

**Update:** September 2024

**The Power Chapter WEBINAR: August 21**

**Kinetic Theory of Plasma Discharges and its  
Simulation Capabilities**

**By  
Jacob Johnson, Scientist II  
Electro Magnetic Applications, Inc.**

The ability to simulate discharges has long been of interest, particularly to the circuit breaker and switch gear industries. Over the years, the breakdown of air has been heavily studied along with commonly used gases such as sulfur hexafluoride (SF<sub>6</sub>). However, as alternatives to SF<sub>6</sub> were searched for, the need for a tool to simulate a discharge in an arbitrary gas became apparent.

Ansys Charge Plus has long been able to simulate the breakdown of air. Recently, the capabilities of the tool have been expanded to be able to simulate the breakdown of any gas. Join us as we explore how the kinetic theory of plasmas was utilized for this development and what the new capabilities of the tool are.

Meeting contact: Rich Kolodziejczyk, P.E.

**Guest Attendance: 0**

**IEEE Member Attendance: 3**

**Berkshire Consultants Network Presented: August 13**

**Discover WinCC Unified PC - The Future of HMI/SCADA**

**By**

**Kyle Harrison**

**Siemens Industry Inc**

Free, live webinar to get a comprehensive overview of WinCC Unified PC.

**Discover** WinCC Unified PC - The Future of HMI/SCADA: Get an overview of WinCC Unified PC and its cutting-edge features. Learn why it's the ideal choice for your company and explore its future direction.

**Decide** on WinCC Unified PC for Your Business: Understand the benefits of WinCC Unified PC for your operations. Discover how it can enhance your visualization processes and improve efficiency.

**Develop** Skills with WinCC Unified PC: Get practical tips on using WinCC Unified PC. Understand its future roadmap and how to maximize its potential for your business. Take advantage of learning opportunities at Unified Academy and get support within the WinCC Unified Community.

**Direction:** The Future of WinCC Unified PC: Explore the future direction of WinCC Unified PC. Learn about upcoming features and advancements that will keep your business at the forefront of HMI/SCADA technology.

Meeting contact: Rich Kolodziejczyk, P.E.

**Guest Attendance: 0**

**IEEE Member Attendance: 1**

# **IEEE Berkshire Section Newsletter**

## Life Member Affinity Group Presented Annual Dinner

Meeting: May 10

### **2024 IEEE Berkshire Section STEM Research Challenge**

#### **Presentations by Research Challenge Winners**

The following winners are students from the Berkshire County high schools' grades 11 and 12 (there were no grades 9 and 10 entries). We recognized the winning papers with our usual awards to students for their topic research and interesting discoveries.

#### Grades 9/10 prizes: (1st - \$800, 2nd - \$400, 3rd - \$200)

(No entries for this grade level)

#### Grades 11/12 prizes: (1st - \$800, 2nd - \$400, 3rd - \$200)

**1<sup>st</sup> Emilie Coziol-Desy** - Grade 11, Miss Hall's School

"The Manifestation of NAFLD in Lean Individuals: A Personal Journey into its Biological Framework"

**2<sup>nd</sup> Hanna Heaton Wellenstein** — Grade 12, Miss Hall's School

"Pores and Cons: Isotretinoin's Efficacy, Side Effects, and Gender Biases"

**3<sup>rd</sup> Valerie Molino** - Grade 11, Lee Middle and Highschool

"Indoor Plants Are Wildly Beneficial To One's Body and Mind"

**3<sup>rd</sup> Ariel Caine** - Grade 12, Monument Mountain Regional High School

"Next-Generation Gene Sequencing Technology for Medical and Anthropological Usage"

