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 humanity.

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 University 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.
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:**

**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 Kshetry

**Biomedical Engineering:**

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

  **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
# Calendar of Events

## Upcoming Events: April 2024 Onwards

<table>
<thead>
<tr>
<th>Title</th>
<th>Date</th>
<th>Hosts</th>
<th>Location</th>
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<tbody>
<tr>
<td>Technology Predictions: Art, Science, and Fashion: Southeastern Michigan Section Chapter, C16</td>
<td>02 Apr 2024 06:00 PM</td>
<td>CH01285, CH04055, CH08667</td>
<td>Virtual</td>
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<td>EDS/CASS Distinguished Lecture: Semiconductor Innovation for Transformative Impact: North Jersey Section Jt Chapter, CAS04/ED15</td>
<td>03 Apr 2024 02:15 PM</td>
<td>CH01092, CH01184</td>
<td>Newark, New Jersey</td>
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<td>IEEE North Jersey Section EXCOM - Meeting 6:30 PM: North Jersey Section</td>
<td>03 Apr 2024 06:30 PM</td>
<td>R10327</td>
<td>Teaneck, New Jersey Hybrid</td>
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<td>5G/6G Innovation Testbed: North Jersey Section</td>
<td>04 Apr 2024 06:00 PM</td>
<td>R10327</td>
<td>Virtual</td>
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<td>IEEE North Jersey and Pune Section - Inter Section activities: Electronic Warfare-the story from Rhine to Ukraine: North Jersey Section</td>
<td>05 Apr 2024 06:00 PM</td>
<td>CH01091, CH01092, CH01177, R10327, SIGHT056, WE10327</td>
<td>Teaneck, New Jersey Hybrid</td>
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<tr>
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<td>Materials Interactions for Emerging Sensing and Communication Applications: North Jersey Section Jt Chapter, AP03/MTT17</td>
<td>09 Apr 2024 12:00 PM</td>
<td>CH01092, CH01178</td>
<td>Virtual</td>
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<td>Post Quantum Internet: Phoenix Section Chapter, C16</td>
<td>10 Apr 2024 12:00 PM</td>
<td>CH01070, CH01080, CH02007, CH02033, CH02042, CH02069, CH02082, CH02130, CH02170, CH02193, CH06042, CH06198, CH08667, WE10327</td>
<td>Virtual</td>
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<tr>
<td>PPPEAC Meeting, Lab Tour at Rowan Univ., and PELS Distinguished Lecture &quot;Modern Power Conversion Solutions – From Electric Power Grids to Aerospace Power Applications&quot; by Brandon Grainger, University of Pittsburgh: Princeton/Central Jersey/Philadelphia, PEL35/IA34</td>
<td>12 Apr 2024 06:00 PM</td>
<td>CH01279, CH01297, R10327</td>
<td>Glassboro, New Jersey</td>
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<td>MakeNJIT Hackathon: North Jersey Section</td>
<td>13 Apr 2024 08:00 AM</td>
<td>R10327</td>
<td>Newark, New York</td>
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<td>MakeNJIT Hardware Hackathon 2024: New Jersey Institute of Technology</td>
<td>13 Apr 2024 09:00 AM</td>
<td>STB01241</td>
<td>Newark, New Jersey</td>
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<td>Telcos' Transition Towards AI-Native Networks: North Jersey Section</td>
<td>17 Apr 2024 11:00 AM</td>
<td>R10327</td>
<td>Virtual</td>
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<td>AI Cybersecurity: North Jersey Section Chapter, C16</td>
<td>17 Apr 2024 12:00 PM</td>
<td>CH01091, CH01177</td>
<td>Teaneck, New Jersey Virtual</td>
