and supervisory skills across multiple industries to maximize profitability and satisfaction of clients in various technical and creative fields. Produced results for all companies by branding, marketing, and procuring revolutionary designs and enhanced digital developments. He loves challenges and helping clients solve problems. Manish was at Omnicom Agency, Arnell where he was Lead Project Manager reporting directly to Chairman of Arnell Group. He managed Innovation Lab teams comprised of artists, designers and engineers developing innovative brand solutions, strategies and products. Key Client Experience included Project Lead for The Home Depot - OrangeWorks innovation initiative, delivering several product SKUs in key categories in collaboration with senior merchandisers, including the Home Hero brand. While having Chrysler Automotive as a client, he was Project Leader and C-Suite Liaison for innovation programs in the areas of automotive design, NAV system user interface design, and electric vehicle programs. He also managed relationships with leading global design studios Pininfarina and Giugiaro in Italy. He introduced process and stage gate methodology and applied it to creative development process.

Manish also worked on the re-brand of the iconic Fontainebleau Hotel and the strategy behind building an experience that once again made the hotel a cornerstone of the Miami high end lifestyle destination. He has also helped small New Jersey businesses maximize their advertising success with the introduction of innovative methods for reaching consumers.

Manish obtained a BSME from Drexel University and an MS Management from NJIT.   Now he enjoys giving back to the school by serving on their Undergraduate Research and Innovation External Advisory Board. When he is not working, he can be seen coaching soccer, playing volleyball or managing the family dog's social media page.

Peggy McHale: Peggy McHale serves as an independent board member for Pariveda Solutions an employee-owned (ESOP), strategy and technology consulting company based in Dallas, Texas. She serves on both the audit and compensation committees. Peggy is also the co-founder and recently retired Managing Director for Blend 360 (Formerly C2G Partners and Consultants 2 Go) a Newark, NJ based consulting firm that provides marketing and data science solutions to Fortune 500 companies in the Financial Services, Fintech, Telecom, CPG, Healthcare, IT and Insurance industries. C2G was acquired in 2016 by Whitegate Capital Partners, a private equity firm. Peggy founded the company with her business partner Sandi Webster in 2002 and grew it into one of the fastest growing businesses in the US. The company was named to the Inc 500 list for seven years. In addition, C2G was recognized twice by Fortune Magazine/ICCC as one of the top 100 Inner City Companies in the US. Peggy was also a two-time finalist for EY's Entrepreneur of the Year. She was awarded Leading Women of NJ and Top 50 Women Leaders in NJ by NJ Biz.

Peggy is the co-author of *Black and White Strike Gold: Practical Nuggets to Grow Your Business. She just recently co-wrote Lessons Beyond the Obvious: An Entrepreneurs Handbook*. Before she started her company, she was a Vice President of Marketing at American Express. She holds an MBA in Finance from St. John's University and a BA from the College of Mount St. Vincent. In addition, Peggy is committed to supporting several non-profit organizations including New Jersey Institute of Technology's Undergraduate Research and Innovation Board. Peggy served on the State Board of the New Jersey Association of Women Business and the Women's Center for Entrepreneurship in NJ (WCEC). She is currently a member of the Women Presidents' Organization (WPO), and the National Association of Corporate Directors (NACD).
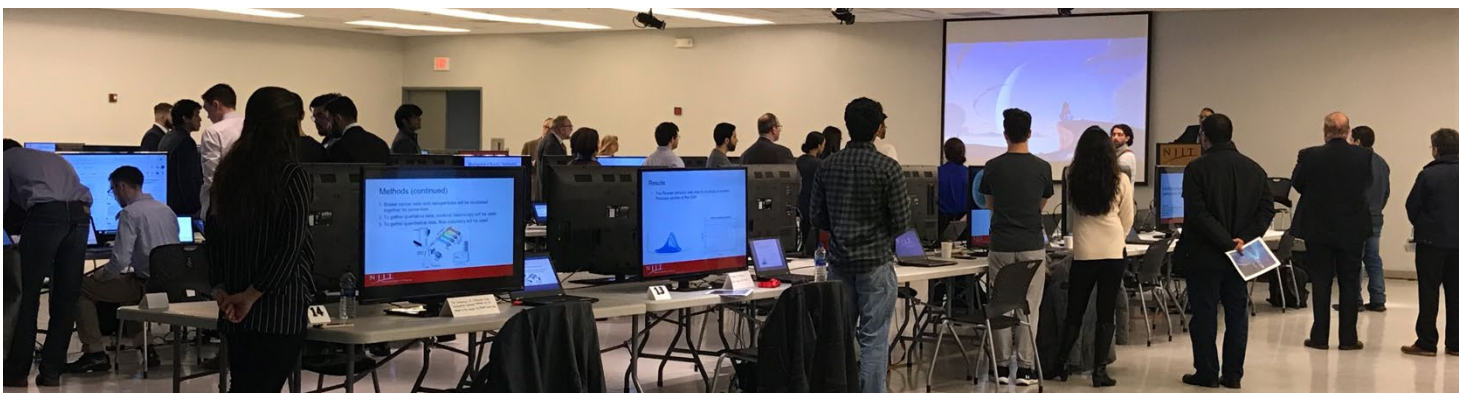
2021 Undergraduate Summer Research and Innovation Symposium

