Detecting heat to save lives using thermal imaging for early detection of breast cancer

Postponing the Dr. Walter Cooper Academy's Science Fair to This Fall... RES Volunteer/Mentors Needed in October/November 2019

The School-Based Planning Team and the Parent-Teacher Organization (PTO) at Dr. Walter Cooper Academy have invited the RES to help with the development of the “First Annual”, Dr. Walter Cooper Academy Science Fair.

Please consider volunteering. See page 6 for details...

NOTE: WE DO NOT PUBLISH A JULY ISSUE
Copy is due July 10th for the August Printed Issue
Detecting heat to save lives using thermal imaging for early detection of breast cancer (cover article) Page 8

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**RES Mission Statement:** The RES will become the lead organization for improving the image and influence of the engineering community in the greater Rochester area by: Demonstrating a comprehensive knowledge of the region’s engineering and technical capabilities; Providing the best clerical support and public relations assistance to our affiliates; Continually communicating the engineering and technical accomplishments to both the engineering and technical community and the public; Providing regular forums and networking opportunities for the exchange of ideas and discussion of issues; and, Providing programs that identify career opportunities to the region’s youth and develop the skills of the practicing engineer.

News items and articles are invited. Materials should be submitted to the administrative director at the society’s office, 657 East Avenue, Rochester, New York 14607; Phone number (585) 254-2350, e-mail: admin@roceng.org

The web site for the Engineers’ Center is at: [www.roceng.org](http://www.roceng.org). The deadline is the 10th day of the month prior to the issue. Unless otherwise stated, opinions expressed in this publication are those of contributors, not of the Rochester Engineering Society, Inc. Advertising information may be obtained by contacting the office of the Rochester Engineering Society or going to the website at [www.roceng.org](http://www.roceng.org).

Published every month but July. Yearly subscription is $20.00, (4 hard copies, 11 digital). You can sign up on the website for the subscription for digital copies only (free) and receive an email notice when posted.

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President’s Message

Spring has finally sprung! Can summer be far behind?

Planning is underway for our next RES fiscal year (beginning June 1, 2019). We have filled our vacant director openings but are always looking for assistance. If interested, please contact us at http://www.roceng.org.

The new RES year starts in June. Our annual meeting was held 5/22/19 at the Rochester Museum and Science Center. May you find our next year to be as engaging as the last year!

Our strategic planning committee has re-convened to chew on some new ideas and inspiration which we hope to roll out shortly.

Lee Lommis is looking for volunteers to assist at a Science Fair being proposed for the Dr. Walter Cooper Academy of the Rochester City School district. If you can help or just need more details, contact Lee at: leeloomis46@gmail.com (see page 6).

The Rochester Engineering Society STEM initiative STEM Bridges was recognized at the Finger Lakes STEM Hub Award Reception held at the Rochester Museum and Science Center’s Riedman Gallery on Wednesday, May 15, 2019.

Jon Kriegel has several active STEM initiatives and is always looking for assistance; please contact him and see the RES website for further details and dates.

That’s it for now, see you at our activities and have a safe start to summer.

Joe Dombrowski
RES President
Continuing with the historical sampling of the earlier writings on behalf of the Rochester Engineering Society, the years following “The Great War,” into and through the “Great Depression,” continued to be a time of reaching out for the maturing Society, both locally and nationally. The meeting minutes describe a series of technical discussions and presentations intended to broaden the technical horizons of the membership (especially the CE’s, ME’s and EE’s). The RES affiliated itself with a number of National technical societies, adopted local Affiliated Societies, frequently held joint meetings with them and continued taking action on a growing list of public matters. Certain issues of standardization, some crucial to public safety, became the responsibility of the RES and its affiliates. In the pervasive economic downturn of the “Great Depression,” the magazine offered classified advertising for unemployed engineers, technicians and draftsmen and took other steps to try to deal with the crisis. Still, it continued its effort to shape the function, purpose and infrastructure of the City of Rochester, and beyond. Soon, war would again affect the Society, taking away many of its leaders while providing opportunities for others to step forward to fill these vacancies. In an effort to provide even greater perspective on the happenings and concerns of the day, a synopsis, featuring selected items from “The Rochester Engineer” has become an integral part of this series. The Second World War and the Korean Conflict are now history. These experiences have changed the face and, no doubt, the future of the community. The Rochester municipal leadership and the industrial community have become immersed in the cold-war, growth economy.

“<em>The Rochester Engineer</em>” (April 1970)
RES President, Alexander M. (Sandy) Beebee, Jr. invited attention to the Society's services to local industry. These included a program of continuing education for engineers, efforts to interest young people in engineering careers, assistance to local engineering schools, applying engineering skills to community problems, centralized services for affiliated technical societies, a single monthly publication for all engineers, engineer recruiting assistance to local employers, development and growth opportunities for local engineers and annual recognition of outstanding engineers. The April RES Luncheon Meeting Series included: “Cost Effectiveness” by Benjamin S. Blanchard of General Dynamics Electronics, “The Art of Forecasting” by Dr. Vernon G. Lippitt of the U of R, “Moog Music” by Dr. Robert A. Moog, independent entrepreneur and developer of the Moog Synthesizer. (Editor’s note: Remember the 1970’s music of The Doors, Grateful Dead, Rolling Stones and The Beatles?) “Eastman Membrane in Separation Processes” by Walter D. Slowig, Eastman Kodak Company. The Boy Scouts of America announced the establishment of a merit badge on the subject of engineering, focused on chemical, civil, electrical and mechanical engineering. RES members were urged to reach out to area Boy Scout Troops to offer their services as advisors to Scouts seeking this award. RES Officer and Director nominations for 1970-71 included: President – Robert G. Leavitt of Taylor Instrument Companies, First Vice President – James A. Clark of Bausch & Lomb Corporation, Second Vice President – Edwin L. Anthony of Erdman and Anthony, Consultants, Secretary – Mark H. Sluis of General Railway Signal Company, Treasurer – Leonard S. Corey of Eastman Kodak Company, Directors (three years) – George S. Landberg of Mixing Equipment Company and John F. Schickler of Rochester Products Division of General Motors Corporation. Mr. Steven Marras, Managing Director of the Engineering Foundation of Dayton, OH, was invited and came to Rochester to confer with RES leadership on the feasibility of engaging professional assistance in planning a continuing education program for Rochester engineers. Raymond E. Keefe, Jr., PE, former Asst. Director of Public Works for the Monroe County, was appointed Commissioner of Public Work for the City of Rochester. Editor’s note: Mr. Keefe would later become “1981 Rochester Engineer of the Year.”

May 6, 1970 (Board of Directors Meeting, Rochester Yacht Club) The Board received a letter from George Beinetti (Rochester Telephone Corporation) inviting the RES’ participation a career interesting exploration program, intended to attract high school students to careers in engineering. The Board approved the appointment of RES member, Milton Roessel to chair an ad hoc committee to explore the possibility of hiring professional help to develop an RES-sponsored industrial exposition, as a fund-raising event for the Society. The Board approved five new Regular Members and one Junior Member. It was reported that a meeting had been scheduled with the Consulting Engineers Council to discuss their concern about an RES volunteer committee, engaging in professional consulting work at the Rochester General Hospital. The Board authorized the Education Committee to carry on discussions/negotiations with several candidates for a full-time position as Education Director for the RES, to develop state-of-the-art engineering education programs for its membership, beyond that offered by area engineering schools. The Board authorized RES Executive Secretary, Norman Howden's attendance at the 1970 Council of Engineering and Scientific Societies meeting, in Montreal, Quebec.

“<em>The Rochester Engineer</em>” (May 1970)
In addition to the installation of the new RES Officers and Directors, attendees at the June 3, 1970 Annual Meeting would hear from RES Member, Ed Seymour, on his adventures as a sailplane pilot, including his record 29,200 ft. flight over Mt. Washington, and his 200+ mile flight from Dansville, NY to York, PA. This issue provided a special summary of the April 1970 RES Board meeting, including discussions of the new Dayton, OH, Engineering & Science Institute building, activities of the RES Civic Affairs Committee with more than a dozen RES groups on various civic projects, and a report that the RES High School Guidance Committee plans to visit 52 high schools in the area by the end of this school year, to inform teachers and guidance personnel about opportunities in the engineering profession. Advertised in this issue of “<em>The Rochester Engineer</em>”…The City of Rochester is seeking candidates for Senior Engineer, Bureau of Buildings; salary range - $11,492 to $13,975. A degree in civil or architectural engineering, with six years’ experience, and an impending PE license, are required.

Subsequent articles in this series will describe the RES’ continuing outreach to other technical societies as it considered its role in this and the larger community, along with more of the activities of the RES as it moved to be of greater service to its membership, especially those suffering from current economic crises, and adopted a greater role in shaping the future of the City and its environs. Noted also, will be the contributions made by RES members in the struggle to meet the challenges coming out of World War II, as well as a hoped-for period of post-war growth and prosperity. These articles will also feature an impressive array of RES activities in support of post-war re-emergence of Rochester area industry.

