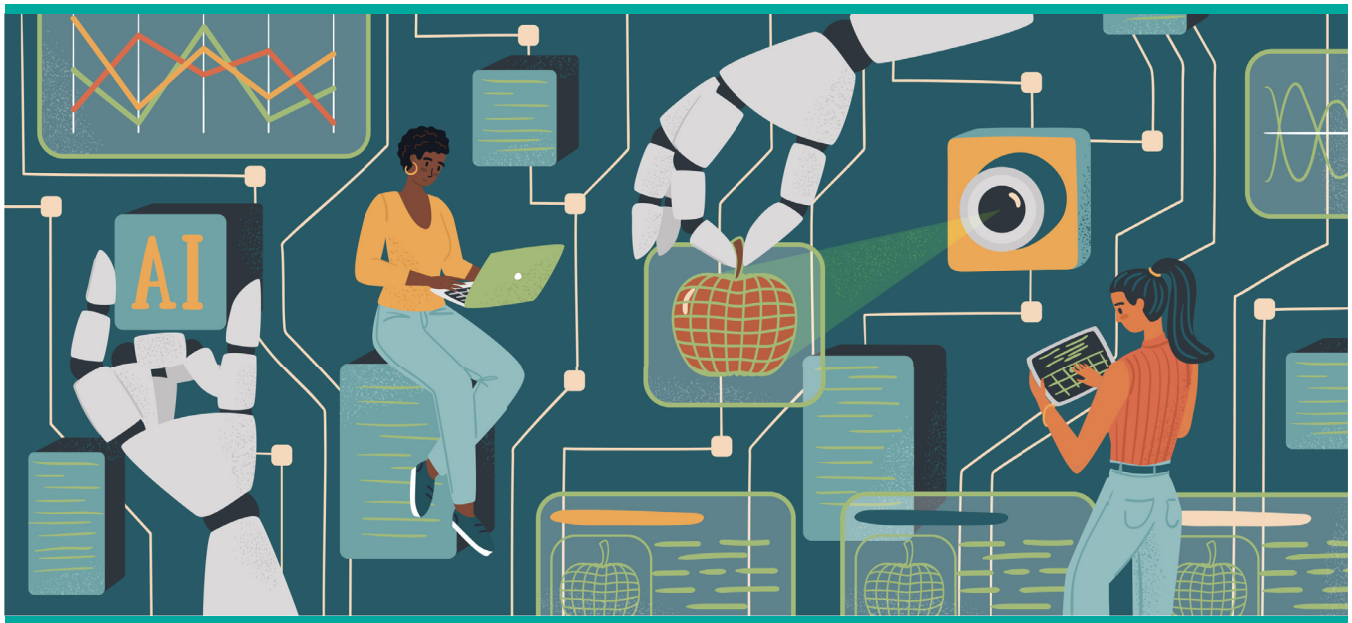
HUDSON COUNTY COMMUNITY COLLEGE

School of Continuing Education and Workforce Development

11th ANNUAL

GIRLS IN TECHNOLOGY 2024



HUDSON COUNTY COMMUNITY COLLEGE

CONTINUING EDUCATION & WORKFORCE DEVELOPMENT

Thursday, March 21, 2024
8:30 a.m. – 2:00 p.m.
Culinary Conference Center
161 Newkirk Street
Jersey City, NJ

Welcome to
Hudson County Community College's 11th Annual

Girls in Technology Symposium!

Dear Students:

On behalf of Hudson County Community College and the School of Continuing Education and Workforce Development, I thank you for joining us for #GIT2023 - the 10th Annual Girls in Technology Symposium!

We also thank your teachers, counselors, and administrators who encourage you to pursue your passion for STEM. As the program unfolds, we encourage you to engage and ask questions during our "A Day in the Life of Women in STEM" panel and STEM activities.

We hope you leave more inspired than before!

Chastity Farrell
Director, Continuing Education and Workforce Development

AGENDA

8:30 a.m.–9:00 a.m.

BUSES	**Student Check-in**
LOBBY	**Guest Check-in**
BANQUET ROOM	**Breakfast**

9:00 a.m.–9:10 a.m.
BANQUET ROOM
1st Floor

Opening — Brianna Heim
Continuing Education & Workforce Development

Welcome — Dr. Christopher Reber
President, Hudson County Community College

Review of the Day — Lori Margolin
Associate Vice President of Continuing Education and Workforce Development, Hudson County Community College

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BANQUET ROOM, 1st Floor

9:10 a.m.–9:15 a.m. **Opening Remarks** — Valerie Medina
Essay Contest Winner
Jose Marti STEM Academy

9:15 a.m.–10:15 a.m. **Panel Discussion: "A Day in the Life of Women in STEM"**
Moderator: Carmen Gates

Banquet Room Panelists:
Carol Benitez
Fiona Approo-Johnson
Linda Corso
Alexandra Velez

SCOTT RING ROOM & JOHNSTON ROOM, 2nd Floor

10:15 a.m.–12:45 p.m. **ACTIVITIES SESSIONS**

10:15 a.m.–10:45 a.m.	**3D reconstructed skin as a tool for predictive evaluation and discovery L'Oreal Technologies on the Cutting Edge**
10:45 a.m.–11:15 a.m.	**Beyond the Horizon: Web 3.0 and AI Unleashed**
11:15 a.m.–11:45 a.m.	**Encryption Expedition**
11:45 a.m.–12:15 p.m.	**Lead -Based Paint Inspection: HCCC School of STEM**
12:15 p.m.–12:45 p.m.	**Wood Veneer Identification Challenge**

12:45 p.m.–1:00 p.m. **Student Display Contests & Voting**
SCOTT RING ROOM *"Technology: Past, Present and Future"*

