

PHILADELPHIA SECTION of the IEEE

Membership in these counties: Bucks, Chester, Delaware, Montgomery, Philadelphia, (PA)
Burlington, Camden, Gloucester (NJ)

Almanack **IEEE**

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December 2014

SECTION MEETING

Jan. 20, 2015

Dinner: 6 pm

Speaker: 7 pm

Sheraton University City

Philadelphia

Meal Cost: \$25.00 (students \$15.00)

Parking cost paid by section

Program will be in the January Almanack
Save the date

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Note: In the event of bad weather please call the Sheraton after 1pm the day of the meeting at 215-387-8000. Ask the front desk if the meeting has been canceled.

December 2014

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2 CONET	3	4	5	6
7	8	9 Adcom	10	11	12	13 Signal Processing Symposium
14	15	16 Hanukah	17	18 Employment Network	19	20
21	22	23	24	25 Christmas	26	27
28	29	30	31			

Chair's Message



By Phil Gonski, P.E.

As our 2014 year draws to an end, there are certainly many things to be grateful for. I'm certainly grateful to be Chairman of the organization that has had the most technical meetings and outreach activity in the area.

In October, around 60 IEEE members took full advantage of our first career fair. Special thanks to our sponsoring companies that truly made a difference. Many attendees have even reported receiving interviews at companies that they met as a direct result.

We held a conference, BenMAS 2014, which drew renowned experts in antennas and microwave technology to Philadelphia. Our Signal Processing in Medicine and Biology Symposium also hopes to draw further attention to our Section. In fact, the Philadelphia Section has had more technical meetings this year

than any in recorded memory, thanks to our excellent chapter chairs.

Our outreach activities this year have made the IEEE Philadelphia a leading supporter of science education. The Arduino outreach organized by Mark Soffa brought hundreds of students to our meetings to learn about software and hardware.

Thanks to Vicky Drury, our Women in Engineering chapter is doing tremendous work promoting engineering at the local level by partnering with local organizations to make a difference.

We've also launched a new global humanitarian outreach program (SIGHT) headed by IEEE members Amanda DelCore and Mahmoud Kabalan, which will focus on making a difference abroad.

At the student levels, our college branches are hosting hackathons, outreach activities, hosting robotics competitions, and even collaborating with students in Australia

I'm immensely proud of the technical and charitable efforts of our Section. Our limiting factor to having increased technical offerings and outreach programs is having volunteers. I'd personally like to welcome you to attend one of our Section nights or Adcom meetings and get involved in making a difference.

IEEE PHILADELPHIA SECTION CONGRATULATES OUR NEW SENIOR MEMBERS!

The October 18 A&A Review Panel meeting was held in Buenos Aires Argentina. We have three new Senior Members. Congratulations to:

William Fitch, also in Industry Applications Society, Power and Energy Society

Robert Uluski, also in Power and Energy Society

Ze Wang, also in Engineering in Medicine and Biology Society

Early Memories

Ernest's Page, by Ernest Cohen, Ph.D

With two older brothers, and a father who was a self-educated engineer, all of whom were interested in technical and a scientific thing, my growing up was not an ordinary childhood. My father, William Weiss, had a factory that made things from steel wire and steel strips. The earliest location I remember was on 17th Street in the East Side of Manhattan. The factory was on the second floor, above the Bon Ton Button Company. I remember helping to install a doorbell for the factory. The nearby hardware store only had very large rolls of bell wire, and we needed only a few feet. We took the rest of the wire home, and plugged it into the wall socket. The result was an immense air core electromagnet, which we boys used to magnetize all kinds of iron things around the house. The other thing I remember about that location was the drive shaft and pulley system used to power the machines. That memory came in handy a decade later, when I was taking a graduate degree in Psychology at Cornell University, and solved a technical problem with an experimental device for measuring motion perception.