We welcome your questions and comments on this series.
This month’s article speaks to the challenges of sizing multiple motor circuits. First some common vocabulary/abbreviations:
MCA—minimum circuit ampacity—minimum wire size required
FLA/FLC—full load amps/current at rated load and voltage

Motor branch circuits and feeders must have overcurrent protection devices to protect the circuits from short circuits and ground faults. Overload protection is a separate calculation and often puts the overload protection device at the motor itself.

In this example, the motor information is given in the photo. Assume the branch and feeder protection are both breakers, not fuses.

Step-1: Determine the overcurrent protection for the largest motor by using NEC Table 430.52 and the Inverse Time Breaker ratings of 250%. (FLC x 2.5 = 70A)

Note—if the above equated to, say, 68 Amps then using the next standard size listed in NEC 240.6 could have been used which would put us at 70A anyways.

Step-2: Repeat step 1 for the 2nd motor. (17 x 2.5 = 42.5) Next size up per NEC 240.6 is 45A.

Step-3: Add the FLC of ALL the other motors on the same circuit to the rating of the breaker calculated for the largest motor. (70 + 17 = 87 Amps) Using the next standard size DOWN per NEC 240.6 gives you a feeder breaker rated at 80A.

The confusing part here is using the next size down. Typically sizing a breaker at 250% is unheard of and would add additional cost to the owner. Using this to size the branch protection already adds a safety factor so using the next size down is warranted.

This article was not intended to go over wire sizing, but you might have noticed the use of #6 AWG wire on the 80A feeder circuit. For motor circuits the wire sizes only need to be sized per the MCA (definition above) which equates to 125% of the FLC (definition above) of the LARGEST motor and the sum of the FLC of ALL other motors. (28 x 1.25) + 17 = 52 amps. This represents the minimum ampacity the wiring must be rated for. So using the 60 degree column #6 AWG is rated for 55 amps and exceeds the 52 amps calculated.

Personally, I prefer to size the wire per the feeder breaker rating (80 amps) which is acceptable as well.

Hopefully this article finds you well and can be used as a reference for your project needs.

If anyone would like to contribute to the RES magazine and add an article or would like to request information on a specific topic (not limited to Electrical) just email me at beliasz@bergmannpc.com. As always, any comments are appreciated…! Thank you for reading.

Image Credits: Mike Holt Enterprises Inc.

Brett Eliasz, P.E., LEED AP BD+C, RES Director
Postponing the Dr. Walter Cooper Academy's Science Fair to This Fall (2019) ...

The School-Based Planning Team and the Parent-Teacher Organization (PTO) at Dr. Walter Cooper Academy have invited the RES to help with the development of the “First Annual”, Dr. Walter Cooper Academy Science Fair.

Using RES Volunteer/Mentors, we had hoped to help our students to prepare their projects this Spring, and hold the Science Fair, this June. However, it seems that too many of us are unavailable in May & June of this (or any?) year, so we’ve decided to postpone the event to next Fall. On our way to finding mentors for this, we have received assurances that many of those not available this Spring would indeed look forward to such an opportunity, next October, November & December.

The PTO has developed a step-by-step plan for the Kick–Off, Student Selection and Exhibition portions of our Fall 2019 Science Fair. This plan begins when the teachers of our 3rd – 6th Graders introduce the concept of a science fair to their students on Friday, October 18th. On this day, they will be witness to an RES-Sponsored School Assembly Program that will include exhibits of various technologies, designed to stimulate the students’ curiosity, so that groups of students can then visit these displays and hear about the various principles of science that they represent.

Having seen these exhibits, the students will then be offered the opportunity to participate in the science fair by submitting an application, by Friday, October 25th, expressing their interest, and agreeing to complete the required work.

The following week, RES Volunteer-Mentors will meet with a small group of students, during their 40 minute science blocks (classes), to help them choose a phenomenon, plan their investigation and design the presentation of their findings for the fair. Homework might be given, as needed. For this first-time attempt, participation will be limited to a total of about 26 students.

Twice-weekly meetings of RES Volunteer-Mentors and their assigned students, in preparation for the fair, will begin during first week of November, and continuing for the next four weeks, with the fair scheduled for the first week of December.

Science blocks (40 minute classes) occur on Tuesdays and Thursdays, between 9:50AM and 2:55PM as follows:

- **Grade 3** (age 8 yrs) – 11:00AM – 11:40AM
- **Grade 4** (age 9 yrs) – 1:30PM – 2:10PM
- **Grade 5** (age 10 yrs) – 2:15PM – 2:55PM
- **Grade 6** (age 11 yrs) – 9:50AM – 10:30AM, 12:30PM – 1:00PM, and 1:30PM – 2:10PM

Remembering how much science meant to you, as a young student, won’t you please consider volunteering for this important opportunity to support our Scholars at Dr. Walter Cooper Academy?!? You can become the “help” these young people need.

Questions?? Reach out to RES Past President Lee Loomis and the RES Tutoring Team at...Rochester Engineering Society (585) 254-2350, via website: www.roceng.org, or via email: leeloomis46@gmail.com, (585) 738-3079 (mobile & text)
How do you arm a STEM Teacher with real-world application examples?

*Put an Engineer in the classroom*

In the 1990’s, Eastman Kodak Company jumped the gun, starting a family of STEM initiatives, years before the Government coined the STEM acronym. The name of these programs was the 21st Century Learning Challenge (TCLC), and at our peek, we were 1500 engineers and technicians, visiting Rochester City School Classrooms, twice a week for two-hour visits, during the entire School Year. This effort continued for nearly ten years, and not only pre-dates our recent STEM excitement level, but delivered support on a scale we have yet to match.

Many of the volunteers in these programs were, and still are, members of the Rochester Engineering Society (RES). In the intervening twenty-five years, many have retired, or are about to retire. That makes them even more available as STEM Coaches, than they were as Kodak employees.

The RES is working to put technical people in K-12 Classrooms, throughout the Greater Rochester area, as STEM Coaches. Their presence will:

- Help the Teacher stay current with our ever-changing technology.
- Provide real-World Application Examples, making whatever is being taught, real enough to be worth remembering.
- Support the teachers with not only the delivery of STEM concepts, but perhaps more importantly, the design and delivery of STEM related hardware.

Last year we had six STEM Coach, doing Classroom Visitation at School #3. That was so successful that RCSD is interested in expanding this program to involve nine STEM Coaches this year.

The RES is specifically seeking Retired, Technical people, (Engineers, Technicians, Machinists, Entrepreneurs or anyone whose work would allow them to visit during School hours), as STEM Coaches. We currently have more than 30 Coaches, and are connecting them with 13 Rochester-area Schools.

“This is a life-changing experience!”

For more information contact: Jon Kriegel  •  jkriegel@rochester.rr.com  •  585-281-5216
RES Volunteer Coordinator, Volunteer STEM Coach
Please visit: roceng.org/stem-bridges
Detecting heat to save lives  
Using thermal imaging for early detection of breast cancer  
by Jose Luis Gonzalez Hernandez, RIT Student

Numbers carry more meaning than the value they possess. For example, the number 12.5 may seem like any other number. However, for women, it is a constant reminder that 12.5% of them will develop breast cancer during their lifetime; this is one out every eight women in the United States. Unfortunately, it is estimated that one out every 24 women (4.17%) will die of breast cancer. Breast cancer can be cured if detected or removed when it is found in its earlier stages. Patients have a 99% chance of survival for at least five years after the diagnosis of breast cancer (5-year survival rate) when cancer is detected in the earlier stages. In contrast, the 5-year survival rate drops to 22% if it is detected when cancer has spread to other parts of the body. The average annual cost for breast cancer treatment is $60,637 when treatment starts during the initial stages and it increases (threefold) to $182,655 for advanced breast cancer. Therefore, detecting breast cancer early is crucial to increase the chances of survival and reduce the cost of treatment.

Improving breast cancer screening is essential to detect early signs of breast cancer. Mammography is the most common modality to detect cancer at an early stage. However, it can miss up to 38% of cancers in women with dense breasts as dense tissue can mask tumors. More than 40% of women have dense breast tissue and are at higher risk of developing breast cancer. Magnetic Resonance Imaging (MRI) is an alternative to mammography however, it is very expensive and time consuming to be used as a screening modality for the general population. Ultrasound is a screening modality that can be used for younger patients, for whom mammography is not recommended or have confirmed dense breasts, but it is very operator dependent and findings may be difficult to reproduce. The team at the Thermal Analysis and Microfluidics Laboratory (TAMFL) at the Rochester Institute of Technology (RIT) has partnered with a team of clinicians at the Rochester General Hospital (RGH) to develop a novel screening modality for breast cancer screening using thermal imaging. The TAMFL-RGH team is formed by thermal researchers and experienced healthcare professionals including radiologists, breast surgeons and oncologists. The team strongly believes that major global problems can only be addressed from a multidisciplinary point of view.