BANQUET ROOM

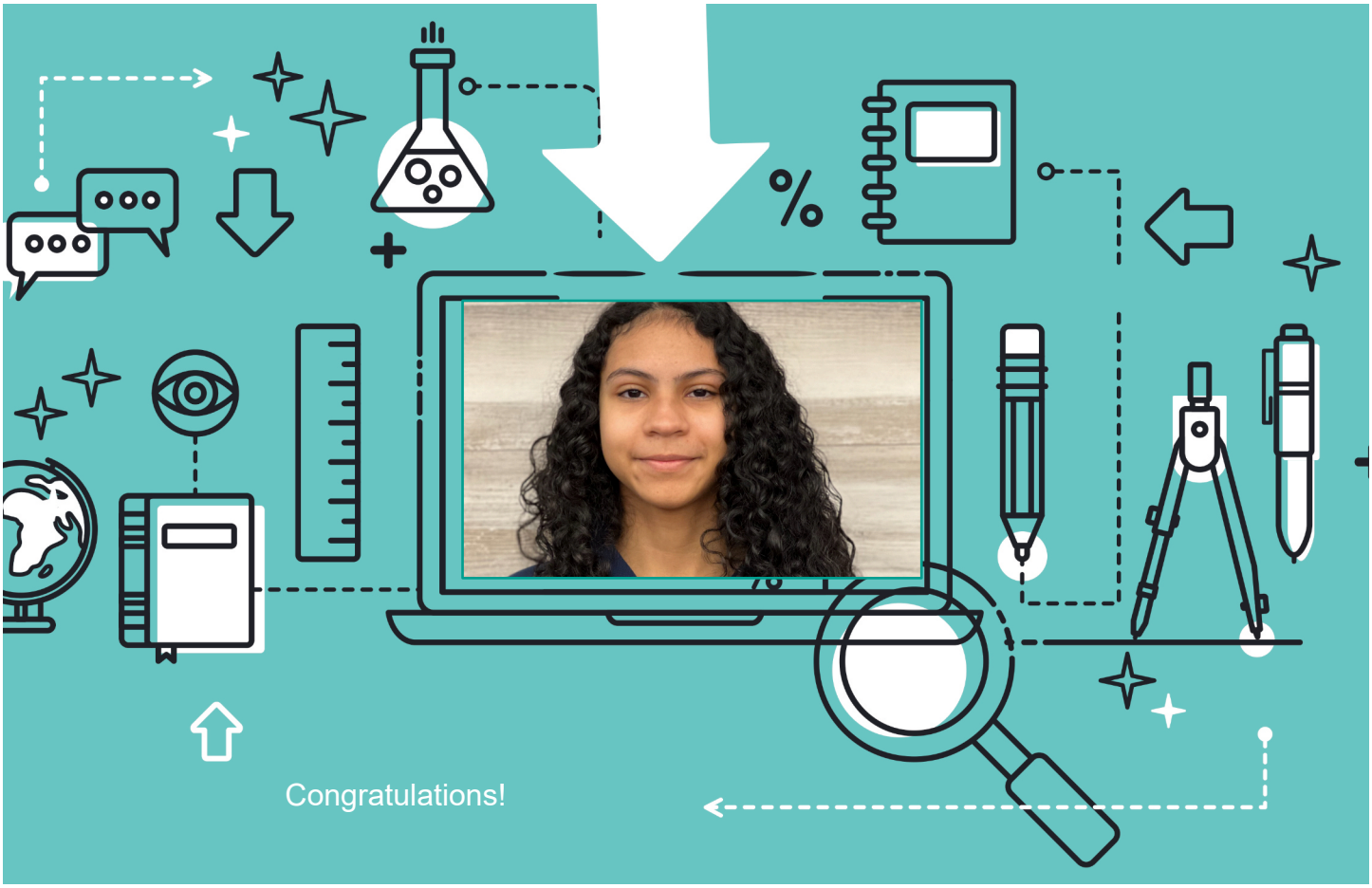
1:00 p.m.–2:00 p.m. **Lunch Proceedings**

1:15 p.m.–1:30 p.m. **L'Oréal Presentation: Product Safety/Toxicology**

1:30 p.m. **Student Display Contest Winner Announced & Photos**

2:00 p.m. **Dismissal**
LOBBY

OPENING SPEAKER ESSAY WINNER



Valerie Medina

Jose Marti STEM Academy

Valerie Medina is a junior at Jose Marti STEM Academy in Union City. She is the treasurer of the Girls Who Code club. She is a hardworking and determined girl. In addition, Valerie loves to learn and explore new things. She plans on having a career in STEM and working in the field of technology. In her free time, she likes to watch informative videos, play video games, and spend time with friends and family.

A DAY IN THE LIFE OF WOMEN IN STEM

MODERATOR

Carmen Gates

Director of Training and Community Initiatives
African American Chamber of Commerce of NJ

Carmen oversees the day-to-day operations of Training and Community based

Initiative programing structured to meet the goals, objectives and services delivered commensurate with the mission of the African American Chamber of Commerce of New Jersey (AACCNJ).

She works closely with the Founder, President, and CEO of AACCNJ and other stakeholders to establish and manage a fast-paced, highly efficient scope of services and duties, activities, educational, and other outreach efforts to enhance awareness and the value proposition of AACCNJ. Carmen hosts and participates in meetings with Government Agencies; at the State, County and Municipal levels, Elected Officials, Higher Education, K-12 Educational Institutions, Chambers of Commerce and Business Associations, Faith Based, and Community Organizations.

Programs include Financial Literacy, Youth Leadership, NJ Kids4 Coding, Reentry, Small Business, Career Fairs, High School Work-Study courses, and First Time Homeownership webinars. Carmen has over 25 years of Administrative and Community Outreach experience. Her career spans across IT, Media, Hospitality, Medical and Legal sectors. On-going initiatives with AACCNJ include partnering with leading corporations in New Jersey to create sustainable programs on Economic Inequalities, Healthcare Disparities and Inequalities and Workforce Diversity and Inclusion.

Carmen was born, raised, and educated in the great state of New Jersey. She has 1 son (Roman), daughter in-love (Jasmine) and 1 grandson (Ayden).

PANELISTS

Carol Benitez

Carol Benitez is GbD's Vice President of Operations who graduated Cum Laude from the New Jersey Institute of Technology Honors College with a degree in Chemical Engineering and a minor in Environmental Studies and Sustainability. Ms. Mendez is responsible for managing projects involving grant-writing and other services for public and private clients promoting clean energy, `environmental restoration and smart growth. She regularly oversees staff and interns, organizes events, and manages project and executive scheduling on a day-to-day basis, requiring regular interaction directly with C-level executives as well as all levels of public and elected officials. Mrs. Benitez is fluent in Spanish with unique experience in translating high-level technical documents, both from English to Spanish and from Spanish to English, for stakeholders and large clients. Mrs. Mendez also has strong mathematical, science and engineering knowledge allowing her to analyze, interpret and easily assimilate data for her clients and project stakeholders. She understands the impact of engineering solutions in a global, economic, environmental, and societal context. In a world that is constantly changing, she knows the importance of lifelong learning and integrating multi-disciplinary solutions to find the best solution for her clients.

