



## Contents

• Chair's Corner.....	2
• Understanding and Mitigating Bias in Human and Machine Face Recognition.....	3
• Operational Fielding of Directed Energy Weapons.....	4
• 2024 Pittsburgh Section Elections - Executive Board Member Search.....	5
• Pittsburgh Section Outstanding Volunteer of the Year Nominations .....	6
• IEEE Pittsburgh Section Power Electronics Society Meeting .....	6

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*All announcements for publication in a particular month's bulletin are due to the Editor by the 20th of the previous month. The accuracy of the published material is not guaranteed. If there is any error, please bring it to the Editor's attention. The Section's web site, [webinabox Pittsburgh.](http://webinabox.Pittsburgh.), has recent issues of the bulletin and lots of other useful information.*

## • Chair's Corner

Greetings members of the Pittsburgh section of IEEE.

We have made it through October, a busy and exhilarating time for the Pittsburgh section. Thanks to all of our volunteers for your support of so many activities and congratulations on a job well done!

This month I'd like to think a little about employment. In September, the Bureau of Labor Statistics announced that U.S. nonfarm payroll employment rose by 336,000 and the unemployment rate remained steady at 3.8%. Slight gains were seen in professional, scientific, and technical services. The Pittsburgh unemployment rate stood at 4.3% in August. These numbers are all seen as signs of improvement in our market and economy.

Perhaps it's my own personal situation or paying attention to LinkedIn™, but it just seems that there are too many technical personnel in Pittsburgh losing their jobs. This month, I'd like to focus a few comments around how IEEE can help those in this situation.

Of course, members who are active in IEEE have already met many other people who can be used as contacts for new employment opportunities. Reach out to them via social media, connect, have lunch or coffee, and learn about their industry. If they don't know of any current open positions, they can keep you in mind for the future and may even be willing to serve as a reference for future jobs.

IEEE has a career center that may have some helpful information. At minimum you will find the job search function to be more focused on technical positions than those in many of the general job search sites. You will also find career insights, such as wages, job outlook, and education options:

<https://jobs.ieee.org/>

Finally, if you would like to learn some new skills before seeking a new role, IEEE offers continuing education courses via the IEEE Learning Network™. Some of the courses are free or low cost:

<https://iln.ieee.org/public/TrainingCatalog.aspx>

IEEE does offer a 50% reduction in membership dues to all of those members who become involuntarily unemployed. Best of luck to all who are seeking new opportunities and please reach out to me if I can be helpful to you.

Steve Mozelewski

2022 - 2023 IEEE Pittsburgh Section Chair

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Young Professionals (formerly GOLD) – Chair: Jenna Price, [jprice@ieee.org](mailto:jprice@ieee.org)

Women In Engineering – Chair: Martin London

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- ***Understanding and Mitigating Bias in Human and Machine Face Recognition***

**Speaker:** John J. Howard, Ph.D.  
**Date:** November 6, 2023  
**Time:** 5:00 PM – 6:00 PM (EST)  
**Place:** Zoom- <https://wvu.zoom.us/j/9188836315> or WVU building AERB, room 135 (if in person)

**Abstract:** With the increasing use of automated face recognition (AFR) technologies, it is important to consider whether these systems not only perform accurately, but also equitability or without “bias”. Despite rising public, media, and scientific attention to this issue, the topic of bias in AFR is often misunderstood. This talk will explore how we currently assess performance differentials in AFR and how those definitions might have been impacted by our own human cognition on how face recognition should work. We’ll also discuss how current definitions of bias in AFR might not be suitable for predicting performance differentials in some operational concepts. Finally, we’ll show how, if we adjust our definition of what a “biased” AFR algorithm looks like, we may be able to create algorithms that operate in unintuitive but novel ways that ultimately optimize the performance of a human+algorithm teams undertaking identity tasks. This talk will be based on our lab’s recent publications in ICPR, TBIOM, BTAS, and PLoS.

**Biography:** Dr. John Howard is a computer scientist specializing in biometrics research and the test and evaluation of artificial intelligence systems. He holds a Ph.D. in Computer Science from Southern Methodist University where his dissertation focused on understanding group-based performance variation in biometric recognition algorithms. He was advised by former Assistant Secretary of the Navy, Dr. Delores Etter.



Dr. Howard has served as the principal investigator on numerous research and development efforts across industry and government. He has published over two dozen scientific papers and his work appears regularly in print media outlets, such as the New York Times and the Washington Post, as well as in congressional testimony. He is currently the Chief Data Scientist at the Maryland Test Facility, a government funded research lab focused on AI application testing. He also serves as the editor of ISO-19795-10, an international standard on fairness in biometric systems, a research fellow at SMU’s AT&T Center, and a member of the IEEE Biometric Council Subcommittee on Societal Impact and Social Good. He also consults as an expert witness on various legal cases related to biometric information privacy laws in the U.S.