My father was also an inventor. He invented a vending machine for lighted cigarettes, some years before I was born. Not getting investors here, he turned to Europe. A souvenir of this project was the bound volume of the British magazine, *Television* for the years 1928-1929. When I was ten years old, I read it through, and learned some things, such as the British term for vacuum tubes was "valves." My brother, Martin, who spoke at a section meeting a while back, still has this antique. My souvenirs from this invention are a photograph of my father in front on the machine, and a pair of book ends with the faces of an America Indian. To dispose of the smoke when a cigarette was lighted, the machine blew a puff out of an Indian face.

Then the family bought a house. My oldest brother had a chemical laboratory in the attic, my brother, Martin, had an electrical laboratory, and I had a table where I took apart geared bicycle hubs. We also had machine tools, including a drill press. We did other things also: one summer we tried grafting red rose buds onto the white rose bush, and vice versa. The grafts did not take, but we tried and learned a lot. Martin bought a 1928 electrical engineers handbook, which I also read through. Very many years later, I used that knowledge to pass examinations. In a previous Ernest's page I told how I won a fountain pen at a hobby show for playing records backwards.

The most important event of my life occurred when I was 17. I was attending the Bronx High School of Science, and met a girl from my neighborhood who was also at the school. We enjoyed chatting together on the bus ride across the Bronx, with no idea that three and a half years later we would be married, and still are, 65 years after we first met. Elaine and I were in the same Chemistry class at Bronx Science, and she got a higher grade. One of the required courses at Bronx Science was "Science Techniques Lab," a basic shop course. Most of the girls made test tube racks. Elaine made a slide wire Wheatstone Bridge, which was so good it was put on display for a year. An operation that could not be done in the school shop — soldering the brass legs— was done on our kitchen stove. We still have that project in our basement.

During my college years, I ran a bicycle business out of our apartment. I had discovered how to convert a Sturmey-Archer 4-speed hub into a 5-speed hub, and rode that bike until I could not ride bicycles any more.

Even in my later years, the spirit of trying new things hangs on. We had a pet cat,

Typaish, and wondered whether house cats can learn tricks like lions and tigers in the circus. Yes, with lots of patience and lots of tuna fish, Typaish learned to shake paws. Then, our present house has hot water radiator heating. I thought: what is the warmest thing in each room: the radiator, and the coldest: the outside wall. So I put a foam insulating board, with aluminum reflector coating behind the radiators on the first floor. Mistake! The second floor bedrooms were too cold. I had to put these insulating boards behind all the radiators; since the thermostat in the dining room drastically reduced the heat sent up.

Section organization

IEEE PHILA. SECTION OFFICERS

Chair: Philip Gonski, P.E. pgonski@gmail.com [www.ieeephiladelphia.org
Project Manager - Keystone Engineering Group (c) 630.363.0790]

Vice Chair: Adam Fontecchio. Ph.D., sec.philadelphia@ieee.org

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Secretary: Leonardo Urbano, Ph.D., sec.philadelphia@ieee.org

Past Chair: Mark Soffa msoffa@kns.com

Adcom meets second Tuesday of the month (Dec. 9) at the Sheraton University City. Members are welcome to attend. Reserve a seat by calling the office by the Friday before.

Almanack Staff

Publisher: Philip M. Gonski, P.E.

Editor: Peter Silverberg

Asst. Editor: Janet English-Cartwright, Ph.D., jenglish@fi.edu

News and notices contact psilverberg3@comcast.net or 856.461.6615 or fax 509.461.6617

Deadline for the January issue is December 9, 2014

New & improved web site: www.ieeephiladelphia.org

ADVERTISE IN THE ALMANACK:

The Philadelphia Section of the IEEE encourages placement of technical, professional, promotional and commercial advertisements in the Almanack. The Almanack is published ten times a year and is read by more than 4,000 members with an average annual salary of over \$70,000 in over 150 key industries. For more information, contact Peter Silverberg at 856.461.6615 or psilverberg3@comcast.net

Rates:

Full Page: 7.5x10: \$100

3/4 Page: 7.5x7.5: \$75

1/2 Page: 5 x 5: \$50

1/4 Page: 2.5 x 5: \$25

1/8 Page: 2.5 x 2.5: \$12.50

E mail blast: First \$50, Second same month \$25.

