SBE Elects Wayne Pecena as President

The results of the 2019 SBE election for the national board of directors concluded on Aug. 28. Wayne Pecena, CPBE, 8-VSB, AMD, DRB, CBNE, was elected as the society's president. Pecena is the assistant director of educational broadcast services at Texas A&M University, where he serves as director of engineering for public broadcast stations KAMU FM & TV. He is a member of SBE Chapter 99 in College Station, TX.

Regarding the election, President-elect Pecena said, "I look to continue the strategic planning implementation work that began under President Leifer while insuring that future certification, continuing education, and professional service needs of all SBE members are met as our industry and technology continues to change."

Others serving one-year terms as officers, which begin on Oct. 16, are:
• Vice President: Andrea Cummis, CBT, CTO; Chapter 15 New York; Roseland, NJ
• Secretary: Kevin Trueblood, CBRE, CBNT; Chapter 90 Southwest FL; Ft. Myers, FL
• Treasurer: Ted Hand, CPBE, 8-VSB, AMD, DRB; Chapter 45

Charlotte; Charlotte, NC

Serving two-year terms on the board of directors, which also begin Oct. 16 are:
• Mark Fehlig, PE, CPBE, 8-VSB; Chapter 40 San Francisco; Walnut Creek, CA
• Charles "Ched" Keiler, CPBE, 8-VSB, CBNE; Chapter 53 South Florida; Ft. Lauderdale, FL
• Geary Morrill, CPBE, CBNE; Chapter 91 Central Michigan; Saginaw, MI
• Jason Ornellas, CBRE, CRO; Chapter 43 Sacramento; Sacramento, CA
• Chris Tarr, CSRE, AMD, DRB, CBNE; Chapter 28 Milwaukee; Milwaukee, WI
• Dan Whealy, CBTE; Chapter 96 Rockford; Waterloo, IA

The national board of directors of the SBE is responsible for the development of policy and determines the programs and services the society provides to its more than 5,000 members. Those elected will begin their terms on Oct. 16, 2019, during the SBE

Pecena

SBE Membership Meeting Webcast Live from Madison, WI

The Annual Membership Meeting of the Society of Broadcast Engineers will be webcast live from Madison, WI, on Wednesday, Oct. 16 from 4:00 to 5:00 p.m. ET (1:00 to 2:00 p.m. PT). The meeting is part of the Society of Broadcast Engineers National Meeting, held in conjunction with the Broadcasters Clinic, presented by the Wisconsin Broadcasters Association in cooperation with the four SBE chapters of Wisconsin.

The one-hour webcast will include updates and reports on the Society's activities and programs and the induction of newly elected national officers and directors, including new SBE President Wayne Pecena, CPBE, 8-VSB, AMD, DRB, CBNE. The program will also include a special guest, RJ Russell, CPBE, in a one-on-one interview conducted by SBE President Jim Leifer. They will discuss Russell's new role as SBE national frequency coordination manager and the work between the SBE and the Department of Defense to coordinate shared-use frequencies with broadcasters.

Watch the 2019 SBE Membership Meeting live webcast.

IN THIS ISSUE

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Complete Library of ATSC 3.0 Tutorial Videos Available

As was noted in the August issue of *The Signal*, the day-long tutorial on ATSC 3.0 implementation, presented by the SBE in April at the 2019 PBS TechCon, was recorded and prepared for on-demand playback. All six videos are now complete and available through Webinars by SBE.

Fred Baumgartner organized the presenters for the program. The SBE also thanks the volunteer efforts of several people at Sinclair Broadcast Group for their work in editing and mastering the videos.

The presentations give attendees real insight into implementing and getting the most out of ATSC 3.0 at their stations. Topics ranged from regulations and the physical layer to how to convert a transmitter and proof it. Other practical topics were covered by showing receivers, dongles, displays and test and measurement tools that are available, and how to use them. The presenters list is a who's who of NextGen Broadcast development.
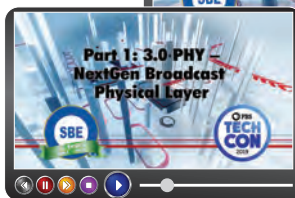
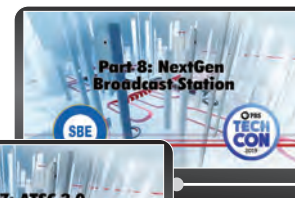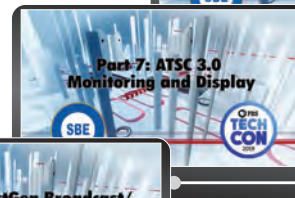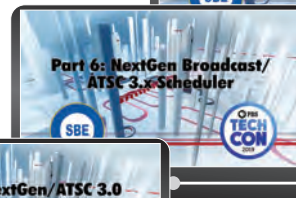SBE members can watch each installment for $59. Non-members can watch them for $89 each. SBE Member-Plus members have free access to them, plus all the Webinars by SBE in the library. Paid registrants for SBE @ PBS TechCon received instructions by email on how to access the videos, which was included in the conference registration.

Transition of Leadership

It's a wrap. I have completed my two years serving as your president. I would like to say a few things about the last two years.

First, the two boards of directors did a fantastic job keeping me straight and focused on the objectives. Without their expertise and friendship, this would have been a challenge. Let me talk about a few of the items we worked on. In 2018, the Society held a strategic planning meeting in Indianapolis and from that we had many action items to work on.

SBE MemberPlus was launched early in my tenure, and I am happy to report several things. First, we exceeded the upgraded membership by every metric that was estimated. Secondly, the amount of educational material used by our members has increased threefold. Our Publications and Education Committees have done a phenomenal job creating content and making it available to the membership.

We launched SBE WEBxtra, the SBE chapter of the web, for those who cannot attend a local meeting. It airs live on the GFQ Network and on Facebook, and it's posted for replay on our YouTube Channel. This is held monthly with subject-matter experts, and future episodes will include subject-matter experts who may not be able to travel to local chapter meetings. SBE Member Communications Director Chriss Scherer and Director Kirk Harnack have hosted them, and I thank them both for their vision and execution of this.

We have several more strategic items to complete including a website makeover. Our next president, Wayne Pecena, will lead this effort. I encourage everyone to help us where you can.

I also want to thank our staff for making all of this happen. John, Megan, Debbie, Scott, Cathy, Chriss and Ann: I want to say thank you.

During the last two years we saw changes. Our membership has expanded. While our industry changes, our members change with that. We have added more than 1,000 members in the last two years. We also added two local chapters, and the future looks promising for the SBE.

I am happy to report that we completed an agreement with the Department of Defense for frequency coordination. I am also happy to report that RJ Russell is heading this effort. While we engage our frequency coordinators nationwide, I am pleased to say we are the preferred provider for this task.

I am also excited to say that our annual Leadership Development Course, held a few weeks ago, was the largest class ever.

The SBE held its first PBS TechCon full-day tutorial in Las Vegas in April, and it was a resounding success. As so many PBS engineers who are SBE members attend TechCon, this was a great way to partner with and support them. We also held our NAB Show Ennes Workshop, which has been ongoing for decades. Our partnership with the NAB and our membership is strong.