Jennifer A. Harris

Jennifer is a professional engineer with over 15 years of experience in Civil Engineering, with a primary focus on water and wastewater. She currently works as a Project Manager at Environmental Resolutions, Inc. in Mount Laurel, NJ. There she helps her clients with their water and wastewater treatment and distribution needs. She is currently working on more wastewater focused projects, but has years of experience with water treatment and distribution. She attended the University of Delaware, where she earned a degree in Civil Engineering, with minors in Environmental Engineering and Women's Studies. While at UD, she was involved in many groups, including being a Resident Assistant and being a member of Alpha Omega Epsilon, a professional and social sorority for women in engineering and technical sciences. When not working she enjoys reading and volunteering for Alpha Omega Epsilon and the Society of Women Engineers.

Fiona Aproo-Johnson

Executive Director, Ellucian Managed Services ITS, Hudson County Community College

Fiona is currently the Executive Director of the Ellucian Managed Services Team at Hudson County Community College (HCCC). She is passionate about making higher education attainable for all students and innovating ways for the college to empower student success through solutions that support the entire student lifecycle. Fiona is focused on guiding HCCC through manageable, sustainable digital transformation using its ERP Applications and Technology Infrastructure so the institution and its students can thrive in today's fast-changing landscape. She is dedicated to partnering with the college's leadership and staff to provide technology leadership and management systems and services and deliver insights needed now and into the future.

Fiona holds a Bachelor of Science in Organizational Management from Nyack College in Nyack, NY, and a Master of Science in Higher Education Leadership and Administration from Capella University. She is currently pursuing a Doctor of Education in Educational Leadership degree at Capella University and her ITIL Certification.

Alexandra Velez

Alex is a Latina, Hudson County native and proud HCCC alumni with over 20 years of experience in IT and cybersecurity. Thanks to early education programs in STEM available in her hometown of Union City, she was able to take her experiences in these afterschool programs in science and information technology and flourish them into a rewarding career. She currently serves as a Senior Cybersecurity Engineer at Provident Bank, while actively volunteering in the Cybersecurity community through ISC2 NJ, ISACA NJ and WiCYS (Women in Cybersecurity) chapters with the goal of giving back to the local community. Community projects include bringing cybersecurity awareness to Senior Citizens in Union City by conducting local presentations in Spanish for National Cybersecurity awareness month.

She has also founded Velez Consulting Services that offers tailored solutions to small businesses focused on cybersecurity. Alex graduated from HCCC in 2022 with an Associates in Science in Computer Science (Cyber Security option). She is currently pursuing her Bachelors in Science from Western Governor's University in Cybersecurity and Information Assurance. She currently holds CompTIA A+, Network+, and Security+.

Linda Corso

Linda Corso is the Project Executive for the Trinity Hall Phase 3 Addition and Expansion project in Tinton Falls, NJ, and the New Jersey Performing Arts Center Chambers Plaza and Center for Arts Education District projects in Newark, NJ. In this role, Linda is the central point of contact for all aspects of work. She is responsible for day-to-day project administration, ensuring efficient, timely and complete communication among all project team members while ensuring that contract deliverables and services are performed at or above expectations. Linda is involved in both preconstruction and construction phases of the project.

After graduating from Lehigh University in 1994 with a Bachelor of Science in Civil Engineering, Linda began her career at Turner as an Estimating Assistant and was responsible for cost estimates on projects such as Lord & Taylor, Union Hospital, Clara Maass Continuing Care Center, Council for Higher Education (CHEN Building), United Hospital, Tiffany Office & Distribution Center and Franklin Lakes Public Schools. Linda progressed through various field engineering positions until joining the Cost and Scheduling Department in 1998. In less than a year, Linda assumed the position of Senior Cost and Scheduling Engineer and was responsible for overseeing the development of costing information for all New Jersey projects. After her time in the Cost and Scheduling Department, Linda was assigned to the 30 Hudson Street Project in Jersey City as the Curtain Wall Engineer. Linda's time on this complex, 42-story office tower proved to be a pivotal point in her career and her knowledge and expertise became invaluable over the course of the project as she finished her assignment managing the engineering responsibilities for the entire project, as Project Engineer.

In 2005, Linda joined the Procurement Department as a Procurement Agent on numerous jobs including Novartis Buildings 431, 432 & 433, Harrison Site Infrastructure, Alcatel-Lucent Building 3, USPS Expansion, Princeton University Butler College, Princeton University Chemistry Building, Princeton University Striker Bridge, Hudson County Community College and Yogi Berra Museum & Learning Center. In 2011, Linda was assigned as the Procurement Manager for the Novartis Oncology Consolidation Project and was promoted to Procurement Manager for the New Jersey Office of Turner Construction Company in 2012. Linda continued as Procurement Manager and next assumed the additional responsibilities of the Regional Procurement Manager for the PANJ Region. In 2019, Linda was appointed Senior Project Manager on the historical renovation of the New Jersey Executive State House Renovation. Shortly thereafter, she was promoted to her current role as Project Executive.

Linda champions the use of MWBE firms and enforces the commitment to providing a diverse workforce. Linda also supports and promotes women in construction and is involved in the women's professional group (NJ WEST) in the New Jersey Office and is also a Board Member of the New Jersey Chapter of Professional Women in Construction (PWC). She will also serve as Vice President of the Executive Board for the 2025/2026 Term. In addition, Linda is a LEED Accredited Professional as well.

Linda resides in Budd Lake, New Jersey with her husband Gregory and their two children, Marissa and Matthew.

ACTIVITIES

3D reconstructed skin as a tool for predictive evaluation and discovery

L'ORÉAL

As the world's largest cosmetics company, L'Oréal makes it a priority to ensure that each of their products is safe and effective. L'Oréal is also committed to beauty with no animal testing and has been at the forefront of non-animal testing methods for over 40 years. L'Oréal implements a variety of alternative tests and tools to predict the safety and efficacy of ingredients and formulas. One of the unique tools available to L'Oréal scientists is reconstructed human skin produced by L'Oréal's Episkin labs located in France, China and Brazil.