- ***Operational Fielding of Directed Energy Weapons***

**Speaker:** David C. Stoudt, PhD  
**Organization:** Senior Executive Advisor, Engineering Fellow for Directed Energy  
Booz Allen Hamilton, Inc.  
**Date:** November 29, 2023  
**Time:** 7:00 PM Eastern (Online) Please RSVP and the meeting link will be emailed to you by the day before the meeting.

**RSVP: Required** at <https://events.vtools.ieee.org/m/378124> by November 26, 2023, 5:00 PM Eastern Time. **Please make sure to enter your email address while registering to receive the meeting link.** If you are an IEEE member, please enter your membership number in the RSVP for accurate meeting reporting.

**Organizer:** IEEE Society on Social Implications of Technology (SSIT) Chapters: Philadelphia Section, Northern Virginia/Washington/Baltimore Sections & Pittsburgh Section

**Abstract:** This talk will introduce a general engineering audience to Directed Energy (DE) weapon technologies and their application in modern warfare.

The Directed Energy (DE) community finds itself at a point of convergence between the state of the art of various forms of DE-weapon technology, and a growing number of emerging and asymmetric threats that those DE weapons can reasonably address in a more cost-effective manner than existing, and thus far conceived, conventional kinetic weapons. Guided rockets, artillery, mortars, and the proliferation of unmanned systems for both intelligence, surveillance, and reconnaissance (ISR) and strike, are a few of the many evolving threats that may be addressable by currently available DE capabilities, both high-energy lasers (HEL) and high-power microwave/radiofrequency (HPM/HPRF) systems. This emergence of addressable threats, the low cost per engagement, and a deep electrical magazine, allows for DE capabilities to reduce engagement costs and enhance force protection.

We are now operating under a new paradigm for DE weapons, where the warfighters and acquisition community need answers on how, and not if or when, DE weapons are to be used. So, this now begs the questions of: How do we operationalize DE weapons? How might such weapons be used? and What are their implications for modern warfare?



**Speaker Bio:** Dr. David Stoudt is a Booz Allen Hamilton Senior Executive Advisor and Engineering Fellow for Directed Energy based in Dahlgren, Virginia. He provides scientific and business strategy and leadership to help advance the lethality, operational suitability, and acceptance of directed energy and other capabilities for the warfighter.

Prior to joining Booz Allen Hamilton, he served in the Department of the Navy (DON) for 32 years, the last 12 of which he held an executive position as the Navy's first Distinguished Engineer for Directed Energy [ST position]. He has a proven track record of providing sound results-driven technical strategic leadership that led to the establishment of world-class directed-energy programs, personnel, and facilities at the Naval Surface Warfare Center, Dahlgren, Virginia (NSWCDD). From 2008 through 2012, he was also the first NAVSEA Technical Authority



Warrant for Directed Energy and Electric Weapon Systems, such as high-energy laser (HEL) weapon systems, the Electromagnetic Rail Gun Weapon System, high-power microwave (HPM) weapon systems, and the electromagnetic launch of weapons.

While at Dahlgren, he established and technically directed several high-power microwave and high-energy laser technology development programs, including airborne electronic attack, counter-Improvised Explosive Devices (IEDs), directed energy and nuclear EMP lethality efforts, and the initiation of the Navy's Laser Weapon System (LaWS) that was deployed on the USS Ponce for three years. He developed and deployed with several HPM counter-IED systems to support Operation Iraqi Freedom, which represented the first ever successful tactical employment of DE weapons.

From 2011 to 2015, he was the Senior Director, Capabilities and Concepts in the Office of the Deputy Under Secretary of the Navy for Policy and was chartered to assess naval programs, technology development and warfighting concepts, and analyze their implications for future naval capabilities. As the Senior Director, he initiated and served as the Executive Secretary for the Naval Directed Energy Steering Group, which was chartered by the Under Secretary of the Navy to develop the Vision, Strategy, and Roadmap for Naval directed-energy weapons. He also initiated the establishment of, and served as the Executive Secretary, for both the Navy Non-Acoustic Anti-Submarine Warfare Steering Group and the Naval Space Board, chartered by the Under Secretary of the Navy and the Secretary of the Navy, respectively.

Among other honors, he was awarded the Navy Distinguished, Superior, and multiple Meritorious Civilian Service Awards, as well as the Naval Sea Systems Command Scientist of the Year Award. He received a B.S. (Summa Cum Laude), M.S., and Doctor of Philosophy, all in Electrical Engineering, from Old Dominion University. He is well published, was awarded several patents, and is a member of the Institute of Electrical and Electronics Engineers (IEEE), the International Union of Radio Science (URSI), and the Association of Old Crows (AOC). He was inducted as a Fellow of the Directed Energy Professional Society in November 2005. In 2018, Dr. Stoudt was elected to the Board of Directors, and is serving in his sixth year as the President of the Directed Energy Professional Society. In 2022, he became a member of the Board of Advisors of the Reginald Victor Jones (RVJ) Institute, whose mission is to advance the art and science of electromagnetic spectrum operations (EMSO). In 2023, he was asked to serve on the Advisory Board of the Directed Energy Center at the University of New Mexico.