Thermal imaging is not affected by breast density like mammography. Therefore, it can be developed as a valuable alternative for screening, especially in younger women and women who cannot receive mammograms. Thermal imaging is complimentary to mainstream modalities as it detects cancer from a different perspective than the detection of abnormal masses in mammograms or MRI. While it is not a new technology, thermal imaging has a lot of potential if viewed in a new perspective.
The TAMFL-RGH team is exploring thermal imaging in the prone position, in which patients lie face down on an imaging table, because this position allows complete optical access to the breasts and avoids contact between the breasts and the chest. In contrast, conventional thermal imaging is done while patients are upright, which blocks visualization of the inframammary fold and induces thermal artifacts because the breasts contact the chest surface. The goal of the TAMFL-RGH team is to develop thermal imaging as an accurate and reliable modality for breast cancer screening that helps in the early detection of breast cancer.

Breast thermal imaging is an FDA approved adjunct for breast cancer screening that relies on the distinctive heat patterns associated with the development of breast cancer. Thermal imaging can detect breast cancer because tumors generate more heat through metabolism and blood supply than surrounding tissue. From a thermal point of view, tumors are warmer entities embedded in a colder body. Thermal imaging can detect signs that are indicative of pre invasive lesions, such as formation of new blood vessels and increased density of blood vessels. However, thermal imaging is not widely implemented because most common detection criteria is based on the presence of certain features and the experience of radiologists interpreting the images rather than in quantifiable measurements.

The interdisciplinary team at TAMFL and RGH is working towards the development of scientifically sound criteria for the analysis of thermal images. One area that is being explored by the TAMFL-RGH team is the use of computer models to aid in understanding the effect of breast cancer on the surface temperature distribution. The computer models developed by the TAMFL-RGH team have the actual breast shape in the prone position and accurately predict the heat patterns observed in breast thermal imaging. In breasts without breast cancer, the temperature smoothly decreases from its maximum value near the chest wall to its minimum towards the tip of the breasts. In the presence of breast cancer, this pattern is disrupted and abnormal heat patterns are observed.

The TAMFL-RGH computer models are able to capture the layering heat pattern observed. The magnitude of the temperature peak and the distribution of the temperature profile correlates with the heat generated by the tumor. The team is intensively studying the temperature changes induced by cancer to determine quantifiable criteria to accurately detect breast cancer. Previous numerical breast models have been simplifications of the breast shape, such as rectangular prisms and hemispheres; although valuable, these models are unable to provide accurate temperature predictions. Having a model with the actual breast shape helps to study different scenarios, and how the surface temperature will change without causing any discomfort on patients or requiring additional imaging. The computer models developed by the TAMFL-RGH team have been validated with thermal imaging data and are being used to aid in the determination of quantifiable criteria for breast cancer detection.

The technique under development is highly portable and can be incorporated in underserved or rural populations because it does not require special infrastructure or special equipment other than an infrared camera and an imaging table. In preliminary studies, the method under development by the TAMFL-RGH shows potential to be used as an accurate adjunct tool for breast cancer screening, which could help in detecting breast cancer early and ultimately to save lives.

Jose Luis Gonzalez is a mechanical engineer PhD candidate at the Rochester institute of Technology.
Get to the Point!

Taking the Dread Out of Networking

Engaging in interesting, memorable small talk is a daunting task for most people. How do you know what to share and when to share it? How do you know what topics to avoid? How do you become an engaging conversationalist?

We propose a simple three-level framework that you can use to master the art of conversation. Identifying where you are and where you should be is not always easy, but having an objective outline can help you stay out of sticky situations. We will also share some handy networking tips that will help you get conversations started.

Level One: Discussing General Topics
At the most basic level, stick to general topics: the weather, sports, non-controversial world events, movies, and books. This is typically what people refer to when they say, “small talk.”

At this stage, you will focus on facts rather than feelings, ideas, and perspectives. Death, religion, and politics are absolute no-no’s. (The exception is when you know someone has had an illness or death in the family and wish to express condolences. In this situation, keep your condolences sincere, brief, and to the point.)

If someone shares a fact that you feel is not true, try to refrain from pointing out the discrepancy. If you are asked about the fact, it’s OK simply to say, “I wasn’t aware of that,” or make some other neutral comment.

Right now, you are simply getting to know the other party. Keep an eye out for common ground while you are communicating. Use open-ended questions and listening skills to get as much out of the conversation as possible.

Level Two: Sharing Ideas and Perspectives
If the first level of conversation goes well, the parties should feel comfortable with each other and have identified some common ground. Now it’s time to move a bit beyond general facts and share different ideas and perspectives.

It is important to note that not all personal experiences are appropriate to share at this level. For example, it’s fine to share that you like cross-country skiing and went to Europe, but you may not want to share the fact that you took out a personal loan to do so.

Although this level of conversation is the one most often used, and is the most conducive to relationship building and opening communication channels, make sure that you don’t limit yourself to one person in a large social gathering. We’ll offer some ways to mingle successfully in a few moments.

Level Three: Sharing Personal Experiences
This is the most personal level of conversation. This is where everything is on the table and personal details are being shared. This level is typically not appropriate for a social, casual meeting. However, all of the skills that we have learned today are crucial at this stage in particular: when people are talking about matters of the heart, they require our complete attention, excellent listening skills, and skilled probing with appropriate questions.

Our Top Networking Tips
Understanding how to converse and how to make small talk are great skills, but how do you get to that point? The answer is simple, but far from easy: you walk up, shake their hand, and say hello!

If you’re in the middle of a social gathering, try these networking tips to maximize your impact and minimize your nerves.

• Before the gathering, imagine the absolute worst that could happen and how likely it is. For example, you may fear that people will laugh at you when you try to join their group. Is this likely? At most business gatherings, it’s very unlikely!
• Remember that everyone is as nervous as you are. Focus on turning that energy into a positive force.
• To increase your confidence, prepare a great introduction. The best format is to say your name, your organization and/or position title (if appropriate), and something interesting about yourself, or something positive about the gathering. Example: “I’m Tim from Accounting. I think I recognize some of you from the IT conference last month.”
• Act as the host or hostess. By asking others if they need food or drink, you are shifting the attention from you to them.
• Start a competition with a friend: see how many people each of you can meet before the gathering is over. Make sure your meetings are worthwhile!
• Join a group of odd-numbered people.
• Try to mingle as much as possible. When you get comfortable with a group of people, move on to a new group.
• When you hear someone’s name, repeat the introduction in your head. Then, when someone new joins the group, introduce them to everyone. Mnemonics are a great way to remember names. Just remember to keep them to yourself! Some examples:
  o Mr. Singh likes to sing.
  o Sue sues people for a living.
  o How funny – Amy Pipes is a plumber!

And the best piece of advice: Just do it! The longer you think how hard networking is, the harder it will be. Get out there, introduce yourself, and meet new people.

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Lisa Moretto is the President of RGI Learning, Inc. For 24 years she has helped engineers improve their oral and written communication skills. Visit www.rgilearning.com or call (866) 744-3032 to learn about RGI’s courses.
My company started in the outsourcing business back in the early 1990s. At the time outsourcing was provided only by very large entities such as IBM and EDS for other entities of similar size. Our concept of outsourcing IT to mid-sized and smaller firms was non-existent. The concept was difficult for many. Commentary often times went like this: “Why would customers hire your firm and ostensibly pay more instead of hiring those people directly?” Come to think of it, I still get that question and I find it valid. The short answer is ‘better, cheaper, and faster’ and it almost always is a combination of those things that make outsourcing a better way to go.

Outsourcing for compliance and security today mirrors that same argument.

The list of high profile data breaches impacting corporate America continues to grow. Retail giants like Target™ and health care providers like Blue Cross/Blue Shield™ have been breached. Few Americans have not received a letter informing them that their personal data has been compromised from trusted companies. The aftermath of these highly publicized data breaches is a veritable rush to implement solutions to improve data security.

The drive to strengthen an organization’s security posture is reflected in the number of industry and sector specific standards that your company needs to consider. These standards range from ones generated by industry sectors such as PCI/DSS to mandated standards such as HIPAA.

Each of these standards has a different focus but all of them require that companies understand what comprises their IT infrastructure and that they maintain policies, procedure and controls to project customer and client data.

No company has the luxury of excess staff and unlimited budgets. Determining how to address a set of actions that must be completed in order to address compliance requirements, generally results is a set of tradeoffs regarding where you are going to allocate resources and funding.