During this workshop, students will learn about a little-known side of L'Oréal, specifically how a pioneering role in skin tissue engineering can support product development and testing. Focus will be given to the different types of reconstructed human skin models that are available and how this lab-grown skin can be useful for predictive safety and efficacy testing of ingredients. Activities planned for the workshop include handling replicas of the reconstructed skin samples and taking a virtual tour of the lab!

L'Oreal Technologies on the Cutting Edge

L'ORÉAL

Students learn about the science of cosmetics and skincare directly from scientists who work at L'Oréal, the world's largest cosmetics company, which has developed products in the personal care field concentrating on hair color, skin care, sun protection, makeup, perfume, and hair care. L'Oréal has set itself the mission of offering all women and men worldwide the best of cosmetics innovation in terms of quality, efficacy and safety.

Through an interactive demonstration, students will learn about the science behind a few exciting technologies. Colorsonic, by L'Oréal, a lightweight, handheld device that uses a mess-free process to mix haircolor and make it easy for anyone to apply it evenly to their hair. HAPTA, by Lancôme, the world's first handheld computerized makeup applicator that incorporates a motion stabilizing technology to help those who may have limited mobility and/or grip strength. Finally, Hair Metrix and K-Scan devices that evaluate the scalp and hair follicles to help dermatologists and scientists better understand various hair and scalp conditions and assess how different treatments impact hair and scalp health.

Beyond the Horizon: Web 3.0 and AI Unleashed

Join us for an exciting session introducing the future of technology! Dive into the world of Web 3.0 and explore the power of Artificial Intelligence (AI) in shaping tomorrow's innovations. Then, embark on an immersive journey through the Metaverse, where you'll participate in an exhilarating scavenger hunt, unlocking the endless possibilities of digital realms. Don't miss this opportunity to engage with cutting-edge technology and unleash your creativity in the world of STEM!

ACTIVITIES

Encryption Expedition

Unlock the secrets of secure communication with "Encryption Expedition," an interactive and engaging workshop designed exclusively for the Girls in Tech Symposium. In this session, participants will delve into the fascinating world of encryption, gaining hands-on experience on how to conceal and reveal messages through the art of cryptography.

HUDSON COUNTY COMMUNITY COLLEGE
School of Science, Technology, Engineering, and Math (STEM)

Lead-Based Paint Inspection: HCCC School of STEM

Lead-based paint inspection is crucial for identifying and mitigating the risks associated with lead exposure, especially in older homes and buildings. Lead-based paint was commonly used before its health hazards were fully understood, making its presence a concern, particularly for children who are more susceptible to its toxic effects. X-ray Fluorescence (XRF) devices are instrumental in this process, as they can detect the presence of lead in paint layers without damaging the surface.

During an inspection, a trained professional, like myself, will use an XRF device to analyze paint samples or surfaces. The device emits X-rays, which interact with the atoms in the paint, causing them to emit fluorescent X-rays characteristic of the elements present. By measuring these emissions, the device can determine if lead is present in the paint, providing valuable information for remediation efforts.

HUDSON COUNTY COMMUNITY COLLEGE
School of Science, Technology, Engineering, and Math (STEM)

Wood Veneer Identification Challenge

In this activity, participants will encounter an array of wood veneer samples displayed on a board. Each sample represents a distinct wood species; their task is to match the provided descriptions with the corresponding veneer.

Through this activity, participants enhance their ability to recognize different wood species based on visual cues. Observing grain patterns, color nuances, and other features sharpens their attention to detail. Additionally, selecting the correct veneer involves critical thinking and decision-making skills. Whether it's the warm tones of oak, the fine lines of maple, or the exotic allure of mahogany, this wood veneer identification challenge promises an enriching experience for all participants!

Eastern Millwork

ACTIVITY LEADERS

Angela Cruz-Hernandez

Dr. Angela Cruz Hernandez is a Senior Scientist for Product Safety at L'Oréal, where she leads efforts to ensure the safety and quality of beauty products. Angela holds a BA in chemistry and a master's degree in environmental toxicology. Angela brings a unique perspective to her role, combining scientific expertise with a deep commitment to diversity, equity, and inclusion (DE&I). Her journey began in Florida, born to Dominican parents who have their own salon and are successful hairdressers. After completing her undergraduate studies at Florida International University with a major in chemistry, Angela, pursued higher education, earning a master's degree in Health Sciences and Environmental Toxicology, followed by a PhD from the University of Colorado. Her doctoral research delved into the profound impact of chemical warfare agents on the lives of veterans.

Beyond her professional achievements, Angela is actively involved in mentorship programs for high school and college students, serving as a role model and guide in the scientific community. Outside of work, she finds joy in a diverse range of activities, including hiking, playing video games, piano, scrapbooking, and cooking. Her cherished moments are spent with friends and her fur baby, Lola.

As a proud member of L'Oréal, Angela finds fulfillment in contributing to a company that celebrates beauty in all its forms and inspires others on a global scale. Her passion for science, combined with a commitment to inclusivity and mentorship, underscores her dedication to making a positive impact both within and beyond the beauty industry.

Hoor A. Javed

Scientist I – Advanced Research

Emerging scientist at L'Oréal who has collaborated closely with personal care and healthcare companies, leveraging her expertise as a scientist with a Master of Science degree in Skin Biology and Dermatology to advanced research.

Daniel Roy

Daniel Roy joined L'Oréal in 2018 and is currently a Director in the Advanced Research department at L'Oréal Research & Innovation located in Clark, NJ. Daniel has a background in skin aging, wound healing, and regeneration, and in his current role, leads a global, cross-functional project dedicated to identifying, developing, and evaluating novel ingredients with clear proof of efficacy toward skin care applications. Daniel also enjoys exploring outside innovation, new scientific territories, and concepts, and transforming these opportunities into novel approaches to study and address skin aging and skin health.

Daniel was raised in Connecticut and received his PhD in Biomedical Engineering from the University of Rochester (Rochester, NY). Prior to joining L'Oréal, Daniel held various research and development positions in Texas and North Carolina, including time spent working in the medical device industry. Throughout his career, Daniel has authored or co-authored 12 peer-reviewed publications.

Stacy-Ann Stevenson

Sr. Scientist – Advanced Research

Primary focus at L'Oreal is on inclusive scientific strategies that fill gaps that exist within research. She manages clinical projects focusing on darker skin types, curly hair and scalp health. A DE&I Advocate, graduate of Rutgers University also a key US representative of the world's largest and most diverse skin and health study.

