

# THE Signal

Bimonthly Publication of the Society of Broadcast Engineers



The Association for  
Broadcast and  
Multimedia Professionals

[www.sbe.org](http://www.sbe.org)

Volume 31, Issue 1 • February 2018

## Ennes Workshop Returns to NAB Show

Once again, as it has since 1995, the SBE will coordinate the Ennes Workshop at the 2018 NAB Show. The workshop will be held Saturday, April 7. This is the 23rd year for the Ennes Workshop at the NAB Show. With changes in the NAB Show schedule, the workshop will be presented in a half day instead of a full day. The 2018 program is titled “Tomorrow’s Media Tool Box – Today.” The presentations will begin at 9 a.m. and end at noon at the Las Vegas Convention Center.

Part one of our morning will focus on IP networking and implementation in the real world, with a presentation of how IP networking will be used in an OTT/OTA system.

IP Networking for Real Time Video, with presenter Robert Welch, technical solutions lead, Arista Networks. ST 2110 is all about professional media over managed IP networks.

Is IP Real? With moderator Stan Moote and industry panelists: Karl Paulsen, DSI; Mike Cronk, Grass Valley; and Dan Turk, NEP Mobile. The panel will hit the hard-facing details about real-time IP from the supplier through system integrator to end-users.

Next Gen is OTT/OTA with presenter Frederick M. Baumgartner CPBE, SBE Education Committee, Ennes Foundation, director of next generation TV implementation, OneMedia. By far the



see [ENNES](#), p. 14

## SBE MemberPlus Is Now Available

The SBE MemberPlus membership option is now available. Those new to SBE who wish to join and current members who want to renew their membership can choose

traditional membership or SBE MemberPlus.

MemberPlus provides significant additional

educational benefits

for the member. It has a higher cost,

but the value in return is well worth it to anyone who wants to take advantage of the many educational webinars the SBE has available.

Traditional membership, with relatively low dues, is still available and there has been no change to the benefits it affords, including The Signal newsletter, and e-publications like SBE-News, Alerts and

Updates and the SBE Career Advancement Newsletter. Also included are SBE social media outlets, SBE JobsOnline, SBE Compensation Survey results and access to group life insurance, all at no additional cost. Traditional membership also provides members with discounts for SBE certification, education programs and purchases at the SBE Bookstore. The cost of traditional Member, Senior and Associate membership is \$85.

SBE MemberPlus provides each member who chooses this option with all of the benefits of traditional membership, plus, unlimited access to the entire archived catalogue of SBE webinars and all new webinars produced by SBE during the membership year (through March 31, 2019). The cost is \$175.

There are 61 archived SBE webinars currently available 24/7/365, including the popular eight-part SBE RF101 series, the five-part Fundamentals of IT Networking series, and many more. Most are \$59 if purchased separately. In addition, registration for the new four-part SBE Broad-

cast Infrastructure Cybersecurity webinar series is now available. Module 1 of this series is being presented January 30 and the other three modules follow in succeeding months. SBE recertification credit can be earned by completing any SBE webinar.

To recap, for less than the price of two SBE webinars, those who choose the SBE MemberPlus option will add to their

see [MEMBERPLUS](#), p. 11

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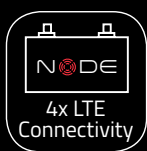
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## BOND Backpack

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American Tower | Boston, MA  
jleifer@sbe.org

**VICE PRESIDENT**

**RJ Russell, CPBE**  
Technical Broadcast Solutions Inc. | Middletown, DE  
rjrussell@sbe.org

**SECRETARY**

**Wayne M. Pecena, CPBE, 8-VSB,  
AMD, DRB, CBNE**  
Texas A&M University/KAMU | College Station, TX  
wpecena@sbe.org

**TREASURER**

**James Bernier, CPBE, CBNE**  
Turner | Alpharetta, GA  
jim.bernier@sbe.org

**DIRECTORS**

**Andrea Cummis, CBT, CTO**  
AC Video Solutions | Orange, NJ  
acummis@sbe.org

**Mark Fehlig, PE, CPBE, 8-VSB**  
Jampro Antennas/Alan Dick | Walnut Creek, CA  
mfehlig@sbe.org

**Kirk Harnack, CBRE, CBNE**  
The Telos Alliance | Nashville, TN  
kharnack@sbe.org

**Stephen H. Lampen, CBRE**  
Belden | San Francisco, CA  
slampen@sbe.org

**Vinny Lopez, CEV, CBNT**  
Sinclair Broadcast Group | Syracuse, NY  
vlopez@sbe.org

**Jason Ornellas, CBRE, CRO**  
Bonneville | Sacramento, CA  
jornellas@sbe.org

**Kimberly K. Sacks, CBT**  
iHeartmedia | Loveland, CO  
ksacks@sbe.org

**Marcelo Sanchez, CPBE**  
WBFS-TV/WFOR-TV | Miramar, FL  
msanchez@sbe.org

**Dave Siegler, CPBE**  
Cox Media Group | Atlanta, GA  
dsiegler@sbe.org

**Barry Thomas, CPBE, DRB, CBNE**  
KSE Radio | Denver, CO  
barryt@sbe.org

**Kevin Trueblood, CBRE, CBNT**  
WGCU Public Media | Estero, FL  
ktrueblood@sbe.org

**Justin "JT" Tucker, CSRE, AMD, CBNE**  
Cumulus Media | Charleston, SC  
jttucker@sbe.org

**IMMEDIATE PAST PRESIDENT**

**Jerry Massey, CPBE, 8-VSB, AMD, DRB, CBNT**  
Entercom Greenville, LLC | Greenville, SC  
jmassey@sbe.org

**SBE NATIONAL STAFF**

**John L. Poray, CAE | Executive Director**  
jporay@sbe.org

**Megan E. Clappe | Certification Director**  
mclappe@sbe.org

**Cathy Orosz | Education Director**  
corosz@sbe.org

**Chriss Scherer, CPBE, CBNT**  
Member Communications Director  
cscherer@sbe.org

**Debbie Hennessey**  
Sustaining Membership Manager  
dhennessey@sbe.org

**Scott Jones | Database Manager**  
kjones@sbe.org

**Carol S. Waite | Certification Assistant**  
cwaite@sbe.org

The Signal is published bimonthly by the Society of Broadcast Engineers, Inc., 9102 North Meridian Street, Suite 150, Indianapolis, IN 46260. Questions or comments regarding editorial content or design should be referred to Chriss Scherer at 317-762-9723 or cscherer@sbe.org. For advertising, contact Debbie Hennessey at dhennessey@sbe.org. SBE is a registered trademark of the Society of Broadcast Engineers.

**SBE National Office**  
317-846-9000 [www.sbe.org](http://www.sbe.org)

# Plan Now for the 2018 Leadership Development Course

Mark your calendar and plan to participate in the SBE Leadership Development Course, again in Atlanta, GA, on Aug. 7-9, at the Hyatt Place Atlanta Airport South. Returning to instruct the course is

skills and better understand and improve interaction with others. A number of broadcast companies have regularly sent one or more employees to the course each year to experience this highly interactive and educational event.

Registration is now available online and includes all course materials, three days of instruction, a certificate of completion, light breakfast items each day and classroom beverages.



Leadership Development Course class of 2017.

Rodney Vandever, professional leadership and management trainer and a professor of organizational leadership and supervision at Purdue University.

The SBE has presented the SBE Leadership Development Course since 1997. The course originally began in 1965, sponsored by the National Association of Broadcasters. The intense course is designed specifically for broadcast engineers who have or aspire to have management responsibilities. It helps technically adept people acquire and develop skills of sound leadership, supervision and management skills.

The SBE Leadership Development Course is equally beneficial for those who are already in management and for those without prior management or supervisory experience. The three-day event challenges attendees to refine leadership

The cost to attend is \$670 for SBE members, and \$725 for non-members. Each person registered will also have free access to the SBE Leadership Development webinar series that consists of three webinars covering leadership, communication and motivation. Questions? Contact Cathy Orosz (corosz@sbe.org, 317-846-9000) at the SBE National Office.



**Certification Question**

Answer on page 6

Microwave and satellite applications typically use:

- A. Open-wire line
- B. Resonant coax
- C. Air dielectric coax
- D. Wave guide



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## LETTER FROM THE PRESIDENT

By Jim Leifer, CPBE  
SBE President  
jleifer@sbe.org

# Future Outlook: MemberPlus and Chapter Meetings

This is my first column of 2018, so I want to wish you a happy 2018. With the new year, the SBE has many new things happening. First, I just renewed my membership to the new SBE MemberPlus. I spent a snowy weekend in January browsing the available SBE webinars. I know people binge watch Netflix, but this made my weekend. I now have access to the extensive Webinars by SBE education resource. For less than the cost of two webinars, I now have access to more than 65 online education programs that cover a wide range of technical broadcast and media topics. This includes the eight-part SBE RF101 series, the five-part Fundamentals of IT Networking, and many more. There are more webinars than snowy weekends, so my 2018 goal is to watch them all. And even when I complete the current webinars, there are always new webinars being added.

It's now time to renew your membership and you can renew online. I didn't want to wait for my membership renewal card in the mail. You can also upgrade to SBE MemberPlus if you have already paid for your standard membership.

### Chapter Meetings

As your president, I will do my best to attend as many meetings both at my local chapter, and as I travel, at other chapters. If you have a special meeting planned, please let me know, I will try to attend.

It's no secret that we work in a greying industry. I am particularly interested in how our industry is developing new multimedia professionals. I know this has been a challenge, but some are training the next group of engineers. Please feel free to share with me your success and failures on this.

And lastly, the SBE is organizing a strategic planning meeting to be held in Indianapolis on June 9. The focus will be on the membership growth and needs of the membership. I encourage all chapter chairmen or a chapter designee to attend. We need as much input as possible. Please reach out to Executive Director John Poray if you plan to attend.