I can also report to you that, financially, the SBE has no debt, and is in better financial shape than when I took office. This is all due to the people who worked with me to achieve these milestones. I am truly blessed to have been a part of these and other changes. But wait, there's more. I will continue to serve as your immediate past president. I will continue to serve you over the next two years under Wayne's leadership. I hope you continue to reach out to me and the other members of the Board of Directors to challenge and encourage us to push the SBE into the next decade.

freedesignfile

EDUCATION UPDATE

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

Time Flies!

My August 2019 *Signal* column, titled *What Time is It?*, provided a chuckle and brought a question to mind for SBE member Kyle P. regarding the 2038 issue with use of the UNIX time epoch in NTP and PTP. My column failed to mention this issue often described as the Y2K problem of 2038 and commonly noted as Y2K38. As Kyle stated, the underlying UNIX time stamp is a 32-bit integer number which will overflow at precisely 03:47:07 on Jan. 19, 2038. The time register overflow occurring at 03:47:08 will yield Dec. 13, 1901 as the signed integer register runs out of bits, flips the sign bit to negative, and continues counting upwards.

Whereas, NTP and PTP use the same Jan. 1, 1990 time epoch as UNIX, the protocols use different time stamp formats. In reality, a NTP rollover occurs in 2036. NTP utilizes a 64-bit timestamp with 32 bits allocated for seconds and 32 bits allocated for fractional seconds to achieve desired accuracy. PTP utilizes a 96-bit time stamp with 48 bits allocated to seconds, 32 bits to nanoseconds, and 16 bits to fractions of a nanosecond. In simple terms, the Y2K38 issue is resolved with current protocol versions NTPv4 and PTPv2.

Whereas Y2K38 would appear to be a distant problem, systems that deal with future dates, must have fixes in place today. Think about your 30-year mortgage you just signed the dotted line on. Fortunately, Y2K38 has been addressed in current operating and database systems. Embedded systems are a potential problem area if time sensitive and if they are actually operational in 2036-2038. One thing we can all count on, there will always be another time epoch rollover crisis, with the big one occurring on Dec. 31, 9999. I am not going to give thought to this one!

But what about time moving quickly? The saying goes, time flies when you are having fun. This could never be truer, as I penned my first Education Update column for the December 2012 *Signal* as the newly appointed Education Committee chair. Some seven years later, I write my last column as your Education Committee chair. And yes, the time has flown by and I have had fun!

Our industry has seen a lot of change in those seven years, as have the professional development education offerings of the society. In 2012, the broadcast industry saw a clear need for broadcast engineers to have a strong working knowledge of IP networking. As a result, numerous IP networking focused webinars and presentations have been developed to help the broadcast engineer migrate and support their IT based broadcast technical plants. At the same time, experienced IT professionals entered the broadcast engineering field, but often lacking the radio frequency (RF) knowledge required of the broadcast engineer. In response, the SBE offered the eight-part RF 101 webinar series created and presented by SBE member Dennis Baldridge. This introductory RF webinar series was followed by the Advanced RF series presented by a diverse cadre of industry RF experts such as Tom King and Tom Silliman. This webinar series continues today with two new webinars before year's end. And technology never sits still with ATSC 3.0 on the horizon for many TV broadcast engineers. To prepare for this transition, the SBE offers yet another webinar series on ATSC 3.0 technology and implementation. Once again, industry experts such as Madeleine Noland and S. Merrill Weiss share their knowledge with SBE members and more in the series to come. IT topics have not been forgotten and go beyond just IP networking as cybersecurity has become a significant responsibility for many broadcast engineers.

While many things change, some stay the same, such as the SBE Leadership Development Course held each year in August. The past year saw the largest enrollment in the history of the program, which began in 1997. But webinars remain the mainstream content delivery platform for professional development content, with more than 70 topics available today in the on-demand library, which has seen more than 2,700 registrations so far this year. I

Snapshots in time. Wayne's December 2012 and June 2016 columns from *The Signal*.

should note that on-demand viewing leads the live broadcast viewing by more than a 3:1 ratio. Remember, these webinars are included free with your SBE MemberPlus membership option.

If you have followed the Education Update column in *The Signal* over the years, you likely noticed a change in the content a few years back. In 2015, Chriss Scherer came on-board as the SBE member communications director. As the editor of *The Signal*, Chriss suggested that the column become more educational in content rather than solely an educational announcement venue as it had been in the past. Based on the feedback since 2015, the editorial change was welcomed by members. In December 2019, you will notice another change in this column as the newly appointed Education Committee chair takes over leading the professional development effort of the SBE as I move on to a new role. I hope to remain engaged in creating and delivering professional development content to our members, but welcome the fresh perspective and leadership from your new Education Committee chair. Thank you for your support provided over the past seven years. One thing we can all count on, there is always more to learn!

The Certification update column has appeared in The Signal for many years. Sometimes a column covers a topic so well, we refer to it over and over again. What follows is one of those columns (with a few updates), which originally appeared in the October 2008 issue of **The Signal**. *It was penned by SBE Fellow Terry Baun, former Certification Committee member and chair. ~Ralph Hogan*

The Art of Composing SBE Certification Exams

by Terrence M. Baun, CPBE, AMD, CBNE

While the SBE Program of Certification itself does not directly teach, it has the companion educational task of assessing the level of vocational accomplishment through creation and administration of testing. As part of that effort, the SBE has the implicit duty to adjust the scope and content of its examinations to reflect current broadcast technology. If certification examinations fail to reflect industry principles and practices, it not only dilutes the value of certification for all participants, but also threatens the credibility of the certification effort as a whole.

It is not surprising then, that one of the most important duties of the Certification Committee is regular examination of the relevance of every certification question, ascertaining whether some need to be rewritten to improve their clarity, and creating new questions as our industry evolves. If you've ever been curious about just how questions get into the Certification exams, you may find the following points of interest.

1. Question creation. Every question on every certification exam is authored by a member of the Certification Committee and reviewed by the Committee before it is incorporated into the question pool. Each question is based on the personal industry experience of one or more committee members. This committee authorship is one of the primary ways we insure that the questions are relevant to broadcast technology. But selecting the subject of a question is only the first step.

It is surprisingly difficult to frame a clear and unambiguous question—and even more difficult to compose and structure the possible responses in such a way as to present only one challenging, but absolutely correct, answer. We often find it far more difficult to create the incorrect answers than the correct one!

A question is framed so as to clearly pose a problem or state a question. The test-taker should be able to understand the question without reading it several times and without having to read any of the possible answers. We write the correct answer in such a way as to be unquestionably the only correct answer. We base the other possible answer choices on logical fallacies or common errors related to the question, so as to further challenge the test-taker's understanding of the question.

We minimize use of "all of the above" or "both A&B" as distractors, since they make it possible to guess the correct answer with only partial knowledge. We use "none of the above" infrequently, as it is only appropriate for situations in which there are only absolutely correct answers, such as mathematics problems.