ACTIVITY LEADERS

Dr. Kirtan Kaur, PhD, MS, MPhil

Kirtan is a Senior Scientist at L'Oreal in the Product Safety team. She works on hair care products (shampoos, conditioners, hair sprays, masks) and assesses their formulations, individual ingredients and new technologies for human use safety. She has a multidisciplinary background within the sciences encompassing experience in environmental health, toxicology and epidemiology. She completed her Bachelor's in Biology at Marymount Manhattan College, both her Master's and PhD at New York University in Environmental Health Sciences before moving onto a Postdoctoral Fellowship at Mount Sinai. Her research interests have focused on reproductive and developmental effects of environmental exposures in utero, an area of research she is passionate about. Throughout her graduate career she enjoyed a chance to teach in various capacities as a TA, lecturer and eventually, course director for graduate and undergraduate courses. She also loves getting involved in fostering a sense of community and meeting new people by joining community outreach initiatives and planning events/social gatherings within executive committees. In her free time, Kirtan loves spending time with her bulldog and her husband, delving into baking, organizing and decorating. She also is an avid weight lifter and a basketball fanatic. Having grown up in Thailand and of Indian descent, being a foodie, a keen traveler and a linguaphile are central to her identity and personal joys.

Priya Chilana, MD

Priya Chilana, MD, joined L'Oréal in October 2022 as a contractor in the clinical team and transitioned into a full-time position as a Senior Scientist in July 2023. Her entry into the cosmetic industry was less than conventional. She joined L'Oréal freshly out of medical school where she graduated with her MD in August 2022. After graduation, she held many clinical positions within hospitals with research focusing on oncology, immunology and hematology.

At L'Oréal, she is part of the Open Clinical team within Advanced Research focusing on upstream clinical innovation. Priya collaborates with internal research teams to evaluate the impact of topical cosmetic products and their clinical impact on improving skin conditions. Being a part of the Open Clinical team allows her to go beyond just the basics of science and place ideas that are out of the box and unconventional on the table for discussion. Priya enjoys the role she plays in the future of cosmetic research and looks forward to sharing her experience.

Rebecca Barresi-Thornton

Rebecca Barresi-Thornton is a Senior Scientist II in the Advanced Research Translational Discovery Lab at L'Oréal USA. She joined the team back in 2018 as an intern. Rebecca obtained her bachelor's in Chemical Engineering and masters of engineering in Engineering Management with a concentration in Systems Engineering in 2018 from Stevens Institute of Technology in Hoboken, NJ.

In her current role, Rebecca utilizes in vitro models to observe efficacy of key and groundbreaking skincare ingredients in addition to understanding skin responses to various stimuli in order to help deliver effective solutions and products to the consumer. Her expertise is on skin barrier and approaches to enhance the skin regeneration process to promote healthy skin aging. To date, she has co-authored 7 publications, 2 patents, and presented at 3 conference proceedings.

Prior to her time at L'Oréal, Rebecca interned at Chemetall US Inc., focusing on surface treatments on products and systems implicated across nearly 30 different industries. She began her journey in the consumer goods industry through internships at Edgewell Personal Care, focusing on feminine care product development. From this experience, she discovered her passion for driving product development with a consumer centric and strong scientific rigor approach.

ACTIVITY LEADERS

Marcos Navas

Marcos Navas is a dedicated educator and technology enthusiast with over two decades of experience in the field of education technology. As an advocate for student empowerment and digital literacy, Marcos has been at the forefront of innovation, leveraging emerging technologies to enhance teaching and learning experiences.

Marcos is recognized as one of the original Flipgrid ambassadors and a TED Ed Innovative Educator, actively promoting student voice and creativity through digital platforms. He is also among the pioneering Raspberry Pi Certified Educators in the United States, empowering learners of all ages to explore the world of computing and coding.

In addition to his work in education technology, Marcos completed a fellowship with the IDEO Teachers Guild, becoming one of ten educational experts trained in Design Thinking methodologies. His expertise in design and innovation has led to the development of transformative educational programs and initiatives.

As the founder and CEO of Hands on Coding Tech, Marcos is dedicated to providing accessible and engaging coding education for students worldwide. Through initiatives like Latinos in Coding, Marcos aims to increase awareness and participation of underrepresented communities in computer science, addressing the equity gap in STEM education.

With a passion for leveraging technology to transform educational environments, Marcos joined the Urbander team as a Senior Consultant in Metaverse Marketing. In this role, he collaborates with businesses, educational institutions, and organizations to create immersive and interactive virtual spaces (Metaverses) that enhance communication, learning, and engagement.

Marcos is committed to driving positive change in education by fostering innovation, inclusion, and accessibility through technology. His mission is to empower learners of all backgrounds to thrive in the digital age and become active contributors to a global society.

Yavuz Guner

Yavuz Guner, serves Hudson County Community College as a full-time Instructor in the School of STEM. Instructor Guner holds a Master of Science degree in Cybersecurity from Saint Peter's University and a Bachelor of Arts degree in Business Administration from Koc University in Istanbul, Turkey. He is certified as an Ethical Hacker by EC-Council and Security+ certified by CompTIA. He teaches cybersecurity, ethical hacking, programming, discrete math and digital forensics. He is also pursuing a Ph.D. degree in Data Science at Saint Peter's University.

Regi Mulla

Regi Mulla is an accomplished Project Management professional working in the field of Advanced Manufacturing with a passion for education and mentorship. Over the past ten years, Regi has made significant contributions to the industry and has a diverse background in project management, woodworking, and design.

Currently working at Eastern Millwork, Inc., a renowned custom woodworking company based in Jersey City, New Jersey. EMI stands out for its innovative approach, embracing technology, automation, and lean manufacturing. As a Project Manager, Regi was pivotal in overseeing complex projects, ensuring seamless execution from design to installation. His keen eye for detail and commitment to excellence made him an invaluable asset to the team.

Regi's impact extended beyond project management. At EMI, he spearheaded the Holz Technik program—an alternative educational initiative in partnership with Hudson County Community College (HCCC) and Thomas Edison State University (TESU). Holz Technik targeted junior and senior high school students who were passionate about woodworking, engineering, and design. Regi served as the program's coordinator, mentoring and guiding students through a unique blend of college-level coursework and on-the-job training. Graduates emerged as skilled architectural millwork professionals, well-prepared to meet industry demands.