Presentation Schedule At-A-Glance
July 29, 2021

First Name	Last Name	Major	Title of Project	Presentation Session	Tentative Presentation Time
David	Alonge	Computer Science	Using Deep Hybrid Modeling To Determine Treatment Strategies for COVID-19 Patients (Note 1)	Bioscience and Bioengineering	11:00 AM
Arun	Aryal	Biomedical Engineering	Effect of acute conductive hearing loss on dip listening	Bioscience and Bioengineering	11:03 AM
Abdul-Rahman	Azizogli	Biology BS	Computational Design of CCL2 Sequestering Anti-Inflammatory Hydrogels	Bioscience and Bioengineering	11:06 AM
Thara	Balaji	Biology	ESSENCE	Bioscience and Bioengineering	11:09 AM
Theresa	Carlos	Biomedical engineering	ESSENCE POC Device – A Shear-Enhanced, flow-through Nanoporous Capacitive Electrochemical Sensor for the sensitive and selective detection of different Biomolecules	Bioscience and Bioengineering	11:12 AM
Mirna	Cheikhali	Chemical Engineering	The Impact of Agglomeration and Surface Hydrophobicity on the Dissolution Rate of Dry Coated Poorly Water Soluble and Cohesive Drugs	Bioscience and Bioengineering	11:15 AM
Gabriela	De Carvalho	Biomedical Engineering	Quantifying Gait Abnormalities in Children with Cerebral Palsy through 3-D Motion Analysis Techniques Before and After Functional Electrical Stimulation	Bioscience and Bioengineering	11:18 AM
Michael	De La Cruz	Mechanical Engineering	Concept design of a lightweight, modular, and adjustable lower-extremity exoskeleton	Bioscience and Bioengineering	11:21 AM
Michaela	Dungan	Biology, Concentration of	Using the OculoMotor and Vestibular Endurance Screening (MoVES) on a Pediatric Population	Bioscience and Bioengineering	11:24 AM
Jonathan	Grabiel-Pabon	Mechanical Engineering	Modelling Complex Mechanism Simulations on Creo: Toothbrush Attachment	Bioscience and Bioengineering	11:27 AM
Shaikh	Hassan	BME	Modeling Spinal Cord Injury and Repair with Nidogen-1	Bioscience and Bioengineering	11:30 AM
Christopher	Henni	Biomedical Engineering	Pain Biosensors in Forensic Identification	Bioscience and Bioengineering	11:33 AM
Anoushka	Karnad	Biomedical Engineering	Dance For Rehab: Dance Pad for Lower Limb Rehabilitation	Bioscience and Bioengineering	11:36 AM
Ashish	Kokkula	Biomedical Engineering	Study of Targeted Platinum Nanoparticles as Treatment for Triple-Negative Breast Cancer	Bioscience and Bioengineering	11:39 AM
Sahitya	Kulkarni	Biology BS	Temperature Entrainment of Cyanobacterial Circadian Clocks	Bioscience and Bioengineering	11:42 AM
Dylan	Lederman	Biology (B.S.)	Examining Parameter Estimation Unidentifiability in Oscillatory Systems	Bioscience and Bioengineering	11:45 AM
Thomas	Martinez	Mechanical Engineering	Design of an Adjustable Instrumented Crutch for Compressive Force Analysis	Bioscience and Bioengineering	11:48 AM
Stuti	Mohan	Biomedical Engineering	Pure-Tone Audiometric Clinical Testing of the Mapping Auditory Processing Disorder (MAPD) Application	Bioscience and Bioengineering	11:51 AM
Jason	Ong	Chemistry	Bacterial Inactivation by Ultranarrow Spectrum LEDs	Bioscience and Bioengineering	11:54 AM
Seejal	Padhi	Biomedical Engineering	The effect of microglial NLRP3 inflammasome on astrocyte Piezo1 expression and IL-1β levels	Bioscience and Bioengineering	11:57 AM
Sheetal	Padhi	Biomedical Engineering	Neuronal Cell Death in Repeated Low-Level Blast Induced Traumatic Brain Injury	Bioscience and Bioengineering	12:00 PM
Disha	Panchal	Biology	Peptide-based Therapeutic for COVID-19	Bioscience and Bioengineering	12:03 PM
Nikitha	Pappachen	Biology	Role of Dmrt3a in Zebrafish Pectoral Fins	Bioscience and Bioengineering	12:06 PM
Ryan	Retino	Mechanical Engineering	Mechanics and Deformation of Cell Membranes	Bioscience and Bioengineering	12:09 PM
Sreya	Sanyal	Biology & History	Opsonization of SARS-CoV-2 to develop a COVID-19 antiviral	Bioscience and Bioengineering	1:30 PM
Esha	Shah	Biology	Can Cold Atmospheric Plasma Improve Neural Regeneration?	Bioscience and Bioengineering	1:33 PM
Will	Suero Amparo	Biomedical Engineering	ROGER (Reduced Oxygen and Gravity Emulating Rotation) Device	Bioscience and Bioengineering	1:36 PM
John	Tobia	Biology	Using BODIPY-based Photobase Generators to Create Physiologically-Compatible Hydrogel Photopolymerization Systems	Bioscience and Bioengineering	1:39 PM
Nishita	Vootukuru	Biochemistry	Effects of Osteopontin on Cardiomyocytes as Related to Myocardial Infarction	Bioscience and Bioengineering	1:42 PM
Pranati	Ambati	Biology	Investigating the Role of Developmental Environment and Mauthner Cell Morphology on Neuronal Plasticity and Escape Behavior	Bioscience and Bioengineering	1:45 PM
Roan	Back	Biomedical Engineering	Application of a Weighted Simple Kalman Filter for Improved Phase Reconstruction	Bioscience and Bioengineering	1:48 PM
Alicja	Bil	Biomedical Engineering	Utilizing fMRI to Examine Functional Brain Changes in COVID Patients	Bioscience and Bioengineering	1:51 PM
Edgar	Canario	Biomedical Engineering	Global Network Analysis of Alzheimer's with Minimum Spanning Trees	Bioscience and Bioengineering	1:54 PM
Hans Elijah	Hugo	Biomedical Engineering	Highlander Ankle Brace	Bioscience and Bioengineering	1:57 PM
Sean	Larmore	Chemistry	Structures of Highly Substituted Cyclopropylcarbinyl Nonclassical Carbocations	Bioscience and Bioengineering	2:00 PM
Kaylin	McQuillan	Biomedical Engineering	Nanoparticle Tracking Analysis of Polymer Particles in Blood Plasma	Bioscience and Bioengineering	2:03 PM
Shiva	Senthilkumar	Biology B.A.	Dynamics of Generalized Half-Center Oscillator Neuronal Networks	Bioscience and Bioengineering	2:06 PM
Nikesh	Shrestha	Mechanical Engineering	Contact Angle Measurement for implementation in Passive Plasma Separation	Bioscience and Bioengineering	2:09 PM
Jailene	Silveri	Biomedical Engineering	A MATLAB toolbox for Quality Validation of Functional Near-Infrared Spectroscopy (fNIRS) Data Collected from the Human Brain	Bioscience and Bioengineering	2:12 PM
Kevin	Yotongyos	Mathematical Sciences	SEIAQRVn Model of Spread of Covid-19 with cGAN Parameter Estimation	Bioscience and Bioengineering	2:15 PM
Rebecca	Zaki	Biology B.A	Evaluation of a Phase-Transfer Catalyst Toward the Synthesis of Chiral Alkylboronic Esters	Bioscience and Bioengineering	2:18 PM
Carlos	Maranon	Electrical Engineering	Securing Deep Learning: Attack/Defense Implementations on Federated Learning	Robotics and Machine Intelligence	2:45 PM
Elizabeth	Kowalchuk	B. Architecture	Bauhaus Medievalism: Gropius' Medieval Ideals and their Manifestation in Bauhaus Pedagogy	Others: Architecture and Design	2:48 PM
Dhruvi	Rajpopat	Architecture	Visualizing Space and Place: Lessons for the Young Architect	Others: Architecture and Design	2:51 PM
Jacob	Swanson	Architecture	The Challenges of Cohousing from the Architect's Perspective	Others: Architecture and Design	2:55 PM
Aaron	Gibbs	Computer Engineering	Exploring Image Compression Using Deep Neural Networks	Robotics and Machine Intelligence	2:58 PM

