

IEEE Berkshire Section Newsletter

Update: December 2018

Power Chapter Dinner Meeting: December, 2018

Electric Power System Considerations, Existing Applications, and Future Opportunities for Battery Energy Storage Systems (BESS) by Michael I. Henderson

The use of energy storage has become increasingly important with the large scale development of renewable resources, such as wind generators and photovoltaics. Electric power system studies identify system needs and show the potential opportunities for BESS and competing technologies.

Michael I. Henderson discussed the electric power system issues, types of electric power system studies that must be conducted, and other considerations that must be addressed to successfully develop Battery Energy Storage Systems.

Meeting contacts: David Rueger, Power Chapter Chair

Guest Attendance: 6

IEEE Member Attendance: 18



Dave Rueger, Power Chapter Chair, opens the meeting with speaker introduction

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The IEEE Berkshire Section Members and guests



Michael Henderson receiving a gift from Dave Rueger on behalf of the IEEE Berkshire Section

Computer and Control Chapter (C&C) Luncheon Meeting:
November, 2018

**Getting Ahead with Lightning Strike Simulation
(Recorded Webinar)**
by
Patrick DeRoy
Computer Simulation Technology (CST)

In this webinar the application of CST Studio Suite software to simulate lightning attachments was presented. Simulation and modeling can accurately quantify the flow of lightning currents in an object. The approach is important for producing engineering-level data earlier in the product lifecycle, which can improve time to market and increase design confidence prior to testing. Testing has limitations with regards to physically taking measurements. With simulation and modeling, however, this is no longer an issue. As a result, a simulation and modeling approach can lead to a greater understanding as to the behavior of an object and plays an important role in evaluating system performance when subjected to Electromagnetic Environmental Effects (E3) and for investigating strategies for protection. In this eSeminar, we had seen how EM field simulation can be used to provide insightful information with respect to lightning attachment/ zoning analysis as well as transient current and magnetic field immunity of relatively large platforms such as aircraft.



Meeting contacts: Rich Kolodziejczyk, P.E.

Guest Attendance: 3

IEEE Member Attendance: 12

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The Webinar explains the simulation and modeling approach of the airplane fuselage using elements, as members and guests listen to the presentation



The Berkshire Section audience listening to the presentation...

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Berkshire Consultants Network Dinner Meeting: October 2018

Balderdash Cellars® (the out of place winery) by Christian and Donna Hanson

Who would have ever thought....a thriving winery in Berkshire County? Certainly, the two owners of Balderdash Cellars never imagined it before they got the “bug” 10 years ago. A deep rooted passion for wine (often fueled by a couple glasses of vino), some hard core Italian genes, and a tremendous amount of support from family and friends, Christian and Donna embarked on a journey over a decade ago of building a world class winery in the Berkshires (really only because Donna would not move to Napa, CA). What began as an innocent hobby, quickly grew into a commercial operation in an old bakery basement. After outgrowing the space and tired of not seeing the light of day, the owners recently purchased a farm in Richmond and are currently in the process of building a new facility. Since day 1, they have been guided by their tag line, *wicked wines and tall tales*. Sourcing only premium grapes from CA and NY, they insist on an unyielding commitment to producing *wicked* good wines, but keep it fun and casual with the *tall tales* behind the unique labels on the bottles.

Meeting contacts: Rich Kolodziejczyk, P.E.

Guest Attendance: 7

IEEE Member Attendance: 12



Speaker: Christian Hanson starts his presentation

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Roger Manzolini, Section Treasurer, shares anecdote about the speaker with the audience



Berkshire Section members and their guests listen to the story of wine business project

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Christian Hanson receiving a gift from Rich Kolodziejczyk on behalf of the IEEE Berkshire Section



Product of Balderdash Cellars: 'drink wine and be happy...'

[Life Member Affinity Group: September 15](#)

Tour of Hancock Shaker Village

Our tour focused on solar and water power, “green” architecture and sustainable agriculture, exploring how each impacted life in the Village. The tour was one and half hours with an interpreter who was a STEM presenter for the village. Tour included a visit to the machine shop, barn and other buildings. After the guided tour we were be able to explore the rest of the village on our own.

Hancock Shaker Village began in the late 1780s, when nearly 100 Believers consolidated a community on land donated by local farmers who had converted to the Shaker movement. By the 1830s, with a great many more conversions and additional land acquisitions, the Shaker community peaked in population with more than 300 Believers and more than 3,000 acres of farm land and woods.

The Shakers were proficient in a wide array of crafts, trades and industries, including woodworking and metalworking, basketry, spinning, weaving and broom making. They developed their own water-powered mills for grinding grain, sawing wood, and manufacturing textiles. The Shakers were highly regarded for their honesty, industriousness, and for the quality of their products, which became an important source of income. The Shakers were innovators and contributors to the technology of the day.

Meeting contacts: Rich Kolodziejczyk, P.E.

Guest Attendance: 2

IEEE Member Attendance: 4

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The most iconic building is the “barn”: utilizes local materials, saves energy and incorporates geothermal features.



The passive solar building designed to collect, store, and distribute solar energy in the form of heat in the winter and reject solar heat in the summer.

Power Chapter Dinner Meeting: June 28

**Power Industry Transformation to the Hybrid Grid
by
Michael I. Henderson**

The traditional electric power grid connected large central generating stations through a high-voltage (HV) transmission system to a distribution system that directly fed customer demand. Generating stations consisted primarily of steam stations that used fossil fuels and hydro turbines that turn high inertia turbines to produce electricity. The transmission system grew from local and regional grids into a large interconnected network that was managed by coordinated operating and planning procedures. Peak demand and energy consumption grew at predictable rates, and technology evolved in a relatively well-defined operational and regulatory environment.