ACTIVITY LEADERS

Lucia Liu

Lucia Xue Liu is a Senior Scientist II in the Advanced Research department at L'Oréal Research & Innovation, based in Clark, NJ. With over a decade of experience in skin physiology, she has contributed to 15+ scientific publications. Lucia specializes in skin regeneration, ingredient screening, and translating scientific knowledge into clinical efficacy. She has played a crucial role in providing scientific evidence for key R&I ingredients used in brands like Thayers, Kiehl's, and SkinCeuticals. Lucia is passionate about uncovering consumer insights to drive innovative technical research and create products that bring joy to consumers.

Previously, Lucia worked as a postdoctoral fellow at the National Institutes of Health, National Center for Advancing Translational Sciences (NIH/NCATS). Her research focused on fabricating human skin tissue and developing a high-throughput drug screening platform using bio-printed vascularized skin. She received research excellence awards from NIH in 2018 and 2019 for her outstanding scientific contributions. Additionally, she was recognized with a postdoctoral award from the Society of Toxicology Dermal Toxicology Specialty Section in 2019 for her skin toxicity studies using animal-alternative methods.

Lucia earned her PhD in Biomedical Engineering from Binghamton University in 2017, where she conducted pioneering research on understanding the failure mechanics of human skin tissue. Her thesis work was honored with a Binghamton University research excellence award. She also chaired the Gordon Research Seminar on the Barrier Function of Mammalian Skin in 2017.

Nasim Farahmand

Nasim Farahmand, an Iranian immigrant came to the United States in 2012 after finishing her undergraduate studies in Chemical Engineering. She continued her studies in Chemistry and graduated with a PhD in Chemistry from City University of New York (City College Campus). She is now a Senior Scientist at L'Oreal R&I – where she enjoys implementing her skills to the world of Beauty.

During her Ph.D. she worked on synthesis and characterization of metal oxide nanoparticles. Her research was based on chemical solution processing methods and self-assembly which can lead to spin coated films and polymer-nanoparticle composites with applications in clean technology, energy storage and power conversion. She used various characterization technics to validate the properties of synthesized nanoparticles.

She has been working as a Senior Scientist in the Hair Fiber Discovery Domain of L'Oreal R&I since October 2021. In her role, Nasim focuses on building knowledge on curly hair to deliver green science-based innovation for long lasting curl definition and shape control.

Raffi Manjikian

Professor Raffi Manjikian has amassed an impressive higher education background, teaching at various institutions across New Jersey since 2012. He has been teaching at Hudson County Community College since 2017, first as an adjunct professor and now as an Instructor of Chemistry.

Even though he primarily teaches Chemistry, when the opportunity presents itself, he also teaches a variety of other courses at the college. As an educator, he is a reflective practitioner possessing forward-thinking and visionary qualities that show how he is an authentic, transformational, and servant leader. He enjoys helping students develop an appreciation of science through different types of teaching strategies that address multiple learning preferences and backgrounds.

ACTIVITY LEADERS

Priya Suresh

Director, Global 360 Client Security Assurance Lead
Ernst & Young LLP

Priya is a Global 360 Client Security Assurance Lead at EY. She has over 20 years of experience in cyber and information technology at firms such as KPMG, JPMorgan Chase and EY. She has held numerous roles such as project and program Manager, Chief of Staff for CISO and Technology Risk Manager. She has led programs such as Security Awareness & Training, Information Management, Data Analytics and Service Management. She finds it rewarding delivering projects that provide client business value, leading initiatives that align with the firm's strategic objectives and building relationships that enable personal and professional growth. She is also very passionate about helping women and underrepresented talent succeed in Cyber and Technology.

She has a Bachelor of Science in Electronics Engineering from Mumbai University, India and a Master of Science in Computer Science and Engineering from The University of Texas at Arlington. She also holds Project Management Professional (PMP), ScrumMaster (CSM), Certified in Risk and Information Systems Control (CRISC), GIAC Information Security Professional (GISP) and GIAC Security Essentials (GSEC) certification.

Priya lives with her husband and two daughters (17 years and 12 years) in Northern New Jersey. She is a Girl Scout troop leader. She is a strong advocate for DEI, Women in Technology and Cyber, Collaboration Circles, supports organizations like NPower to help underserved individuals build a career in technology. During her free time, Priya loves to cook for friends and family, read and enjoy shows. She also enjoys traveling and experiencing new cultures.

Susan G. Fitzsimmons

Director, Security Technology Services, EY

Sue is currently a Director in Security Technology Services at EY and her team is responsible for the implementation and maintenance of several security tools designed to help protect the EY firm and its clients. In her almost 27-year career at EY, Sue has been given the opportunity to be engaged in various Information Technology projects. Ten years ago, she joined Information Security and continues to be amazed about all the technological advances and enjoys the continual learning. She has over 30 years of experience in technology, cyber and information systems. Before starting at EY, she was employed at American Express. She has held numerous roles at EY. She has managed multiple development teams supporting all the business lines including Tax, Audit and Assurance, Technical and Business Consulting. She has also managed the Americas EY Data Center, and started an EY Infrastructure Monitoring team, both teams operating 24x7x365. She has also opened supporting offices in Kerala, India and Buenos Aires, Argentina and loves managing and teaming with truly global partners. Sue finds most rewarding the personal relationships she has developed and cultivated through the years. She's very passionate about helping women and underrepresented talent succeed in Cyber and Technology as a whole.

She has a Bachelor of Arts in Communications from University of Delaware in Newark, DE. She also holds her Masters from New York University's Interactive Telecommunications Program. She also has a GIAC Security Essentials (GSEC) certification.

Susan lives with her husband and has two sons (Aidan, 24 years old and Grady, 21 years old) in Northern New Jersey. She is an active member of the Hyacinth Foundation and contributing member to Lamp for Haiti. She is a strong advocate for DEI, Women in Technology and Cyber, collaboration circles, supports organizations like Women in Technology Professional network. When not at work, Sue loves relaxing with a good book on the beach. She also enjoys traveling.

Clive Li

Clive Li is an engineering science instructor at Hudson County Community College. He is the inventor of the Biodegradable Diaper (patent #20170224540), the Eggshell Bio-composite (patent #20140323616), and the Wearable Aromatic Device (patent #20160174694). His research group at HCCC collaborates with researchers across several disciplines and utilizes different techniques, including plasma sputtering, scanning electron microscopy, X-ray fluoresce, electro-spinning, UV-visible spectroscopy and Fourier Transform Infrared spectroscopy. His current research is focused on biomaterials and nanotechnology.

