IEEE North Jersey Section Newsletter
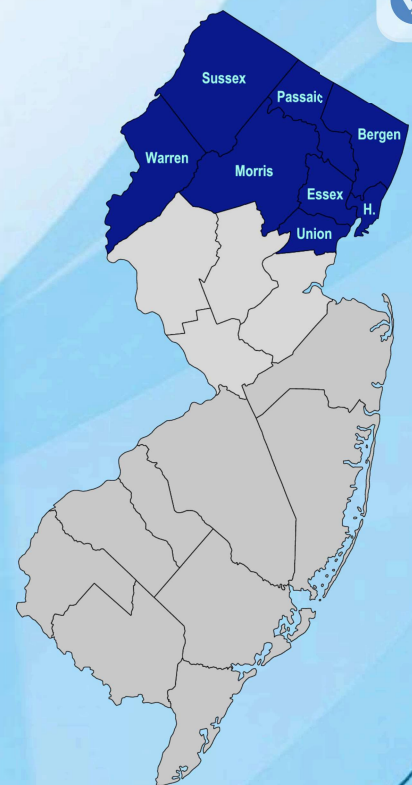
VOL. 70, NO. 04   Issue: April 2024

Prior registration is highly encouraged to attend any event.

IEEE North Jersey Section Website

IEEE North Jersey Section - Roster

Chair's Note - A Message from the IEEE North Jersey Section Chair, Prof. Hong Zhao

The IEEE North Jersey Section remains committed to supporting our local members through seminars, senior and student membership drives, consultant network events, and by supporting student activities. We have several exciting events planned for April.

At the same time, the IEEE North Jersey Section is pleased to announce its annual "Awards Banquet Event". On behalf of the North Jersey Section, I would like to invite you to attend our prestigious event "Awards Banquet" to be held on Sunday, May 5, 2024, at Birchwood Manor, in Whippany, New Jersey, from 3:00 pm until 6 pm. The event is meant to appreciate and honor the newly elevated Fellows in our Section, as well as the recipients of technical and other major IEEE awards, IEEE Region-1 Awards, and IEEE Section Awards. It is also a great opportunity to relax, unwind and enjoy the company of all members and non-members at the banquet. Please come and join us!

Best wishes,

Hong Zhao, IEEE North Jersey Section Chair

IEEE – IMPORTANT EVENTS, ARTICLES, ANNOUNCEMENTS, AND REMINDERS:
- This Month's Communications Society News from Around the World
- **Lost Opportunities--Nuclear Power -** An article by Harry Roman
- ED/CAS Distinguished Lecture to be held on April 3, 2024
- TNJSF 2024 - IEEE Young Engineer Award - Judging Event

Lost Opportunities--Nuclear Power

It just seemed like the perfect electric energy fuel source, where its ash could be recycled to reclaim unused fuel to produce yet more electricity. I speak of course of nuclear power, whereby "fuel ash" or spent fuel could be recycled multiple times. But once the reprocessing magic was politically cancelled by law, the valuable spent fuel simply became radioactive waste. I seriously pondered this, making it the subject of my long-ago graduate project thesis; and with this came a kind of anger at the lost opportunities-an anger that persists to this day.

We could have enjoyed cleaner air, plenty of domestic fuel supply, many ways to extract energy using different kinds of reactors, and in the long run, cheaper and more plentiful electricity. Especially now, as we wring our hands and beat our breasts over green technologies, global warming, climate change and the lemming-like stampede toward electric vehicles.

Now, fifty years later, the nation is kind of backing into a nuclear power advocacy, half-heartedly it seems, void of the needed infrastructure to effectively support it, including fuel reprocessing—thus the magic of nuclear power will remain unutilized and only nuclear waste will result.

How sad it is. Nuclear was the only fuel source ever conceived which included waste recycling from the outset. And the economies to the nation and electric utility rate payers remains largely untapped. I cannot be the only engineer upset over this and the lost opportunities to fulfill our prime directive of helping humani**ty.**