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<td>Learning and Intelligence over Weak Communication Links: North Jersey Section</td>
<td>18 Apr 2024 12:00 PM</td>
<td>R10327</td>
<td>Virtual</td>
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<td>Madhu Chinnambeti Presents: Retrieval Augmented Generation (RAG): Princeton/Central Jersey Section Chapter,C16</td>
<td>18 Apr 2024 08:00 PM</td>
<td>CH01080, CH01092, CH01104, CH02170, WE10327</td>
<td>Princeton, New Jersey Virtual</td>
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<tr>
<td>IEEE Distinguished Lecture: Improved reinforcement learning with applications in robotics, games, and quantum engineering: North Jersey Section Chapter, SMC28</td>
<td>22 Apr 2024 10:30 AM</td>
<td>CH01096, CH01177, CH01278, R10327, STB21201</td>
<td>Newark, New Jersey Virtual</td>
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<td>Bill Ochs on the James Webb Space Telescope: North Jersey Section Chapter, C16</td>
<td>24 Apr 2024 12:30 PM</td>
<td>CH01091, CH01092, CH01177, STB00591</td>
<td>Teaneck, New Jersey Virtual</td>
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<td>ROBOTICS PRESENTATION &amp; GALLOIS AUTONOMOUS ROBOT COMPETITION: North Jersey Section</td>
<td>26 Apr 2024 10:00 AM</td>
<td>R10327</td>
<td>Hoboken, New York</td>
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<tr>
<td>STEM Night - Emerson, NJ: North Jersey Section</td>
<td>26 Apr 2024 06:00 PM</td>
<td>R10327</td>
<td>Emerson, New York</td>
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<td>IEEE SSIT Lecture: Self-Driving Cars: The Good, the Bad &amp; the Ugly: UK and Ireland Section Chapter, SIT30</td>
<td>30 Apr 2024 06:00 PM</td>
<td>CH01070, CH01285, CH02193, CH04051, CH06042, CH07171, CH08031, CH08381, CH08432, CH08667, CH08709, SIGHT060, SIGHT119</td>
<td>Virtual</td>
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<tr>
<td>2024 IEEE North Jersey Section Awards Banquet: North Jersey Section</td>
<td>05 May 2024 03:00 PM</td>
<td>R10327</td>
<td>Whippany, New Jersey</td>
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<tr>
<td>See Her, Be Her is Girl Scout Heart of New Jersey’s annual career fair 2024: North Jersey Section</td>
<td>11 May 2024 09:00 AM</td>
<td>R10327</td>
<td>Hoboken, New York</td>
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<td>IEEE SSIT Lecture: Implications of Robotics for Public Policy: UK and Ireland Section Chapter, SIT30</td>
<td>15 May 2024 06:00 PM</td>
<td>CH01070, CH01092, CH01177, CH01258, CH01285, CH02100, CH04055, CH08667, CH08917, SIGHT060, SIGHT119, SIGHT177, WE10327</td>
<td>Virtual</td>
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<tr>
<td>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</td>
<td>20 May 2024 12:00 PM</td>
<td>CH01092, CH01177, CH01178, CH01184, R10327, SIGHT056, WE10327, YP10327</td>
<td>Middle-town Township, New Jersey</td>
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<td>Summer Camp for Female Middle School and High School Students: SHE in ECE: North Jersey Section Jt Chapter, CAS04/ED15</td>
<td>02 Jul 2024 08:15 AM</td>
<td>CH01092, CH01178, CH01184, R10327, SIGHT177, WE10327</td>
<td>Newark, New Jersey</td>
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<tr>
<td>IEEE SSIT Lecture: Automating Empathy in Human-AI Partnerships: Issues, Ethics and Governance: UK and Ireland Section Chapter, SIT30</td>
<td>10 Sep 2024 06:00 PM</td>
<td>CH01070, CH01092, CH01177, CH01258, CH01285, CH02100, CH04055, CH08667, CH08917, SIGHT060, SIGHT119, SIGHT177, WE10327</td>
<td>Virtual</td>
</tr>
</tbody>
</table>

For Past Month’s Events - MARCH 2024 - [Click Here]
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