The entire selection of questions in each certification exam is reviewed to prevent inadvertently providing answers to previous or subsequent questions through question wording or choice of distractors. Writing effective and fair multiple choice questions demands not only careful selection of topic and achievement level, but also development of a clearly defined answer accompanied by plausible distractors.

2. Question review. Every question in the test pool is periodically reviewed by the Certification Committee members.

• Is this question still relevant to the industry? A majority no from the panel will remove the question from the question pool.

• Is this question framed accurately and is the correct answer the unambiguous correct choice? Often, a Committee member will bring a fresh viewpoint to the question, resulting in revision of one or more of the distractors or changes in the language used for the correct answer.

• What is the level of technical competency reflected by this question? Is a question suitable for more than one certification level? Should its level be adjusted upward or downward because of changes in the industry? Can this question be used for more than one certification area?

3. Question/answer review. When a question is missed consistently by a significant number of test-takers, or is the subject of specific comment by an individual test-taker, that question is brought to the Committee for consideration. Is the question clear and unambiguous? Are the distractors appropriate? Is there a cultural bias or false assumption in the question that has gone undetected? Is the question appropriate for this particular level and area of certification? Upon further discussion, the offending question is either rewritten or removed from the exam pool.

4. Generating the tests. Questions are contained in a database and tagged with the level of difficulty and appropriate certification specialty. About one month prior to every exam period, questions for each level and certification specialty are randomly selected and forwarded to a group of Committee members for review. This double-check is designed to catch any typographic, grammar, or coding errors, and to verify again that the questions are relevant for the particular levels and certification specialties to which they are assigned. It is not unusual at this stage for several questions out of several hundred to be flagged and either replaced or corrected prior to the printing and distribution of the examinations. After this review, it is from this group of questions that the actual session examinations are selected.

5. Essay Questions. At the senior, specialist and networking engineer level, an essay question allows the applicant to express more completely an understanding of a particular segment of broadcast engineering technology. Committee members, who also write the essay questions, select appropriate questions for each applicant based upon that applicant's past knowledge and experience as detailed in the examination application. The question(s) are selected in this manner and are presented to the test-taker.

Certification Committee members grade essays. Each independently assigns a numerical value to the essay answer, which are added and averaged to become the final score.

CQ Answer from page 3

The answer is D

Simply put, the FCC (once it did away with operator licenses years ago) has no guidelines as to what an operator's responsibilities are. Therefore, it is left up to the station management.

SBE Certification Achievements

CONGRATULATIONS

LIFE CERTIFICATION

Certified Professional Broadcast Engineer (CPBE)
Paul Easter, Rosenberg, TX - Chapter 105
Certified Senior Radio Engineer (CSRE)
Frederick Morton, Oklahoma City, OK - Chapter 85
Certified Video Engineer (CEV)
Philip Dubs, Boca Raton, FL - Chapter 53

Certified Broadcast Television Engineer (CBTE)
Ralph Shrider, Lancaster, OH - Chapter 52
Certified Broadcast Networking Technologist (CBNT)
Paul Easter, Rosenberg, TX - Chapter 105
Wayne Smith, Sand Springs, OK - Chapter 56

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 the 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 (CPBE)

Certified Professional Broadcast Engineer (CPBE)
Adrian Washington, Riverside, 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.

JUNE EXAMS

Certified Broadcast Networking Engineer (CBNE)
Mike Hanna, Rush, NY - Chapter 57
Benjamin Koffman, Rochester, NY - Chapter 57

Certified Radio Operator (CRO)
Graham King, Cambridge, MA - Chapter 11

AUGUST EXAMS

Certified Senior Television Engineer (CSTE)
Bobby Allen, Memphis, TN
James Bunch, Greeneville, TN - Chapter 113
Damon Prentice, Memphis, TN
Todd Strenger, Columbus, MN - Chapter 17
Certified Broadcast Radio Engineer (CBRE)
Kevin Potter, Walland, TN - Chapter 113

Certified Broadcast Networking Technologist (CBNT)
Matthew Eppright, Kansas, MO - Chapter 59
Nicole Fantozzi, Colorado Springs, CO - Chapter 48
Certified Broadcast Technologist (CBT)
Steven Cuchetti, Wixom, MI - Chapter 82
Markel Hawkins, Silver Spring, MD - Chapter 37

Certified Radio Operator (CRO)
Peter Creamer, Centennial, CO - Chapter 48
Matthew Egbert, Rocklin, CA - Chapter 43
Frances Gonzales, Rocklin, CA - Chapter 43
Michael Rieck, Centennial, CO - Chapter 48
Steven Rosenblad, Rocklin, CA - Chapter 43
Certified Television Operator (CTO)
Eric Daigh, Phoenix, AZ - Chapter 9

SPECIAL PROCTORED EXAMS

Certified Broadcast Networking Technologist (CBNT)
Albert Brown, Zanesville, OH

Certified Broadcast Technologist (CBT)
Albert Brown, Zanesville, OH

Certified Radio Operator (CRO)
Mike Travis, Prairie Du Sac, WI - Chapter 24

SBE CERTIFIED SCHOOL COMPLETION

Certified Broadcast Technologist (CBT)
Cleveland Institute of Electronics
Robert Provost, Keeseville, NY - Chapter 73

Got your SBE Certification pin?
sbe.org/pins

CERTIFIED BY LICENSE

Certified Broadcast Technologist (CBT)
Douglas Ducote, Colorado Springs, CO

CERTIFIED RADIO OPERATOR (CRO)

Nick Church, Rhinelander, WI
Christopher Ranck, Salisbury, MD
Neko Rivera, Los Angeles, CA

Levi Rocke, Black Creek, WI
Rachel Stapholz, Tempe, AZ

Southeastern Community College
Joshua Baker, Whiteville, NC
Shawn Dinsmore, Whiteville, NC

CERTIFIED TELEVISION OPERATOR (CTO)

Christopher Caudle, Fuquay Varina, NC
Caleb Pearl, Tacoma, WA
Clifford Pickell, Bartlett, TN

David Sam, Las Vegas, NV
Michael Shuman, West Valley City, UT

ION Media
Beau Brakman, Clearwater, FL
Aaron Brown, Clearwater, FL
Ma'en Halwani, Clearwater, FL
Carly Inselmann, Clearwater, FL
Jeremy Landers, Clearwater, FL

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)
Winston Hawkins, Blacksburg, VA - Chapter 78
S. Merrill Weiss, Metuchen, NJ - Chapter 15
Certified Professional Broadcast Engineer (CPBE) 8-VSB Specialist (8-VSB)
Timothy Stoffel, Reno, NV - Chapter 139
Charles Stutsman, Norfolk, VA - Chapter 54
Certified Professional Broadcast Engineer (CPBE) AM Directional Specialist (AMD)
Tim Walker, Graham, TX - Chapter 67
Certified Professional Broadcast Engineer (CPBE) 8-VSB Specialist (8-VSB) AM Directional Specialist (AMD)
Arthur Clardy, III, Lafayette, LA - Chapter 72
Certified Senior Radio Engineer (CSRE)
Timothy McGuire, Archer, FL - Chapter 7
Certified Senior Radio Engineer (CSRE) AM Directional Specialist (AMD)
Robert Stroupe, Jr., Missouri City, TX - Chapter 105
Certified Broadcast Networking Engineer (CBNE)
Evangel Arcega, Abu Dhabi
Arthur Clardy, III, Lafayette, LA - Chapter 72
Timothy McGuire, Archer, FL - Chapter 7
William Sewell, Norfolk, VA - Chapter 54
Timothy Stoffel, Reno, NV - Chapter 139
Charles Stutsman, Norfolk, VA - Chapter 54
Certified Broadcast Radio Engineer (CBRE) AM Directional Specialist (AMD)
Robert Hailey, Tampa, FL - Chapter 39