The three options that companies have are:
1. Do everything in-house
2. Outsource everything
3. Outsource those things that are better done by someone else

The third option, outsourcing those things that are better done by someone else, can be compared with a make/buy analysis. Companies routinely look at products and components that they want to take to the market and determine if it makes more sense to make them in house or to buy them from someone else. How you choose to manage your IT infrastructure to align with your compliance requirements should be viewed similarly. Common questions that should be part of this analysis include:

- Are you staffed at a level to meet demand?
- Do you have the required expertise to address compliance requirements?
- Will assigning in house staff to address compliance requirements divert them from other activities that are critical to business objectives?

Ensuring that your IT infrastructure contributes to your company’s security posture and is aligned with relevant compliance frameworks requires a 24/7/365 focus.

Your IT staff exists to serve the needs of your company. This includes meeting all of your IT and compliance requirements. How to proceed should include determining what you want internal staff to concentrate on and what activities are better handled by a third party.

Monitoring and managing your server environment is a good place to begin. Monitoring of servers, filtering through alerts, and dispatching resources to handle issues does not involve the same skill levels that network management and support of your critical projects requires. Off-loading the monitoring and management of your server environment frees your IT staff to focus on critical projects and business requirements.

Think About IT

Andrè Godfrey is President, Entrè Computer Services, www.entrecs.com
CHA Appoints Jim Stephenson Chief Strategy Officer

CHA Consulting, Inc. (CHA) announces the appointment of Jim Stephenson as Executive Vice President and Chief Strategy Officer. Based in Boston, Jim will lead CHA’s strategic development, acquisitive growth initiatives, and go-to-market strategies.

Jim brings more than 20 years of financial and corporate development experience to CHA. Prior to joining CHA, he was the Chief Strategy Officer at TRC Companies, ranked #20 on the ENR Top 500, where he was responsible for structuring a five-year strategic growth plan focused on executing acquisitive growth and strategic investments, and also co-led TRC’s successful public to private sale transaction to New Mountain Capital in 2017. Jim was also a director at Huron Consulting Group, Inc. directing financial restructuring and operational turnaround efforts in a variety of industries. He has been awarded the Environmental Business Journal – Large Company M&A Award four times, most recently outstanding achievement in M&A in 2018 and is a frequent panelist at industry events.

Jim earned his MBA in financial and international business at American University – Kogod School of Business in Washington, D.C. and his B.A. in business management at Clark University in Worcester, MA.
Go to the RES Web Site for Updated Details On All Meetings - www.roceng.org

Continuing Education Opportunities

Wednesday – Friday, June 12-14
Institute of Electrical and Electronic Engineers (IEEE)  p 27
Machine Intelligence & Deep Learning Workshop
PDH Credits Offered
Place: RIT Campus.
Registration: IEEE members get a 10% registration discount.
See https://www.rit.edu/kgcoe/cqas/machinelearning for more details.

Support Your Affiliate
Attend A Meeting

To post continuing education opportunities on this page please contact the Rochester Engineering Society, 585-254-2350, or email: admin@roceng.org

Wednesday, September 18
American Society of Plumbing Engineers (ASPE)  p 25
The Art of Water: Solving delivery challenges with bottle filling stations
1 PDH Credit Approval Pending
Place: Valicia’s Ristorante, 2155 Long Pond Road, Rochester, NY 14606 (just north of Route 31, Gates)
Time: 12:00 noon to 1:30 pm (please arrive by 11:50 am).
Cost: $20 (member or guest), check or cash at door.
Reservations: To Dave Jereckos (585-341-3168), or djereckos@ibceng.com

Engineers’ Calendar

The engineering societies are encouraged to submit their meeting notices for publication in this section. The deadline for submitting copy is the 10th of the month prior to the month of publication. Please email to: admin@roceng.org. The meetings offering PDHs are highlighted in blue. Details about the meeting and affiliate (if in this issue) are on the corresponding page listed next to the affiliate name.

Tuesday, June 4
Institute of Electrical and Electronic Engineers (IEEE)  p 27
EXCOM Meeting
Place: Tandoor of India
Time: Noon to 1:00 pm
Details at http://sites.ieee.org/rochester/event/rochester-section-excom-meeting-new-location/.

Wednesday – Friday, June 12-14
Institute of Electrical and Electronic Engineers (IEEE)  p 27
Machine Intelligence & Deep Learning Workshop
PDH Credits Offered
Place: RIT Campus.
Registration: IEEE members get a 10% registration discount. See https://www.rit.edu/kgcoe/cqas/machinelearning for more details.

Friday, June 14
Institute of Electrical and Electronic Engineers (IEEE)  p 27
Thyristor Milestone Ceremony
Place: Advanced Atomization Technologies, Clyde, NY
Details will be available on the website.

Tuesday, June 18
Association for Facilities Engineering (AFE)  p 24
AFE’s Annual Nick Dargento Memorial Scholarship Golf Outing
Place: Victor Hills Golf Club – South Course, 1450 Brace Road, Victor.
Time: Registration starts at 9:00 am; Shotgun Start at 10:00 am.
Cost: 18 Holes of Golf & Lunch is $60; Golf and Dinner is $85; Dinner Only is $35. (Includes breakfast, lunch [grilled chicken, burgers, sausage & hots], beer and soft drinks and Buffet Dinner at 4:00 pm – steak, chicken, ziti, salads and more). Hole sponsorship also available. Registration and prepayment is required by June 14th. Checks should be made payable to AFE and sent to Ken Carr, c/o Maplewood YMCA, 25 Driving Park Avenue, Rochester NY 14613 or use the PayPal link at www.afe21.org. Questions to Dan Friday, 315-594-3131.

The RES website (www.roceng.org) has a calendar of events for this month’s meetings and meetings that are received or updated after print deadline. Please refer to the website for updated information. If you wish to be listed in the calendar please send details to res@frontiernet.net
Tuesday, June 18 - 21
Genius Olympiad p 23
Place: SUNY Oswego
Information at info@geniusolympiad.org or call 315-400-1763.

Wednesday, June 19
American Society of Civil Engineers (ASCE) p 28
Spring into Summer and Join Us for a Drink…Hump Day Happy Hour
Place: Rochester Beer Park, 375 Aveeall Avenue, Rochester
Time: 5:30 to 7:00 pm. First drink is on us for all members and potential new members. ASCE Website: www.asce.org/join

Wednesday, June 19
Illuminating Engineering Society (IES) p 32
2019 Annual Golf Outing
Place: Victor Hills Golf Club, 1450 Brace Road, Victor NY
Time: Shotgun start at 10:30 am
Cost: Breakdown of costs and times are detailed on page 32 of this issue of the Rochester Engineer.
Reservations: Register for this event BEFORE JUNE 10 through the website at www.iesrochester.org on the events page. You may also call John Garbinski at 585-586-8510 or email to jgarbinski@QIsny.com and bring a check to the event payable to IES Rochester.

Thursday, June 20
International Council on Systems Engineering (INCOSE) p 31
SE Management is not SE Core Competency, Time to Shift this Outdated, 60 Year-Old Paradigm
Speaker: Charles Wasson, Wasson Strategies, LLC
Place: 4 host sites. Details are on page 31 or contact Kevin Devaney at kdevaney@srcinc.com.
Time: Meetings begin at 6:00 pm and run to approximately 7:30 pm
Reservations: Contact the host person at the host site list on page 31.

Thursday, June 20
Association for Bridge Construction and Design (ABCD) p 21
21st Annual Scholarship Golf Outing
Place: Terry Hills Country Club, 5122 Clinton Street Road, Batavia
Time: Registration begins at 11:30 am; Lunch (Halfway House) at 11:30. Shotgun start at 12:45 pm, Keg beer starting one hour before dinner. Steak dinner at 6:00 pm, awards following dinner.
Cost: $100 per person (includes lunch, golf with cart, keg beer, dinner and prizes). $35 for dinner only. $200 Hole Sponsorships available.
Watch for registration information soon. Contact Todd Swackhamer, PE, 716-834-8934 or tsrackhamer@mmce.net for additional information.

Thursday, June 20
Genesee Valley Land Surveyors Association (GVLSA) p 19
Board of Directors Meeting
Place: 40 & 8 Club, 933 University Avenue, Rochester NY 14607
Time: 6:00 pm
Website: www.gvlsa.com

Wednesday, June 26
Institute of Electrical and Electronic Engineers (IEEE) p 27
Fundamentals of Deep Learning for Natural Language Processing
Place: RIT Campus, GLE 1100
Time: Noon to 4 pm. For more information contact Ray Ptucha, rwpecc@rit.edu.