# Renewal Reminders Are in the Mail

Annual membership renewal for Member, Associate, Senior, Student and most Fellow members is underway. Renewal letters and membership cards are in the mail to you. The due date for membership renewal is April 1. Those in the Member, Senior and Associate categories have the opportunity of selecting the SBE MemberPlus option. Fellow members, who are not also Life members, also have that option.

Traditional membership dues for Member, Senior, Associate and Fellow members is \$85. Student membership is \$25. The SBE MemberPlus option is \$175 and includes all of the benefits of traditional membership, plus, access to all archived SBE webinars and any new webinars the SBE presents during the membership year (through March 31, 2019), at no extra charge.

The SBE provides education, certification programs and member services as well as opportunities for member interaction in local chapters and with members across the United States and in 30 other countries. The network of 114 SBE chapters provides opportunities for education, local SBE certification exams and professional and social interaction with local technical media professionals.

You can renew your membership online

at the SBE website, [www.sbe.org](http://www.sbe.org). Click on "Renew Membership" in the upper right-hand corner of the home page. The online system is secure and accepts Visa, MasterCard and American Express. The system automatically generates a receipt, sent to your email address. You will need

your member number and SBE website password to access the renewal system. If you have forgotten your number or password, there is an automated retrieval system available to you on the renewal page.

Life Members of the

SBE don't have to renew their membership. In the spring you'll receive a letter that provides an update on SBE activities and an opportunity for you to edit your contact information. Life members are those who are at least 65 years of age, are fully retired from broadcast engineering work and have been a member of the SBE for at least 15 consecutive years at the time of applying for Life member status. There is a one-time \$85 application fee. After acceptance, Life members pay no further dues for the rest of their life and receive all the traditional member benefits. Life members do not automatically receive the MemberPlus benefit. That is available to them at the same \$175 rate

as it is to other members.

Members of five years or more who have at least 15 years of experience in broadcast engineering or allied fields and can show demonstrated responsibility in supervision, equipment design, physical plant design, marketing and/or equipment systems integration, are eligible for Senior membership. There is no cost to apply for Senior membership.

Applications for Senior and Life Membership are available on the SBE website. Click on Membership/Membership Categories.

Balloting for the annual election of the national board of directors will be conducted online and through the mail in July 2018. More than ninety percent of the election ballots cast in 2017 were submitted using our web-based balloting system. All voting members are encouraged to use the electronic ballot method as it is quick, easy and saves the society printing, mailing and postage expense.

Members who prefer voting by mail may opt-out of electronic balloting by checking the appropriate box on their member renewal form (available on both the paper renewal or the online renewal form). The letter to Life Members will also provide the opt-out opportunity.

Questions about your membership renewal? Contact Scott Jones at the SBE National Office at 317-846-9000 or [kjones@sbe.org](mailto:kjones@sbe.org).



## EDUCATION UPDATE

By Wayne M. Pecena, CPBE, 8-VSB, AMD, DRB, CBNE  
Chairman, SBE Education Committee  
wpecena@sbe.org



## Welcome to 2018

I hope that 2018 is off to a good start for you and that the year brings prosperity and successes in both your personal and professional life. Keep in mind that continuous learning is a key success trait of the technology professional and a new year brings an opportunity to set your professional development goals for the year.

### Technology

Every area of technology has its own vocabulary and broadcast engineering is no different. The industry is full of acronyms and as broadcast engineers we often use these acronyms in our conversations. We might even attempt to impress upon our non-technical colleagues a higher knowledge level by liberal use of acronyms. We have all likely been guilty of geek-speak, especially with our station management teams.

Even when speaking with our engineering colleagues the use of TLAs and FLAs can send us down the wrong path of understanding in a conversation. Oh sorry, I mean the use of three-letter acronyms or four-letter acronyms. When you mention the acronym IOT the traditional RF-oriented broadcast engineer (especially if the keeper of a high power UHF television transmitter) is likely to think of the IOT as the inductive output tube. This mention brings fond memories of maintaining the proper glycol/distilled cooling water mix and beam supply voltages in excess of 30kV+ at several amperes. The less experienced broadcast engineer that might have come from the information technology (IT) world to broadcast engineering would likely think of the internet of things. Thus the context of the discussion often defines what an acronym actually means. The same apparent acronym with different meanings further adds to confusion especially when speaking with our non-technology colleagues.

The internet of things (often written as IoT) is an area of IT that will likely invade your broadcast facilities if it has not already. An IoT device often brings useful capabilities and features to the fully interconnected broadcast technology facility and can range from HVAC temperature sensors, to ac power monitors, to proximity sensors, to UPS devices. I should note that the IoT terminology is often associated with home devices and a newer acronym, IIoT refers to the industrial internet of things might be more appropriate for our broadcast plants. This technology invasion also brings challenges, especially in terms of cybersecurity whether in the home or the industrial environment. A 2017 Gartner Research report stated that approximately 8.4 billion IoT devices would be in use by the end of 2017 and forecast that by 2020 there will be over 20.4 billion IoT devices deployed with more than five million added to our networks each day. These current and future device numbers might also suggest that existing network device security solutions will not be up to the task in today's cybersecurity environment.

For more information on any SBE education program, contact Education Director Cathy Orosz at the SBE National Office at 317-846-9000 or corosz@sbe.org.

### IOT and IIoT Precautions

The IOT requires safety precautions due to the lethal operating voltages involved. IIoT devices deserve their own safety precautions in terms of network security. Whereas these devices are expected to be unique in their purpose or function (such as a transmitter exhaust temperature sensor), but share some common design characteristics. These devices are often limited in



An IOT and the IIoT are not the same.

scope with regards to available processing power and/or memory, operating system, communications protocol, and the ability to be securely upgraded. Forrester Research identified several cybersecurity enhancements that manufacturers must incorporate into IIoT devices. Today, security is often an afterthought rather than a design requirement. These recommended enhancements include device authentication, communications encryption between devices, device access protection, remote upgrade ability with accessibility protection, and an overall system approach to device deployment that includes cybersecurity protections. For the broadcast engineer, these recommended enhancements must become requirements as IIoT devices are considered, evaluated, and deployed in the broadcast technical plant whether within the broadcast air chain

or within the facility management system. What about devices that may already be installed in the broadcast facility? Common network security mitigations can be and should be applied that begins with being aware of all IIoT devices that are deployed, understanding what these devices are doing, and placing these devices on a separate network or VLAN. Manually configure devices so as not to rely on plug-and-play features. Use unique passwords for each device. And develop an on-going maintenance plan to insure that IIoT device firmware is patched or upgraded. And don't lose site of the disruption that a simple IIoT device such as a security camera or temperature sensor might cause if compromised.

### Webinars by SBE

A new SBE webinar series on cybersecurity began January 30 and continues through April. The webinar series is targeted to provide a fundamental understanding of IP network security principals, developing a network security plan, and best practice cybersecurity implementation techniques. With your 2018 SBE MemberPlus membership, this webinar series and all SBE webinars in the on-demand library are available to you at no additional cost. Your SBE Education Committee wants to know your professional development needs. Lend your advice and guidance to the SBE Education Committee to help establish the right mix of educational content to meet your professional development needs. The SBE Education team is dedicated to bringing you quality professional development programs covering relevant broadcast industry topics delivered via mediums that meet your needs.



# CERTIFICATION UPDATE

By Joe Snelson, CPBE, 8-VSB  
Member, SBE Certification Committee  
joe@snelson.tv

## Certification... By The Letter

Since it began in 1975, the purpose of SBE certification is to recognize and raise the professional status of broadcast engineers by providing standards of professional competence. There is a wealth of information about SBE certification on the SBE website ([sbe.org/certification](http://sbe.org/certification)).

Once a certification is granted, that's not the last of it. Certification is granted for a five-year period, at which point the holder must renew it via recertification or advance to the next level (if he or she can). Recertification in the categories of CRO, CTO and CBT only have a service requirement. All other recertifications are subject to what is presented in the rest of this article.

Recertification can be obtained in one of two ways. The first is by examination where the applicant will take an exam similar to what he took when he initially applied for certification. The questions, however, will be different from those of the initial exam, and, most likely, updated. The second way of obtaining recertification is through professional credits, which we call "Maintenance of Certification."

You may ask, "Why does a certification holder need to renew his or her certification once it has been granted?" The answer is to ensure the certification holder has kept current on technology related to the level of certification he or she holds. Think of it this way: you would probably not want to go to a surgeon who obtained his license 50 years ago and has not kept up with current methods

and technology. Likewise, an employer would be unlikely to hire a broadcast engineer who has little or no experience with current technology or IT.

### LINKS

#### SBE Program of Certification

[sbe.org/certification](http://sbe.org/certification)

#### Maintenance of Certification

[sbe.org/sections/Cert\\_Maint.php](http://sbe.org/sections/Cert_Maint.php)

### Recertification by Professional Credits

In my title I used the phrase "by the letter." I am referring to the 10 categories (labeled A to J) an applicant uses to enter his or her professional (i.e. continuing education) credits over the last five years of his certification. An applicant must submit the required number of credits from at least four of the ten categories listed on the recertification application.

You should refer to the Maintenance of Certification Program

document on the SBE website as to the number of points required for your recertification and more details on the categories and number of points allowed for each. The 10 categories are noted in the sidebar.

I mentioned earlier that an applicant for recertification must have points in a minimum of four categories. Obtaining points in categories A, E and G should be a fairly easy task for anyone to achieve. Points in these three categories demonstrate an individual's continued interest in broadcast engineering and development of his career.

Gaining that fourth category typically requires a proactive effort to attend a class related to broadcast technology or involvement in some official capacity with a broadcast-related organization.