Main Office: 11 Bala Avenue, Bala Cynwyd PA 19004, 484.270.5136

sec.philadelphia@ieee.org



Call for Speakers for The 2015, 10th Annual



IEEE/ACM Information Technology Professional Conference at TCF

Event: **Friday, March 20, 2015 and Saturday, March 21, 2015**
Location: **The College of New Jersey, Ewing Township, NJ**
Abstract Submission Date: **Friday, December 12, 2015**

The 2015 IT Professional Conference provides a set of presentations relevant to today's professional IT community. Bringing together practitioners, academics and industry leaders in a forum to exchange experiences, innovations, practical implementations, studies, designs and approaches important to current Information Technology.

You are invited to submit a one paragraph abstract of your presentation (full paper submissions are not necessary), along with a one-paragraph bio and digital photograph of yourself to the program chair, David Soll (dsoll@ieee.org), by Friday, December 12, 2014. All suggested talks will be considered. More information on the 2015 IT Professional Conference can be found at <http://princetonacm.acm.org/tcfpro/>.

We are particularly interested in recent talks in the following areas:

Application Development	Manufacturing Computer Systems
Infrastructure	IT Management
Technology	Professional Development

The 2015 ITPC is associated with the 40th Annual Trenton Computer Festival (TCF@40) <http://tcf.pages.tcnj.edu/> to be held on Saturday, March 21, 2015 and the 5th Annual IEEE Integrated Stem Education Conference <http://ewh.ieee.org/conf/stem/> to be held on Saturday, March 7, 2015 at the Friend Center, Princeton University, Princeton, NJ. Visit these websites for information on their individual Call for Speakers.

Sponsored by the IEEE Princeton/Central Jersey Section Computer Society Chapter with technical co-sponsors the IEEE Princeton Central Jersey Section, the Princeton Chapter of the ACM, the IEEE Region 1 and the IEEE Region 2.

Some potential topics are listed on the other side.



Suggested presentation topics include (but not limited to):

IT Management

How to Build, Maintain, and Motivate an IT Staff
Reducing long term support costs
Portals and Knowledge Management
Changes in Microsoft/An inside look at Microsoft
Managing Viruses
The Impact of Windows 8.x
IT Security and Cryptography
Protecting Intellectual Property Assets
Digital Rights Management
Designing College Curricula to Match the Needs of IT
BYOD (Bring Your Own Device)
Attracting Students into IT
Off-shoring and outsourcing Application/Solution Development
Compliance
In House Collaboration
Retraining Staff
Managing Social Media into the Business
Online Back-up

Manufacturing Computer Systems

Process Data Integration
Time Series Data Historian
Introduction to Process Analytical Technology (PAT)
The Future of Real Time Performance Management
Bringing Process Data to the Business User
Computer Validation Methodologies
Batch Process Reporting
Bracket and compare repeatable continuous processes
Machine Vision Technology
Product Tracking

Application Development

Mobile First
Cloud Computing
Developing Custom Web Parts
Developing Metro Applications
Developing HTML 5 Applications
Java vs .NET
Visual Studio 2013
SQL Server 2012
Storyboarding
Web Application Development
BizTalk
.NET 4.5, WPF, WCF, Workflow
Freeware in production application development
Managing multi-vendor application development projects
Prototyping/Rapid Application Development/Agile
Software Testing and Tools
Static, Dynamic and Gradual Typed Languages
Software Development Processes, Languages and Tools
Rules based Engines, Languages and Applications
AI Engines and Game Design
User Interface Design
Human Factors Engineering
Open Source
NoSQL
Github
Scala