Monday, July 15
Electrical Association (EA) p 29
39th Annual Invitational Golf Outing
Place: LeRoy Country Club, 7759 East Main Road, LeRoy, NY
Time: 10:00 am shotgun start at the Club House. Registration opens at 9:00 am
Cost: $90 for EAWNY Members – includes 18 hols of golf, cart, coffee and donuts at registration, lunch at the turn, one free beverage ticket, buffet dinner and prizes. Register before June 15th for a discounted price.
For more information call 585-382-9545 or go to the website for additional details - www.eawny.com/.

Friday, August 30
New York State Association of Transportation Engineers (NYSATE) p 18
2019 Summer Picnic at the Red Wings
Place: Frontier Field, Downtown Rochester
Time: Picnic Dinner 6:00 to 7:00 pm. Game starts at 7:05 – Rochester Red Wings v. Syracuse Mets.
Tickets Coming Soon! Check our Facebook Group for details.

Wednesday, September 18
Society for Imaging Science and Technology (IS&T) p 22
Algorithm Development of Hyperspectral data for the automatic characterization of materials in illuminated manuscripts
Speaker: Tania Kleynhans
Place: TBA Time: 6:00 pm
No meeting reservations are required. Additional information will be in the August issue.

Wednesday, September 18
American Society of Plumbing Engineers (ASPE) p 25
The Art of Water: Solving delivery challenges with bottle filling stations – 1 PDH Credit pending approval
Place: Valicia’s Ristorante, 2155 Long Pond Road, Rochester, NY 14606 (just north of Route 31, Gates)
Time: 12:00 noon to 1:30 pm (please arrive by 11:50 am).
Cost: $20 (member or guest), check or cash at door.
Reservations: To Dave Jereckos (585-341-3168), or jereckos@ibceng.com
Timothy Porter Joins Bergmann as Digital Design Principal

National architecture, engineering and planning firm Bergmann has hired Timothy Porter, CM-BIM, as digital design principal in its Rochester office. Porter specializes in Building Information Modeling (BIM), utilizing multidimensional modeling software to assist in the development of new buildings and infrastructure and manage and modernize existing structures. The process has applications across the planning, construction, design, and project management stages, streamlining tasks throughout the project for architecture, engineering, and construction professionals.

Previously, Porter served as director of BIM/VDC at The Pike Company, overseeing a team tasked with applying the technology to address project challenges and enhance project team performance. His 14 years of experience using BIM have included model production, animation, schedule simulation, virtual reality configuration, high-density laser scanning, 3D printing, and more.

“Tim’s depth of experience with BIM is a huge asset to the firm and our clients,” said Scott Lockwood, Bergmann chief financial officer / chief administrative officer. “We look forward to exploring the value that Tim’s expertise will add to current and future projects as the capabilities of BIM continue to expand.”

Porter earned his bachelor’s degree in architectural technology from Alfred State College. Tim enjoys watching hockey, home improvement projects, and expanding his knowledge of technology beyond architectural and engineering applications in his spare time.

Erdman Anthony Hires Two

Erdman Anthony has hired Miriah Mono as a CAD/BIM coordinator in the Rochester office’s facilities group. Miriah has a bachelor of technology degree in alternative and renewable energy systems from SUNY Canton. She is also an active member in the SUNY Canton chapter of Tau Alpha Pi honor society for engineers.

Erdman Anthony has also hired Zafar Shehzad as an electrical engineer in the facilities group. Zafar has six years of experience and a bachelor of science degree in electrical engineering technology from Rochester Institute of Technology.

Bender joins GPI as Director of Engineering

Greenman-Pedersen, Inc. welcomes Thomas Bender, PE to its staff where he has been named director of engineering for Western New York operations. Tom is a registered Professional Engineer in New York State, with a BS in civil engineering and an MS in coastal engineering. He brings to GPI more than 35 years of coastal engineering design and construction experience.

During his long tenure with the U.S. Army Corps of Engineers, he personally designed and oversaw construction of dozens of major coastal projects including revetments, seawalls, bulkheads, beach restoration, dredge material disposal facilities, and small boat harbors; which included short-term assignments in Kosovo (Balkans) as the Director of Public Works on Camp Bondsteel, and as the chief of engineering and construction in Kandahar, Afghanistan, overseeing a $2.0B construction program. In addition, he has served on several national and international coastal engineering research committees and has taught classes in coastal structure design. More recently Tom worked for a private consultant in NYC as a resident engineer working on City infrastructure projects damaged by Hurricane Sandy.
Bergmann Awarded 5-Year Contract by NYSOGS to Support DEC Programs

Bergmann has been selected by the NYS Office of General Services (NYSOGS) to provide statewide coastal management, floodplain mapping, dam safety and flood protection services to support the NYS Department of Environmental Conservation’s (NYSDEC) Division of Water Program. The $3 million contract will be executed over a five-year period—three years to assign projects and an additional two years to complete projects—with work beginning in mid-2019.

Bergmann’s Northeast Water Resources and Waterway Structures practices will collaborate to meet the needs of the NYSOGS and NYSDEC teams, providing design and construction phase services to upgrade and improve the resiliency of the state’s aging infrastructure for the purpose of public safety, primarily as it pertains to flooding risks.

As part of the environmental considerations for the projects, the firm will conduct environmental investigations, prepare permit applications, and incorporate provisions in the construction contracts to comply with all environmental laws and requirements. The firm will also address needs for specific environmental features such as fish passage around dams.

“Our team at Bergmann is always thrilled to take on projects that will improve public safety and have a positive impact on the environment,” said Kenneth Avery, PE, Water and Environmental Practice Leader. “We look forward to continuing our collaboration with the NYSOGS and working closely with NYSDEC as we embark on this new set of projects over the next several years.”

NYSOGS has utilized Bergmann’s services since 2010 in a number of capacities for both infrastructure and buildings projects. For infrastructure, the firm is also currently working with NYSOGS under a Clear Lake contract and another Division of Water Program contract, as well as a dam safety contract won in late 2018.

CHA Aviation Project Wins National APWA Project of the Year Award

The American Public Works Association (APWA) will be awarding CHA Consulting, Inc. (CHA) a National Public Works Project of the Year Award for the Gateway to Monroe County (Rochester International Airport Terminal) in the category of Structures more than $75 million. CHA shares this honor with airport operator/owner Monroe County, New York; primary contractor LeChase Construction Services; and canopy consultant Passero Associates.

CHA was hired to furnish engineering, design and construction administration services for the NYSDOT-funded, $56 million terminal renovations program which included checkpoint reconfiguration, airport exiting, main terminal building expansion and concession enhancement, communication technology for the hearing impaired and infrastructure network upgrades.

The National APWA Project of the Year Award is the culmination of a year of many APWA awards at the State and local level. CHA was recently part of the team awarded two of nine Project of the Year Awards from the New York State APWA including:

- Bailey Avenue Bridges, Buffalo, NY (Structures $5-$25 million)
- Gateway to Monroe County, Rochester, NY (Structures >$75 million)

This followed five local chapter APWA Project of the Year Awards in New York State:

- Route 32 Bridge over the Mohawk River, Cohoes/Waterford, NY (Capital Branch)
- Beaver Creek CSO Abatement & Flood Mitigation Project, Albany, NY (Capital Branch)
- Former Town of Salina Landfill, Salina, NY (Central NY Branch)
- Gateway to Monroe County, Rochester, NY (Genesee Valley Branch)
- Bailey Avenue Bridges, Buffalo, NY (Western NY Branch)

The National APWA Award will be presented at a ceremony held in conjunction with the 2019 PWX Convention in Seattle, Washington on Monday, September 9th.
SAVE THE DATE!

2019 Summer Picnic at the Red Wings

When: Friday, August 30th, 2019

Where: Frontier Field

Time: Picnic Dinner 6:00 – 7:30 PM
Game Starts at 7:05 PM • Rochester Red Wings v. Syracuse Mets

Tickets Coming Soon!
Check our Facebook Group for details

2019/2020 Budget Lunch-Meeting

Our annual budget meeting was held on March 27th, 2019 at Bowl-a-Roll in Henrietta. The budget was discussed and approved by majority vote of members present. The meeting also served as an opportunity to remember those members we lost over the past year.

In addition, we learned about NYSATE Region 4’s plans for the rest of the year, and recognized five members celebrating 25 years with NYSATE: Paul Attoma, Sue Miles, Dave Stevens, Brad Walike, and Getachew Woldeminsaye.

