

RESEARCH & DEVELOPMENT COUNCIL OF NEW JERSEY

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RDNJ Welcomes New Leadership in 2023

In 2023, Colleen Ruegger, RPh, Ph.D., Executive Director, Technical Research & Development (TRD), Development Unit Head CardioRenalMetabolic & Global Health at Novartis, stepped into the Chairperson role of the Research & Development Council of New Jersey, replacing outgoing chair Kevin Campos, Ph.D. of Merck. The 2023 Board also includes Vice Chair Virginie Maillard of Siemens Technology, Secretary Ian Davies of Princeton University, and Treasurer Jeffrey Stokes of PSEG.

Board members who joined the Council in 2023 include: Rubi Burlage, Ph.D., Associate Vice President, Sterile Product and Device Development at Merck; Dan



RDNJ Chairwomen Dr. Colleen Ruegger.

Rosenthal, Vice President, Product Development for the Joint Replacement Business at Stryker; Ed Synakowski, Ph.D., Vice Provost for Research and Innovation at Stevens Institute for Technology; and Mei Wei, Ph.D., Vice President for Research at Rowan University.

The Research & Development Council of New Jersey is a nonprofit association made up of industry, government and academic members working to foster cross-sector collaboration to grow and strengthen STEM in education, innovation and the economy in New Jersey.

Since our founding in 1962, the Research & Development Council of New Jersey has worked to advance research and development throughout New Jersey. We advocate on behalf of research-driven companies and universities in the state. We bolster New Jersey's STEM education and career pipeline through our statewide STEM initiatives.

44th Annual Edison Patent Awards Celebrates NJ's Inventors

In November, the Research & Development Council honored the state's innovators and inventors with its 44th annual Edison Patent Awards at the Liberty Science Center in Jersey City. The Council celebrated 14 patents developed by a team of 62 inventors and recognized three outstanding individual award winners.

The R&D Council honored retired Bell Laboratories inventor and communications trailblazer Victor Lawrence, Ph.D. with its highest honor: the Science and Technology Medal; Robert C. Garrett, FACHE, CEO of Hackensack Meridian Health

received the Chairman's Award; NJ Senator Andrew Zwicker, Ph.D. of Princeton Plasma Physics Laboratory was honored as the Educator of the Year.

2023 Edison Patent Award winners are BASF, Bristol Myers Squibb, Consolidated Energy Design, Mentor Worldwide, LLC, a Johnson & Johnson Company, Merck Research Laboratories, New Jersey Institute of Technology, Nokia Bell Labs, Princeton University, Rowan University, Rutgers, The State University of New Jersey, SATO, part of LIXIL, Siemens Technology, and Stevens Institute of Technology.



Top: Robert C. Garrett accepts the Chairman's Award at the Edison Patent Awards.

Bottom: Inventors from Merck accept their Edison Patent Award.

GROWING STEM. ADVANCING INNOVATION. IMPACTING THE WORLD.



The 2024 class of Governor's STEM Scholars

Governor's STEM Scholars Showcases NJ's STEM Economy

In May, 126 New Jersey high school and college students graduated from the Governor's STEM Scholars program, marking the largest class in programmatic history. During the Commencement conference, Scholars presented year-long research projects led by undergraduate and graduate-level Scholars, that advances the work of New Jersey's research community. The research team working on Observing the Expression of Osteopontin in Tumor-Associated Macrophages was awarded an Excellence in Research Award.

This fall, the Governor's STEM Scholars welcomed 129 New Jersey Scholars into their 2024 class. Selected among nearly 1,000 applicants from across this state, these students represent some of NJ's highest achieving students in STEM. Scholars attended their first conference of the programmatic year on STEM in Government at Rutgers University. Some Scholars visited the United Airlines hub at Newark International Airport as the first field trip of the year.

The Governor's STEM Scholars launched a program with the Network Contagion Research Institute providing a number of Scholars with the opportunity to learn about cyber-social threat identification and forecasting. Through the experience, Scholars contributed to two reports: "#Twittertakeover: How the Musk Acquisition Became a Launchpad for Gen-Z Neo-Nazis, Ye, and Widespread Antisemitism" and "Bot Driven Gold Rush – Unmasking the Role of Inauthentic Social Media Activity on the Crypto Market and Beyond."



Top: 2023 GSS Excellence in Research Award winners.

Middle: Alberto M. Cuitiño, Ph.D., Dean of Engineering, Rutgers University, speaks to Scholars at the STEM in Government conference.

Bottom: Scholars tour the United Airlines hub at EWR.



NJ STEM Pathways Network Continues to Grow, Strengthening STEM Education in New Jersey

The New Jersey STEM Pathways Network (NJSPN) expanded to seven ecosystems in 2023, with the launch of the Green STREAM Consortium Mid-State STEM Ecosystem in Middlesex County led by North Brunswick Township School District. Funds to launch the ecosystem were provided with Governor Murphy's support.