Certified Broadcast Radio Engineer (CBRE)
Keith O'Malley, Chesapeake, VA - Chapter 54
Mark Voris, Omaha, NE - Chapter 74
Certified Broadcast Television Engineer (CBTE)
Ken Brown, Edgewood, NM - Chapter 34
Michael Flynn, Lake Mary, FL - Chapter 42
John Garmendi, Old Bridge, NJ - Chapter 15
Damion Giunta, Highlands Ranch, CO - Chapter 48
Brandon Graham, Largo, FL - Chapter 39
Randolph Kohout, Geona, IL - Chapter 26
Gary Malick, Bellingham, WA - Chapter 16
Certified Audio Engineer (CEA)
Gregory Friedman, Park City, UT - Chapter 62
Robert Musso, New York, NY - Chapter 15
Kira Parker, Colchester, VT - Chapter 115
Certified Video Engineer (CEV)
Michael Liebman, Brooklin, NY - Chapter 15
Certified Broadcast Networking Technologist (CBNT)
James Clarke, Valley Stream, NY - Chapter 15
John Garmendi, Old Bridge, NJ - Chapter 15
Robert Hailey, Tampa, FL - Chapter 39
George Kowal, Neptune, NJ - Chapter 15
Michael Liebman, Brooklin, NY - Chapter 15
Robert Stroupe, Jr., Missouri City, TX - Chapter 105
Tim Walker, Graham, TX - Chapter 67
Certified Radio Operator (CRO)
David Baker, Bettendorf, IA
Natalie McElmeel, Rocklin, CA

Certified Broadcast Technologist (CBT)
Robert Amoroso, Petaluma, CA - Chapter 40
Timothy Annett, Topeka, KS - Chapter 3
Justin Bernard, Napa, CA - Chapter 40
Keith Blaisdell, Harrisburg, PA - Chapter 41
Curtis Blount, Lucedale, MS - Chapter 125
Isaiah Chavez, Largo, FL - Chapter 39
Andrea Cummis, Roseland, NJ - Chapter 15
William Godfrey, Gainesville, FL - Chapter 7
Bradley Goehl, Austin, TX - Chapter 79
Curtis Harper, Benton, KY - Chapter 35
William Hudson, San Carlos, CA - Chapter 43
Dave Kalahar, Bakersfield, CA - Chapter 66
Doreen Kelley, Menifee, CA - Chapter 131
Sergey Kurakin, Spokane, WA - Chapter 21
John Lorentz, New York, NY - Chapter 15
Wilson Middleton, University Place, WA - Chapter 16
Mike Modney, Edmonton, Alberta Canada
Robert Romonosky, Harrisburg, IL - Chapter 121
Kira Parker, Colchester, VT - Chapter 115
Steven Pingelski, Cohoes, NY - Chapter 58
Chris Thomas, Seattle, WA - Chapter 16
Mark Thorsell, Sacramento, CA - Chapter 43
Gerald Weaver, Georgetown, TX - Chapter 79
Certified Television Operator (CTO)
Chipper, Angeles-Negrete, Los Angeles, CA
Keith Blaisdell, Harrisburg, PA
Fuad Cuzmar, Albuquerque, NM - Chapter 34
Marc Fenton, Moreno Valley, CA - Chapter 131
Marvin Hanlesy, El Paso, TX
Brandon McKinney, Saint Peters, MO
Susan Smith, McAllen, TX

To view the webcast, follow the link on the SBE website home page (sbe.org). The webcast is is sponsored by Blackmagic Design, Comark, Dielectric, Drake Lighting, DVEO, Jampro, Ross Video and Shively.

SBE National Meeting events begin on Tuesday, Oct. 15, and include a meeting of the national SBE Certification Committee and the fall meeting of the SBE Board of Directors. On Wednesday, Oct. 16, activities begin with the annual SBE Fellows Breakfast, sponsored by Kathrein. Following the SBE Annual Membership Meeting will be the SBE Annual Awards Reception, sponsored by Comrex, and the SBE National Awards Dinner, sponsored by The Telos Alliance. Lewis Friedland, professor at the School of Journalism and Mass Communication at the University of Wisconsin-Madison, will be the keynote speaker during the Awards Dinner. His topic will be "The Changing News Ecology: What Will We Do Without Newspapers?"

The SBE National Awards Dinner features the presentation of the society's major awards, including the Robert L. Flanders SBE Engineer of the Year to Charles Wooten of Panama City, FL, and the James C. Wulliman SBE Educator of the Year to William Hubbard, CPBE, of Green Bay, WI. The SBE will present the SBE Technology Award to Blackmagic Design for its 8K workflow technology.

The award for the Best Chapter Regional Educational Event will be awarded to the 2018 Broadcasters Clinic, held in Madison, WI. Doug Irwin, CPBE, AMD, DRB, will receive the award for Best Technical Article, Book or Program by an SBE member for his three-part *Radio World* series on repack, and Chapter 16 Seattle will be recognized for Best Chapter Communication. Jim Dalke, CPBE, 8-VSB, AMD, CBNT, is the webmaster.

A number of chapters will be recognized for their accomplishments in member growth, attendance and certification. These categories recognize chapters in two divisions. Class A, with membership less than the national median and Class B, for chapters with membership greater than the national median.

Greatest percentage growth in new members:
- Class A: Chapter 115, Southern Idaho; Chapter Chair Thomas Kettwig, CBT
- Class B: Chapter 85, Central & Western Oklahoma; Chapter Chair Brian Ryel, CBTE

Highest percentage of SBE certified members:
- Class A: Chapter 7, Jacksonville, FL; Chapter Chair Craig Butler, CSRTE, and Certification Chair Alan Alsobrook, CSRE, AMD, CBNT
- Class B: Chapter 24, Madison, WI; Chapter Chair Britny Williams, CBT, CBNT, and Certification Chair James Hermanson, CPBE, CBNT

Highest average percentage of member attendance at chapter meetings:
- Class A: Chapter 112, Western Wisconsin, Chapter Chair Todd Zschernitz, CBTE
- Class B: Chapter 79, Austin, TX Chapter Chair Ed Rupp, CBTE, CBNT

The dinner program concludes with the presentation of the SBE Fellow membership rank to John Collinson, CPBE, 8-VSB, AMD, CBNE, of New Port Richey, FL, and a member of Chapter 39, Tampa Bay.