As a member of the SBE National Certification Committee and having reviewed many applications for recertification, I find that most all applicants submit points in five to six categories, with a total point count well exceeding the amount needed for recertification.

One of the keys in preparing for recertification is good record keeping. I would recommend entering into a diary eligible recertification activities as soon as possible after they occur. Doing this avoids you trying to remember all you have accomplished over the last five years when trying to complete your recertification application. It also serves as a good reference through your current certification period so you can see where you stand in terms of categories and points along the way. This eliminates the last-minute panic of having to identify categories and points for your recertification application. The SBE provides an Excel file that makes it easier to track and total your points as you earn them. Find it on the maintenance of certification web page. The link is to the left.

It is typical for state-licensed professionals such as structural, mechanical or electrical engineers to meet continuing education requirements to retain their license. That is why we feel applying continuing education credits over several categories is important for SBE recertification.

### SBE Recertification Categories

- A: Employment
- B: Formal Education Development
- C: Being a Presenter
- D: Publication of a Technical Article
- E: Active Membership and Participation in a Broadcasting Society
- F: Serving in a Broadcasting Society
- G: Meeting Attendance
- H: Equipment Schools
- I: SBE Course and Home Study
- J: Other Activities (for activities not mentioned above)

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## EQ Answer from page 3

The answer is D

Wave guide is specifically designed to operate with minimum signal loss at the higher frequency ranges of radar, microwave and satellite, which all use frequencies above 2 GHz. Air dielectric is typically not used above 1 GHz because of its signal loss at high frequencies. Open-wire line is not used above 30 MHz. Resonant coax is typically a quarter-wave stub and is not a way to transport RF.

# SBE Certification Achievements

## CONGRATULATIONS

### LIFE CERTIFICATION

**Certified Professional Broadcast Engineer (CPBE)**  
James Hermanson, Middleton, WI - Chapter 24  
John Luff, Sewickley, PA - Chapter 20  
Mark Rapson, Land O Lakes, FL - Chapter 39  
David Siegler, Atlanta, GA - Chapter 5

**Certified Broadcast Networking Technologist (CBNT)**  
James Hermanson, Middleton, WI - Chapter 24

**Certified Radio Operator (CRO)**  
Michael Phillips, New Milford, NJ

Certified Professional Broadcast Engineers and certified senior broadcast engineers who have maintained SBE certification continuously for 20 years, are at least 59½ years old and are current members of SBE may be granted Life Certification if so requested. All certified who have retired from regular full-time employment and are at least 59½ years old may be granted Life Certification if they so request. If the request is approved, the person will continue in his/her current level of certification for life.

### CERTIFIED PROFESSIONAL BROADCAST ENGINEER

**Certified Professional Broadcast Engineer (CPBE)**  
Ljube Georgievski, Longwood, FL - Chapter 42  
Daniel Smith, Perris, CA - Chapter 131

Applicants must have 20 years of professional broadcast engineering or related technologies experience in radio and/or television. The candidate must be currently certified on the Certified Senior Broadcast Engineer level.

### NOVEMBER EXAMS

**Certified Broadcast Radio Engineer (CBRE)**  
James Vanaman, Viera, FL - Chapter 42  
**Certified Broadcast Television Engineer (CBTE)**  
Theo Economides, Chicago, IL - Chapter 26  
Gerry Field, Watertown, MA - Chapter 11  
Josh Kahn, Oakland, CA - Chapter 40  
Jason Liao, San Leandro, CA - Chapter 40  
John Martin, Empire, MI - Chapter 91  
Andres Sandin, Crownsville, MD - Chapter 132  
Kenny Wong, San Francisco, CA - Chapter 40  
**Certified Video Engineer (CEV)**  
Gustavo Contreras, Key Biscayne, FL - Chapter 53  
Todd Nunes, Los Angeles, CA - Chapter 47

**Certified Audio Engineer (CEA)**  
Glenn Booth, Arvada, CO - Chapter 48  
Ted Nadaskay, Milton, FL - Chapter 118  
Todd Washburn, Norfolk, VA - Chapter 54  
**Certified Broadcast Networking Technologist (CBNT)**  
Nihad AliAkbar, Alexandria, VA - Chapter 37  
Joel Hime, Tucson, AZ - Chapter 32  
Steven Mainger, Westlake, OH - Chapter 70  
Brandon McKinney, St. Peters, MO - Chapter 55  
**Certified Broadcast Technologist (CBT)**  
Terry Neal, LaVergne, TN - Chapter 103  
Bridget Pamboris, East Moiches, NY - Chapter 11  
Lisa Stapley, Aurora, CO - Chapter 48

**Certified Radio Operator (CRO)**  
Harry Benavides, Riverdale, MD - Chapter 37  
Christopher Brown, Lehigh Acres, FL - Chapter 90  
Jonathan Nurse, Sacramento, CA - Chapter 43  
**Certified Television Operator (CTO)**  
Angel Calderon, Las Vegas, NV - Chapter 128  
Michael Murray, Madison, WI - Chapter 24  
Robert Raymond, Liverpool, NY - Chapter 22  
Ryan Smith, Las Vegas, NV - Chapter 128  
Bianca Valdez, Las Vegas, NV - Chapter 128

### SPECIAL PROCTORED EXAMS

**Certified Broadcast Television Engineer (CBTE)**  
Lubos Kuzma, Calgary, Alberta Canada

**Alabama Broadcasters Association**  
**Certified Senior Radio Engineer (CSRE)**  
Stan Carter, Pearl, MS - Chapter 125  
James Heim, Vass, NC - Chapter 147

**Certified Broadcast Radio Engineer (CBRE)**  
Jeff Welton, Bangor, ME

### CERTIFIED RADIO OPERATOR (CRO)

Andrew Battistoni, Amarillo, TX  
John Devries, Leesburg, VA

Carrie Kingsbury, Vermillion, SD  
Tasia Kinzle, Vermillion, SD  
Sean McCabe, West Palm Beach, FL

Robert Portillo, Amarillo, TX  
Vernon Linnemann, Copperas Cove, TX

### CERTIFIED TELEVISION OPERATOR (CTO)

Susan Conner, Midvale, UT  
Kyle Davis, North Hollywood, CA  
Alex Garcia, Monterey Park, CA  
Richard Gonzalez, El Paso, TX  
Charles Gray, Cape Girardeau, MO

Rick Katt, Cape Girardeau, MO  
David Medow, Reno, NV  
Kelsea Newton, Friendswood, TX  
Gayle Saugstad, Vermillion, SD  
Bryan Vincent Smith, Inglewood, CA

Dave Thum, Vermillion, SD  
Jason Woods, Cape Girardeau, MO

*Tribune Broadcasting*  
Hoyt Molina, Norfolk, VA  
Catherine Read, Norfolk, VA

### RECERTIFICATION

Applicants completed the recertification process either by re-examination, point verification through the local chapters and national Certification Committee approval and/or met the service requirement.

**Certified Professional Broadcast Engineer (CPBE)**  
Joseph Glynn, Old Forge, PA - Chapter 2  
**Certified Professional Broadcast Engineer (CPBE)**  
**8-VSB Specialist (8-VSB) AM Directional Specialist**  
Steve Scott, Las Vegas, NV - Chapter 128  
**Certified Senior Radio Engineer (CSRE)**  
Amado Abenojar, Mesquite, TX - Chapter 67  
Robert Henning, Mishawaka, IN - Chapter 30  
**Certified Senior Television Engineer (CSTE)**  
Douglas Greene, Littleton, CO - Chapter 48  
**Certified Senior Television Engineer (CSTE) 8-VSB Specialist**  
Mark Clem, Jonesboro, AR  
**Certified Senior Radio Television Engineer (CSRTE)**  
Craig Butler, Orange Park, FL - Chapter 7  
**Certified Broadcast Networking Engineer (CBNE)**  
Christopher Crump, Buford, GA - Chapter 5  
Andrew Hamann, Kennesaw, GA - Chapter 5  
**Certified Broadcast Radio Engineer (CBRE)**  
William Gaddis, Tuscaloosa, AL - Chapter 68  
Michael Jamnick, Minneapolis, MN - Chapter 17

**Certified Broadcast Television Engineer (CBTE)**  
Renato Calalang, Orlando, FL - Chapter 42  
Ronald Rockrohr, Lenexa, KS - Chapter 59  
**Certified Audio Video Engineer (CEAV)**  
David Erickson, Anchorage, AK - Chapter 89  
**Certified Audio Engineer (CEA)**  
**Certified Video Engineer (CEV)**  
Michael Belanger, Morrow, OH - Chapter 33  
**Certified Broadcast Networking Technologist (CBNT)**  
Michael Jamnick, Minneapolis, MN - Chapter 17  
Robert Nelson, Manhattan, KS - Chapter 3  
Edward Rupp, Austin, TX - Chapter 79  
Steve Scott, Las Vegas, NV - Chapter 128  
**Certified Television Operator (CTO)**  
Bryan Evans, York, PA  
Curtis Kirk, Tyler, TX - Chapter 67  
Lynn Lamb, Billings, MT  
Brad Meyer, Springfield, MO  
Jeffery Pillivant, Westerville, OH  
Gregory Tomlin, Asheville, NC

**Certified Radio Operator (CRO)**  
Arturo Aguirre, Los Angeles, CA  
Aerika Dave, S. Pasadena, CA  
**Certified Broadcast Technologist (CBT)**  
Jonathan Bednar, Baltimore, MD - Chapter 46  
Robert Bertrand, Derwood, MD - Chapter 37  
David Brett, Poland, OH - Chapter 122  
Larry Ewing, Amarillo, TX  
Clark Jillson, Boscobel, WI - Chapter 24  
Michael Keith, Helena, AL - Chapter 68  
Brian Latsha, York, PA - Chapter 41  
Tony Mancari, Bridgewater, VA - Chapter 78  
Michael McCormick, Ocala, NE - Chapter 87  
Christopher Nixon, White Heath, IL - Chapter 49  
Jim Oster, Chantilly, VA - Chapter 37  
Timothy Parish, Sacramento, CA - Chapter 43  
Norman Portillo, Fayetteville, NC - Chapter 147  
Stephen Roth, New York, NY - Chapter 15  
Brock Round, Forest, VA - Chapter 78  
Nathan Smith, Pensacola, FL  
Michael Strobel, Flanders, NJ - Chapter 15  
Brian Urban, Georgetown, TX - Chapter 67



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[sbe.org/pins](http://sbe.org/pins)

# Nominations Committee Seeks Board Candidates

The annual election of officers and directors to the national SBE Board of Directors will take place this summer. The SBE Nominations Committee seeks qualified candidates who are voting members (Member, Senior, Fellow or the designated representative of a SBE Sustaining Member) in good standing (dues paid). Candidates must hold an engineering level of SBE certification (CBT or higher or CBNE) and maintain it the entire duration of service on the Board, if elected. Candidates should have a desire to serve and lead, not only as a member of the board, but through service as a national committee chair or member. Members of the Board represent all members, not any one specific region, state, city or chapter. It is suggested that candidates

have previous experience as a leader in his or her local chapter, or other volunteer leadership experience, prior to running for the national SBE Board.