Technology

Wearable Technology
Big Data
Mobility Computing
Biometrics
Next Generation Storage
Microsoft Office 2013
SharePoint Web Application Framework
System Center
Windows 8.x
Windows 10
Virtualization
Silverlight and WPF
Windows Communications Foundation
Windows Server 2013 R2
Software as a Service (SaaS)
Firewalls
Software Defined Network
Computer Image Visual Recognition
Sensors Integration
Data Representation and Visualization
Software Architectures and Decision Making
Autonomous Vehicles
Modeling
System of Systems

Infrastructure

Network Integration
Migration and Transformation
Desktop Management
SAN vs. NAS
Designing a Manageable AD Infrastructure
Exchange and Mobile Devices
Solution Architecture
Android vs. IOS vs. Windows 8.x RT
Rights Management Services/IRM/DRM
Spyware & Viruses and how to handle them
IPv6
Managing SPAM
Identity Management
Upgrading to Active Directory
Security Management
Disaster Recovery
Platform as a Service (PaaS), Infrastructure as a Service (IaaS)

Professional Development

IT Consulting
Career Planning and the New Normal
Continuing Education, Skills Development and Resources
Hot jobs and careers for 2015 and beyond
Strategies for finding contract jobs
How to Create a Personal Portfolio
Apprenticeships, Internships, and Incubators
Planning for retirement
Massive Open Online Courses, MOOC
The Evolution of IT Careers
Jumpstarts
Consulting

IEEE Signal Processing in Medicine and Biology Symposium

Date: Saturday, December 13, 2014

Location: Howard Gittis Student Center, Temple University, 1755 N. 13th Street, Philadelphia, Pennsylvania, USA

Signal processing plays a vital role in applications ranging from simple measurement equipment to sophisticated devices such as prosthetics. IEEE SPMB14 is a regional symposium intended to provide a highly interactive forum where bioengineering and signal processing researchers can collaborate on emerging trends in signal processing. The symposium will consist of two plenary talks, two oral sessions and two poster sessions. Exhibits and demonstrations are encouraged as well. The symposium is sponsored by IEEE USA, IEEE Region 2, IEEE Region 2 Philadelphia Section, Temple University, the Neural Engineering Data Consortium and NYU Polytechnic School of Engineering.

Please visit the symposium web site at <http://www.ieeespmb.org/2014> for more details. The submission deadline for papers was September 1, 2014.

Organizer: Joseph Picone

Professor, Department of Electrical and Computer Engineering

Contact Information:

Temple University, Room 703A

1947 North 12th Street, Philadelphia, PA 19122

Tel: 215-204-4841 (office) / 662-312-4209 (cell) Fax: 215-204-5960

Email: picone@temple.edu

URL: <http://www.isip.piconepress.com>

Philadelphia Section Looking for IEEE Awards Candidates

(Deadline extended to Dec. 30)

The Philadelphia Section IEEE Awards Committee needs your help in the process of nominating members (yourself included) to the Senior Member and Fellow membership grades, and to receive IEEE awards and medals. The committee is seeking the names and biographies of individuals whose meritorious achievements in one of the areas of IEEE interest — Electrical Engineering, Computer Science and allied branches of Engineering, Arts and Sciences — deserve wide recognition. Many significant contributions to the profession that originated in Delaware Valley companies and universities are yet to be promoted and properly recognized by the IEEE.

The Senior Member grade is the highest professional IEEE grade for which application can be made. This grade requires the candidate to have been active professional practice for at least ten years. Evidence is requested for significant performance of the candidate over at least five of these years, as an engineer, scientist, educator, technical executive, or technical originator. The awards committee will gladly furnish application forms to interested members, and help in preparing the application

The **Fellow** grade recognizes unusual distinction in the profession, and is conferred by the IEEE Board of Directors. IEEE Fellows are individuals of outstanding and extraordinary qualification and experience in IEEE fields of interest. Nominations to the Fellow grade are made by peers of the nominee, and are usually supported by other Fellows, by local IEEE Chapters and by an IEEE Society.