July 30, 2021

First Name	Last Name	Major	Title of Project	Presentation Session	Tentative Presentation Time
Bilal	Adra	Mechanical Engineering	Dual-Layer, Millimeter-Core, Coil Wrapping Machine	Data Science and Management	9:30 AM
Lazar	Agoev	Computer Engineering	Statistical Study of Mini-filament Eruptions	Data Science and Management	9:33 AM
Elizabeth	Brogna	Biomedical Engineering	The Impact of Clutter on Multiple Object Search in Naturalistic Settings	Data Science and Management	9:36 AM
Hao Massimo	Chen	Computer Science	Eruption of Polar Crown Filaments	Data Science and Management	9:39 AM
Reesha	Gandhi	Human-Computer Interac	An Exploration of Intern Socialization During Remote Internships	Data Science and Management	9:42 AM
Cindy	Gonzalez	Human-Computer Interac	YouMatter: Doctor-patient matching application designed for the LGBTQ+ community	Data Science and Management	9:45 AM
Jason	Kurzer	Information Technology	Unity for Spatial Research	Data Science and Management	9:48 AM
Ruchi	Shah	Biomedical Engineering	Visual Memory and Shifting Ability in Chess Players	Data Science and Management	9:51 AM
Meredith	Westrich	Computer Science	Interface Implementation of the Edicole Sacre Database	Data Science and Management	9:54 AM
Allison	Wong	Digital Design	Developing Interactive Educational Animation to Visualize Financial Concepts for Students	Data Science and Management	9:57 AM
Rui	Zhang	Computer Science	Establishing Flare Database for Advancing Space Weather Research	Data Science and Management	10:00 AM
Ashley	Ahmed	Chemistry and Biological	spDCC: Model-based deep embedding with spatially constrained k-nearest neighbor for single-cell RNA sequencing clustering analysis	Data Science and Management	10:03 AM
Pedro	D'Avila	Business	Contrast Effect Bias in Finance: Pattern Deviations Conditioned on Industry Structures	Data Science and Management	10:06 AM
Jada	Evans	Law, Technology and Cu	Indigenous Data Sovereignty and Accessibility in Rowasu'u, an A'uwē-Xavante Scientific Archive	Data Science and Management	10:09 AM
Larissa	Gao	Computer Science	Social Media Deplatforming Effects on User Interest in Alternative Platforms	Data Science and Management	10:12 AM
Gagandeep	Kaur	Global Project Managem	Quantified Customer Requirement Analysis	Data Science and Management	10:15 AM
Wara	Laura	Computer science	Social Media Misinformation in Covid19	Data Science and Management	10:18 AM
Ethan	Lee	Math	Customer Churn Prediction in Grocery Store Setting	Data Science and Management	10:21 AM
Bhumi	Patel	Industrial Engineering	Determining Conditions for the Optimal Immunization Strategy: Ring or Mass Vaccination	Data Science and Management	10:24 AM
David	Preciado	MS, Information Systems	SecurList: Web Application to Proactively Protect Consumer Data and Privacy	Data Science and Management	10:27 AM
Carlos	Ruiz Justiniano	Industrial Engineering	Quantified Customer Requirement Analysis	Data Science and Management	10:30 AM
Joseph	Schaedler	Computer Science	Blockchain- enabled Standardized Testing Design	Data Science and Management	10:33 AM
Austin	Westbrook	Masters Business Admini	Quantified Process Risk Analysis	Data Science and Management	10:36 AM
Peggy	Yin	N/A	Predicting Priority and Information Types in Twitter Incident Streams	Data Science and Management	10:39 AM
Salma	Alami Yadri	Electrical Engineering	Building A Self-Sustaining Community Microgrid Using 100% Renewable Energy Resources	Environment and Sustainability	12:30 PM
Samantha	Augustin	Computer Engineering	Examining the Impact of Engineering Entrepreneurship Courses on Students	Environment and Sustainability	12:33 PM
Egor	Demidov	Chemical Engineering	Enhanced Light Scattering and Absorption by Processed Soot Aerosols	Environment and Sustainability	12:36 PM
Manal	Desai	Computer Science & App	Analysis of Flux Rope Events and Their Effect on Earth's Magnetosphere	Environment and Sustainability	12:39 PM
Manav	Guzraty	Mechanical Engineering	Schooling of Tandem Flapping Swimmers	Environment and Sustainability	12:42 PM
Ian	Horstkamp-Vineka	Chemical Engineering	Synthesizing Biomimetic Water Splitting Catalysts	Environment and Sustainability	12:45 PM
Jeffrey	Luk	Biology	Inactivation of MS2 Bacteriophage for Water Disinfection via Microwave Irradiation in the presence of Microwave-Absorbing Catalysts	Environment and Sustainability	12:48 PM
Alan	Lundi	Civil Engineering	Remediation of PFAS Contaminated Soil and Sediment	Environment and Sustainability	12:51 PM
Areej	Qamar	Biomedical Engineering	Electrochemical Studies of Catalysts Developed From RuPd Nanoparticles for the Breakdown of PFAS	Environment and Sustainability	12:54 PM
					12:57 PM
Vishva	Rana	Mechanical Engineering	Determination of the Ultrafine Porosity of Shale	Environment and Sustainability	1:00 PM
Lara	Rios	Civil Engineering (minor i	Open-Source, Low-Cost Lead Sensor	Environment and Sustainability	1:03 PM
Akhilesh	Kootala	Mechanical Engineering	Hybrid Floating Solar and Hydro Power System	Environment and Sustainability	1:06 PM
Samuel	Solomon	Civil Engineering	Polymer Engineering and Mechanisms in Template Assisted Crystallization for Hardness Removal	Environment and Sustainability	1:09 PM
					1:12 PM
SHAFIA	TALAT	Biology, BA	A Food Forest for a Hot Planet	Environment and Sustainability	1:15 PM
Xin	Yin	Environmental engineerir	Enhancing Natural Source Zone Degradation Processes	Environment and Sustainability	1:18 PM
Simone	Bishara	Biochemistry	Observing Compressive Strength of Fibrin Hydrogels of Varying Concentrations	Material Science and Engineering	2:00 PM
Angel	Guzman	Environmental Science	Flavonoid derived metal nanoparticles	Material Science and Engineering	2:03 PM
Alexander	Hanna	Biochemistry	Photosensitizers for Multi-Step Excited State Electron Transfer Reactions	Material Science and Engineering	2:06 PM
Christopher	Leong	Physics	Uncooled Mid-wavelength Infrared Photoconductive Photodetectors Based on Silver Selenide Colloidal Quantum Dot	Material Science and Engineering	2:09 PM
Andressa	Marangon	ECET	Engineering the Carrier Dynamics of III-Nitride Ultraviolet Nanowire Light-Emitting Diodes	Material Science and Engineering	2:12 PM
Jason	Ogbebor	Chemical Engineering	Compressibility of Water Confined in Carbon Nanopores Via Molecular Dynamics Simulations	Material Science and Engineering	2:15 PM
Justin	Pace	Chemical Engineering	Experimental Determination of Mixing Time in the USP Dissolution Apparatus 1	Material Science and Engineering	2:18 PM
Maryom	Rahman	Chemical Engineering	Detection of Perfluorooctanoic Acid (PFOA) Using ESSENCE Electrochemical Sensors and Metal-Organic Frameworks	Material Science and Engineering	2:21 PM
Vincent	Tews	Chemical Engineering	Hybrid Monte Carlo-Molecular Dynamics Scheme for Simulating Adsorption-Induced Deformation in Spherical Pores	Material Science and Engineering	2:24 PM
Nicholas	Winay	Chemical Engineering	Numerical Solution for the Non-Steady-State Growth of a Gas Bubble in a Supersaturated Solution with Capillary Forces	Material Science and Engineering	2:27 PM
Ihsaam	Al-Shehab	Mechanical Engineering	Design of LED Structure with Negligible Electron Leakage	Material Science and Engineering	2:30 PM
Ruby	Burgess	Physics	Feasibility Study on Building a Stand-Alone Community Microgrid in the United States	Material Science and Engineering	2:33 PM
FNU	MUJEEBU RAHMA	CET and CIM	Conductive Rigid Concrete Pavement	Material Science and Engineering	2:36 PM
Vignesh	Sridhar	Mechanical Engineering	Magnetorheological (MR) Fluids of mixtures of micron-sized ferromagnetic and diamagnetic particles	Material Science and Engineering	2:39 PM