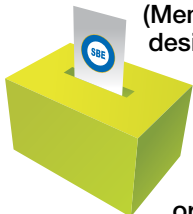
Members of the Board are expected to attend two regularly called meetings each year; in the spring, held during the annual NAB Show, and in the fall, at the annual SBE National Meeting. Other meetings may be called via conference call during the year.

The national SBE board includes 12 directors, four officers and the immediate past president. Directors serve two-year terms and officers serve one-year terms. Six director seats will be contested in 2018 as will all four officer positions. The SBE By-laws limits the number of terms of elected members of the Board. Directors may serve three consecutive terms. The secretary and treasurer may serve up

to four consecutive terms and the president and vice president may serve up to two consecutive terms. The maximum number of years anyone may serve on the board is ten consecutive years. The time spent as immediate past president does not count towards the ten-year total.

Members interested in offering their candidacy and serving on the national Board if elected are encouraged to contact SBE Nominations Committee Chair JT Tucker, CSRE, AMD, CBNE, at [jtucker@sbe.org](mailto:jtucker@sbe.org) or 843-277-1270. A slate of nominees will be assembled by the committee by May 1. Other qualified members may be nominated by members in good standing no later than July 6.

The election takes place from July 20 to Aug. 22. Candidates elected will be installed into office during the SBE National Meeting in Boston, on Oct. 2.



# SBE Fellow Nominations Are Open

by Troy Pennington, CSRE, CBNT  
Chair, SBE Fellowship Committee

There is still time to recognize a broadcasting peer who has contributed to the success of an SBE chapter or broadcasting. The membership grade of SBE Fellow is the highest in the society, and it honors those who have exhibited a dedication to the advancement of the broadcast engineer, the field of broadcast engineering and the Society of Broadcast Engineers itself. To date, 83 members have been recognized with the honor in the society's more than 50 years of existence.

To nominate a member, candidates must be proposed in writing by a voting SBE member to the Fellowship Committee. The nomination must include a comprehensive professional history of the nominee and an explanation of why the candidate is deserving of this honor. The nomination must also include the written endorsements of at least five other voting SBE members.

Nominations are confidential. No others besides the nominators and the members of the Fellowship Committee should be aware of the nomination. The nominee should not know that he or she has been nominated.

Nominations for 2018 must be received no later than March 2, 2018, for consideration. The Fellowship Committee will bring the names of nominees to the Board of Directors for consideration and election at the April 8, 2018, meeting. The SBE secretary will notify those elected. Awards will be presented at the SBE National Awards Dinner during the 2018 SBE National Meeting to be held in Boston.

Submit your nominations to:

Fellowship Committee Chair Troy Pennington, CSRE, CBNT; 6156 Hampton Hall Way; Hermitage, TN 37076; or to [tpennington@sbe.org](mailto:tpennington@sbe.org).

# Third Year for SBE Compensation Survey

How do you know if your earnings are in line with other professionals in your field or your market? You can ask around, but that's not a practical method for many reasons. Instead, turn to your trusted source of information: The SBE.

The SBE will again conduct a compensation survey in April. In its third year, the goal is to provide practical information to SBE members about individual compensation (salary and benefits) based on the type of broadcast or multimedia involvement, market size and years of experience. SBE members will have access to the full report. We encourage every SBE member to participate to provide a large sample base of responses. All responses are anonymous. The first two surveys have provided good information, and strong participation ensures that we can provide the most accurate and useful data.

The survey opens April 1. Look for a link to the survey in our regular email communications and on the SBE website. The results will be published in July.



## Ready for the NAB Show? The SBE Can Help!

The Society of Broadcast Engineers is again preparing a resource to help you navigate your way around the 2018 NAB Show. The convention occupies nearly the entire Las Vegas Convention Center, and trying to see everything in four days is a challenge. Our NAB Show Resource Guide provides useful information to help you get the most from your limited time at the convention.



The Guide will include a listing of SBE events, including the annual Membership Meeting and Ennes Workshop, and a directory of all the SBE Sustaining Members exhibiting at the show. The exhibitor information will include descriptions of that exhibitor's products and services listed to help you better navigate the convention and get the information you need quickly.

The Guide will be posted on the SBE website. Look for a prominent link on the home page beginning in March.



# Recruit a New SBE Member

The SBE Membership Drive will kick off on March 1. The theme this year is Get Ahead with the SBE. With more than 50 years of history, the SBE provides broadcast engineers the best in certification, continuing education, government relations and career opportunities. And you can help continue that tradition. The SBE is the only organization that is devoted to the advancement of all levels and types of broadcast engineering.

As a member, you know the benefits of membership. Chances are you have a colleague or two who are not familiar with the SBE, but could benefit from membership. While anyone can join the SBE at any time during the year, there's an added benefit to joining during the SBE Membership Drive, held from March 1 to May 31.

If you recruit a new member during the Drive and your name is on the sponsor's line of the membership application, your name

## GET AHEAD WITH THE



SBE

will be entered into the member drive drawing for prizes donated from our sustaining members. If you recruit a new sustaining member, you'll earn five entries into the prize drawing. Prizes include logo items, books and more. The grand prize is airfare and hotel to attend the SBE National Meeting held in conjunction with the 2018 Media Resource Expo in the Boston area, Oct. 2-3.

And as a further bonus, for every new member you sponsor you will receive \$5 off your 2019 dues (up to \$25).

## New Webinar Series: Broadcast Infrastructure Cybersecurity

The SBE presents a four-part webinar series, Broadcast Infrastructure Cybersecurity. The series provides an understanding of IP network security terminology, security plan principals, best practices, proactive implementation techniques, and active security verification. Practical implementation examples utilizing popular network infrastructure equipment will be provided with public domain security assessment tools. Module 1, Introduction & Network Security Principals, was streamed on Jan. 30 and is available now on-demand. Module 1 introduced cybersecurity in the broadcast facility and provided an overview of the security policy. Module 1 also covers structured security implementation and hardening the broadcast IP Network.

The modules that follow include Module 2: Understanding the Firewall, Tuesday, Feb. 27, 2018 from 2 p.m. - 3:30 p.m. ET, which will include a discussion of the access control list (ACL) and the firewall, a review of Firewall Implementation & Ruleset Configuration and applying the security policy through the firewall ruleset.

Module 3: Understanding Secured Remote Access is next, on Tuesday, March 27, 2018 from 2 p.m. - 3:30 p.m. ET will discuss how to establish secured remote access. This session also reviews VPN implementation and configuration.

Completing the series is Module 4: Security Verification Through Penetration Testing, Tuesday, April 24, 2018 from 2 p.m. - 3:30 p.m. ET. It will cover proactive security monitoring and an overview of network penetration testing and network presentation testing tools, with examples.

Watch each module live or later on-demand. The SBE member fee for each module of the series is \$59, but is free to SBE MemberPlus members.

The SBE webinar series is presented by Wayne Pecena, CPBE, 8-VSB, AMD, DRB, CBNE, assistant director of educational broadcast services in the Office of Information Technology at Texas A&M University.

## 54<sup>th</sup> SBE National Meeting Heads to Boston Area



Photo courtesy of MRE  
The Media Resource Expo attracts attendees from New England and beyond.

Danvers, MA, a northern suburb of Boston, is the location of the 2018 SBE National Meeting, to be held on Tuesday and Wednesday, October 2-3. This year's SBE National Meeting is held in conjunction with the Media Resource Expo (MRE) at the Doubletree by Hilton Boston North Shore. Our host chapter is Chapter 11 of Boston.

The SBE National Meeting includes the SBE Annual Membership Meeting, the SBE National Awards Reception and Dinner, and the SBE Fellows Breakfast. Also meeting during the event will be the national SBE Board of Directors and the national SBE Certification Committee.

The MRE is a one-day exhibition and educational event (Oct. 3) that brings together professionals in the fields of broadcast, film, instructional media and communication with manufacturers, resellers and integrators.

The Doubletree by Hilton Boston North Shore in Danvers is located 19 miles north of downtown Boston, just off I-95. This first class hotel is 100% smoke-free and boasts 363 rooms and suites, a 24-hour business center, free parking and complimentary shuttle to and from the Logan Express stop in Peabody and the Beverly Depot Commuter Rail stop. A special room block is reserved for SBE National Meeting participants with a rate of \$149 and includes complimentary internet access.