The IEEE also bestows recognition on its most outstanding members in the form of a Medal of Honor, IEEE Medals, Technical Field Awards, Service Awards, and Paper- Prize Awards.

The IEEE Philadelphia Section will help nominators and nominees in preparing forms, locating appropriate nominators, endorsing candidates for awards and medals, and sometimes serving as the nomination body. We strongly encourage members of our Section to contact the committee for information, nomination kits, and general assistance in the process.

The various Philadelphia Section Awards available for nomination are:

Philadelphia Section Engineer of the Year Award

The Philadelphia Section Executive Committee seeks nominations for the IEEE Delaware Valley Electrical Engineer of the Year Award. The Electrical Engineer of the Year will be recognized at the Section's Annual Awards Banquet. Nominees should be engineers who are members of the section, and who have demonstrated excellence in technical, scientific, academic, or managerial endeavors. The award emphasizes creative, important, and widely recognized work.

**Nominators are asked to submit a short letter of nomination (1-2 pages) and a resume of the candidate.*

Young Electrical Engineer of the Year Award

The Philadelphia Section Executive Committee seeks nominations for the IEEE Delaware Valley Young Electrical Engineer of the Year Award. This person will be recognized at the Section's Annual Awards Banquet. The nominee must be under 35 years of age before January 1, 2008 and should be a graduate of an accredited curriculum with a degree in Engineering or a related field. The award emphasizes creative, important, and widely recognized work. An additional part of the judging will be the candidate's contribution to professional, civic, and charitable affairs.

**Nominators are asked to submit a short letter of nomination (1-2 pages) as well as a resume of the candidate.*

Benjamin Franklin Key Award

The IEEE Philadelphia Section invites nominations for its annual Benjamin Franklin Key Award to recognize an electrical engineer in the Philadelphia Section for outstanding technical innovation and technological contributions that have had significant practical applications. The award emphasizes technical innovation, such as a system (design and application), a significant improvement to a system, or patents of clear practical values. Emphasis will be put on tangible technical and technological achievements that demonstrate intellectual, industrial, economical or human benefits.

**Nominations should include:*

- 1. A description of the nominee's technical invention, system, project, or patent*
- 2. A proposed citation (30 words or less)*
- 3. The nominee's curriculum vitae*
- 4. Additional evidence demonstrating the invention, system, project, or patent*

Philadelphia Section Corporate Technology Innovation Award

The IEEE Philadelphia Section invites nominations for its annual Corporate Technology Innovation Award. This award recognizes a company or corporation for its outstanding contribution to electrotechnology. The award emphasis developments, projects, products, and other group achievements, that have been very innovative and successful.

**Nominations should include:*

- 1. A description of the nominee's technical accomplishment*
- 2. A proposed citation (30 words or less)*
- 3. Any additional appropriate information*

Submit ALL nominations by December 30, 2014 to:

Merrill W. Buckley, Jr., Awards Committee Chair

IEEE Section Office, 11 Bala Avenue, Bala Cynwyd, PA 19004.

Think carefully about your fellow workers and about your own contributions. Don't be shy! We really need your help. Call with the name of a potential awardee; even your own. For more information, please call the Section office at 484.270.5136, or use email at **sec.philadelphia@ieee.org**, or contact any member of the committee:

Merrill W. Buckley, Jr. 484 573.5156

Thomas Fagan 484.678.1078

Dr. Victor Schutz 610.649.9331

Donald C. Dunn 856.227.2458

Public Roles for Technical Experts

December 2, 2014 CONET meeting

Presented by Clinton J. Andrews PhD, PE, AICP

Date: Tuesday evening, 2014 December 2

Place: Sheraton University City Hotel, 36th & Chestnut Streets, Philadelphia PA 19104
Fairmount/Franklin Suite – downstairs from main lobby

Free Parking for CONET Members: Sheraton indoor garage – entrance on 36th Street.

Take your garage ticket, and have it stamped when you sign in to the meeting.