The Broadcasters Clinic includes an exhibition that features many of the industry's top manufacturers and service providers and three days of media and broadcast technical sessions presented by experts from across North America. All Broadcasters Clinic activities and the SBE National Meeting events will take place at the newly renovated Madison Marriott West Hotel in Middleton, WI, a western suburb of Madison. Guest room reservations, subject to availability, may be made by calling the hotel at 608-831-2000. Ask for the SBE room block. If sold out, the Comfort Suites (608-820-2370) and Baymont by Wyndham (608-831-7711) are nearby.

Register for the Broadcasters Clinic at wi-broadcasters.org. Register separately to attend the SBE National Awards Reception and Dinner ($16) through the SBE National website (sbe.org) or by telephone, Monday - Friday from 8:30 a.m. to 4:30 p.m. ET, at 317-846-9000. There is no cost to attend the SBE Annual Membership Meeting.

SBE Election Board of Tellers

The annual SBE election of officers and directors concluded on Aug. 28. To officiate the results of the election, the SBE Board of Directors appointed members of SBE Chapter 25 Indianapolis to serve as the election board of tellers. Thanks to (left to right) Mark Flesner, CTO; Tom Weber, CPBE, CBNT; Chuck Kelly; Roger Bishop, CPBE, CBNT; Dale Smiley, CPBE.

ELECTIONS

Ennes Educational Foundation Trust Announces Scholarship Recipients

The Ennes Educational Foundation Trust has awarded four scholarships for 2019. Winners were chosen from applications received by July 1, 2019, from the previous 12 months.

The Harold E. Ennes Scholarship, Robert D. Greenberg Scholarship and John H. Battison Founder's Scholarship are awarded to individuals interested in continuing or beginning their education in broadcast engineering and technology. The Youth Scholarship is specifically for a graduating high school senior interested in broadcast engineering as a career. Each scholarship awarded this year is for $1,500.

ENNES

E D U C A T I O N A L
FOUNDATION TRUST
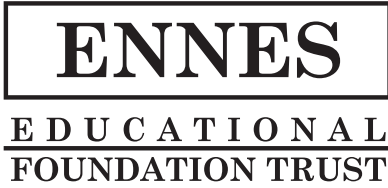
This year the Harold E. Ennes Scholarship recipient is Nicholas Church of Rhinelander, WI. In May 2019, Nick began working as the director of operations and technology at WXPR-FM, the public radio station in Rhinelander, WI. He has a B.A. in music with a management studies concentration from St. Olaf College. After earning his SBE Certified Radio Operator, Nick began his broadcast education towards achieving the SBE Certified Broadcast Technologist and Certified Broadcast Networking Technologist certifications.

Church

Receiving the Robert Greenberg Scholarship is Chris Gamelin of Middletown, CT. His interest in broadcasting began when he was 12. Since then, he built his own internet radio station, worked at WNHU-FM at the University of New Haven and WQUN-AM at Quinnipiac University. He is currently a student at the University of New Haven, and worked as an assistant engineer at Entercom, and is now a maintenance technician at WFSB-TV.

The John H. Battison SBE Founder's Scholarship has been awarded to Sadie Levy of New York, NY. She recently graduated from Fiorello H. LaGuardia High School of Music & Art and Performing Arts, where she worked on various school productions as a Digital Media Department intern. Additionally, she was awarded scholarships to study digital electronics in pre-college programs at both The Cooper Union and New York University. This past summer, she pursued education for a career in recording and new media, majoring in electrical engineering, with an interest in media production, at Northeastern University in Boston.
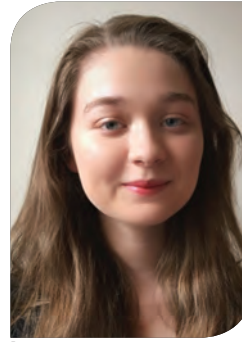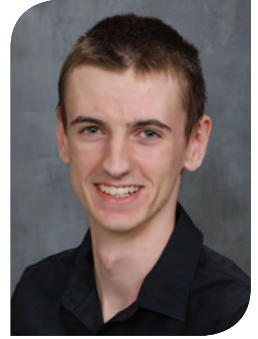
Gamelin

Levy

Andrew Marcus Heller of Two Rivers, WI, received the Youth Scholarship. His father owns two AM radio stations today, and Andrew has been involved in his high school audio/video efforts as the director of the student daily announcements his senior year. Andrew was accepted to the Science and Engineering program at the University of Minnesota - Twin Cities.

The Harold Ennes Scholarship Fund Trust was initiated by Indianapolis Chapter 25 in 1980 in memory of Harold E. Ennes, author of many textbooks for broadcast and broadcast-related communications training and a member of the Indianapolis chapter. Ennes was a member of the SBE's national Certification Committee and made many contributions to the early development of the Certification Program. To encourage greater growth, the Scholarship Trust was transferred by Chapter 25 to the SBE national organization to administer in 1981. The name of the Trust was changed in 1995 to the "Harold Ennes Educational Foundation Trust" to fully embrace its expanded role.

Heller

Membership Meeting. They will join the other six directors who have another year remaining in their terms: Stephen J. Brown, CPBE, CBNT, director of broadcast engineering, Woodward Radio Group, Appleton, WI; Roswell Clark, CPBE, CBNT, senior director of radio engineering, Cox Media Group, Clearwater, FL; Kirk Harnack, CBRE, CBNE, senior solutions consultant, Telos Alliance, Nashville, TN; Vinny Lopez, CEV, CBNT, chief engineer, WSTM/WTVH/WSTQ-TV, Syracuse, NY; Thomas McGinley, CPBE, AMD, CBNT, president, McGinley Enterprizes, Missoula, MT; and Shane Toven, CBRE, CBNT, field engineer, Educational Media Foundation, Laramie, WY. Jim Leifer, CPBE, senior manager of broadcast operations at American Tower Corporation, Andover, MA, becomes the immediate past president.

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

Clearing the Air On Short Towers

There is a lot of inaccurate or misleading information being circulated, mostly within the land mobile radio community (but elsewhere as well), about your obligation to paint and light "short towers" (i.e. those between 50 feet and 200 feet in height) which are not located in close proximity to an airport or heliport, but which are located in rural or agricultural areas. Here is what broadcast engineers need to know: you *may* have to register your short broadcast tower in an FAA database depending on its location, but you do *not* have to paint or light it unless it is near an airport.

It all started back around 2013. States became concerned that low-flying agricultural aircraft were hitting meteorological evaluation towers (METs). There is no history of aircraft hitting short towers generally; the only problem was with respect to METs. These are temporary structures, often erected in rural areas on short notice, with very low visibility, and they are very hard for pilots to see. They are not on any maps, and for crop dusters and other low flying aircraft, they posed a real threat if not near other structures. States that have rural, agricultural areas became concerned that short towers which are not near airports did not have to be lighted or painted according to FAA regulations. Colorado, Washington State, Idaho and a few other western states enacted state statutes that regulated all short towers.