## **• 2024 Pittsburgh Section Elections - Executive Board Member Search**

The IEEE Pittsburgh Section is seeking candidates-volunteers for the 2024 Executive Committee. These positions are a wonderful opportunity to gain experience in organizing, planning and management. The opportunity will expand your network of like professionals, improve your skills, and support the continued success of the Pittsburgh Section.

To apply, you must be an active IEEE member in good standing and have a willingness to learn. The time commitment is not large, along the lines of a few hours per month. Previous volunteer experience is a plus but not strictly necessary. Please reach out to the search committee at [c.evan.watson@ieee.org](mailto:c.evan.watson@ieee.org) for additional information.

- ***Pittsburgh Section Outstanding Volunteer of the Year Nominations***

Dear members at large, we are seeking nominations for the 2024 IEEE Pittsburgh Section Outstanding Volunteer of the year award. This award seeks to honor an IEEE member or members who have demonstrated exemplary levels of dedication and service to IEEE in general and the Pittsburgh Section in particular over the 2023 calendar year. In order to qualify, the recipient must be an active IEEE member or student member volunteer that has contributed to IEEE in a demonstrable way. To nominate someone, please submit their name, IEEE number and a brief summary (250 words or less) highlighting their service and contributions in 2023. Nominations may be submitted via email to: [jebeck@ieee.org](mailto:jebeck@ieee.org). The cutoff date for nominations is February 29th, 2024. All nominations will be reviewed by the awards committee, and the recipient will be honored at the 2024 IEEE Pittsburgh Section's annual history and awards dinner which will be held next Spring (details to follow).

- ***IEEE Pittsburgh Section Power Electronics Society Meeting titled “Application of Power Electronics in Aerospace”***

IEEE Pittsburgh Section Power Electronics Society held its first post-pandemic hybrid meeting at Next-Tier’s state-of-the-art conference room in Monroeville on Thursday, October 12, 2023 with an attendance of 15 IEEE members and guests. The event started with a fabulous 10-course Indian dinner, followed by a presentation, titled “Application of Power Electronics in Aerospace” by Dr. Joseph P. Kozak of Johns Hopkins University Applied Physics Laboratory.



## 2023 Calendar – Meetings of IEEE Pittsburgh Section

	Jan	Feb	Mar	Apr	May	June	July	August	Sept	Oct	Nov	Dec
<b><u>Executive Committee (AdCom)</u></b>	19 Virtual	16 Virtual	16 Virtual	20 Pitt	18 NextTier	15 Eaton	20 Pitt	19 Duquesne Light	14 Monroeville	19 WVU	16 Virtual	14 TBD
<b><u>Section</u></b>		23, 24 E-Week; 25 Robot Car	28,29 Science Fair		19 History Dinner	24 Picnic	15 WV - Oglebay	26 Pirates Baseball		26-28 WiE Forum		
<b><u>Communications</u></b>									18 Radar			
<b><u>Computer</u></b>							10-14 AI Camp		15 AI			
<b><u>EMBS</u></b>		6 Microwave Medical	13 Deep Learning							15 BHI Con- ference		
<b><u>EMCS</u></b>								24 Reverb				
<b><u>Power Electronics</u></b>					25 Solid State Transformer					12 Power in Aerospace		
<b><u>PES/IAS</u></b>	12 Eaton Tour			27 Transmission Planning	16 Tenaska Plant Tour				28 Beaver Valley Tour			
<b><u>Magnetics</u></b>												
<b><u>Nanotech- nology</u></b>									14 Nano Fab Tour			
<b><u>Robotics</u></b>								22 Robots				
<b><u>Sig. Processing</u></b>								31 Radar	28 Ansys			
<b><u>EPS/ED</u></b>					11 ALLVAR							
<b><u>Education</u></b>										20 Cybersec.		
<b><u>Social Impl Technology</u></b>	12 Eaton Tour			27 Transmission Planning							29 Weapons	
<b><u>Upper Mon</u></b>		6 Microwave Medical	13 Deep Learning						18 Radar	2 – Grid Blackouts; 19 – AI; 25 – Dist. Sys	6 Face Recognition	
<b><u>Women in Eng'ing</u></b>										26-28 Forum		
<b><u>Young Pros</u></b>					6 Trolley Museum				27 IEEE Benefits			
<b><u>Life Members</u></b>					16 Tenaska Plant Tour				28 Beaver Valley Tour			
<b><u>PACE</u></b>							19 Fusion					
<b><u>Student Act</u></b>												