For information on becoming a member, go to <http://www.philaconet.com>

Networking/Social time: Starts at 5:30 PM

Dinner: 6:15 PM (Be sure to allow for rush-hour traffic or inclement weather.)

Program: 7:00 to 9:00 PM

Main Speaker: *Clinton J. Andrews PhD, PE, AICP*

Abstract: Technical experts claim an authority based in scientific rationality, typically seeking to inform decision makers using substance and logic. However, adding a procedural dimension greatly enriches our notion of rationality by bringing in communicative and legitimacy concerns. This talk argues that popular tools of decision analysis such as benefit-cost studies are deficient when judged against this broader definition of rationality; hence, better tools are under development. Rationality may even be improved by resorting to procedural solutions such as public participation. Such solutions impose communicative demands on technical experts. In a public context, rationality is a characteristic of decision making that some people desire some of the time. It has no guaranteed seat at the table.

Clinton J. Andrews is Professor of Urban Planning and Policy Development, Associate Dean for Planning and New Initiatives, and Director of the Center for Green Building, at Rutgers University in New Brunswick, New Jersey. His research addresses behavioral, policy and planning questions related to energy use in the built environment. Dr. Andrews was educated at Brown and MIT as an engineer and planner. He has worked in the private sector as a design engineer and technology assessor, helped launch an energy policy project at MIT, and helped to found a science policy program at Princeton. At Rutgers, he has launched initiatives in energy policy, green building, and innovation studies. He has published over 100 scholarly and popular articles, and his books include *Humble Analysis: The Practice of Joint fact-Finding*, *Regulating Regional Power Systems*, and *Industrial Ecology and Global Change*. Dr. Andrews is a recipient of the IEEE Millennium Medal and the Society on Social Implications of Technology Brian O’Connell Distinguished Service Award.

Also on the program is **CONSULTING TALES FROM THE STREET**: Senior Member Robert Perruzzi will describe a new consulting experience entitled “If You Can't Beat Them, Join Them.” It will be an informative and enjoyable evening.

Admission

CONET Members	IEEE Student Members	All Others
A: With Dinner \$30	A: With Dinner \$40	A: With Dinner \$40
B: Meeting-Only - Free	B: Meeting-Only-- Free	B: Meeting-Only \$1

Reservations, and Payment

A: With Dinner: Reservations and advance payment are required.

- 1) Reserve by sending an e-mail to CONETtreasury@gmail.com Include your full name and telephone number.
- 2) You will get an e-mail confirmation with instructions for paying by check or credit card.
- 3) Advance payment is required to reserve space for dinner.
- 4) Payment by check must be received no later than Wednesday, November 26, 2014. The credit card deadline is Friday, November 28, 2014.

B: Meeting-Only: Reservations preferred. Walk-ins (space available).

- 1) Reserve by sending an e-mail to CONETtreasury@gmail.com Include your full name and telephone number.
- 2) You will get an e-mail confirmation with instructions for paying by check or credit card.
- 3) Advance payment is not required for meeting-only admission.
- 4) Check or exact cash is accepted at sign-in. (No credit card payment at sign-in.)

The IEEE Philadelphia Consultants Network (CONET) is an Affinity Group of the IEEE. Most Members are electrical or computer engineers. The CONET mission is to share knowledge through technical and business networking. For details, and information on becoming a member, you may go to www.PhilaConet.com

Open: You do not have to be an IEEE member or a CONET Member to attend this meeting. Meeting updates will be sent by e-mail: Be sure your current e-mail address is in our records. If in doubt, confirm your current e-mail address to CONET.Phila@IEEE.org

Questions can be directed to Robert Peruzzi at (610) 462-3939 or by e-mail to Peruzzi@RPeruzzi.com

Your early reservation will assist our meeting planning. Thank you.