Join us! Membership: $39/year, Contact Matthew.Oravec@dot.ny.gov | Facebook Group: bit.ly/NYSATESection4
Genesee Valley Land Surveyors Association
Website: www.gvlsa.com

Year 2018-19 Officers

President
Jared R. Ransom, LS
Vice President
Justin M. Roloson, LS
Secretary
Robert J. Avery, LS
Treasurer
Michael A. Venturo, LS

Roy B. Garfinkel, LS, Ex-officio

Upcoming Events 2019

June 20, 2019
Board of Directors Meeting
40 & 8 Club, 933 University Avenue,
Rochester NY 14607
6:00 pm

July Meeting TBD

Board of Directors

June 20, 2019
40 & 8 Club
933 University Avenue
Rochester, NY 14607
6:00 PM

Professional Affiliations

• New York State Association of Professional Land Surveyors, Inc.
• National Society of Professional Surveyors
• Rochester Engineering Society

July Meeting
TBD
Record Attendance at 2019 Engineering Symposium in Rochester

The 15th annual Engineering Symposium in Rochester had the largest attendance ever, with 510 registered attendees at the Rochester Riverside Convention Center. While the majority of the attendees were from the Rochester area, several travelled from Buffalo, Syracuse, the Southern Tier, and PA. A total of 43 accredited PDH courses were offered. The 2019 Engineering Symposium classes and certificates are located here: 2019 Engineering Symposium in Rochester (http://www.engineeringsymposiumrochester.com/).

The keynote speaker was Dr. Ray Ptucha, an Assistant Professor in Computer Engineering and Director of the Machine Intelligence Laboratory at Rochester Institute of Technology. He provided and ethics related course “What Is And How Will Machine Learning Change Our Lives”. The class proposed some controversial and ethical dilemmas that we will need to face with the expanse of computer technology. The video can be viewed here: What Is And How Will Machine Learning Change Our Lives (https://www.youtube.com/watch?reload=9&v=cQ54GDm1eL0).

MPES Congratulates 2019 Scholarship Winners

In order to promote the profession of engineering, MPES manages nine different scholarships available to high school seniors who plan to enroll in ABET accredited engineering programs. Please join us in congratulating this year’s scholarship winners (student name | high school | engineering major | college | scholarship name):

Matthew Cufari | Pittsford Sutherland | Nuclear Eng. | MIT | Paul and Claire Raynor (sponsored by MPES)
Aditya Bhargava | Victor | Biomedical Engineering | Harvey Mudd | Vastola (sponsored by MPES)
Peter Rydzynski | Victor | Mechanical Engineering | University of Pittsburgh | David Lazzar
John Caputo | Greece Olympia High School | Engineering Exploration | RIT | Bergmann
William Johnson | Byron Bergan | Electrical Engineering | SUNY Buffalo | Erdman Anthony
Erik Maier | Oakfield-Alabama | Electrical Engineering | SUNY Buffalo | Alstom Foundation
Hudson Planning | Brockport | Computer Engineering | undeclared | Optimization Technology
Ariel Struzyk | Penfield | Chemical Eng. | Cornell | American Council of Eng. Companies
Rachel Roof | Honeoye Falls-Lima | Computer Engineering | RIT | Edward J. Ries Memorial

As always, we encourage active membership in the Monroe Professional Engineers Society. We are constantly striving to improve your membership but we always need more help. If you are interested in becoming an active member or have any questions, please email me at CKambar@apd.com or contact MPES through our website at www.monroepes.org/contactus.

Christopher V. Kambar, President, MPES
Save the date as the Association for Bridge Construction and Design would like to welcome everyone to participate in our annual Scholarship Golf Tournament. The tournament proceeds will benefit the ABCD Scholarship Program. The Western New York Chapter plans to award scholarships to students in a bridge related curriculum for the 2019-2020 academic year.

Highlights

- Registration beginning at 11:30 AM
- Lunch beginning at 11:30 AM (Halfway House)
- Shotgun Start at 12:45 PM
- Keg beer starting 1 hour before dinner
- Steak Dinner at 6:00 PM
- Awards following Dinner

Location

Terry Hills Country Club; Batavia, NY

Terry Hills Country Club
5122 Clinton Street Road
Batavia, NY 14020
Phone: (585) 343-0860

Reservation Deadline

Friday, June 14, 2019

Cost

- $100 per person (includes Lunch, Golf with Cart, Keg Beer, Dinner, and Prizes)
- $35 (dinner only)
- $200 Hole Sponsorships available

Contact Information

Todd Swackhamer, P.E.
Phone: (716) 834-8932
Email: tswackhamer@mmce.net

Association for Bridge Construction and Design
Western New York Chapter - www.abcdwny.org

Watch for registration information to come in the near future!
Society for Imaging Science and Technology
Website: http://rochesterengineering society.wildapricot.org/ISandT

Our meeting locations have changed starting this fiscal year. They are being held at the Irondequoit Public Library, 1290 Titus Avenue, Irondequoit, NY. No meeting reservations are required.

Meeting Schedule:
September 18, 2019 - "Algorithm development of Hyperspectral data for the automatic characterization of materials in illuminated manuscripts," by Tania Kleynhans
Fall 2019 - Tour the Image Permanence Institute at RIT
Venue ideas requested - we are soliciting input regarding other possible venues for our meetings.

Election State for 2019-2020 Council Members

President          Director/VP Programs        Treasurer/VP Membership
Bruce Pilloman    David Odgers            Roger Tripletter

Secretary         Councilors
Joanne Weber       Alexander Mirzaoff     Bob Patti
                      Kodak retired       Kodak retired

American Society of Heating, Refrigerating, and Air-Conditioning Engineers

Another year, and with great thanks to Jim Browe and Kacie Hoffman, we had another very successful annual Golf/Picnic Outing at Ravenwood. Special thanks to all our sponsors as well! Their support goes beyond the success of the golf outing, for that we are truly grateful.

The 2108/19 ASHRAE Rochester board is comprised of several individuals; all volunteers. As an organization we are fortunate to be able to fill 39 positions with 26 members. Everyone contributed to our success and helped drive the greater ASHRAE mission forward, that is, ‘To advance the arts and sciences of heating, ventilating, air conditioning and refrigerating to serve humanity and promote a sustainable world.’

From our 7 monthly lunchtime meetings with technical presentations and PDH credits, our special events including the Clambake, Valentine’s Dinner Dance, Golf/Picnic Outing, YEA outings, and Ski Day, and our many committee sponsored events that happen behind the scenes, a tremendous commitment from everyone involved provided for that success. For that I offer my sincere gratitude for their time and commitment.

Please continue to check out our website at http://rochester.ashraechapters.org/ for information on upcoming chapter meetings, current officer list and contact information, chapter newsletters, and more! Also take a minute and like us on Facebook at ASHRAE Rochester.

Thank you!! Enjoy your summer, we’ll see you back in September for our Clambake.

Paul Kenna, P.E.
2018-2019 President
Rochester Chapter
Thank you again to every RES member who turned out to volunteer, judge, or visit at the 2019 Terra Rochester Finger Lakes Science and Engineering Fair at the RMSC. You are the living power that makes the most difference!

Enjoy our science fair tour at terrafairs.org/rochester.

Have more free time in June? Terra also sponsors GENIUS OLYMPIAD - the world’s largest precollegiate international environmental competition!

GeniusOlympiad.org

Watch the overview video at the homepage.

Students grades 8-12 travel from 70+ countries to bring their work related to the environment to SUNY Oswego. A traditional science fair is one piece of GO. Youth also bring business plans, prepare robots or drones for on-site challenges, perform vocal or instrumental pieces, submit graphic art, or read their creative writing! Environment issues permeate it all.

Register to judge by clicking on “Partners.”

Contact us today: GeniusOlympiad.org
(315) 400 1763  info@geniusolympiad.org
Presents: AFE’s ANNUAL NICK DARGENTO MEMORIAL SCHOLARSHIP GOLF OUTING

When and Where:
Tuesday, June 18, 2019
Victor Hills Golf Club—South Course
1450 Brace Rd. (Rt. 64), Victor, NY

Details:
Collared shirt required (no T-shirts, tank tops, cutoffs, or jeans)
Registration starts at 9:00 a.m.
Scramble Format/Shotgun Start at 10:00 a.m.
Includes: Continental breakfast; lunch (grilled chicken, burgers, sausage, & hots); beer & soft drinks; 4:00 PM Buffet Dinner (steak, chicken, ziti, salads, & more)

HOLE SPONSORSHIPS AVAILABLE — $80.00 Each
Please sponsor a hole to help us raise money for the AFE Scholarship Fund. Includes professional advertisement of your company on one of the golf holes. *Special Offer: Purchase hole sponsorship with golf and dinner and save $15! (cost: $150)

- Hole sponsorship signs will be located on each tee box for best viewing.
- Money raised for Engineering Student Scholarships at RIT, MCC and FLCC. Scholarships awarded at our January event.

Registration and prepayment is required by June 14th.
Send checks, made payable to AFE, to:

Ken Carr
C/o Maplewood YMCA
25 Driving Park Avenue
Rochester, NY 14613

GOLF & DINNER COSTS
Organize A Foursome!
18 Holes of Golf & Lunch ......$60
Golf and Dinner ..................$85
Dinner Only ...................... $35

Please help make this year’s fundraiser a bigger success by contributing gifts and door prizes!