Ecosystem leaders attended the 2023 National STEM Ecosystems Convening in Jacksonville, FL in May where they learned from ecosystems across the globe. In June, they convened locally to receive leadership training in preparation for the programmatic year.

While all seven of the ecosystems provided numerous STEM experiences and programming for students across the state, a few of the ecosystem highlights include:

The South Jersey STEM Ecosystem's first Cyber Day event to increase Atlantic City awareness on new pathways.

Hunterdon, Somerset, Mercer Tri-County Ecosystem received a CIA Mission Impossible grant to secure equipment for Flemington Raritan School District's first STEM lab.

The Delran Ecosystem provided 40 scholarships to economically disadvantaged students for their summer STEM camp.

NJ-Nest in Bergen County partnered with NJIT and Dominican University to provide Bergen Community College students with a summer research experience.



In 2023, the South Jersey STEM Ecosystem held its first Cyber Day event.

The reorganization of the Newark STEM Ecosystem leadership with a relaunch event scheduled for January 2024.



NJ STEM Advisory Board Launches NJ STEM Innovation Fund, Awards \$100K in STEM Grants

The NJ Innovation Fund launched in 2023, supported by NJ STEM Advisory Board members: Comcast, Novartis, the Overdeck Family Foundation, and the PSEG Foundation. The Fund supported four organizations for the 2023-2024 academic year:

Delran Digital Fabrication Innovation for the Middle Grades and Beyond to expand the Delran High School STEM programming - including access to the Delran Innovation & Fabrication Lab - to 720 middle school students.

STREAM at the Kinnelon Public Library to create makerspace stations in their children's department of the library with STEM learning materials that will encourage young patrons and their families to explore and create.

Hunterdon, Somerset, Mercer Tri-County Ecosystem Nucleus Building, which supported three programs: the Greenpower USA Racecar teams through the 23-24 school year for Flemington Raritan School District and neighboring districts, forming the State's first racing cohort; ensure continued access to district-led field

trips including the Young Women's Conference in STEM at the Princeton Plasma Physics Laboratory and The Watershed Institute; and continue summer educational programs such as Experience Math! and Project STEM Club.

Students 2 Science Career Advancement Program Advancing STEM Careers to help students reach their greatest potential by pursuing a STEM pathway, be that continuing education or entering the workforce, after high school.



New Jersey STEM Month Impacts 73,000 New Jersey Learners in 2023

NJ STEM Month is a celebration hosted by the New Jersey STEM Pathways Network, an initiative of the Research & Development Council of New Jersey, that highlights the Garden State's incredible accomplishments in science, technology, engineering, math and innovation.



NJ Senator John Bramnick speaks with Cristiane San Miguel, Ph.D. of GS-LSAMP during the STEM Showcase at the Statehouse.

On March 30th, several organizations had the chance to showcase their STEM work to legislators at the State House in Trenton.

More than 73,000 learners were impacted during STEM Month events in 2023, with schools and organizations in 20 New Jersey counties participating.

\$24k in Grants Provided to Schools and Organizations Supporting STEM Education

The New Jersey STEM Pathways Network provided 46 mini-grants to schools and organizations throughout the state to support their STEM Month activities. A few mini grant recipients include:



Upper Elementary School North Hanover's Family STEM Night brought more than 250 students and parents together to collaborate around all things STEM. Over 15 district teachers facilitated activities throughout the evening. Events ranged from robotics to chemistry to aviation. With the support of NJ STEM Month they were able to bring in New Jersey Mad Science which facilitated a station on chemical change using dry ice.

The students' Lego Journals were showcased at the annual STEM Month Family Brick Bash! with the Rockaway Borough School District. Students were excited to have their work on display. These Lego Journals were created by students in multiple disabilities classrooms which were then combined into a published book and were further showcased for Autism Awareness Month in April.



With over 300 attendees, the Police Activities League of Egg Harbor Township & Atlantic County hosted a STEM Expo at their facility. Over 30 exhibitors provided hands-on activities. Participants included Atlantic County Institute of Technology, Atlantic Shores Offshore Wind, Civil Air Patrol, Coast Guard, NASA Solar System Ambassador, Exolith, FAA STEM, FBI, Rutgers/JC NERR, ACUA, National CSI Camp, Spectrum Software Technology, South Jersey Astronomy Club, NJ Aviation Education Council & Yard Sciences.



For 30 plus years, NY/NJ Baykeeper has grounded their policy and research initiatives in sound data and science, from their stormwater policy to their living shoreline installations. Activities at the Junior Baykeeper Day included interaction with a touch tank containing live marine species, shell painting, and story time!

The Cliffside Park School No. 3 NJ Makers Day Fair was a huge success. The event serviced over 400 students and staff in grades K-4, including students with special needs and English Language Learners. At the event, each activity was stationed at a different table and students had the freedom to roam around, find the activity that was just right for them and take a seat at the table.