Our mailing address is:
Philadelphia IEEE Consultants Network (CONET)
c/o R. Peruzzi Consulting, Inc.
719 Fourth Avenue, Bethlehem, PA 18018

MaST gets big donation

By Northeast Times Staff Oct. 22, 2014



High-tech: In September, MaST Community Charter School, 1800 E. Byberry Road, accepted a \$3,000 donation from the Institute of Electrical and Electronics Engineers (IEEE) Philadelphia Section to fund a new 3D plastic printer for the school's new Makerspace. Makerspace is an innovative space with state-of-the-art equipment designed to cultivate creative thinking and unconventional learning among MaST students. Students can study 3D design, robotics, science, technology and healthcare in the facility.

Adam K. Fontecchio, PhD Named 2015 Engineer of the Year

News From the Delaware Valley Engineers Week Committee

11/12/14

On November 11, delegates of the engineering-related technical societies of the Delaware Valley and past Engineers of the Year met to elect the 2015 Delaware Valley Engineer of the Year. In an effort to accommodate delegates who live and work in the suburbs, the election was held in two locations: Urban Engineers in Center City and GlaxoSmithKline

in King of Prussia, with a WebEx connection. The planned satellite location in Cherry Hill was not needed.

After nominating remarks from representatives of their respective societies and a video of each candidate responding to: “If elected as Engineer of the Year, you will represent the engineering community in the Delaware Valley. Please discuss how you will promote the importance of our profession when given the opportunity to speak to those outside of the industry.”

After the ballots had been cast, Adam K. Fontecchio, PhD, professor and the Associate Dean for Academic Affairs at Drexel University’s College of Engineering, was declared the 2015 Delaware Valley Engineer of the Year. He had been nominated by the IEEE Philadelphia Section.

The Awards Luncheon where he will be inducted is February 20, 2105 at the Doubletree Hotel in Philadelphia.



**Meet Delaware Valley Engineers Week
2015 EOY: Adam K. Fontecchio, PhD**

Ask Drexel Engineering students what they think about Adam Fontecchio as a professor and advisor, and one word is heard over and over again: awesome. Ask the College of Engineering faculty for one word that describes Fontecchio as a peer academic and researcher and the consensus is unanimous: dedicated.

Adam K. Fontecchio is a professor and the Associate Dean for Academic Affairs at Drexel University’s College of Engineering. He is an expert in electro-optics, liquid crystals, polymer dispersed liquid crystals, holography, remote sensing, color filtration, wearable technology and electrically switchable Bragg gratings. His research is focused on the fundamental investigations of liquid crystal interactions to develop novel devices and he has investigated the materials development of polymer/liquid crystal systems for optimization of electro-optical characteristics.

Fontecchio holds bachelor’s, master’s and doctorate degrees from Brown University. He was a NASA Graduate Student Research Fellow at Goddard Space Flight Center where he investigated holographically-formed Polymer Dispersed Liquid Crystal technology for space borne remote sensing applications. He traveled to Tokyo, Japan in the summer of 2000 as part of the National Science Foundation Summer Institute, where he studied polymer-stabilized liquid crystal devices at the NTT Cyberspace Laboratories. He has also served as a Visiting Lecturer in Physics at the University of Massachusetts, Dartmouth campus.

In addition to teaching in the Department of Electrical and Computer Engineering, Fontecchio is a co-director of Drexel’s Expressive and Creative Interaction Technologies (ExCITe) Center, a University-wide strategic initiative bringing together faculty, students, and entrepreneurs from engineering, fashion design, digital media, performing arts, computer and information science, product design, and many other fields to pursue highly multi-disciplinary collaborative projects. He is also the director of the College of Engineering’s NanoPhotonics+ Lab, dedicated to research focused on the nanoscale

interaction of light with matter.

Fontecchio has been highly instrumental in introducing student programs that will influence the engineering undergraduate curriculum at Drexel for years to come. The Lockheed Martin Engineering Leadership Program, which he directs, was developed in partnership with Lockheed Martin and is structured to develop the attributes in aspiring engineers that define true leadership through practice. Required curriculum for engineering freshmen, the program is refined with each of the cohort's academic years so that an elite group of the most promising students are identified as Lockheed Martin Scholars in their third year, and move on to further hone their leadership skills.