Registration will open and more information about the SBE National Meeting will be available beginning in June. Watch for it in The Signal and SBE-news. All members and friends of the SBE are invited to attend. Members in New England and neighboring states are particularly encouraged to attend while the SBE National Meeting is close by. Save the dates: Oct. 2-3 for the 2018 SBE National Meeting and the MRE!



## LEGAL PERSPECTIVE

By Chris Imlay, CBT  
SBE General Counsel  
cimlay@sbe.org

# Shooting In the Dark

On December 1, 2017, the FCC issued a public notice in Docket 17-340 asking for comment on a series of spectrum policy recommendations of the Commission's Technological Advisory Council (TAC), contained in a series of TAC white papers issued over the past several years. The TAC's Spectrum and Receiver Performance Working Group developed recommendations for revised FCC spectrum policy to address the "increasing challenges of efficient and fair allocation of spectrum in congested RF environments" (in other words, more spectrum overlays). FCC watchers will quickly realize that there is very little new here. The concepts underlying the principles and policies are notions of (a) interference temperature evaluations, (b) receiver immunity standards proposals, and (c) the suggested adoption of harm claim thresholds.

There are earlier docket proceedings and studies dealing with all three concepts, mostly revealing quite limited support from the telecommunications industry. What is worrisome though is that each concept and the recommended policies presuppose the FCC has a good handle on ambient RF conditions (RF noise levels) in the allocations that would be subject to these new methods of spectrum management. The bad news is that it doesn't.

The TAC's recommended Basic Spectrum Management Policies are as follows:

1) Implement and formalize the TAC's recommendations for *Basic Spectrum Principles* as policies, and set clear expectations about the affected system's capabilities regarding interference, such as harm claim thresholds.

2) Adopt risk-informed interference assessment and statistical service rules more widely.

3) Implement steps for improving interference resolution, including a next-generation architecture for radio spectrum interference resolution, creating a public database of past radio-related enforcement activities, and incorporate interference hunters in the resolution process.

The recommended principles underlying the proposed policies and goals follow:

*Principle #1:* Harmful interference is affected by the characteristics of both a transmitting service and a nearby receiving service in frequency, space or time;

*Principle #2:* All [radio] services should plan for non-harmful interference from signals that are nearby in frequency, space or time, both now and for any changes that occur in the future;

*Principle #3:* Even under ideal conditions, the electromagnetic environment is unpredictable. Operators should expect and plan for occasional service degradation or interruption. The Commission should not base its rules on exceptional events;

*Principle #4:* Receivers are responsible for mitigating interference outside their assigned channels;

*Principle #5:* Systems are expected to use techniques at all layers of the stack to mitigate degradation from interference;

*Principle #6:* Transmitters are responsible for minimizing the amount of their transmitted energy that appears outside their assigned frequencies and licensed areas;

*Principle #7:* Services under FCC jurisdiction are expected to dis-

close the relevant standards, guidelines and operating characteristics of their systems to the Commission if they expect protection from harmful interference;

*Principle #8:* The Commission may apply interference limits to quantify rights of protection from harmful interference; and

*Principle #9:* A quantitative analysis of interactions between services shall be required before the Commission can make decisions regarding levels of protection.

These principles are in some cases clearly true, but in others subject to strong debate. However, they do not by themselves justify adoption of the recommended new policies absent a good understanding of ambient RF conditions. For example, in 2002, the FCC created a Spectrum Policy Task Force (SPTF), composed of Commission staff members, to assist in identifying and evaluating changes in spectrum policy.

The SPTF issued a report recommending the Commission adopt a new and untested approach to spectrum management that incorporated an "interference temperature" concept. Basically, the staff proposed to establish maximum permissible levels of interference, thus characterizing the "worst case" environment in which a receiver would be expected to operate. Different threshold levels would be set for each band, geographic region or service, and these thresholds should be set after the FCC has reviewed the condition of the RF environment in each band.

This review, they said, should include actual spectrum measurements of the RF noise/interference floor. In addition to obtaining better data regarding the noise floor, adoption of a standard methodology for measuring the noise floor was recommended. Further, the SPTF recommended that the Commission create a public/private partnership for a long-term noise (interference temperature) monitoring network and for the archiving of data, for use by the FCC and the public.

The additional concepts of receiver immunity standards and harm claim thresholds (i.e. policy limits on complaints of interference by radio services that do not comply with receiver immunity and minimum performance standards), both of which are part of the interference temperature concept, assume the standards for receiver immunity and interference rejection and the threshold established for interference complaints will be based on objective criteria, premised on actual knowledge of ambient noise levels in the environments in which the next generation receivers will operate.

But wait; the FCC has quietly disinvited the TAC from proceeding with the ET Docket 16-191 noise study before that study even got started (despite extensive industry support reflected in comments on the study's methodology). How can the FCC now suggest the adoption of specific spectrum management principles without having a firm grasp on ambient noise levels in basic RF environments and geographical areas? Terminating the noise floor study limits the extent to which the FCC can conduct accurate, quantitative analyses of interactions between and among radio services and therefore limits the tools at its disposal to evaluate and implement new, innovative spectrum management techniques.

Going forward, the FCC would be well-advised to provide the TAC with some flexibility in its areas of study without imposing artificial limits on its efforts. It is also strongly suggested that the Commission re-task the TAC with pursuing the Noise Study announced in June of 2016. Without it, the FCC is just shooting in the dark.

### LINK

Technological Advisory Council White Papers  
[fcc.gov/general/tac-reports-and-papers](http://fcc.gov/general/tac-reports-and-papers)



## FOCUS ON SBE

By John L. Poray, CAE  
SBE Executive Director  
jporay@sbe.org

# Tangible and Intangible

This is the time of year when most of our members make the decision to renew their memberships. You might be interested to know that each year about 90% do so. That is a significant percentage for a professional organization whose members are primarily individuals. The remaining ten percent do not renew for various reasons. They have left broadcasting by choice or otherwise, some have retired, and of course, sadly, we lose a number each year.

Renewing membership is a decision that many members make without a second thought. Others will make a mental count of the reasons why they should or should not before making their decision. We won't take anything for granted, so I would like to provide some reasons why membership is important, both the tangible and intangible.

### The Tangible

The tangible reasons are easy to count down. The SBE offers many specific benefits that help one develop his or her career. Educational programs and SBE certification programs are at the top of many member's lists. Whether they be online or in-person educational programs direct from the national SBE, or the monthly presentations at a local chapter, there are many available to you each year, presented by subject matter experts on topics critical to your job today and in the future. The SBE certification program provides the opportunity to demonstrate to yourself and to others your knowledge and

experience you have acquired over your career, no matter what level of broadcast engineering or operations you work. It is the most recognized gauge of technical expertise in our industry.

Having a link to technical broadcast and media job opportunities is another tangible reason for SBE membership, which you get with the SBE JobsOnline. If you haven't checked out SBE JobsOnline lately, you will find a system that is searchable, giving you the opportunity to set parameters of the job you are seeking – location, broadcasting facility type, geographical location and others – and be automatically notified via email when a new job is posted that meets your criteria.

Whether you use it for your personal development or for those you may supervise or employ, the results of the annual SBE Compensation Survey is a valuable tangible benefit of membership. So are broadcast-related technical books and life insurance, both at discounted rates for members.

### The Intangible

So what about those benefits that are hard to define or measure? Many members appreciate these as much or even more than the tangible ones. Most commonly mentioned are the relationships that develop by being a part of a national professional association. Through the SBE, people who otherwise may have little in common find a shared interest with other members because of the work and interest they have in the technical side of

broadcasting. New professional relationships are born and existing relationships ripen at every chapter meeting and social event, educational program, convention or trade show you attend. Relationships that may provide you with a lead to a position that could advance your career, or just provides an understanding ear when you seek a solution to a work-related problem. It is the very core of what associations are all about: getting people together who share a common interest.

Information gained from a presentation at your chapter meeting or from a live SBE webinar helps to build your knowledge base that can pay off the next day, or next year, when you are working on a complex project, making an equipment order or installing the latest software.

The promotion you received or new job you took in another town may have been helped along by an SBE member who knew you and what you could do. The growing confidence of a newer professional in the industry is aided by another member a little further along in his or her career, who takes an interest in the young person's development, providing encouragement and guidance, along with some timely technical tips. Our SBE Mentor program provides a vehicle to help build those relationships today.

Technical advances have made it commonplace for people to subscribe to forums and other online common interest groups to share interests, comments and ideas. The SBE has a number of those, including the SBE Roundtable for broadcast engineering and industry discussion and SBE-Chat for general discussion. SBE Exchange focuses on the EAS and emergency communications while the SBE Facebook Group, SBE Chapters Facebook group, and LinkedIn network, keep people connected. Amateur radio fills the bill for others through our HAMnet, SBE Chapter of the Air.

So there you are, plenty of reasons members stay members and others become members. I could have listed more, and you could probably come up with others as well. Here's one more: supporting the organization that supports your chosen field. It is old school, but still as valid today as it was 54 years ago when 100 broadcast engineers gathered in Chicago and created the SBE.

### MEMBERPLUS from p. 1

traditional membership benefits, access to a wide variety of broadcast technical, regulatory and safety educational presentations, presented by industry subject matter experts, for the entire membership year.

SBE MemberPlus members will register for webinars at the SBE website as before. Your MemberPlus status will be confirmed as you register and convert your webinar cost to \$0.

Current members may renew now to take advantage right away of MemberPlus benefits. Renew online at [www.sbe.org](http://www.sbe.org). You can also choose to wait and renew when your renewal letter arrives in the mail. Whichever you choose, current members who renew and select the MemberPlus option will have immediate access to the SBE educational webinar catalog.

This is an outstanding opportunity for other technical media employees where you work who are not currently members of SBE to join and take advantage of the exceptional value that the SBE MemberPlus option provides. Invite them to click the "Join Now" link on the SBE website. More information about SBE member benefits including MemberPlus are available at the SBE website or by contacting the SBE National Office at 317-846-9000.