In the wake of agricultural aircraft collisions with METs, the National Transportation Safety Board (NTSB) recommended in 2013 that states enact laws (crop duster statutes) requiring marking and registration of METs. FAA Advisory Circular (70/7460-1L) concerning Obstruction Marking and Lighting, released Oct. 8, 2016, urged, on a voluntary basis, the marking of METs (only) less than 200 feet or 61 meters in height.

The basic premise for the crop duster statutes was that short towers are not regulated by the FAA. That was inaccurate. Towers less than 200 feet in height are regulated by the FAA (and notification to the FAA is called for by the FCC) if a tower shorter than 200 feet is to be located in an area that the FAA has determined constitutes a danger to air navigation: that is, where the towers are located within the glide slope of an airport or heliport. (See FCC rules, Section 17.7). The glide slope is 100-to-1 for a horizontal distance of 6.10 kilometers from the nearest point of a runway of an airport or heliport, and less for towers closer to the airport or heliport. Unless such short radio towers were located within the glide slope of airports or heliports, they were not required to be painted or lit because they were not deemed to be an air hazard.

The Final Say

The FAA has preemptive federal jurisdiction to protect air traffic as necessary in a reasonable exercise of its discretion. The comprehensive regulation of tower height, marking and lighting by the FAA (in conjunction with the FCC) leaves no room for the states to supplement it. The Supreme Court has concluded that Congress intended to preempt states with respect to aviation safety. Perhaps because these state cropduster laws were subject to challenge, it enacted H.R. 636, the FAA Extension, Safety, and Security Act of 2016 (Reauthorization Act), in July 2016. Section 2110 of that Act instructed the FAA to enact rules by July of 2017, requiring painting and lighting of short radio towers that were located in rural areas. The 2016 Act defined towers that are covered as self-standing or guy wire-supported structures: (1) 10 feet or less in diameter at the above-ground base (excluding concrete footing); (2) more than 50 and less than 200 feet tall; and (3) with accessory facilities mounted with antennas, sensors, cameras, meteorological instruments, or other equipment. Covered towers were those located: (1) outside the boundaries of an incorporated city or town; (2) on undeveloped land; or (3) on land used for agricultural purposes. Undeveloped land was defined as a geographic area where the FAA determines low-flying aircraft are operated on a routine basis, such as low-lying forested areas with predominant tree cover less than 200 feet and pasture and range land. Exceptions to the covered tower definition include: (1) structures adjacent to a house, barn, electric utility station, or other building; (2) structures within the developed area of a farm immediately surrounding a house or other dwelling such as a yard; (3) structures that support electric utility transmission or distribution lines; (4) structures that are windpowered electrical generators with a rotor blade radius exceeding six feet; or (5) street lights erected or maintained by government entities.

This was a huge problem of course. Short broadcast towers, if they had to be painted and lit, would have to be removed from most locations due to local land use regulations, and the cost of painting and lighting short towers was prohibitive for most users of them.

With help especially from Senator Inhof of Oklahoma (himself a pilot), the NAB, the SBE, the Association of American Railroads and others, the FAA Reauthorization Act of 2018 was enacted. It amended and clarified the 2016 Act by revising the requirements for covered towers, as long as the FAA administrator determines they pose no hazard to air navigation. The legislation requires covered tower operators or owners to either submit the tower's location and height information into a database to be established by the FAA, or mark the tower consistent with the FAA's 2015 advisory circular (AC 70/7460– IL). Only METs have to be painted and lit. FAA has not yet developed its database, which will contain only the location and height of each covered tower. Covered tower operators or owners who elect to submit tower information to the FAA database must do so within one year of the availability of the FAA database. The 2018 Act also excludes towers located within the right-of-way of a rail carrier and used for railroad purposes.

A Return to Madison and Welcoming Our New Leadership

The SBE National Meeting makes a return to Madison, WI, this month. We'll hold our events in conjunction with the annual Broadcasters Clinic, presented by the Wisconsin Broadcasters Association (WBA). The Clinic has been a popular and successful regional event for many years, and we are pleased to be a part of it this year. Our thanks to the Board of the WBA, its president, Michelle Vetterkind, and vice president, Linda Baun. Also, to the Clinic Committee, chaired by SBE member Kent Aschenbrenner and to the four chapters of Wisconsin and their chairs, Britny Williams, Chapter 24 in Madison; Chris Tarr, Chapter 28, Milwaukee; Steve Brown, Chapter 80 in the Appleton/Green Bay area and Todd Zschernitz, of Chapter 112 in La Crosse for hosting us.

We will once again stream the one-hour SBE Annual Membership Meeting, one of the primary events of the National Meeting, to members everywhere, and I hope you will be able to carve out an hour to watch. This year's membership meeting will feature special guest RJ Russell, CPBE, who through his consulting firm, Technical Broadcast Solutions, Inc., serves as the Society's new national frequency coordination manager. SBE President Jim Leifer, who will

The Broadcasters Clinic offers three days of sessions and exhibits.

chair the meeting before handing his president's gavel to Wayne Pecena, will discuss with RJ his new role, and the new project that the SBE has undertaken with the Department of Defense to coordinate frequencies they now share with broadcasters.

The membership meeting will also include updates on the Society's education and certification programs, membership and finances. This is also the occasion when the Society inducts officers and directors to the National Board of Directors who were elected this past August, marking a turning point where several Board members will end their Board service while others join the Board.

The national SBE Board of Directors governs the Society, overseeing and determining programs and allocating resources that benefit SBE members. This past election the ballot fielded ten candidates, and though only six director seats were available, all ten would have made productive contributions. We thank all the candidates who ran for office and who were willing to serve if elected. The SBE is fortunate to have so many dedicated members who voluntarily serve at all levels of the organization.

A special welcome to incoming president, Wayne Pecena, CPBE, 8-VSB, AMD, DRB, CBNE, director of engineering at Texas A&M University. Wayne has served on the SBE National Board for seven years and, for that entire time, served as chair of the SBE Education Committee. The education program saw tremendous growth during his tenure. Wayne has also served as an officer, first as secretary and then as vice president. He has frequently traveled on behalf of the SBE, making technical presentations at our Ennes Workshops, through the SBE Technical Presenters Group and as a regular Webinars by SBE presenter.

Entering the vice president's chair is Andrea Cummis, CBT, CTO, chief technology officer with WLVT-TV in the Allentown-Bethlehem, PA, area. "Andy" also is managing partner of her own company, AC Video Solutions. She has served the Society for a number of years as the chair of its Publications Committee and is the first woman to serve as SBE vice president.

Kevin Trueblood, CBRE, CBNT, begins his first full term as secretary, after filling the unexpired term of his predecessor, and previously as a director. Kevin is associate general manager, technology and operations at WGCU Public Media (Gulf Coast University) in Ft. Myers, and prior to moving to Florida, worked in engineering at Wisconsin Public Radio. He was active in Chapter 24 in Madison where he served as chapter chair and treasurer. He currently is chair of Chapter 90, Southwest Florida.

Ted Hand, CPBE, 8-VSB, AMD, DRB, returns as treasurer and previously served on the Board as secretary and as a director, as well as chair of the Frequency Coordination Committee. Ted is director of engineering/operations with Cox Media Group in Charlotte, NC. He is active with Chapter 45 in Charlotte and stays connected to his previous chapter in Norfolk, VA.