DragonTeach, which Fontecchio co-directs with colleagues in the School of Education and the College of Arts and Sciences, is a program that streamlines the process for undergraduate students majoring in STEM fields to become certified teachers. This program not only serves Drexel students, but also the broader issues and concerns of the lack of qualified STEM teachers in the United States today.

Fontecchio is the recipient of numerous honors and awards for his research. Among these are the following:

- Elected Senior Member, IEEE (2011)
- Elected to Vice-Chair position, IEEE Philadelphia Section (2014)
- Patent selected for publication in NASA Tech Briefs magazine "Dynamic Time Multiplexing Fabrication of Holographic Polymer Dispersed Liquid Crystals for Increased Wavelength Sensitivity (2011)
- Electrical and Computer Engineering Department Doctoral Mentor Award (2010)
- Drexel ECE Outstanding Research Achievement Award (2006)
- Drexel Graduate Student Association Outstanding Mentor Award (2006)
- International Liquid Crystal Society Multimedia Prize (2004)
- NASA Summer Faculty Fellowship, NASA Jet Propulsion Laboratory (2003)
- NASA Graduate Student Researcher Fellowship, NASA Goddard Space Flight Center (2000-2001)
- Certificate of Special Congressional Recognition, US House of Representatives (2000)
- Citation of Excellence, Rhode Island House of Representatives (2000)

Fontecchio is a Senior Member of the IEEE, Member of the International Liquid Crystal Society (ILCS), a member of both the American Society for Engineering Education (ASEE), the ASEE Global Leadership Forum on Engineering Education, and the Society of Information Display (SID).

Fontecchio lives in Downingtown, PA with his wife and two daughters. In his spare time he enjoys mountain biking and cooking.

IEEE Philadelphia Employment Network Group

Date: Thursday, December 18, 2014

Time: 7:00 PM - 9:00 PM

Topic and Speaker: IEEE Employment Network - Winter Social Networking Event

Location: Great American Pub - Oak Room (Public Bar area near fireplace - Entrance on W 2nd Ave), 123 Fayette Street, Conshohocken PA 19428 (Phone: 610.940.0540)

Cost: No Charge, snacks will be served, everyone is on their own for drinks.

Organizer: George Butts <george@georgebuttsjr.com>

The December 2014 Employment Network Event will be a social gathering sponsored by the Philadelphia Section of IEEE. Please join us for a Winter Social Networking Meeting to help individuals network towards career development and employment support.

Register for this event in vTools or by calling the office

*** Join our group on LinkedIn for the latest updates and articles related to IEEE Employment around the Philadelphia Region - Search LinkedIn Groups for "IEEE Philadelphia Employment Network" ***

Hackathon

The Drexel Undergraduate Student Branch is running a “Drexel University IEEE Embedded Systems Hackathon” January 10 & 11, 2015. This event would provide undergraduate teams of two or more IEEE student members with a free hardware kit including an Arduino and multiple sensors. Within the 48-hour duration of the hackathon, each team would conceive, create, and demonstrate an application that accomplishes some unique goal. Cash prizes will be awarded to the top three creations. Students from the other branches are invited. For information: Savannah Lee sml352@drexel.edu.

2015 | DELAWARE VALLEY ENGINEERS WEEK
HOLD THESE DATES!

Awards Luncheon
Friday, February 20
DoubleTree Hotel Philadelphia
Broad & Locust Streets
Philadelphia

Young Engineers Social
Tuesday, February 24
Manayunk Brewing Company
4120 Main Street
Philadelphia

Celebration of Engineering Reception
Thursday, February 26
Singh Center for Nanotechnology
University of Pennsylvania
3205 Walnut Street
Philadelphia

Please join us at these events as we honor our
**DELAWARE VALLEY ENGINEER OF THE YEAR,
YOUNG ENGINEER OF THE YEAR & OUR OTHER
AWARD RECIPIENTS**