## ENGINEERING PERSPECTIVE

By Jeff Smith, CPBE  
Syndication Engineering Manager, iHeart Media NYC  
Chair, SBE Chapter 15  
jeffsmith@sbe15.com

# Winter Weather Preparedness

You hear the extended forecast and it says there is a chance of a winter storm in five days. What do you do? Well, in places like New York City, you probably ignore it and continue to drink your coffee. Two days later the weather forecasters are more concerned and use terms like bombogenesis and bomb cyclone. Hmm.... Maybe this will be serious.

As broadcast engineers, it is our responsibility to do everything possible to keep our stations on the air during any storm or catastrophe. Winter storms in particular present some unique issues that tropical or warm weather storms may not. Winter storms have the wind and precipitation but they also have the COLD.

This takes a special kind of preparation, a little different than that for normal storm preparation. One example: We use several redundant STL paths in NYC, one of which is an 11GHz microwave path. Snow is incredibly disruptive to 11GHZ, so it is more important than usual to make sure all paths are functioning to the main and backup transmitter sites. We are lucky enough to have three paths to a main and backup site. You may not have three paths, and the number of paths isn't the

point here, but ensuring all the paths work before the storm hits is key. It is also important to make sure that any automated switching for these paths is functioning at your transmitter site. If it's not, it really doesn't matter how many paths you have.

Don't forget HVAC systems. These units are notorious for freezing and icing up during cold weather. Check that they are charged and have no leaks. Make sure they are not a block of ice before you can't get to your transmitter site.

Backup power is a consideration with any storm, but especially with winter storms. Not only do you have to worry about snow and ice taking down power lines, you may also have to worry about the wonderful effects of salt on old infrastructure. In NYC and in many other cities, salt takes a big toll on underground cables. Just when you think you have "weathered the storm," BAM the manhole behind your building explodes and shoots blue flames in the air. The salt has corroded yet another 60-year-old feeder cable, and you are in darkness. That is unless you have checked and tested your backup power. These tests are even more important when cold weather hits.

Fuel pumps fail, batteries die, cold gas-gaskets leak, and the list of potential issues is endless. Unless you test your backup regularly and make sure it's good before the winter storm, you will potentially be in a lot of trouble.

One final concern is the ability of staff to get in and get home. Mass transit shuts down and roads close, so you must be sure to have hotel rooms or another option available. This goes for before the storm as well as after.

The bottom line is that before any storm you MUST check all your primary and backup systems. Backup systems are great – until they don't work. We can have all the redundancy in the world, but if they don't work in a disaster, they might as well not exist. Broadcasters in NYC and in every market are where people turn when there is a weather emergency. People expect us to be there and provide information and entertainment. It is our responsibility to make sure that the systems we have worked so hard to install work when they are called on. These are the systems that keep us on the air, even when the cell carrier or power company fails, which is very common in bad winter weather.




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**Chapter Check**

**Chapter 26 • Chicago**  
Chapter 26 held its December 2017 meeting at the headquarters of Shure in Niles, IL, and was treated to a facility tour, which included a stop in the anechoic chamber.



*Chapters: Share your meeting photos with us and post them to the SBE Chapters group on Facebook.*