As you can see, our SBE officers have many years of experience in broadcast engineering as well as in SBE leadership roles. They are joined by 12 directors, six of whom were elected this summer and six others who return to serve the second year of their two-year terms (see the election article on page 1).

Completing the Board will be Jim Leifer, CPBE, who will move to the role of immediate past president when his second term as president ends on Oct. 16. Jim has led the SBE through a very productive two years, including the development of a new strategic plan that will serve the society for several years beyond Jim's time at the helm.

When new people come in, that means we are also saying goodbye to a couple who have contributed much to the SBE and whose Board service is coming to an end. Steve Lampen, CBRE, who is well-known in the industry through his years with Belden and the hundreds of educational and entertaining presentations he did under their banner, many of which were done for SBE audiences at both the chapter and national levels, ends his term on the SBE Board.

Immediate Past President Jerry Massey, CPBE, 8-VSB, AMD, DRB, CBNT, who served as the Society's 29th president and served a total of 12 years on the Board, ends his Board service this month. His dedication to the Society and to broadcasting is an example to all. We will miss his wisdom and steady hand.

I hope to see some of you at the National Meeting in Madison, but if you can't be there, please tune in to the Annual Membership Meeting webcast at 4:00 p.m. EDT, Oct. 16.

ENGINEERING PERSPECTIVE
By Shane Toven, CBRE, CBNT
Field Engineer, Educational Media Foundation
stoven@sbe.org

Playing the Hero with Infrastructure Maintenance

As broadcast engineers, we have one inherent goal: Keep it on the air. While this is (of course) our primary responsibility, it doesn't mean that we shouldn't approach the situation with a healthy dose of reality as well. Infrastructure ages. Parts for equipment become difficult or impossible to come by. How do you respond? Find parts from sources such as eBay? Beg and borrow from colleagues with similar equipment for which they still have parts or may have been scrapped? Kludge something together with bubblegum and bailing twine just to keep it on the air? This becomes even more of a challenge when you're putting multiple kludges in place on top of equipment that is no longer supported by the manufacturer, or worse, the manufacturer is out of business entirely. One-off equipment that was custom built poses an even bigger challenge.

Why do we do this? Because it satisfies our core mission as broadcast engineers to get it back on the air and keep it on the air, even if that means the equipment will still be subject to a similar failure (or worse) going forward. This is where we truly need to face reality. We know in our heart of hearts that the failing equipment needs to be replaced or updated. This causes no end of stress wondering when the next failure will come, but often we don't bring these concerns to those who can make the decision to open the checkbook. Meanwhile, those same managers remain blissfully unaware of how tenuous their infrastructure really is, because we continue to keep it on the air despite the fact that things are hanging by a thread, and getting worse.

So why don't we ask for what we know is truly needed, rather than letting the quick fixes become permanent? Is it a fear of being denied new purchases? Is it not wanting to spend money because you can fix it? Is it our ingrained nature as engineers to want to fix or create rather than buy? Or – as I titled this article – are you simply playing the hero?

Repair or replace? There's a right time and situation to play the hero.

If you honestly ask yourself this question and find you are always playing the hero because you can, nothing will change, and you will continue constantly putting out the same fires. You kept it on the air, but did not communicate the extraordinary measures it took to do so. The facility remains compromised in some way, but it's not made known what it will take to fix the situation properly.

Ask and You Might Receive

In many cases we don't have what we need as engineers (new equipment, tools, etc.) simply because we haven't asked for it. Most managers are extremely receptive to this if you can make the case and demonstrate how it will improve your productivity, improve reliability, or otherwise improve the station and add value to the bottom line. Is it always easy to build this case? No, but it is well worth the effort to do so and have these conversations with management. Is the answer always yes, even with a solid case? Again, no, but if you never ask, the answer will *always* be no.

The relationship between management and engineering is critical, and needs to be a two-way street. Start the conversations early and have these conversations often. Make sure you have a seat at the table come budget time, and be prepared with a prioritized plan for addressing aging infrastructure (now, and into the future). This includes multiple options at multiple price points, each with its own set of tradeoffs. The "ideal world" option is the best place to start, but don't hesitate to have the additional not perfect, but perfectly acceptable options available as well.

Managers: If your engineer isn't initiating these conversations, *please* approach him or her and start asking questions in a way that opens the dialog about infrastructure needs and future planning. If you don't have a good engineer to make these sorts of recommendations, *find one*. SBE JobsOnline is a great place to start.

There is one more important item to consider when planning for ongoing infrastructure maintenance going forward: The lifecycle of most equipment has shortened considerably. Even the most expensive equipment (i.e. automation systems, studio infrastructure, and yes, transmitters) have a much shorter lifespan than in the past. What was once a 20- to 30-year purchase may now need a planned replacement in 5 to 10 years. This takes some creative thinking and budgeting to address. Your facility is now as much an IT data center as it is broadcast studio. If you aren't thinking of it this way and budgeting accordingly, you should be.

Being an engineering hero is admirable, but not if it means constant stress over failures. Plan ahead so you don't need to play the hero.

Chapter 37
District of Columbia
In August, Chapter 37 met to learn about the other side of the TV repack from Scott Hewitt of T-Mobile.
Photo by Fred Willard, CPBE, 8-VSB, CBNT.

AC Video Solutions • 2014
Andrea Cummis   201-303-1303
Consulting, Systems Design/Integration

AEQ Broadcast International • 2015
Peter Howarth   954-581-7999
Broadcast Audio, Video and Communications

American Tower Corporation • 2000
Peter A. Starke   781-926-4772
Development/Construction/Management

Audemat-Worldcast Systems Inc. • 2000
Christophe Poulain   305-249-3110
Control Manufacturer

AVCOM of Virginia, Inc. • 2010
Tom Pagonis   804-794-2500
Spectrum Analyzers

Belden Electronic Division • 1991
Sales   800-235-3361
Cable and Connectivity

Blackmagic Design • 2012
Terry Frechette   408-954-0500
Production Switchers, Digital Cameras, Routers, Video Editing and Monitoring, Color Correction, Video Converters

Bracke Manufacturing LLC • 2012
Patra Largent   949-756-1600
RF & Microwave Components

Broadcast Depot • 2018
John Lackness   305-599-3100
TV, Satellite, Radio, IP

Broadcast Devices, Inc. • 2015
Robert Tarsio   914-737-5032
Audio/RF Support Products

Broadcast Electronics Inc. • 1978
Tom Beck   217-224-9600
Radio Equipment Manufacturer

Broadcast Software International • 2016
Marie Summers   888-274-8721
Radio Automation, Audio Logging

Broadcast Supply Worldwide • 1986
Shannon Nichols   800-426-8434
Audio Broadcast Equipment Supplier

Broadcasters General Store • 2004
Buck Waters   352-622-7700
Broadcast Audio Video Distributor

Burk Technology • 2019
Tom French   978-486-0086 x613
Transmitter Facility Control Systems