Notes: Team Project Presenters:	
1	David Alonge, Francis Kanwanya-Nwajueboe, Karolina Kowal, Chinonye Uzowuru
2	Elizabeth Brogna, SophieJedrysek
3	Jada Evans, Pia Kapoor
4	Ashley Ahmed, Nathan Whitener

The time schedule is tentative subject to adjustments due to time-gap between the presentations.

2021 Undergraduate Summer Research and Innovation Symposium

Schedule of Presentations

"TechQuest encourages undergraduate students to channel their creative ideas toward real world marketplace and social needs."

Research Presentation Area

Bioscience and Bioengineering

Name: David Alonge
Department: Computer Science
Project Title: Using Deep Hybrid Modeling To Determine Treatment Strategies for COVID-19 Patients
Faculty Advisor: Casey Diekman
URI Program: NSF Community College Biomathematical Research Initiation Program

Name: Arun Aryal
Department: Biomedical Engineering
Project Title: Effect of acute conductive hearing loss on dip listening
Faculty Advisor: Antje Ihlefeld
URI Program: URI Provost Summer Research Fellowship Program

Name: Abdul-Rahman Azizogli
Department: Biology BS
Project Title: Computational Design of CCL2 Sequestering Anti-Inflammatory Hydrogels
Faculty Advisor: Vivek Kumar
URI Program: URI Provost Summer Research Fellowship Program

Name: Thara Balaji
Department: Biology
Project Title: ESSENCE
Faculty Advisor: Yu Hsuan Cheng and Sagnik Basuray
URI Program: NSF Funded Project

Name: Theresa Carlos
Department: Biomedical engineering
Project Title: ESSENCE POC Device – A Shear-Enhanced, flow-through Nanoporous Capacitive Electrochemical Sensor for the sensitive and selective detection of different Biomolecules
Faculty Advisor: Sagnik Basuray and Yu-Hsuan Cheng
URI Program: NSF Funded Project

Name: Mirna Cheikhali
Department: Chemical Engineering
Project Title: The Impact of Agglomeration and Surface Hydrophobicity on the Dissolution Rate of Dry Coated Poorly Water Soluble and Cohesive Drugs
Faculty Advisor: Rajesh Dave
URI Program: URI Provost Summer Research Fellowship Program

Name: Gabriela De Carvalho
Department: Biomedical Engineering
Project Title: Quantifying Gait Abnormalities in Children with Cerebral Palsy through 3-D Motion Analysis Techniques Before and After Functional Electrical Stimulation
Faculty Advisor: Saikat Pal
URI Program: URI Provost Summer Research Fellowship Program

Name: Michael De La Cruz
Department: Mechanical Engineering
Project Title: Concept design of a lightweight, modular, and adjustable lower-extremity exoskeleton
Faculty Advisor: Xianlian Zhou
URI Program: McNair Scholar Program