<b>101 Telco Solutions • 2017</b> Erik Hoegh-Guldberg 469-732-3589 Dehydrator and Microwave Repair	<b>Dielectric • 1995</b> Cory Edwards 207-655-8131 TV & FM Transmission & Cellular Products	<b>LBA Technology Inc. • 2002</b> Javier Castillo 252-757-0279 AM/MW Antenna Equipment & Systems	<b>SCMS Inc. • 2000</b> Bob Cauthen 800-438-6040 Audio and RF Broadcast Equipment Supplier
<b>305 Broadcast • 2015</b> Anthony Gervasi 305-406-3560 Broadcast Equipment Supplier	<b>Digital Alert Systems, LLC • 2005</b> Bill Robertson 585-765-1155 Emergency Alert Systems	<b>Linkup Communications Corporation • 2017</b> Mark Johnson 703-217-8290 Satellite Technology Solutions	<b>Seacom Erectors, Inc. • 1997</b> John Breckenridge 360-793-6564 Tower/Antenna Erections
<b>AC Video Solutions • 2014</b> Andrea Cummis 201-303-1303 Consulting, Systems Design/Integration	<b>DoubleRadius, Inc. • 2012</b> Jeffrey Holdenrid 704-927-6085 IP Microwave STL	<b>LYNX Technik • 2007</b> Steve Russell 661-251-8600 Broadcast Terminal Equipment Manufacturer	<b>SEG • 2014</b> Chris Childs 913-324-6004 Supply Chain Products and Services
<b>AEQ Broadcast International • 2015</b> Peter Howarth 954-581-7999 Broadcast Audio, Video and Communications	<b>Drake Lighting • 2015</b> Dave Sheppard 270-804-7383 FAA Obstruction Lighting - Medium and High Intensity	<b>Markertek • 2002</b> Wesley Brewer 800-522-2025 Specialized Broadcast & Pro-Audio Supplier	<b>Shively Labs • 1996</b> Dale Ladner 888-SHIVELY FM Antennas & Combiners
<b>American Tower Corporation • 2000</b> Peter A. Starke 781-926-4772 Development/Construction/Management	<b>DTS Inc./HD Radio Technology • 2014</b> Rick Greenhut 443-539-4335 HD Radio Technology	<b>Micronet Communications Inc. • 2005</b> Jeremy Lewis 972-422-7200 Coordination Services/Frequency Planning	<b>Shure Incorporated • 2012</b> Bill Ostry 847-600-6282 Microphones, Wireless Systems, Headsets
<b>ATV Broadcast, LLC • 2016</b> Doug Smith 317-258-6280 Telecommunications Consulting Group	<b>du Treil, Lundin &amp; Rackley, Inc. • 1985</b> Jeff Reynolds 941-329-6000 Consulting Engineers	<b>Microtech Gefell GmbH • 2016</b> Michael Militzer +49 36649-82245 Microphones	<b>Sierra Automated Systems and Eng. Inc. • 2011</b> Al Salci 818-840-6749 Routers, Mixers, Consoles, Intercoms
<b>Audemat-Worldcast Systems Inc. • 2000</b> Christophe Poulain 305-249-3110 Control Manufacturer	<b>The Durst Org. - 4 Times Square • 2004</b> John M. Lyons, CPBE 212-997-5508 TV/FM/Microwave Tower Site	<b>Microwave Video Systems • 2011</b> Warren J. Parece 781-665-6600 Microwave Equipment Rental, Sales & Service	<b>Silvus Technologies • 2015</b> Mark Tommey 617-816-6588 Wireless Video Mesh Network
<b>AVCOM of Virginia, Inc. • 2010</b> Tom Pagonis 804-794-2500 Spectrum Analyzers	<b>DVEI - Division of Computer Modules Inc. • 2011</b> Laszlo Zoltan 858-613-1818 Everything About Transport Streams	<b>Middle Atlantic Products • 2005</b> David Amoscatto 973-839-1011 Equipment, Mounting, Solutions	<b>Smarts Broadcast Systems • 2017</b> Dave Potratz 800-213-3356 Radio Digital Audio Systems
<b>A-Ware Software/MusicMaster • 2014</b> Shane Finch 352-351-3625 Advanced Music Scheduling Solutions	<b>Econco • 1980</b> Debbie Storz 800-532-6626, 530-662-7553 New & Rebuilt Transmitting Tubes	<b>Midtown Video • 2016</b> Jesse Miller 305-669-1117 Complete Studio Production Support	<b>Snell Advanced Media • 1995</b> John Shike 650-703-4906 Video Equipment Manufacturer
<b>Belden Electronic Division • 1991</b> Sales 800-235-3361 Cable and Connectivity	<b>ENCO Systems Inc. • 2003</b> Ken Frommert 800-362-6797 Playout and Automation Solutions	<b>Moseley Associates Inc. • 1977</b> Bill Gould 805-968-9621 x785 Digital STLs for Radio and Television	<b>Solid State Logic • 2014</b> Steve Zaretsky 212-315-1111 Digital Audio Mixing Consoles, Networked Audio Routing, Embedded Audio Solutions
<b>Blackmagic Design • 2012</b> Terry Frechette 408-954-0500 Production Switchers, Digital Cameras, Routers, Video Editing and Monitoring, Color Correction, Video Converters	<b>ERI - Electronics Research • 1990</b> David White 812-925-6000 Broadcast Antennas, Transmission Line, Filters/Combiners, Towers and Services	<b>Nascar Productions • 2014</b> Abbey Kielcheski 704-348-7131 Live/Post Production Services	<b>Staco Energy Products Co. • 2010</b> Paul Helligenberg 937-253-1191 x128 Manufacturer of Voltage Regulators, UPS
<b>Bracke Manufacturing LLC • 2012</b> Patra Largent 949-756-1600 RF & Microwave Components	<b>Fiber Group Inc. • 2016</b> Dennis Ford 336-859-2031 Fiber, Video, Satellite and Drone Products	<b>National Association of Broadcasters • 1981</b> Industry Trade Association 202-429-5340	<b>Sutro Tower Inc. • 1989</b> Eric Dausman 415-681-8850 Broadcast Tower Leasing
<b>Broadcast Devices, Inc. • 2015</b> Robert Tarsio 914-737-5032 Audio/RF Support Products	<b>Florical Systems • 2008</b> Shawn Maynard 877-774-1058 Television Broadcast Automation	<b>National Football League • 1999</b> Ralph Beaver 813-282-8612 Game Day Coordination Operations	<b>Tektronix Inc. • 1977</b> Jim Lang 503-627-2980 Video Test & Measurement, Equipment Manufacturer
<b>Broadcast Electronics Inc. • 1978</b> Tom Beck 217-224-9600 Radio Equipment Manufacturer	<b>Frontline Communications • 2015</b> Tracy Brink 727-280-8843 Broadcast Vehicle Manufacturer	<b>Nautil Inc. • 2002</b> Jeff Welton 877-662-8835 Radio Broadcast Transmitter Manufacturer	<b>Teledyne e2v US Inc. • 1997</b> Dominic Piarulli 914-593-6828 Electronic Components
<b>Broadcast Software International • 2016</b> Marie Summers 888-274-8721 Radio Automation, Audio Logging	<b>Fujifilm/Fujinon • 1986</b> Gordon Tubbs 973-686-2769 Broadcast & Cine Lens Products	<b>Nemal Electronics Int'l Inc. • 2011</b> Benjamin L. Nemser 305-899-0900 Cables, Connectors, Assemblies and Fiber Optic	<b>Telemetrics Inc. • 2016</b> Anthony Cuomo 201-848-9818 Camera Robotic Control Systems
<b>Broadcast Supply Worldwide • 1986</b> Shannon Nichols 800-426-8434 Audio Broadcast Equipment Supplier	<b>GatesAir • 1977</b> Dave Hopson (TV) 513-445-5243 Mark Goins (Radio) 513-899-9124 Broadcast Equipment Manufacturer	<b>Neutrik USA, Inc. • 2012</b> Kathy Hall 704-972-3050 Ruggedized Optical Fiber Systems	<b>Televs USA, LLC • 2018</b> Andy Ruffin 937-475-7255 ATSC 3.0 Transmission Solutions, Antennas
<b>Broadcasters General Store • 2004</b> Buck Waters 352-622-7700 Broadcast Audio Video Distributor	<b>Heartland Video Systems, Inc. • 2011</b> Dennis Klas 920-893-4204 Systems Integrator	<b>Orban Labs, Inc. • 2011</b> David Rusch 480-403-8300 Audio Processing AMFMTV	<b>Telos Systems/Omnia/Axia • 2003</b> Denny Sanders 216-241-7225 Telos Systems Talk-Show Systems
<b>Calrec Audio • 2016</b> Dave Lewty 805-305-5711 Audio Mixing Equipment	<b>Hilights, Inc. • 2016</b> Rob Sobol 352-564-8830 Obstruction Lighting Maintenance	<b>Pasternack Enterprises • 2001</b> Christine Hammond 949-261-1920 Coax & Fiber Products	<b>Teradek • 2011</b> Jon Landman 949-743-5783 Camera-top ENG Solutions
<b>Complex • 2017</b> Daniel Coscarella 800-445-7568 x7409 Fiber Optic Cable Assembler	<b>Hitachi Kokusai Electric Comark • 2013</b> Jack McAnulty 860-763-1100 Manufacturer Broadcasting Transmission Equipment	<b>Pebble Broadcast Systems • 2016</b> Kurt Schini 612-345-0461 Television Broadcast Playout Automation	<b>Terrestrial Inc. • 2003</b> Billie Layman 888-373-4832 FCC Broadcast Auxiliary Licensing Services
<b>Canon USA Inc. • 1985</b> Larry Thorpe 201-807-3300, 800-321-4388 Broadcast Lenses & Transmission Equipment	<b>IMT-Vislink • 2009</b> John Procacci 908-747-3011 Wireless Video Systems	<b>PlayBox Technology • 2017</b> Van Duke 561-229-0003 Automation Video Playout Server	<b>TieLine The Codec Company • 2003</b> Dawn Shewmaker or Jacob Daniluck 317-845-8000 Audio Codec Manufacturer
<b>Cavell, Mertz &amp; Associates Inc. • 2011</b> Gary Cavell 703-392-9090 Consulting Services	<b>Inovonics Inc. • 2012</b> Gary Lührman 831-458-0552 Radio Broadcast Equipment	<b>Potomac Instruments • 2012</b> Guy Berry 301-696-5550 RF Measurement Equipment Manufacturer	<b>Unimar Inc. • 2001</b> Thad Fink 315-699-4400, 813-943-4322 Tower Obstruction Lighting Designer, Manufacturer, Distributor
<b>Comrex Corporation • 1997</b> Chris Crump 978-784-1776 Audio & Video Codecs & Telephone Interfaces	<b>JAMPRO Antennas Inc. • 2011</b> Alex Perchevitch 916-383-1177 DTV, FM-HD Radio, DVB-T/T2, ISDB-T, DAB	<b>ProAudio.com - A Crouse-Kimzey Co. • 2008</b> Mark Bradford 800-433-2105 x560 Proaudio Broadcast Equipment Distributor	<b>Verizon Digital Media/Services • 2015</b> Gary Learner 781-221-7400 Media Intelligence and Logging Solutions
<b>Comsearch • 2004</b> Tim Hardy 703-726-5651 Frequency Coordination Services	<b>JVC Professional Video • 2014</b> Lon Mass 973-317-5117 Professional Video Products, Camcorders, Display Monitors, Recording Decks	<b>Propagation Systems Inc. - PSI • 2010</b> Doug Ross 814-472-5540 Quality Broadcast Antenna Systems	<b>Wheatstone • 2010</b> Jay Tyler 252-638-7000 IP Consoles, Routers & Processors
<b>Continental Electronics • 1976</b> Dale Dalesio 412-979-3253 TV and Radio Transmitters	<b>Kathrein USA Inc. • 1985</b> Les Kutasi 214-238-8835 Antennas for Broadcasting & Communications	<b>Quintek Electronics and Communications Inc. • 2002</b> James Herbstritt 724-349-1412 State-of-the-art RF Hardware Solutions	<b>WideOrbit • 2012</b> Brad Young 214-923-6337 Broadcast Management Software, Automation and Master Control
<b>CueScript • 2014</b> Michael Accardi 203-763-4030 Teleprompting Software & Hardware	<b>Kintronc Labs, Inc. • 2015</b> Joaquin Raventos 423-878-3141 Radio Broadcast Antenna Systems - ISO9001 Registered Company	<b>QVC • 2011</b> Kevin Wainwright 484-701-3431 Multimedia Retailer	<b>Wireless Infrastructure Services • 2006</b> Travis Donahue 951-371-4900 Repacking Services - West Coast Turnkey Services
<b>Davicom, Division of Comlab, Inc. • 2014</b> Louis-Charles Cuierrier 418-682-3380 x512 Remote Site Monitoring and Control Systems	<b>L3 Electron Devices • 2017</b> Mark Strohecker 570-326-3561 CEAs, IOTs, Thyratrons	<b>Radio Frequency Systems • 2015</b> Scott Martin 812-589-4755 Broadcast & Telecom Antennas & Systems	
<b>DEVA Broadcast • 2015</b> Todor Ivanov 305-767-1207 Monitors, IP Audio Codecs, RDS/RBDS Encoders, Audio Processors, Broadcast Tools	<b>Lawo AG • 2017</b> Michael Dosch 888-810-4468 AoIP Consoles & Virtual Radio	<b>RF Specialties Group • 2008</b> www.rfspecialties.com Everything from the Microphone to the Antenna	
<b>Dialight Corporation • 2006</b> US Headquarters 732-919-3119 FAA Obstruction Lighting, LED Based		<b>Ross Video Ltd. • 2000</b> Jared Schatz 613-228-0688 Manufacturer, Television Broadcast Equipment	
		<b>Sage Alerting Systems Inc. • 2010</b> Gerald LeBow 914-872-4069 Emergency Alert Systems Products	

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# Member Spotlight: Aaron Read

## Member Stats

**SBE Member Since:** 2011

**Certifications:** CBT

**Chapter:** 11 Boston

**Employer:** Rhode Island Public Radio

**Position:** IT and Engineering Director

**Location:** Providence, RI

**I'm Best Known For:** My "jack of all trades" reputation.

**Q.** *What do you value most about your SBE involvement?*

**A.** Being able to stand around and talk geek every month with my fellow engineers.

**Q.** *What got you started in broadcast engineering?*

**A.** My third day as an undergrad at Boston University I saw a flyer for WTBU, the campus radio station. I also took a work-study job at WBUR where I was immensely fortunate enough to meet Michael LeClair (chief engineer), who patiently answered so, so many of my dumb questions over the years.

**Q.** *Who was your mentor?*

**A.** There are three people to whom I owe my entire career. Michael LeClair is both a good friend and an amazing mentor who's taught me so much. John Devecka of WLOY, Loyola University Baltimore, was my contact at LPB Communications when I was an undergrad and working on their transmitters, and he taught me college radio was more than just about college. David Maxson read an article I wrote in *Radio World*, and decided to take a chance on me. He gave me a job where I can do amazing amounts of real-world RF



Aaron proudly claims his title.

engineering for his clients.

**Q.** *What do you like most about your job?*  
**A.** I get to figure stuff out! As the sole technical person on staff, it can be incredibly frustrating work, but it does carry the perk that I get to figure out and implement all the solutions I can.

**Q.** *When I'm not working I...*

**A.** ...head to the beach as much as possible, even in winter. I grew up on the water and love living in a state where I'm never more than 20 minutes from the coastline. I also combine that with birdwatching whenever I can.

**Q.** *What's something most people don't know about you?*

**A.** My senior year of college I lived in a dilapidated old six-bedroom duplex at 101 Hooker Street, which was three doors down from Hooker Park, a pleasant playground now called Hooker-Sorrento Park for the obvious reason. It was all about the famous revolutionary war general. Aside from some wild college parties, there wasn't anything going on there that would interest the vice squad. And Emily Deschanel lived at 99 Hooker St.

**Q.** *What's your favorite gadget?*

**A.** I rarely go anywhere without my mini box-cutter in my pocket. The blade might be just a half-inch long, but it's just so handy!