Talk to you again soon...
Harry (Harry T. Roman, Life Senior Member, Author & Advisor, Edison Innovation Foundation (Retired-PSE&G Co.), htroman49@aol.com)
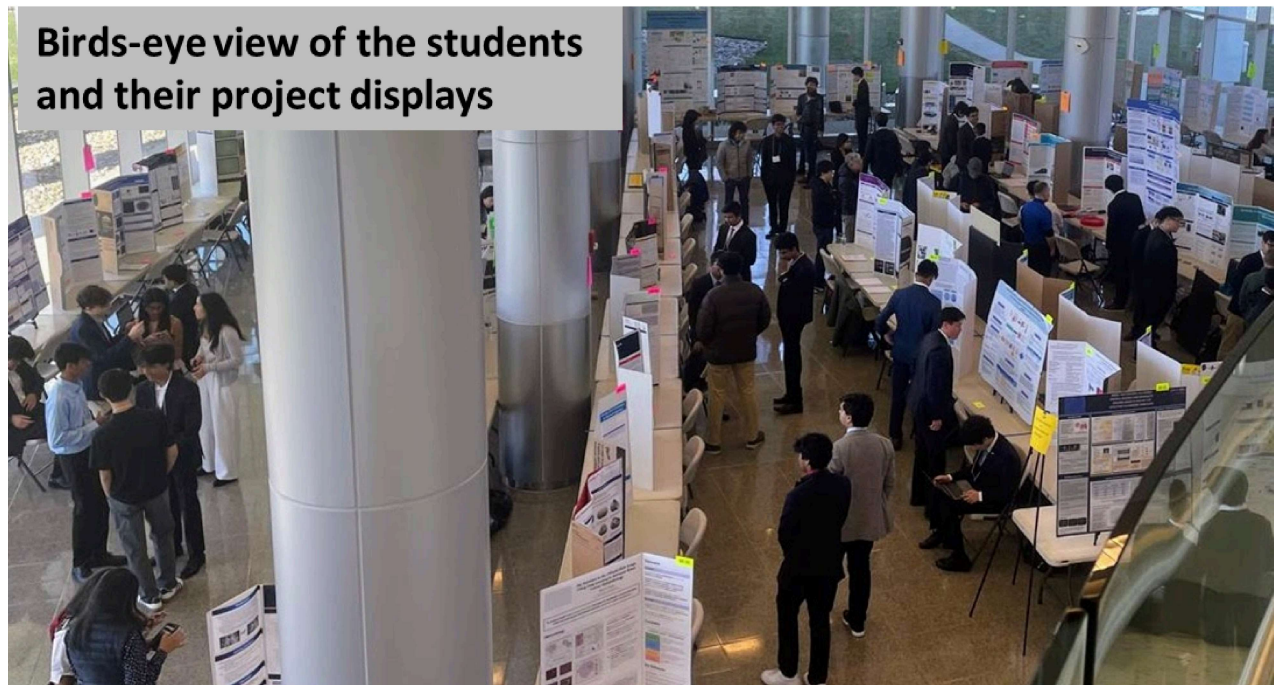
The Terra North Jersey Science Fair 2024 - IEEE Young Engineer Award Judging Event

The Terra North Jersey STEM Fair is a high school student competition in all STEM fields, in which students, individually or in groups, present a wide variety of projects. Most of the projects are investigative in nature, posing and attempting to answer some question or problem, either through experimentation and design or in a theoretical sense. All areas of science, math, and engineering are included. The fair accepts entries from ten counties of northern New Jersey: Bergen, Essex, Hunterdon, Middlesex, Morris, Passaic, Somerset, Sussex, Union, and Warren. The home page for the TNJSF is https://tnjsf.zfairs.com.

The mission of the TNJSF is to support, encourage, and recognize student involvement in scientific research, with the belief that students can only truly appreciate the creative nature of the scientific process if they have actually experienced it themselves. In addition, resources are provided which further this overarching goal, including giving students various opportunities to interact with professional scientists and engineers. The opportunity to partake of the TNJSF itself as well as the other resources offered is intended to be open to all high school students in the northern NJ region.

Our North Jersey Section has been a sponsor of the IEEE Young Engineer Award at this event for the past few years. This year marks another successful year of judging these projects with a group of enthusiastic volunteers from our section and outside. This year, our judging team also included some of our student members from Montclair State University. They will receive a certificate of recognition for their participation.

The projects were reviewed and shortlisted to be presented at the Terra North Jersey Science Fair, held at the Kean Universtiy STEM Building on Sunday, March 24th, 2024. After careful consideration and seeking multiple votes for each project from the teams of judges, the winners in the three categories were announced.

Birds-Eye View of the students projects displays

The Team of judges can be seen in the pictures below, deliberating on the winners:

Judges (EN, BE) standing in the picture: from left: Jay Morreale, David Kerr, Dr. Lawrence O'Gorman, Prof. Durga Misra, Dr. Anisha Apte, Leslie Dempsey-Marchese, Dr. Boyd Mathews, Claire Kerr, Chitra Venkatraman, Craig Polk, and Ajay Poddar

Judges (CS) standing in the picture: from left: Jesse Perron, Maxim Lyons, Amaar Rehman, Chitra,Venkatraman, Benjamin Cheung, Julia Rodano, Poonam Gupta, Lakshmi Umarale, and Akhil Khunger

The winners in the three categories that we conducted the judging are as follows:

Engineering:
EN 03 - Sky Linker: UAV Perpetual Solar Flight to Cheaply Position Radio Antennas by **Michael Xu.**
EN 12- SNAKE - Smart Navigational Adaptive Kinamatic Exploration. An effective locomotion of multi- terrain Pneumatic Muscle-Driven Modular Soft Robot. By **Samhita Pokkunuri**

Computer Science:
CS 02 Utilizing AI Algorithms to Classify and Mitigate the impacts of Space Debris by **Divya Krishnan**
CS 06 AutoChain: Novel Autonomous Vehicle Networks via Federated Learning and Cooperative Perception with Blockchain Integration. By **Twisha Patel and Gauri Kshettry**

Biomedical Engineering:
BE 02 Novel 3D Auxetic Geometry for Prosthetic Applications Designed Using Finite Element Analysis. By **Mayank Deoras and Karthik Thallam.**

A big thank you to all the judges for volunteering their time and Chitra Venkatraman for a successful execution. Each student winner will receive the award in person at their school. School visits will be announced, and section members will be encouraged to accompany Chitra during these visits. Pictures of the award ceremonies will be included in a future newsletter. All of the winners will also be invited to our section's annual picnic event,

- **ED/CAS Distinguished Lecture** to be held on April 3, 2024

IEEE
Advancing Technology for Humanity

ELECTRON DEVICES SOCIETY

CAS

Electron Devices and Circuit & Systems Distinguished Lecture
Co-sponsored by AP/MTT Chapter & North Jersey Section

Tsu-Jae King Liu
Dean and Roy W. Carlson Professor of Engineering
University of California, Berkeley

Title: *Semiconductor Innovation for Transformative Impact*

Date: April 3, 2024, at 2:30pm

Lecture Followed by a Reception

Location: **Campus Center Ballroom B**

Abstract, Biography & Registration
https://events.vtools.ieee.org/m/376864

FDU
Gildart Haase School of Computer Sciences & Engineering

GRADUATE SCHOOL VIRTUAL OPEN HOUSE!

Tuesday, April 16, 2024, 5 p.m.

Fairleigh Dickinson University

Gildart Haase School of Computer Sciences & Engineering (GHSCSE)

Cybersecurity Leadership: "National Center of Academic Excellence for Cyber Defense Education (CAE-CDE)" by NSA

18 cutting-edge labs, among the best in the North and Mid-Atlantic Regions

Offers 6 Masters of Science (MS) Programs

*Cybersecurity & Information Assurance   *Management Information Systems

*Electrical Engineering   *Computer Engineering

*E-Commerce   *Computer Science (Data Science, Cloud Computing and more)

Scan Zoom Registration

Scan Grad Program Info

FDU
Gildart Haase School of Computer Sciences & Engineering

GRADUATE SCHOOL VIRTUAL OPEN HOUSE!

Tuesday, May 21, 2024, 5 p.m.

Fairleigh Dickinson University

Gildart Haase School of Computer Sciences & Engineering (GHSCSE)

Cybersecurity Leadership: "National Center of Academic Excellence for Cyber Defense Education (CAE-CDE)" by NSA

18 cutting-edge labs, among the best in the North and Mid-Atlantic Regions

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Scan Zoom Registration

Scan Grad Program Info

Calendar of Events

Upcoming Events: April 2024 Onwards

Title	Date	Hosts	Location
Technology Predictions: Art, Science, and Fashion: Southeastern Michigan Section Chapter, C16	02 Apr 2024 06:00 PM	CH01285, CH04055, CH08667	Virtual
EDS/CASS Distinguished Lecture: Semiconductor Innovation for Transformative Impact: North Jersey Section Jt Chapter, CAS04/ED15	03 Apr 2024 02:15 PM	CH01092, CH01184	Newark, New Jersey
IEEE North Jersey Section EXCOM - Meeting 6:30 PM: North Jersey Section	03 Apr 2024 06:30 PM	R10327	Teaneck, New Jersey Hybrid
5G/6G Innovation Testbed: North Jersey Section	04 Apr 2024 06:00 PM	R10327	Virtual
IEEE North Jersey and Pune Section - Inter Section activities: Electronic Warfare-the story from Rhine to Ukraine: North Jersey Section	05 Apr 2024 06:00 PM	CH01091, CH01092, CH01177, R10327, SIGHT056, WE10327	Teaneck, New Jersey Hybrid