Name: Michaela Dungan
Department: Biology, Concentration of Neurobiology
Project Title: Using the OculoMotor and Vestibular Endurance Screening (MoVES) on a Pediatric Population
Faculty Advisor: Chang Yaramothu
URI Program: URI Provost Summer Research Fellowship Program

Name: Jonathan Grabiel-Pabon
Department: Mechanical Engineering
Project Title: Modelling Complex Mechanism Simulations on Creo: Toothbrush Attachment
Faculty Advisor: Balraj Mani
URI Program: McNair Scholar Program

Name: Shaikh Hassan
Department: BME
Project Title: Modeling Spinal Cord Injury and Repair with Nidogen-1
Faculty Advisor: Jonathan Grasman
URI Program: URI Provost Summer Research Fellowship Program

Name: Christopher Henni
Department: Biomedical Engineering
Project Title: Pain Biosensors in Forensic Identification
Faculty Advisor: Omowunmi Sadik
URI Program: URI Provost Summer Research Fellowship Program

Name: Francis Kanwanya-Nwajueboe
Department: Biomedical Engineering
Project Title: Using Deep Hybrid Modeling To Determine Treatment Strategies for COVID-19 Patients
Faculty Advisor: Casey Diekman
URI Program: NSF Community College Biomathematical Research Initiation Program

Name: Anoushka Karnad
Department: Biomedical Engineering
Project Title: Dance For Rehab: Dance Pad for Lower Limb Rehabilitation
Faculty Advisor: Alev Erdi
URI Program: URI Provost Summer Research Fellowship Program

Name: Ashish Kokkula
Department: Biomedical Engineering
Project Title: Study of Targeted Platinum Nanoparticles as Treatment for Triple-Negative Breast Cancer
Faculty Advisor: Kathleen McEnnis
URI Program: URI Provost Summer Research Fellowship Program

Name: Karolina Kowal
Department: Computer Science
Project Title: Using Deep Hybrid Modeling To Determine Treatment Strategies for COVID-19 Patients
Faculty Advisor: Casey Diekman
URI Program: NSF Community College Biomathematical Research Initiation Program

Name: Sahitya Kulkarni
Department: Biology BS
Project Title: Temperature Entrainment of Cyanobacterial Circadian Clocks
Faculty Advisor: Yong-Ick Kim
URI Program: URI Provost Summer Research Fellowship Program

Name: Dylan Lederman
Department: Biology (B.S.)
Project Title: Examining Parameter Estimation Unidentifiability in Oscillatory Systems
Faculty Advisor: Horacio Rotstein
URI Program: URI Provost Summer Research Fellowship Program

Name: Thomas Martinez
Department: Mechanical Engineering
Project Title: Design of an Adjustable Instrumented Crutch for Compressive Force Analysis
Faculty Advisor: Saikat Pal
URI Program: McNair Scholar Program

Name: Stuti Mohan
Department: Biomedical Engineering
Project Title: Pure-Tone Audiometric Clinical Testing of the Mapping Auditory Processing Disorder (MAPD) Application
Faculty Advisor: Antje Ihlefeld
URI Program: Honors College Summer Research Program

Name: Jason Ong
Department: Chemistry
Project Title: Bacterial Inactivation by Ultranarrow Spectrum LEDs
Faculty Advisor: Mengyan Li
URI Program: URI Provost Summer Research Fellowship Program

Name: Sheetal Padhi
Department: Biomedical Engineering
Project Title: Neuronal Cell Death in Repeated Low-Level Blast Induced Traumatic Brain Injury
Faculty Advisor: Ying Li
URI Program: URI Provost Summer Research Fellowship Program

Name: Nikitha Pappachen
Department: Biology
Project Title: Role of Dmrt3a in Zebrafish Pectoral Fins
Faculty Advisor: Kristen Severi
URI Program: Honors College Summer Research Program

Name: Sreya Sanyal
Department: Biology & History
Project Title: Opsonization of SARS-CoV-2 to develop a COVID-19 antiviral
Faculty Advisor: Vivek Kumar
URI Program: URI Provost Summer Research Fellowship Program

Name: Will Suero Amparo
Department: Biomedical Engineering
Project Title: ROGER (Reduced Oxygen and Gravity Emulating Rotation) Device
Faculty Advisor: Eun Jung Lee
URI Program: NSF iCorps NJIT Site Program

Name: Seejal Padhi
Department: Biomedical Engineering
Project Title: The effect of microglial NLRP3 inflammasome on astrocyte Piezo1 expression and IL-1β levels
Faculty Advisor: Bryan Pfister
URI Program: URI Provost Summer Research Fellowship Program

Name: Disha Panchal
Department: Biology
Project Title: Peptide-based Therapeutic for COVID-19
Faculty Advisor: Vivek Kumar
URI Program: URI Provost Summer Research Fellowship Program

Name: Ryan Retino
Department: Mechanical Engineering
Project Title: Mechanics and Deformation of Cell Membranes
Faculty Advisor: Fatemeh Ahmadpoor
URI Program: NSF Research Experience of Undergraduate (REU) Program for Optics and Photonics

Name: Esha Shah
Department: Biology
Project Title: Can Cold Atmospheric Plasma Improve Neural Regeneration?
Faculty Advisor: Gal Haspel
URI Program: URI Provost Summer Research Fellowship Program

Name: John Tobia
Department: Biology
Project Title: Using BODIPY-based Photobase Generators to Create Physiologically-Compatible Hydrogel Photopolymerization Systems
Faculty Advisor: Yuanwei Zhang
URI Program: URI Provost Summer Research Fellowship Program

Name: Chinonye Uzowuru
Department: Computer Science
Project Title: Using Deep Hybrid Modeling To Determine Treatment Strategies for COVID-19 Patients
Faculty Advisor: Casey Diekman
URI Program: NSF Community College Biomathematical Research Initiation Program

Name: Nishita Vootukuru
Department: Biochemistry
Project Title: Effects of Osteopontin on Cardiomyocytes as Related to Myocardial Infarction
Faculty Advisor: Alice Lee
URI Program: Honors College Summer Research Program