PRESENTATION

L'ORÉAL

Toxicology in Personal Care: Navigating Careers in Beauty – A Conscious World

Presented by Dr. Kirtan Kaur and Dr. Angela Cruz-Hernandez
Senior Scientists in Product Safety at L'Oreal

DISPLAY CONTEST ENTRIES

The Technology of Eyeglasses and Contact Lenses
Mary Akhnoukh, 11th grade
Bayonne High School

I would like to have the privilege to talk about the history and technology of eyeglasses and contact lenses. Bad vision is something a lot of people struggle with including me. There are many other things that come with bad vision such as dry eyes, astigmatism, etc. For all those reasons we have to wear glasses or contact lenses. Glasses started out over 500 years ago as these two pieces of magnifying glass in a wooden or metal frame that you would hold up or rest on your noise to be able to read. Over time people found better and more stylish ways of making glasses and added things to your glasses to help with other problems you might have. Some glasses can double as sunglasses or safety glasses. Also with contact lenses, some correct for both near and far sightedness. You can now get contact lenses that could even give you a different eye color. Companies now make glasses that you can see and record things with. You can even call people just by clicking one button on the side of your glasses.

Strolling Through Time
Brehannah Singer and Kira Archer 12th grade
Bayonne High School

The baby carriage is a fairly modern invention. A typical stroller was seen during the late 1800s as a sign of wealth in the Gilded Age. Before this, babies were carried in slings of sturdy fabric and woven baskets. The original version of the stroller by an inventor William Kent for the third Duke of Devonshire. It was created for animals like dogs or ponies to push and pull a carriage, like a sled. The more conventional stroller design was patented in 1889 by William Richardson. This was the first stroller meant to be pushed by a person. For the convenience of those living in cities and towns with cobblestone roads. The evolution of baby strollers reached every sector in society. In the 20th century, baby stroller designs included multi purpose uses such as storage, folding in different shapes and forms, safety locks, and shock absorbers. The more modern 21st century models have modular designs which include tracking devices, internet, detachable car seats, and high seats. Some may even have dual seats for twins or babies.

Evolution of Robotic Assistive Technology in Cancer Patients: A Journey Toward Precision Oncology
Samantha Mursuli, Charlisse Burns, and Melody Andes-Phillips
Explore Middle School

Robotic assistive technology has undergone a remarkable evolution in the field of oncology, revolutionizing the diagnosis, treatment, and management of cancer patients. This abstract aims to provide an overview of the evolution of robotic assistive technology in cancer care. For some types of cancer, traditional open surgery may not be the best option. With robotic surgery, specially trained surgeons use robotic technology, including tiny surgical tools and a computer console, to remove a patient's cancer. Robotic-assisted surgery has transformed cancer treatment, evolving from the groundbreaking da Vinci Surgical System to current applications in prostate, gynecological, and colorectal cancer surgeries. These systems enhance precision, reduce recovery times, and minimize complications. The future promises even more with advancements in AI, machine learning, and augmented reality. Personalized treatment strategies and expanded accessibility may result in a future where robotic-assisted surgery plays a pivotal role in precise, minimally invasive cancer interventions.

Technology in Our Everyday Life:
Wartha Kamble 6th grade
Explore Middle School

Technology is a part of our everyday life, even if we don't notice it. Technology can come in tools, devices, machines, and more. They can use science, engineering, math, and prior knowledge to develop a new concept or improve an old one. Some of us might take technology for granted, while others might greatly appreciate it. Technology is an essential part of disabled people's lives. Now, with advances in technology, many inventions help people with disabilities. They might need technology for text-to-speech software, hearing aids, and more. But what about the technology necessary for their interests? What if someone likes to play sports? The Paralympics is the answer to that question. About 4,000 athletes compete in the Paralympics yearly, needing different technology to compete. From prosthetics to wheelchairs, technology helps them compete.

Looking through the camera
Leilani Velez, Raquel Canto-Venegas, Zoe Cameron, 7th grade
Explore Middle School

We will be doing a display of the past, present, and future of the camera. Past will be contributed by Leilani Velez, present by Raquel Canto-Venegas, and future by Zoe Cameron. We will be using a three-panel poster board. Each poster board section will be dedicated to the past, present,, or future. We will include camera images and a section devoted to the inventor. There will be a 3D-printed model of what we think the camera will look like in the future. Each section will cover what camera existed or what we predict to exist during then.

VOTE for your favorite!

DISPLAY CONTEST ENTRIES

Using Computer Programming to Develop Analytical and Problem-Solving Ability

Victoria Guzman 10th grade & Hillary Guarango 11th grade
Jose Marti STEM Academy

This study investigates both the scientific and historical aspects of Computer Programming and Artificial intelligence, as well as the woman who gave Computer Programming its name: Ada Lovelace. The research concentrates on the creation of instructions that computers may follow to complete tasks, the creation of the first computer program, and the recreation of artificial intelligence by machines, particularly computer systems. The group will discuss the advancements in programming with the use of AI as well as the development and invention of Computer Programming.

Evolution of the X-Rays

Jayleen Valencia, Alexa Guevara, Katelyn Min 9th grade
Jose Marti STEM Academy

As technology continues to develop and change, our project elaborates on the different types of X-rays throughout the years. X-rays are crucial in the medical field as they help doctors aid us and save lives. The X-ray was first made to revolutionize medicine by allowing doctors to see the inside of the human body. Before we knew much, X-Rays used to be big and bulky but, they still get the job done. As the knowledge grew on technology, they have now evolved to be simpler with highly advanced technology that can detect bone fractures, certain tumors, other abnormal masses, etc. The project goes in-depth on how much X-rays have changed over time and even goes into how we can work to work to transform a better alternative due to high radiation. Due to some studies, it has been shown that X-rays are starting to become less popular and the technology and discoveries of MRIs and CT scans are starting to take over. Future models of the X-ray will describe safer alternatives for humans and continue to grow to aid people.