Questions? Call Dan Friday at (315) 594-3131

Or use our Paypal Links at www.afe21.org
President’s Message

The Rochester ASPE annual golf outing is set for 10:00 am, June 13, 2019 at Victor Hills Golf course. Please contact any of the board members to get signed up for this event.

Golf will be our last official event before we take a little break for summer.

We look forward to seeing everyone again in September when we restart our monthly lunch time educational sessions. We were able to approve all 9 our lunch presentations last season, for 9 PDH credits. If you are looking for a good way to earn your 12 credits per year for PE renewal from NYS, we can help!

We have chapter elections every two (2) years, and they are occurring this month. Look for our new board roster in the next publication.

Have a great summer!

Jennifer Wengender, P.E., CPD
Rochester Chapter President

Meeting Notice – Save the Date

Topic: SAVE THE DATE

The Art of Water: Solving delivery challenges with bottle filling stations

Date: Wednesday, September 18, 2019

Time: 12:00 noon – 1:30 p.m. (please arrive by 11:50 am)

Place: Valicia’s Ristorante, 2155 Long Pond Rd., Rochester 14606 (just north of Route 31, Gates)

Credits: 1 PDH - pending approval

Cost: $20.00 (member or guest), check or cash at door.

RSVP: To Dave Jereckos (341-3168), or djereckos@ibceng.com
Section Officers

Chair
Sreeram Dhurjaty
Vice Chair
Cristian Linte
Treasurer
Bill Fowkes
Secretary
Eric Brown

Chapters & Groups
AES & COMSOC
Cristiana Tapparello
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Photons
Bruce Smith
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PES & IAS
Jean Kendrick
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Eric Brown

Student Groups
Univ. of Rochester
Tom Howard
RIT
Gill Tsouri

Committees
Awards
Jean Kendrick
Communications
Greg Goewski
Newsletter
Howard Bussey
PACE
Alex Loui
Bruce Rubin

Liaisons
RES
Harold Paschal
RCSS
William Brewer

Message From the Chair

Dear colleagues,

May has been eventful. I am working with the Power Electronics Society of IEEE to finalize the IEEE milestone, on SCR/Thyristors, to be held in Clyde NY starting at 1:30 PM on June 14th. IEEE president Professor José M. F. Moura and the Power Electronics Society president Professor Frede Blaabjerg are conducting this event. This is the first milestone for the Power Electronics Society, and the second in the Rochester Section geographic area. The milestone will be at the Advanced Atomization Technologies, which occupies the building where the SCR was developed by GE.

The JCM that we held at RIT was a big hit with 65 registered attendees. Kudos to Cristian Linte for making sure it went without a hitch. Jon Kriegl's keynote-talk on the Chandra X-ray Observatory was spectacular. Ray Ptucha and Emmett lentilucci have been running successful workshops.

We are also working on a place for the summer outing. There will be more information at the next EXCOM meeting.

We have several nominations for the slate of officers for next year’s EXCOM. The nominating committee is working diligently on these nominations. The next EXCOM meeting in June will be at Tandoor Restaurant and not China Buffet.

Maggie Cech, who will be working as a Software Tester at the SAS Institute this summer, is a junior in Electrical Engineering at Binghamton University. She is entering her 2nd year as Treasurer for the Society of Women Engineers at Binghamton and is a member of both Tau Beta Pi and Eta Kappa Nu honor societies. Maggie is also the captain for Binghamton’s club field hockey team.

Rebekah Bagley is a junior at the Pensacola Christian College, majoring in Electrical and Mechanical Engineering and minoring in Mathematics. Her engineering internships include Gulf Coast Electric Motor Service and Coach and Equipment Manufacturing. Rebekah has honed her communication skills as a participant, judge, and mentor in regional, state, and national public speaking competitions.
Machine Intelligence and Deep Learning

Dr. Majid Rabbani and Dr. Raymond Ptucha will present a Machine Intelligence & Deep Learning 3-Day Workshop June 12-14 on the RIT campus. Scientists, engineers, and technical managers who want to understand and apply AI concepts to their work should attend the workshop. IEEE members get 10% registration discount, and PDH credits are offered. See https://www.rit.edu/kgcoe/cqas/machinelearning for more details.

Deep Learning for Natural Language Processing

The NVIDIA Deep Learning Institute is presenting “Fundamentals of Deep Learning for Natural Language Processing”, June 26th, 12:00 – 18:00 on the RIT campus, GLE-1100. For more information, contact Ray Ptucha, rwpec@rit.edu.

Signal Processing Society Summer Meetings

The Rochester IEEE Signal Processing Society would like to hold weekly meetings this summer for local engineers in industry as well as students. The focus will be on Reinforcement Learning. We will go through much of UC Berkeley CS 294 by Dr. Sergey Levine, Fall 2018 edition. If you are interested in attending, contact Ray Ptucha, rwpec@rit.edu.

June EXCOM Meeting

Our next EXCOM meeting is on Tuesday, June 4th 11:50 – 13:00. We will review plans for upcoming Rochester meetings within our section, chapters, and groups. If you are looking to become more engaged in IEEE in the Rochester Section, please plan on attending this meeting. The EXCOM meetings are also great opportunities for networking with fellow engineers over lunch. This meeting is open to all IEEE members, and all are welcome. See http://sites.ieee.org/rochester/event/rochester-section-excom-meeting-new-location/.

IEEE Rochester Section Events

For current information and registration links for our events, see http://sites.ieee.org/rochester/

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<th>Event</th>
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<td>EXCOM Meeting</td>
<td></td>
<td>June 4th</td>
<td>Tandoor of India</td>
</tr>
<tr>
<td>Electrostatics Society of America Annual Meeting</td>
<td>N/A</td>
<td>June 10th – 12th</td>
<td>Rochester Riverside Hotel</td>
</tr>
<tr>
<td>Machine Intelligence and Deep Learning Workshop</td>
<td></td>
<td>June 12th-14th</td>
<td>RIT Campus</td>
</tr>
<tr>
<td>SCR/Thyrstor Milestone Ceremony</td>
<td></td>
<td>June 14th 13:30 – 15:30</td>
<td>Advanced Atomization Technologies, 124 Columbia Street, Clyde, NY</td>
</tr>
<tr>
<td>Fundamentals of Deep Learning for Natural Language Processing</td>
<td></td>
<td>June 26th 12:00 – 18:00</td>
<td>RIT Campus, GLE 1100</td>
</tr>
<tr>
<td>Western NY Image &amp; Signal Processing Workshop</td>
<td></td>
<td>October 4th</td>
<td>RIT Campus</td>
</tr>
</tbody>
</table>

The Electrostatics Society of America is not affiliated with IEEE, however the ESA’s annual meeting may be of interest to IEEE members. For further information, see http://www.electrostatics.org/annualmeeting.html
SPRING into SUMMER &

JOIN US FOR A DRINK...
HUMP DAY HAPPY HOUR

Wednesday, June 19
@ Rochester Beer Park
375 Averill Avenue

5:30 → 7 pm

** 1st drink is on us for all members & potential new members**

JOIN US / RENEW www.asce.org/join

Follow us on Facebook @ASCERochester
LinkedIn: ASCE Rochester Section
Email: ascerochester@gmail.com
39th Annual Invitational Golf Outing

Monday
July 15, 2019
LeRoy Country Club
7759 East Main Rd, LeRoy NY 14482

Schedule & Golf Package
10:00 a.m. SHOTGUN START at Club House [Registration opens at 9:00 am]

REGISTER EARLY FOR DISCOUNTED PRICE!
EAWNY Members $90 ($110 after 6/15)
Non-Members $120 ($140 after 6/15)
Price is determined by date payment is received!

Price Includes: 18 Holes of Golf, cart, coffee and donuts at registration, lunch at the turn [choice of hotdog or hamburger, chips and beverage], one free beverage ticket (good at the beverage cart), buffet dinner and prizes.

Beverage Tickets
Each golfer receives one free beverage ticket that can be used at the Beverage Cart. Additional drinks may be purchased directly from the Beverage Cart Driver [cash only].

Hole Sponsorship
Here’s an opportunity for your company to be a sponsor of EAWNY’s 39th Annual Invitational Golf Outing. A $60 per hole sponsorship will display your company name at the tee for all EAWNY member golfers and guests to see. Show your company’s contribution and dedication to the Electrical Association and check the appropriate box on the Registration/Sponsor Form.

Buffet Dinner
Even if you are not a golfer, reserve now for dinner. Tickets are only $25 per person. Come out early to enjoy LeRoy Country Club’s facilities. Join the golfers for cocktails before dinner.

Prize Donations
Prizes are needed and will be greatly appreciated. The value should be approximately $15 or greater. Donations indicated on Registration/Sponsor Form will be recognized in the program.