Title	Date	Hosts	Location
Materials Interactions for Emerging Sensing and Communication Applications: North Jersey Section Jt Chapter,AP03/MTT17	09 Apr 2024 12:00 PM	CH01092, CH01178	Virtual
Post Quantum Internet: Phoenix Section Chapter, C16	10 Apr 2024 12:00 PM	CH01070, CH01080, CH02007, CH02033, CH02042, CH02069, CH02082, CH02130, CH02170, CH02193, CH06042, CH06198, CH08667, WE10327	Virtual
PPPEAC Meeting, Lab Tour at Rowan Univ., and PELS Distinguished Lecture "Modern Power Conversion Solutions – From Electric Power Grids to Aerospace Power Applications" by Brandon Grainger, University of Pittsburgh: Princeton/Central Jersey/Philadelphia, PEL35/IA34	12 Apr 2024 06:00 PM	CH01279, CH01297, R10327	Glassboro, New Jersey Virtual
MakeNJIT Hackathon: North Jersey Section	13 Apr 2024 08:00 AM	R10327	Newark, New York
MakeNJIT Hardware Hackathon 2024: New Jersey Institute of Technology	13 Apr 2024 09:00 AM	STB01241	Newark, New Jersey

Title	Date	Hosts	Location
Telcos' Transition Towards AI-Native Networks: North Jersey Section	17 Apr 2024 11:00 AM	R10327	Virtual
AI Cybersecurity: North Jersey Section Chapter, C16	17 Apr 2024 12:00 PM	CH01091, CH01177	Teaneck , New Jersey Virtual
Learning and Intelligence over Weak Communication Links: North Jersey Section	18 Apr 2024 12:00 PM	R10327	Virtual
Madhu Chinnambeti Presents: Retrieval Augmented Generation (RAG): Princeton/Central Jersey Section Chapter,C16	18 Apr 2024 08:00 PM	CH01080, CH01092, CH01104, CH02170, WE10327	Princeton , New Jersey Virtual
IEEE Distinguished Lecture: Improved reinforcement learning with applications in robotics, games, and quantum engineering: North Jersey Section Chapter, SMC28	22 Apr 2024 10:30 AM	CH01096, CH01177, CH01278, R10327, STB21201	Newark, New Jersey Virtual

Title	Date	Hosts	Location
Bill Ochs on the James Webb Space Telescope: North Jersey Section Chapter,C16	24 Apr 2024 12:30 PM	CH01091, CH01092, CH01177, STB00591	Teaneck, New Jersey Virtual
ROBOTICS PRESENTATION & GALLOIS AUTONOMOUS ROBOT COMPETITION: North Jersey Section	26 Apr 2024 10:00 AM	R10327	Hoboken, New York
STEM Night - Emerson, NJ: North Jersey Section	26 Apr 2024 06:00 PM	R10327	Emerson, New York
IEEE SSIT Lecture: Self-Driving Cars: The Good, the Bad & the Ugly: UK and Ireland Section Chapter, SIT30	30 Apr 2024 06:00 PM	CH01070, CH01285, CH02193, CH04051, CH06042, CH07171, CH08031, CH08381, CH08432, CH08667, CH08709, SIGHT060, SIGHT119	Virtual
2024 IEEE North Jersey Section Awards Banquet: North Jersey Section	05 May 2024 03:00 PM	R10327	Whippany, New Jersey
See Her, Be Her is Girl Scout Heart of New Jersey's annual career fair 2024: North Jersey Section	11 May 2024 09:00 AM	R10327	Hoboken, New York

Title	Date	Hosts	Location
IEEE SSIT Lecture: Implications of Robotics for Public Policy: UK and Ireland Section Chapter, SIT30	15 May 2024 06:00 PM	CH01070, CH01092, CH01177, CH01258, CH01285, CH02100, CH04055, CH08667, CH08917, SIGHT060, SIGHT119, SIGHT177, WE10327	Virtual
Dr Robert Wilson, Nobel Laureate: Celebration 60th Anniversary 1st Measure of Cosmic Microwave Background Radiation CMB Big Bang Origins of the Universe: North Jersey Section Jt Chapter, CAS04/ED15	20 May 2024 12:00 PM	CH01092, CH01177, CH01178, CH01184, R10327, SIGHT056, WE10327, YP10327	Middle-town Township, New Jersey
Summer Camp for Female Middle School and High School Students: SHE in ECE: North Jersey Section Jt Chapter,CAS04/ED15	02 Jul 2024 08:15 AM	CH01092, CH01178, CH01184, R10327, SIGHT177, WE10327	Newark, New Jersey
IEEE SSIT Lecture: Automating Empathy in Human-AI Partnerships: Issues, Ethics and Governance: UK and Ireland Section Chapter, SIT30	10 Sep 2024 06:00 PM	CH01070, CH01092, CH01177, CH01258, CH01285, CH02100, CH04055, CH08667, CH08917, SIGHT060, SIGHT119, SIGHT177, WE10327	Virtual

For Past Month's Events - MARCH 2024 - [Click Here](#)

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