## ENNES from p. 1

most difficult reimagining Next Gen broadcast presents televisioners is that Next Gen is in fact an overlay of the existing internet.

Part two of our morning will shift to focus on Social Media influencing viewership, understanding Microservices, concluding with implementation of cyber security in our station operations.

Social Media Drives Local TV Viewership with presenter Emily Stone, director of multi-platform content, WTTG, Fox 5. Emily and moderator Stan Moote will discuss how social media was once considered a pain for broadcasters and many operations painstakingly took these digital efforts as a money losing necessary evil. It is now all about having a compelling social media strategy tied directly to station activities.

What are Microservices and Why Should We Care? Presenter Dr. Glodina Connan-Lostanlen, chief marketing officer, Imagine Communications, will explore the game-changing impact of microservices, providing real-world perspectives on how these software-based building blocks are being implemented in media applications.

Cyber Security Hygiene in IP Broadcast Systems with presenter Denis Onuoha, chief information officer, Arqiva LTD. Everyone knows cyber security is a key element in the media and entertainment business. The question is how to implement this in a practical manner.

The Ennes Workshop, presented by the SBE, is organized by Tom Mikkelsen, principal with National TeleConsultants and Stan Moote, CTO with IABM.

We look forward to seeing our members and attendees participate in this always topical and timely discussion of issues in the broadcast industry.

## Participate in the SBE Mentor Program

*Enhance Your Skills  
Share Your Skills*

**N**ew to the field and want to enhance your skills? Participate in the SBE Mentor Program.

The 2018 Mentor Program continues to build its offering with a special kick-off conference call planned for February followed by additional skill-enhancing webinars throughout the year.

The SBE Mentor Program is designed to help broadcast engineers who are new to the field. Mentors and mentees are paired to work together for one year. The program partners a new engineer with a more-seasoned professional who shares his or her gained knowledge. For the seasoned mentor, it is a chance to give something back. For the mentee, it is an ideal way to gain inside knowledge and understanding that can sometimes take years to accumulate.

Pairings of mentors and mentees will be determined by the end of this month. For more information, you can also visit the Mentor Program page at the SBE website. To be a mentor or a mentee, complete the registration form at the SBE website, or contact Cathy Orosz at 317-846-9000 or [corosz@sbe.org](mailto:corosz@sbe.org).

[sbe.org/mentor](http://sbe.org/mentor)



# WELCOME TO THE SBE

## NEW MEMBERS

Jason S. Adams - Katy, TX  
Donald J. Backus - Grand Rapids, MI  
Glenn A. Booth - Arvada, CO  
Kevin P. Boutote - New York, NY  
Michael Brooks - Seattle, WA  
Corey E. Butler - Newalla, OK  
Paul D. Carvalho - Seattle, WA  
R. Gregory Cockroft - Wake Forest, NC  
Ariel Diaz - Guaynabo, PR  
Keith Dunne - New York, NY  
Wade T. Giddens - Troy, AL  
Ronald Gnadinger - Dollar Bay, MI  
Joshua M. Hall - Roanoke, VA  
Scott F. Hammond - San Jose, CA  
Jasmin E. Henderson - Glen Burnie, MD  
Amy Holland - Eagle, ID  
Ashley V. Kelton Franco - Tucson, AZ  
Wade Matthews - New Orleans, LA  
Kevin Morrow - Jacksonville, FL  
Miles Muller - Staples, TX  
Quen R. Oliver - Powder Springs, GA  
Alfred G. Russo - Brighton, MA  
John F. Schroth - Rochester, NY  
Robert E. Schwab - Fairfield, OH  
Kevin M. Seguin - Milltown, NJ  
Robert J. Shanks - Virginia Beach, VA  
Tim Soares - Bullhead City, AZ  
Edgar A. Sosa - North Hollywood, CA  
Gary Stratton - Kent, WA  
Richard F. Vale - Columbus, GA  
Roy E. Walker - Austin, TX

## NEW STUDENT MEMBERS

Justyn M. Clark - Aurora, IL  
Ronald Craft - Rock Hill, SC  
Christopher H. Swinerton - Lynchburg, VA

## NEW ASSOCIATE MEMBERS

Ben Carlucci - San Jose, CA

## NEW YOUTH MEMBERS

Sean M. Roth - Akron, OH

## RETURNING MEMBERS

John M. Brunson - Troy, AL  
Randy J. Bush - Montgomery, AL  
James R. Carter - Columbia, AL  
Craig C. Koster - Boise, ID  
Bruce G. Lebovitz - Pittsburgh, PA  
Louis Libin - Woodmere, NY  
Christopher D. MacLaurin - Ottawa, ON  
Matthew W. Mulder - Denver, CO  
Lawrence C. O'Donnell - Tampa, FL  
Jeffrey W. Pearce - Penn Yan, NY  
Stephen B. Roth - Bayside, NY  
David R. Tancig - Houston, TX  
Lawrence L. Titus - Glastonbury, CT



And when you join or renew, be sure to consider the SBE MemberPlus option to receive even more great benefits.

# Recognize Excellence: SBE Awards

By Jason Ornellas, CBRE, CRO  
Chair, SBE Awards Committee

Nominate SBE members and chapters for the 2018 SBE award season. Please consider your chapter and chapter members when you think about these awards. There may be an individual in your chapter who has been an outstanding engineer, educator or mentor for new broadcast engineers. Recognize that person by nominating him or her for the Robert W. Flanders SBE Engineer of the Year or the James C. Wulliman SBE Educator of the Year awards.

This will be the sixth year that the Chapter Engineer of the Year award is nominated by SBE Chapters. Each chapter has the opportunity to nominate one of their own members. If your chapter hasn't taken this opportunity, I encourage you to do it this year.

The SBE Freedom Award recognizes an individual or group that has performed extraordinary service to the United States through the use of media technology. The SBE Technology Award recognizes the person, group or company that has developed innovative new technology or systems for media technology. Maybe someone you know has written a notable technical article or presented a technical paper at a meeting or program. These are a few of the awards that are presented each year by the SBE.

Of the 13 awards that are presented each year, the local chapter or SBE members nominates for 10 of them. Many SBE members are highly qualified and deserving of recognition. Likewise, many chapters do an excellent job promoting the ideals and goals of the SBE. Please nominate these members and chapters so they can receive the recognition they deserve.

Find all the details on the SBE awards at [sbe.org/awards](http://sbe.org/awards). If you have any questions or need more information, please contact Certification Director Megan Clappe at [mclappe@sbe.org](mailto:mclappe@sbe.org) or me at [jornellas@sbe.org](mailto:jornellas@sbe.org).



# Plenty of SBE Events at the NAB Show

It's only February, but the NAB Show will begin before you know it. Now is the time to schedule your time at the convention, and you want to be sure to include the many SBE events on your convention calendar. While the Ennes Workshop launches the convention on Saturday, the highlight for SBE members is the annual Membership Meeting, sponsored by Blackmagic Design, which will be followed by a reception. The Membership Meeting will be held on Tuesday, April 10, at 5 p.m. The event brings you up to date on all the SBE activities and programs. It includes a milestone-service recognition of SBE chapter certification chairmen, and updates on the society's plans, programs and government relations efforts. Everyone attending will be eligible to win prizes, including a \$250 gift card for Fry's Electronics and restaurant gift cards.

You'll want to be one of the first in line as well, because the first 100 people at the meeting will receive a special SBE memento.

The Membership Reception starts immediately after the meeting at 6 p.m. Light snacks and drinks are made possible through the generous support of several Sustaining Member sponsors, including Broadcast Electronics, Comark and Comrex.

Sponsorships are still available. There will also be a prize drawing at the reception.

You will want to stop at the SBE booth near the entrance to the North Hall from the Grand Lobby and drop your card for the daily booth drawing, Monday through Wednesday. Blackmagic Design, Linkup Communications and Nema Electronics are the sponsors.

Complete details of all the SBE events and meetings will appear in the April issue of *The Signal*, and are also posted in our online NAB Show Resource Guide.



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## MEMBERS ON THE MOVE



▶ **James Kuzman** is a content strategist with the Telos Alliance TV Solutions Group. **Robert Butler**, CPBE, is director of engineering for The University of Alabama Center for Public Television and Radio, Tuscaloosa, AL.



▶ **David Antoine**, CBRE, CBNT, is a radio broadcast engineer on the Radio Technical Support team at Lawo.

▶ **Ed Morano** is manager of engineering and IT for CBN News. He is based in the Washington, DC, bureau.

▶ **Shane Toven**, CBRE, CBNT, is a field engineer at the Educational Media Foundation, K-Love and Air1 Media Networks, Laramie, WY.



▶ **Milford "Smitty" Smith** has joined the consulting firm of Khanna and Guill, henceforth to be named Smith, Khanna and Guill Consulting Engineers, as a principal.

▶ **Kurt Sutton** is the director of broadcast engineering for Clemson Athletics.



*Have a new job? Received a promotion? Let your fellow SBE members know. Send your news to Chriss Scherer at [cscherer@sbe.org](mailto:cscherer@sbe.org).*

## MARK YOUR CALENDAR

### SBE Certification Exams

Local Chapters  
Feb. 2 - 12, 2018 [sbe.org/certification](http://sbe.org/certification)  
Application deadline Dec. 31, 2017

### SBE Membership Drive Begins

Runs through May 31  
March 1, 2018 [sbe.org](http://sbe.org)

### Ennes Workshop

Chapter 53 South Florida  
March 2, 2018 [sbe.org/ennes](http://sbe.org/ennes)

### SBE Compensation Survey

online  
April 1 - May 15, 2018 [sbe.org](http://sbe.org)

### NAB Show

Las Vegas, NV  
April 7 - 12, 2018 [nabshow.com](http://nabshow.com)

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