Quantitative Characterization of Single Particle Combustion using X-ray Phase Contrast Imaging and Machine Learning

Lehansa Marambage 9th grade
Jose Marti STEM Academy

Metal powders are potential fuel additives in explosive and propellant applications and in the deactivation/degradation of weapons of mass destruction (WMDs) via high energy combustion. Current studies capture metal combustion using high-speed videos, producing large video-datasets that are difficult to analyze quantitatively. To mitigate this challenge, machine learning (ML) computer vision was used to detect and track metal particles in combustion tests using high-speed optical imaging setups like Snapshot-Hyperspectral-Imaging for Emissions and Reactions (SHEAR) and High-speed X-Ray Phase Contrast Imaging (XPCI). ML analysis produces quantitative data describing reaction mechanisms for engineering metals with improved combustion performance. While several ML algorithms exist, extensive (and scarce) training data is required to create usable, highly accurate models. MATLAB was used to compile an open-source training dataset and develop/test specialized object-detection-models including a region-based convolutional neural network, cascade detector (using the Viola-Jones algorithm), and foreground detector (using Gaussian Mixture Models). Custom scripts validated object-detections. Results showed that while the cascade detector has high accuracy detection, its bounding-box precision was about 65%. The RCNN has higher detection accuracy as a stand-alone ML model but requires more computational resources. These results lay the groundwork for future studies integrating these models with classification/segmentation algorithms for other scenarios like particle dispersion in nuclear blasts.

Timeless Creations

Victoria Vizueta, & Sandy Ramos 11th grade
Jose Marti STEM Academy

Technology has allowed our creativity to reach new transformations resulting in users developing advanced forms of artistic design to express themselves freely. Art is a method for humans to unleash their innovative skills and develop a visual piece based on their imagination. The earliest forms of art began with decorative artifacts created during the Middle Stone Age in Africa. The culture of art has rapidly evolved with more diverse media. One of the most popular visual art forms is digital art where the practice of drawing uses embedded technology in their creative process. As opposed to traditional art, computational art contains all the materials within the software, making it easier to design. Today, artificial intelligence or AI can simulate generated artwork with information from the user. Using a prompt, the art generator processes the request and delivers the desired image. Artists fear that it will create art that is indistinguishable from human art, possibly resulting in their job loss. Innovations in technology have provided users with a modern canvas to express themselves. However, newly generated works from AI have reduced the value of human creativity and talent. In the future, Artificial Intelligence may take away the careers of real-life artists.

Stalking The Evasive Murderer: Decoding DNA Mysteries

Areea Ahmed and Aracely Candelaria
11th grade
County Prep High School (CPHS)

Forensic DNA analysis has come a long way since its inception. This project delves into the historical progression of DNA analysis techniques, highlighting key milestones and advancements. This project aims to shed light on the fascinating evolution of forensic DNA analysis, bridging the past with the future.

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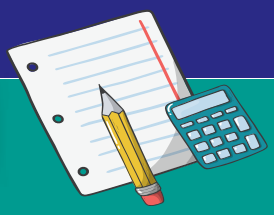

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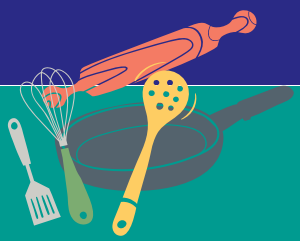

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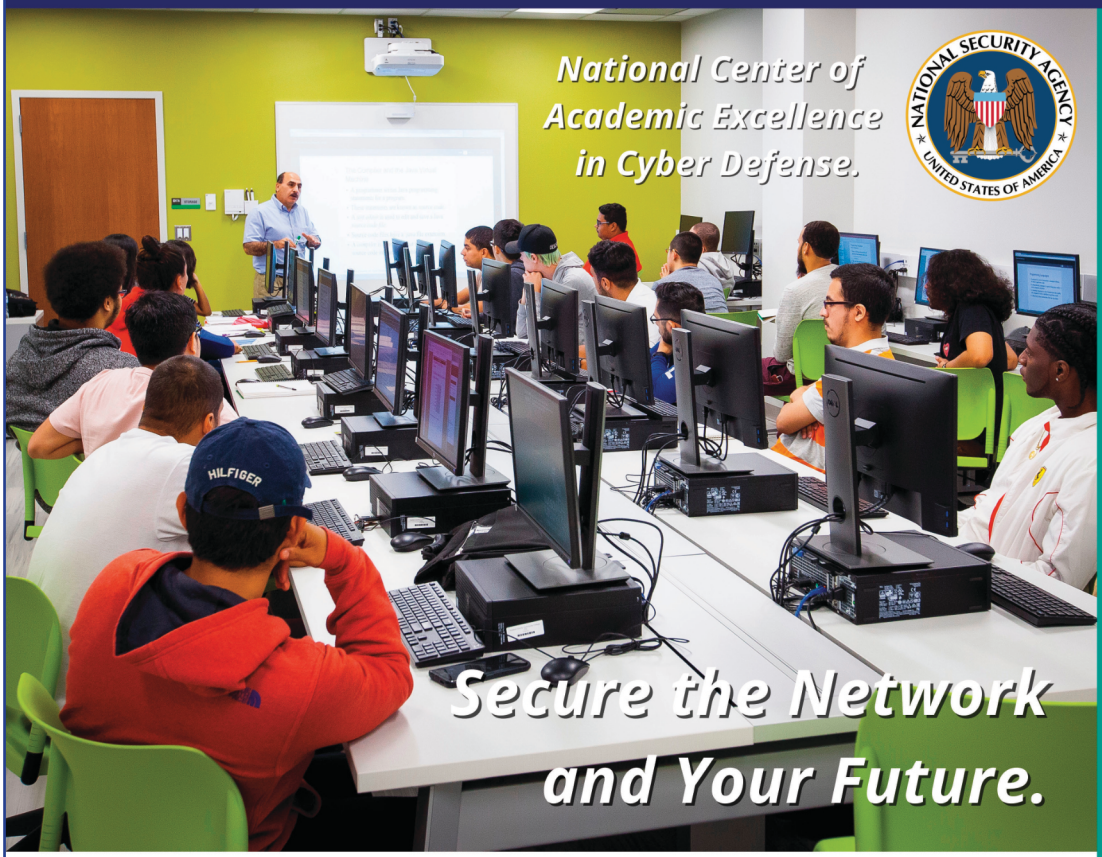

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More information may be found at:
https://bit.ly/2Sat1sm

For further information, please contact:
Dr. Azhar Mahmood (Program Coordinator – Construction Management)
(201) 360-4259 or amahmood@hccc.edu
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