Name: Pranati Ambati
Department: Biology
Project Title: Investigating the Role of Developmental Environment and Mauthner Cell Morphology on Neuronal Plasticity and Escape Behavior
Faculty Advisor: Severi Kristen
URI Program: URI Provost Summer Research Fellowship Program

Name: Roan Back
Department: Biomedical Engineering
Project Title: Application of a Weighted Simple Kalman Filter for Improved Phase Reconstruction
Faculty Advisor: Xuan Liu
URI Program: NSF Research Experience of Undergraduate (REU) Program for Optics and Photonics

Name: Alicja Bil
Department: Biomedical Engineering
Project Title: Utilizing fMRI to Examine Functional Brain Changes in COVID Patients
Faculty Advisor: Bharat Biswal
URI Program: URI Provost Summer Research Fellowship Program

Name: Edgar Canario
Department: Biomedical Engineering
Project Title: Global Network Analysis of Alzheimer's with Minimum Spanning Trees
Faculty Advisor: Bharat Biswal
URI Program: URI Provost Summer Research Fellowship Program

Name: Hans Elijah Hugo
Department: Biomedical Engineering
Project Title: Highlander Ankle Brace
Faculty Advisor: Alex Zhou
URI Program: NSF iCorps NJIT Site Program

Name: Sean Larmore
Department: Chemistry
Project Title: Structures of Highly Substituted Cyclopropylcarbinyl Nonclassical Carbocations
Faculty Advisor: Pier Alexandre Champagne
URI Program: URI Provost Summer Research Fellowship Program

Name: Kaylin McQuillan
Department: Biomedical Engineering
Project Title: Nanoparticle Tracking Analysis of Polymer Particles in Blood Plasma
Faculty Advisor: Kathleen McEnnis
URI Program: NSF Research Experience of Undergraduate (REU) Program for Optics and Photonics

Name: Shiva Senthilkumar
Department: Biology B.A.
Project Title: Dynamics of Generalized Half-Center Oscillator Neuronal Networks
Faculty Advisor: Horacio Rotstein
URI Program: URI Provost Summer Research Fellowship Program

Name: Nikesh Shrestha
Department: Mechanical Engineering
Project Title: Contact Angle Measurement for implementation in Passive Plasma Separation
Faculty Advisor: Eon Soo Lee
URI Program: NSF Research Experience of Undergraduate (REU) Program for Optics and Photonics

Name: Jailene Silveri
Department: Biomedical Engineering
Project Title: A MATLAB toolbox for Quality Validation of Functional Near-Infrared Spectroscopy (fNIRS) Data Collected from the Human Brain
Faculty Advisor: Xiaobo Li
URI Program: NSF Research Experience of Undergraduate (REU) Program for Optics and Photonics

Name: Kevin Yotongyos
Department: Mathematical Sciences
Project Title: SEIAQRVn Model of Spread of Covid-19 with cGAN Parameter Estimation
Faculty Advisor: Casey Diekman
URI Program: Math 451 Capstone Research Project

Name: Rebecca Zaki
Department: Biology B.A
Project Title: Evaluation of a Phase-Transfer Catalyst Toward the Synthesis of Chiral Alkylboronic Esters
Faculty Advisor: Pier Alexandre Champagne
URI Program: URI Provost Summer Research Fellowship Program

Research Presentation Areas

Robotics and Machine Intelligence

Architecture and Design

Name: Carlos Maranon
Department: Electrical Engineering
Project Title: Securing Deep Learning: Attack/Defense Implementations on Federated Learning
Faculty Advisor: Abdallah Khreishah
URI Program: NSF Research Experience of Undergraduate (REU) Program for Optics and Photonics

Name: Elizabeth Kowalchuk
Department: B. Architecture
Project Title: Bauhaus Medievalism: Gropius' Medieval Ideals and their Manifestation in Bauhaus Pedagogy
Faculty Advisor: Louis Hamilton
URI Program: URI Provost Summer Research Fellowship Program

Name: Dhruvi Rajpopat
Department: Architecture
Project Title: Visualizing Space and Place: Lessons for the Young Architect
Faculty Advisor: Dr. Gabrielle Esperdy
URI Program: URI Provost Summer Research Fellowship Program

Name: Jacob Swanson
Department: Architecture
Project Title: The Challenges of Cohousing from the Architect's Perspective
Faculty Advisor: Maurie Cohen
URI Program: URI Provost Summer Research Fellowship Program

Name: Aaron Gibbs
Department: Computer Engineering
Project Title: Exploring Image Compression Using Deep Neural Networks
Faculty Advisor: Qing Liu
URI Program: NSF Research Experience of Undergraduate (REU) Program for Optics and Photonics

Research Presentation Area

Data Science and Management

Name: Bilal Adra
Department: Mechanical Engineering
Project Title: Dual-Layer, Millimeter-Core, Coil Wrapping Machine
Faculty Advisor: Professor Balraj S. Mani, Dr. Nuggehalli Ravindra
URI Program: URI Provost Summer Research Fellowship Program

Name: Lazar Agoev
Department: Computer Engineering
Project Title: Statistical Study of Mini-filament Eruptions
Faculty Advisor: Haimin Wang
URI Program: URI Provost Summer Research Fellowship Program

Name: Elizabeth Brogna
Department: Biomedical Engineering
Project Title: The Impact of Clutter on Multiple Object Search in Naturalistic Settings
Faculty Advisor: Yelda Semizer
URI Program: Honors College Summer Research Program

Name: Hao Massimo Chen
Department: Computer Science
Project Title: Eruption of Polar Crown Filaments
Faculty Advisors: Yan Xu, Li Qin and Haimin Wang
URI Program: URI Provost Summer Research Fellowship Program

Name: Reesha Gandhi
Department: Human-Computer Interaction & Business Information Systems Dual Degree, Minor in Psychology
Project Title: An Exploration of Intern Socialization During Remote Internships
Faculty Advisor: Yvette Wohn
URI Program: Honors College Summer Research Program

Name: Cindy Gonzalez
Department: Human-Computer Interaction
Project Title: YouMatter: Doctor-patient matching application designed for the LGBTQ+ community
Faculty Advisor: Shrutika Madda
URI Program: NSF iCorps NJIT Site Program