Electrical Association of Western New York
PO Box 20219, Rochester, New York 14602-0219
Phone: 585-382-9545 Fax: 585-382-9455
www.eawny.com ~ karen@eawny.com
The Society of Women Engineers stimulates women to achieve full potential in careers as engineers and leaders, expands the image of the engineering profession as a positive force in improving the quality of life, and demonstrates the value of diversity.

CALL FOR VOLUNTEERS

Would you like to join our team for Habitat for Humanity? Every year, a group of women from SWE Rochester volunteers for a day with Flower City Habitat for Humanity. To participate, email Brianna at swe.rochester@gmail.com

EXPLORER’S POST

The Explorer’s Post by the Society of Women Engineers has come to end for the year. We’ve exposed a promising group of high school girls to engineering, by letting them hear from panels of women engineering students, engineers in academia & industry, and engineers in leadership roles. A very huge thank you to the volunteers from the following universities and companies, who donated their time outside normal working hours to host us this year:

Rochester Institute of Technology
Bergmann Associates
Gleason Corporation
Bausch Health
SPX

And a special thank you to Jessica Bull for being the SWE Rochester’s Explorer’s Post organizer!

Best of luck to the girls that decide to pursue engineering as their field of choice!

Be sure to check out our website for details on our upcoming Meet and Mingle events, and activities at www.swerochester.org
Upcoming Chapter Meeting Event

- **Thursday, June 20th, 2019: June Chapter Meeting**
  - Charles Wasson, Wasson Strategies, LLC

  **SE Management is not SE Core Competency, Time to Shift this Outdated, 60-Year-Old Paradigm**

  Over the past 60+ years, the emerging field of Systems Engineering (SE), which originally focused on answering a key engineering question “Will the system work – i.e., “be fit for purpose” shifted to “did we follow our processes?” Projects corrected a “management” problem while neglecting the “engineering” question. As a result, projects continue to exhibit systemic performance issues. It is time to shift this outdated Systems Management paradigm and reestablish SE core competency as the “engine” for correcting SE contributions to project performance issues that seem so intractable.

  Charles Wasson is an INCOSE Fellow and is the Founder and Principal Consultant for Wasson Strategies, LLC. His professional affiliations include the INCOSE, IEEE, ASEE, PMI, and Tau Beta Pi. His educational background includes a BSEE and an MBA from Mississippi State University, a SE Certificate from Stevens Institute of Technology, and additional graduate studies. His professional experience includes over 38 years of leadership in project management; system, hardware, and software development; integration and test. He has worked at Lockheed Martin Corporation; Teledyne Brown Engineering; U.S. Army Missile Research & Development, Command; Planning Research Corporation; Spacecraft, Inc.; and eight years with Wasson Strategies, LLC. Charles’ first SE text System Analysis, Design, and Development: Concepts, Principles, and Practices won the International Academy of Astronautics’ 2006 Engineering Sciences Book of the Year Award. In 2016, John Wiley published the 2nd Edition of his System Engineering Analysis, Design and Development: Concepts, Principles, and Practices text used world-wide by practitioners and universities.

- **Meetings begin at 6:00 pm and run to approximately 7:30 pm**
  - Please RSVP with your local host – a list of local hosts and their contact information is below; if there are any issues contacting one of them, or there are any other questions or concerns, please contact Kevin Devaney at kdevaney@srcinc.com

<table>
<thead>
<tr>
<th>Location</th>
<th>Contact</th>
<th>Location Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ithaca</td>
<td>Wesley Hewett</td>
<td>Cornell University, Rhodes Hall</td>
</tr>
<tr>
<td>Syracuse</td>
<td>Kevin Devaney</td>
<td>SRC, 6225 Running Ridge Road, N. Syracuse</td>
</tr>
<tr>
<td>Lockheed Martin MST</td>
<td>Shirley Kupst</td>
<td>Owego, NY</td>
</tr>
<tr>
<td>Rochester, NY</td>
<td>Rick Zinni</td>
<td>Location TBD</td>
</tr>
</tbody>
</table>

Finger Lakes Chapter of INTERNATIONAL COUNCIL ON SYSTEMS ENGINEERING
http://www.incose.org/ChaptersGroups/Chapters/ChapterSites/finger-lakes/chapter-home
2019 Annual Golf Outing
June 19, 2019 - Victor Hills Golf Club
1450 Brace Road ~ Victor, NY 14564

Shotgun start at 10:30AM
Shamble Format
[Pick best drive and hit your own ball from there]

Cost
Foursome: $480 - Individual Golfer: $125
Price includes 18 holes of golf, cart, lunch,
steak dinner, drinks, prizes & raffle

PLEASE PRINT CLEARLY

Name: _____________________________________________

Company: __________________________________________

Business Phone: _____________________________________

E-Mail Address: _____________________________________

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<tr>
<th>Item</th>
<th>Qty</th>
<th>Cost</th>
<th>Total</th>
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<td>Golf Foursome</td>
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<tr>
<td>Individual Golfer</td>
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<tr>
<td>Sponsorship</td>
<td>#</td>
<td>$100.00</td>
<td>#</td>
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<tr>
<td>Prize Contribution (confirm amount)</td>
<td>#</td>
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<td></td>
<td></td>
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<td>Grand Total #</td>
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___ Assign me with someone
___ Assign me with the following golfers

Name/Company: ___________________________ Name/Company: ___________________________
Name/Company: ___________________________ Name/Company: ___________________________

Direct any tournament questions to John Garbinski at 585.586.8510 or jgarbinski@qlsny.com

Please RSVP and pay for this event before 6/10 through our website
at www.iesrochester.org on the ‘Events’ page.

You may also RSVP via phone (and bring a check to the event-
payable to IES Rochester) to JOHN GARBINSKI at 585-586-8510
or jgarbinski@qlsny.com
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Email: PVars@bmepc.com

American Society of Civil Engineers, Rochester Section
President, Drazen Gasic, CPSWQ, CPESC, LaBella Associates. 585-402-7005
Email: DGasic@LaBellaPC.com

American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Rochester Chapter
President, Bill Clark, PE, CEM
Email: ashaerocnews.com

American Society of Mechanical Engineers, Rochester Section
Chairman, Steven Ivancic, University of Rochester

American Society of Plumbing Engineers, Rochester New York Chapter
Email: jwengender@clarkpatterson.com

Alfred Steele Scholarship available to ASPE members and their immediate family. Applications due in January each year. Details at https://www.aspe.org/SteeleScholarship.

Association for Bridge Construction and Design
President, Ronald Centola
Prudent Engineering
Email: RCentola@prudenteng.com

Association For Facilities Engineering, Rochester Chapter
President, Dennis Roote, PE
Email: Dennis.Roote@cede-PLIC.com

Electrical Association
Executive Director, Karen Lynch
Email: karen@eawny.com
President, Russ Corcoran, Landmark Electric, 585-359-0800.
Email: rusc@landmarkelectric.net.

Genesee Valley Land Surveyors Association
President, Jared R. Ransom, LS
585-737-6881
Email: jaredransomls@gmail.com

Illuminating Engineering Society of North America Inc., Rochester Section
President, Dan Rusnack
Email: drusnack@bergmannpc.com

Imaging Science & Technology, Rochester Chapter
President, Bruce Pillman, 585-748-6006
Email: bruce.pillman@gmail.com

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Chairman, Sreeram Dhurjaty
Email: SDhurjaty@dhurjaty.net

Institute of Industrial and Systems Engineers, Rochester Chapter
President, John Kaemmerlen, 585-475-2767
Email: jxkpdm@rit.edu

International Council on Systems Engineering, Finger Lakes Chapter
President, Jack Riley
Email: jackr2139@hotmail.com

Monroe Professional Engineers Society
President, Chris Kambar
Email: CKambar@apd.com

New York State Association of Transportation Engineers, Section 4
Email: Howard.Ressel@dot.ny.gov
NYSATE has scholarships available for dependents of members who are or plan to enroll in a post-secondary university of accredited business or vocational school (undergraduate only). Some members may also be eligible. Information will be posted in the early spring at www.nysate.org

New York Water Environment Association Inc., Genesee Valley Chapter (www.gvcnywea.org)
President, Bill Davis, 585-381-9250
Email: william.davis@mrbgroup.com

Sheet Metal & Air-Conditioning Contractor’s National Association-Rochester, Inc.
Executive Director, Aaron Hilger
585-586-8030. Email: mizin@smacnaroc.org

Society of Plastics Engineers, Rochester Section
President, Marca J. Lam, RIT
Email: mjleme@rit.edu

Society of Women Engineers
President, Marca J. Lam, RIT
Email: mjleme@rit.edu

Terra Rochester Finger Lakes Science & Engineering Fair
Director, Mary Eileen Wood, 315-422-2902
Website: Terrafairs@terraed.org.
Awards and scholarships available. Visit the website for details.

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