Over the last hundred years, there have been considerable technological advances for the bulk power grid. But the power grid is being rapidly transformed by new technologies.

The need for understanding and addressing interactions between the distribution system and transmission in the electric power industry continues to accelerate annually. This talk contained discussion on: drivers for change, grid modernization needs, and vision of the future grid, technologies being implemented, industry structural changes underway and IEEE preparation for a bright tomorrow.

Meeting contacts: Dave Rueger, Power Chapter Chair

Guest Attendance: 16

IEEE Member Attendance: 7

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Dave Rueger, Power Chapter Chair, opens the meeting with speaker introduction



Speaker: Michael Henderson starts his presentation

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The Berkshire Section audience listening to the presentation...



The IEEE Berkshire Section Members enjoying their dinner.

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More of the IEEE Berkshire Section Members...



Michael Henderson receiving a gift from Dave Rueger on behalf of the IEEE Berkshire Section

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Life Member Affinity Group Presented Annual Dinner Meeting: May 23

2018 IEEE Berkshire Section STEM Research Challenge Presentations by Research Challenge Winners

We recognized this year's winners by giving the students a few minutes to talk about their project: how they chose their topic, their research, and any interesting discoveries.

Grades 9/10 prizes: (1st - \$600, 2nd - \$400, 3rd - \$200)

1st - Lanna Knoll - Grade 10, Miss Hall's School: "CRISPR: The New Genome-Editing Tool"

2nd - Liana Hall – Grade 10, Lee Middle and High School: "The Ninth Planet"

3rd - Zachary Goffin – Grade 10, Monument Mountain Regional High School: "Sleep... The Eighth Wonder of the World"

Grades 11/12 prizes: (1st - \$600, 2nd - \$400, 3rd - \$200)

1st – Sofia Smedvig – Grade 11, Monument Mountain Regional High School: "Can we Reverse Paralysis?"

2nd – Wilson Sprague – Grade 11, Monument Mountain Regional High School: "Biomimicry: Innovation Through Observation"

3rd – Zoe Hypolite – Grade 11, Miss Hall's School: "'I was blind but now I see': Child Blindness Through Open Eyes"

Honorable Mention – Grade 12, Miss Hall's School: "Romania's Failure to Thrive: A Lost Generation"

From Award Chairman:

Rich Kolodziejczyk our Chairman announced the list of winners of the Member Child Awards for 2018 Member Child Awards \$100: No applicants this year.

Meeting contacts: Jill McKennon, Education Chair

Guest Attendance: 11

IEEE Member Attendance: 27

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Jill McKennon, Education Chair, opens the meeting and introduces the 2018 IEEE Berkshire Section STEM Research Challenge Winners

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1st - Lanna Knoll - Grade 10, Miss Hall's School: "CRISPR: The New Genome-Editing Tool"



2nd - Liana Hall – Grade 10, Lee Middle and High School: "The Ninth Planet"

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3rd - Zachary Goffin – Grade 10, Monument Mountain Regional High School: “Sleep... The Eighth Wonder of the World”



1st – Soffia Smedvig – Grade 11, Monument Mountain Regional High School: “Can we Reverse Paralysis?”

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3rd – Zoe Hypolite – Grade 11, Miss Hall's School: “I was blind but now I see”: Child Blindness Through Open Eyes”



Honorable Mention – Mariah Lewis - Grade 12, Miss Hall's School: “Romania’s Failure to Thrive: A Lost Generation

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Miss Hall's School Winners: Mariah Lewis, Zoe Hypolite, Lanna Knoll (left to right)

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Computer and Control Chapter Dinner Meeting: April 19

Cryptocurrency

by

Michael Glaberman

CGC IT Solutions + Genesis10

What has been one of the single biggest breakthroughs in computer technology in recent history? That is an easy answer: Cryptocurrencies (or at least the technology behind Cryptocurrency). Cryptocurrencies have been a driving force in Blockchain Technology, a technology that is in its infancy and has endless possibilities. This presentation touched on the basic concepts of the Blockchain Technology and its practical applications. Cryptocurrencies was focused on, with a detailed explanation on what they are, how they function, and provide insight into whether or not the radical idea(s) behind many top performing Cryptocurrencies are worth an investment.

Meeting contacts: Rich Kolodziejczyk, P.E.

Guest Attendance: 17

IEEE Member Attendance: 10



Rich Kolodziejczyk, Section Chair, opens the meeting with speaker introduction

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Speaker: Michael Glaberman starts his presentation

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Michael explains Cryptocurrency concept



Furthermore, explanation of the Blockchain Technology and its practical applications for Cryptocurrencies

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Berkshire Consultants Network Presented National Engineers Week Dinner Meeting: February 22

American Engineering Jobs

By

Peter A. Eckstein HKN
2016 President IEEE-USA

For years, IEEE-USA has been vocal in highlighting abuses in the H-1B visa program to the U.S. Congress. These abuses created unfairness for temporary non-immigrant workers and American workers.

What has happened to American engineering jobs? Many of us have heard of the H-1B visa, and the controversy surrounding it. But, what is it, how does it work, and how does it impact our employment? This talk demystified the visa process and explained how its abuse is affecting the engineering community.

Meeting contacts: Rich Kolodziejczyk, P.E.

Guest Attendance: 6

IEEE Member Attendance: 10



Kolodziejczyk, Section Chair, opens the meeting with speaker introduction

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Speaker: Peter A. Eckstein, 2016 IEEE Region 1 Director starts his presentation



Peter Eckstein quotes the statistics on the H-1B visa in USA

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Peter Eckstein is presented with a gift from Rich Kolodziejczyk on behalf of the IEEE Berkshire Section