Name: Sophie Jedrysek
Department: Biomedical Engineering
Project Title: The Impact of Clutter on Multiple Object Search in Naturalistic Settings
Faculty Advisor: Yelda Semizer
URI Program: Honors College Summer Research Program

Name: Jason Kurzer
Department: Information Technology
Project Title: Unity for Spatial Research
Faculty Advisor: Burcak Ozludil
URI Program: Honors College Summer Research Program

Name: Ruchi Shah
Department: Biomedical Engineering
Project Title: Visual Memory and Shifting Ability in Chess Players
Faculty Advisor: Yelda Semizer
URI Program: URI Provost Summer Research Fellowship Program

Name: Meredith Westrich
Department: Computer Science
Project Title: Interface Implementation of the Edicole Sacre Database
Faculty Advisor: Vincent Oria
URI Program: Honors College Summer Research Program

Name: Allison Wong
Department: Digital Design
Project Title: Developing Interactive Educational Animation to Visualize Financial Concepts for Students
Faculty Advisor: Hyejin Hannah Kum-Biocca
URI Program: URI Provost Summer Research Fellowship Program

Name: Rui Zhang
Department: Computer Science
Project Title: Establishing Flare Database for Advancing Space Weather Research
Faculty Advisor: Nian Liu, Ju Jing and Haimin Wang
URI Program: URI Provost Summer Research Fellowship Program

Name: Ashley Ahmed
Department: Chemistry and Biological Sciences
Project Title: spDCC: Model-based deep embedding with spatially constrained k-nearest neighbor for single-cell RNA sequencing clustering analysis
Faculty Advisor: Zhi Wei
URI Program: NSF Research Experience of Undergraduate (REU) Program for Computational Data Analytics

Name: Pedro D'Avila
Department: Business
Project Title: Contrast Effect Bias in Finance: Pattern Deviations Conditioned on Industry Structures
Faculty Advisor: Zhipeng Yan
URI Program: URI Provost Summer Research Fellowship Program

Name: Jada Evans
Department: Law, Technology and Culture
Project Title: Indigenous Data Sovereignty and Accessibility in Rowasu'u, an A'uwẽ-Xavante Scientific Archive
Faculty Advisor: Rosanna Dent
URI Program: Honors College Summer Research Program

Name: Larissa Gao
Department: Computer Science
Project Title: Social Media Deplatforming Effects on User Interest in Alternative Platforms
Faculty Advisor: Cody Buntain
URI Program: NSF Research Experience of Undergraduate (REU) Program for Computational Data Analytics

Name: Pia Kapoor
Department: Biology
Project Title: Indigenous Data Sovereignty and Accessibility in Rowasu'u, an A'uwẽ-Xavante Scientific Archive
Faculty Advisor: Rosanna Dent
URI Program: Honors College Summer Research Program

Name: Gagandeep Kaur
Department: Global Project Management
Project Title: Quantified Customer Requirement Analysis
Faculty Advisor: Paul Ranky
URI Program: NSF iCorps NJIT Site Program

Name: Wara Laura
Department: Computer science
Project Title: Social Media Misinformation in Covid19
Faculty Advisor: Cody Buntain
URI Program: NSF Research Experience of Undergraduate (REU) Program for Computational Data Analytics

Name: Ethan Lee
Department: Math
Project Title: Customer Churn Prediction in Grocery Store Setting
Faculty Advisor: Lian Duan, Zhi Wei
URI Program: NSF Research Experience of Undergraduate (REU) Program for Computational Data Analytics

Name: Bhumi Patel
Department: Industrial Engineering
Project Title: Determining Conditions for the Optimal Immunization Strategy: Ring or Mass Vaccination
Faculty Advisor: Esra Büyüktahtakın Toy
URI Program: URI Provost Summer Research Fellowship Program

Name: David Preciado
Department: MS, Information Systems
Project Title: SecurList: Web Application to Proactively Protect Consumer Data and Privacy
Faculty Advisor: Sameh Sabet
URI Program: NSF iCorps NJIT Site Program

Name: Carlos Ruiz Justiniano
Department: Industrial Engineering
Project Title: Quantified Customer Requirement Analysis
Faculty Advisor: Paul Ranky
URI Program: NSF iCorps NJIT Site Program

Name: Joseph Schaedler
Department: Computer Science
Project Title: Blockchain- enabled Standardized Testing Design
Faculty Advisor: Jasmine Chang
URI Program: URI Provost Summer Research Fellowship Program

Name: Austin Westbrook
Department: Masters Business Administration
Project Title: Quantified Process Risk Analysis
Faculty Advisor: Paul Ranky
URI Program: NSF Grant

Name: Nathan Whitener
Department: Computer Science, Mathematical Statistics
Project Title: spDCC: Model-based deep embedding with spatially constrained k-nearest neighbor for single-cell RNA sequencing clustering analysis
Faculty Advisor: Zhi Wei
URI Program: NSF REU Program for Computational Data Analytics

Name: Peggy Yin
Department: N/A
Project Title: Predicting Priority and Information Types in Twitter Incident Streams
Faculty Advisor: Cody Buntain
URI Program: NSF Research Experience of Undergraduate (REU) Program for Computational Data Analytics

Research Presentation Area

Environment and Sustainability

Name: Salma Alami Yadri
Department: Electrical Engineering
Project Title: Building A Self-Sustaining Community Microgrid Using 100% Renewable Energy Resources
Faculty Advisor: Philip Pong
URI Program: McNair Scholar Program

Name: Samantha Augustin
Department: Computer Engineering
Project Title: Examining the Impact of Engineering Entrepreneurship Courses on Students
Faculty Advisor: Prateek Shekhar
URI Program: McNair Scholar Program

Name: Egor Demidov
Department: Chemical Engineering
Project Title: Enhanced Light Scattering and Absorption by Processed Soot Aerosols
Faculty Advisor: Alexei Khalizov
URI Program: URI Provost Summer Research Fellowship Program

Name: Manal Desai
Department: Computer Science & Applied Mathematics
Project Title: Analysis of Flux Rope Events and Their Effect on Earth's Magnetosphere
Faculty Advisor: Hyomin Kim
URI Program: URI Provost Summer Research Fellowship Program

Name: Manav Guzraty
Department: Mechanical Engineering
Project Title: Schooling of Tandem Flapping Swimmers
Faculty Advisor: Anand Oza
URI Program: NSF LSAMP Program