# IEEE Berkshire Section Newsletter



**2024 IEEE Berkshire Section STEM Research Challenge Winners**

# IEEE Berkshire Section Newsletter



**1<sup>st</sup> Emilie Coziol-Desy** - Grade 11, Miss Hall's School



**2<sup>nd</sup> Hanna Heaton Wellenstein** — Grade 12, Miss Hall's School



# IEEE Berkshire Section Newsletter



**3<sup>rd</sup> Valerie Molino** - Grade 11, Lee Middle and Highschool

**From Award Chairman:** There were no entries this year for the 2024 Member Child Award and no winners.

Meeting contact: James F. McVeigh

**Guest Attendance: 11**

**IEEE Member Attendance: 5**

**Berkshire Consultants Network Presented: April 30**

**The latest enabling technologies for electronic warfare (EW)**

By  
**Star Labs Software**

Military & Aerospace Electronics presented a webinar panel discussion on the latest enabling technologies for electronic warfare (EW). The panel discussion consisted of a prime EW systems integrator on the most important EW technologies needed from suppliers; a high-performance embedded computing expert from the Curtiss-Wright Corp. Defense Solutions Division on the latest embedded computing technologies for EW, and a trusted computing expert from Star Labs Software on some of the latest cyber security innovations for EW.

Highlights included EW enabling technologies that prime EW systems integrated need most from their suppliers; high-performance embedded computing technologies for EW, and cyber warfare and cyber security technologies for EW. Also included was a short discussion on the future potential of quantum computing and quantum communications technologies that could influence EW systems design.

Meeting contact: Rich Kolodziejczyk, P.E.

**Guest Attendance: 0**

**IEEE Member Attendance: 2**

**The Computer and Control Chapter (C&C): March 20**

**Blockchain**

By

**Amber E Orr, PE in the State of Washington, USA**

Blockchain is a distributed ledger technology that enables secure, transparent, and immutable recording of transactions across a network of computers. At its core, a blockchain consists of a chain of blocks, where each block contains a list of transactions. It requires network consensus to ensure validity. Once consensus is met, a block can be added to the ledger as an immutable record of *transaction*.

This rather simple concept has already changed our transactional landscape a great deal since it emerged in popularity. Conceptually, blockchain technology has the potential to disrupt traditional systems, increase efficiency, transparency, and trust, and empower individuals and organizations across various domains.

But, how did we get here? How is the history of Blockchain tied to Engineering and Technology? Is Blockchain only significant in the Data sciences and Computer Sciences Industries?

Meeting contact: Rich Kolodziejczyk, P.E.

**Guest Attendance: 0**

**IEEE Member Attendance: 2**



**The Computer and Control Chapter (C&C): March 6**

**Next Level of Autonomous Driving with Advanced Object Generation**

**By**

**Mihai Aldea and Andreas Ibl**

As the automotive industry pushes towards higher levels of Autonomous Driving, radar technology is constantly evolving, with increased bandwidth and resolution as well as more complex modulation and signal processing. Test technology is evolving in parallel to allow the entire automotive radar ecosystem from chipset vendors and module suppliers to OEMs and service organizations verify the performance of radar sensors and the ADAS functions they enable. Join this webinar to get an up-to-date overview of radar technology, the market and the latest capabilities of automotive radar object simulation, including very short distances, MIMO and complex traffic scenarios.

In this webinar, we have learned more about:

- Automotive radar technology and market update
- Advanced automotive radar echo generation
- Electronically steerable antenna arrays
- Radar object simulation systems

Meeting contact: Rich Kolodziejczyk, P.E.

**Guest Attendance: 0**

**IEEE Member Attendance: 2**

**Life Member Affinity Group Webinar: February 7**

**Creating Income for Life**  
**By**  
**Kyle Cunningham**

In this talk, Kyle presented timely and relevant insights around six major risks in retirement, how to strategically move from accumulation mode to the distribution phase, and will cover the importance of establishing reliable, guaranteed income in retirement.

IEEE-USA's free webinars/events are designed to help you find your next job, maintain your career, negotiate an appropriate salary, understand ethical considerations in the workplace and learn about other career-building strategies and public policy developments that affect your profession.

Meeting contact: Rich Kolodziejczyk, P.E.

**Guest Attendance: 0**

**IEEE Member Attendance: 2**

# **IEEE Berkshire Section Newsletter**

## **2024 Berkshire Section Officers:**

On January 19, the EXCOM has voted new Berkshire Section Officers:

Section Chair	James McVeigh
Section Vice Chair	Rich Kolodziejczyk
Treasurer	Roger Manzolini
Secretary	Dave Rueger

The NOMINATING COMMITTEE consisted of Dave Rueger, George Haus and George Gela.