Name: Ian Horstkamp-Vinekar
Department: Chemical Engineering
Project Title: Synthesizing Biomimetic Water Splitting Catalysts
Faculty Advisor: Michael Eberhart
URI Program: URI Provost Summer Research Fellowship Program

Name: Jeffrey Luk
Department: Biology
Project Title: Inactivation of MS2 Bacteriophage for Water Disinfection via Microwave Irradiation in the presence of Microwave-Adsorbing Catalysts
Faculty Advisor: Wen Zhang
URI Program: URI Provost Summer Research Fellowship Program

Name: Areej Qamar
Department: Biomedical Engineering
Project Title: Electrochemical Studies of Catalysts Developed From RuPd Nanoparticles for the Breakdown of PFAS
Faculty Advisor: Omowunmi Sadik
URI Program: BioSensor Materials for Advanced Research and Technology (BioSMART Center) Undergraduate Summer Research

Name: Lara Rios
Department: Civil Engineering (minor in Computer Science)
Project Title: Open-Source, Low-Cost Lead Sensor
Faculty Advisor: William Pennock
URI Program: McNair Scholar Program

Name: Samuel Solomon
Department: Civil Engineering
Project Title: Polymer Engineering and Mechanisms in Template Assisted Crystallization for Hardness Removal
Faculty Advisor: Wen Zhang
URI Program: URI Provost Summer Research Fellowship Program

Name: Xin Yin
Department: Environmental engineering
Project Title: Enhancing Natural Source Zone Degradation Processes
Faculty Advisor: Lisa Axe
URI Program: NSF iCorps NJIT Site Program

Name: Alan Lundi
Department: Civil Engineering
Project Title: Remediation of PFAS Contaminated Soil and Sediment
Faculty Advisor: Jay Meegoda
URI Program: McNair Scholar Program

Name: Vishva Rana
Department: Mechanical Engineering
Project Title: Determination of the Ultrafine Porosity of Shale
Faculty Advisor: Jay Meegoda
URI Program: URI Provost Summer Research Fellowship Program

Name: Akhilesh Kootala
Department: Mechanical Engineering
Project Title: Hybrid Floating Solar and Hydro Power System
Faculty Advisor: Lin Dong
URI Program: NSF iCorps NJIT Site Program

Name: Shafia Talat
Department: Biology, BA
Project Title: A Food Forest for a Hot Planet
Faculty Advisor: Maria Stanko
URI Program: Honors College Summer Research Program

Research Presentation Area

Material Science and Engineering

Name: Simone Bishara
Department: Biochemistry
Project Title: Observing Compressive Strength of Fibrin Hydrogels of Varying Concentrations
Faculty Advisor: Jonathan Grasman
URI Program: McNair Scholar Program

Name: Angel Guzman
Department: Environmental Science
Project Title: Flavonoid derived metal nanoparticles
Faculty Advisor: Francis Osonga
URI Program: Academic Summer research

Name: Alexander Hanna
Department: Biochemistry
Project Title: Photosensitizers for Multi-Step Excited State Electron Transfer Reactions
Faculty Advisor: Michael S. Eberhart
URI Program: URI Provost Summer Research Fellowship Program

Name: Christopher Leong
Department: Physics
Project Title: Uncooled Mid-wavelength Infrared Photoconductive Photodetectors Based on Silver Selenide Colloidal Quantum Dot
Faculty Advisor: Dong Ko
URI Program: NSF Research Experience of Undergraduate (REU) Program for Optics and Photonics

Name: Andressa Marangon
Department: ECET
Project Title: Engineering the Carrier Dynamics of III-Nitride Ultraviolet Nanowire Light-Emitting Diodes
Faculty Advisor: Hieu Pham Trung Nguyen
URI Program: McNair Scholar Program

Name: Jason Ogbebor
Department: Chemical Engineering
Project Title: Compressibility of Water Confined in Carbon Nanopores Via Molecular Dynamics Simulations
Faculty Advisor: Gennady Gor
URI Program: McNair Scholar Program

Name: Justin Pace
Department: Chemical Engineering
Project Title: Experimental Determination of Mixing Time in the USP Dissolution Apparatus 1
Faculty Advisor: Piero Armenante
URI Program: URI Provost Summer Research Fellowship Program

Name: Maryom Rahman
Department: Chemical Engineering
Project Title: Detection of Perfluorooctanoic Acid (PFOA) Using ESSENCE Electrochemical Sensors and Metal-Organic Frameworks
Faculty Advisor: Sagnik Basuray
URI Program: Other Undergraduate Student Summer Researcher

Name: Vincent Tews
Department: Chemical Engineering
Project Title: Hybrid Monte Carlo-Molecular Dynamics Scheme for Simulating Adsorption-Induced Deformation in Spherical Pores
Faculty Advisor: Gennady Gor
URI Program: URI Provost Summer Research Fellowship Program

Name: Nicholas Winay
Department: Chemical Engineering
Project Title: Numerical Solution for the Non-Steady-State Growth of a Gas Bubble in a Supersaturated Solution with Capillary Forces
Faculty Advisor: Gennady Y. Gor
URI Program: Summer Undergraduate Research with Dr. Gor

Name: Ihsaam Al-Shehab
Department: Mechanical Engineering
Project Title: Design of LED Structure with Negligible Electron Leakage
Faculty Advisor: Hieu Nguyen
URI Program: NSF Research Experience of Undergraduate (REU) Program for Optics and Photonics

Name: Ruby Burgess
Department: Physics
Project Title: Feasibility Study on Building a Stand-Alone Community Microgrid in the United States
Faculty Advisor: Philip Pong
URI Program: NSF Research Experience of Undergraduate (REU) Program for Optics and Photonics

Name: Fnu Mujeebu Rahman
Department: CET and CIM
Project Title: Conductive Rigid Concrete Pavement
Faculty Advisor: Ahmed Omran
URI Program: NSF iCorps NJIT Site Program

Name: Vignesh Sridhar
Department: Mechanical Engineering
Project Title: Magnetorheological (MR) Fluids of mixtures of micron-sized ferromagnetic and diamagnetic particles
Faculty Advisor: Pushpendra Singh
URI Program: Undergraduate Research Assistant