Calrec Audio • 2016
Helen Carr   703-307-1654
Audio Mixing Equipment

Camplex • 2017
Daniel Coscarella   800-445-7568 x7409
Fiber Optic Cable Assembler

Canon USA Inc. • 1985
Larry Thorpe   201-807-3300, 800-321-4388
Broadcast Lenses & Transmission Equipment

Cavell, Mertz & Associates Inc. • 2011
Gary Cavell   703-392-9090
Consulting Services

Comrex Corporation • 1997
Chris Crump   978-784-1776
Audio & Video Codecs & Telephone Interfaces

Continental Electronics • 1976
Dale Dalesio   412-979-3253
TV and Radio Transmitters

CueScript • 2014
Michael Accardi   203-763-4030
Teleprompting Software & Hardware

D2D Technoloies • 2018
Jessica Colyer   619-248-0618
PSIP & EAS Insertion, IP Gateways, Multiplexers, SRT Transmission

Davicom, Division of Comlab, Inc. • 2014
Louis-Charles Cuierrier 418-682-3380 x512
Remote Site Monitoring and Control Systems

DEVA Broadcast • 2015
Todor Ivanov   305-767-1207
Monitors, IP Audio Codecs, RDS/RBDS Encoders, Audio Processors, Broadcast Tools

Dialight Corporation • 2006
US Headquarters   732-919-3119
FAA Obstruction Lighting, LED Based

Dielectric • 1995
Cory Edwards   207-655-8131
TV & FM Transmission & Cellular Products

Digital Alert Systems, LLC • 2005
Bill Robertson   585-765-1155
Emergency Alert Systems

DoubleRadius, Inc. • 2012
Jeffrey Holdenrid   704-927-6085
IP Microwave STL

Drake Lighting • 2015
Dave Shepeard   270-804-7383
FAA Obstruction Lighting - Medium and High Intensity

DTS Inc./HD Radio Technology • 2014
Rick Greenhut   443-539-4335
HD Radio Technology

du Treil, Lundin & Rackley, Inc. • 1985
Jeff Reynolds   941-329-6000
Consulting Engineers

The Durst Org. – 4 Times Square • 2004
John M. Lyons, CPBE   212-997-5508
TV/FM/Microwave Tower Site

DVEO - Division of Computer Modules Inc. • 2011
Laszlo Zoltan   858-613-1818
Everything About Transport Streams

Econco • 1980
Debbie Storz   800-532-6626, 530-662-7553
New & Rebuilt Transmitting Tubes

ENCO Systems Inc. • 2003
Ken Frommert   800-362-6797
Playout and Automation Solutions

ERI - Electronics Research • 1990
David White   812-925-6000
Broadcast Antennas, Transmission Line, Filters/Combiners,Towers and Services

Florical Systems • 2008
Shawn Maynard   877-774-1058
Television Broadcast Automation

Fujifilm/Fujinon • 1986
Gordon Tubbs   973-686-2769
Broadcast & Cine Lens Products

GatesAir • 1977
Dave Hopson (TV)   513-445-5243
Mark Goins (Radio)   513-899-9124
Broadcast Equipment Manufacturer

Heartland Video Systems, Inc. • 2011
Dennis Klas   920-893-4204
Systems Integrator

Hilights, Inc. • 2016
Timothy Nash   352-564-8830
Obstruction Lighting Maintenance

Hitachi Kokusai Electric Comark • 2013
Jack McAnulty   413-998-1523
Manufacturer Broadcasting Transmission Equipment

iHeartMedia, Inc. • 2019
Troy Langham   918-664-4581
Radio Group Owner

IMT-Vislink • 2009
John Procacci   908-747-3011
Wireless Video Systems

Indiana Association Broadcasters • 2019
Dave Arland   317-701-0084
Indiana Association for Radio & TV Broadcasters

Inovonics Inc. • 2012
Gary Luhrman   831-458-0552
Radio Broadcast Equipment

JAMPRO Antennas Inc. • 2011
Alex Perchevitch   916-383-1177
DTV, FM-HD Radio, DVB-T/T2, ISDB-T, DAB

JVC Professional Video • 2014
Edgar Shane   973-317-5000
Professional Video Products, Camcorders, Display Monitors, Recording Decks

Kathrein USA Inc. • 1985
Les Kutasi   214-238-8835
Antennas for Broadcasting & Communications

Kintronc Labs, Inc. • 2015
Joaquin Raventos   423-878-3141
Radio Broadcast Antenna Systems - ISO9001 Registered Company

Lawo AG • 2017
Michael Dosch   888-810-4468
AoIP Consoles & Virtual Radio

LBA Technology Inc. • 2002
Javier Castillo   252-757-0279
AM/MW Antenna Equipment & Systems

Linkup Communications Corporation • 2017
Mark Johnson   703-217-8290
Satellite Technology Solutions

LYNX Technik • 2007
Steve Russell   661-251-8600
Broadcast Terminal Equipment Manufacturer

Markertek • 2002
Wesley Brewer   800-522-2025
Specialized Broadcast & Pro-Audio Supplier

Micronet Communications Inc. • 2005
Jeremy Lewis   972-422-7200
Coordination Services/Frequency Planning

Microwave Video Systems • 2011
Warren J. Parece   781-665-6600
Microwave Equipment Rental, Sales & Service

Middle Atlantic Products • 2005
David Amoscato   973-839-1011
Equipment, Mounting, Solutions

Moseley Associates Inc. • 1977
Bill Gould   805-968-9621 x785
Digital STLs for Radio and Television

MusicMaster • 2014
Shane Finch   352-351-3625
Advanced Music Scheduling Solutions

Nascar Productions • 2014
Abbey Kielcheski   704-348-7131
Live/Post Production Services

National Association of Broadcasters • 1981
Industry Trade Association   202-429-5340

National Football League • 1999
Ralph Beaver   813-282-8612
Game Day Coordination Operations

Nautel Inc. • 2002
Jeff Welton   877-662-8835
Radio Broadcast Transmitter Manufacturer

Nemal Electronics Int'l Inc. • 2011
Benjamin L. Nemser   305-899-0900
Cables, Connectors, Assemblies and Fiber Optic

Neutrik USA, Inc. • 2012
Kathy Hall   704-972-3050
Ruggedized Optical Fiber Systems

NPR Distribution Services • 2019
Dan Riley   202-513-2624
Your Content Delivery Partners

Orban Labs, Inc. • 2011
Mike Pappas   480-403-8300
Audio Processing AMFMTV

Pasternack Enterprises • 2001
Christine Hammond   949-261-1920
Coax & Fiber Products

Potomac Instruments • 1978
Zachary Babendreier   301-696-5550
RF Measurement Equipment Manufacturer

ProAudio.com- A Crouse-Kimzey Co. • 2008
Mark Bradford   800-433-2105 x560
Proaudio Broadcast Equipment Distributor

Propagation Systems Inc. - PSI • 2010
Doug Ross   814-472-5540
Quality Broadcast Antenna Systems

QCommunications • 2019
Tony zumMallen   816-729-1177
Services Behind the Scenes

Quintech Electronics and Communications Inc. • 2002
James Herbstritt   724-349-1412
State-of-the-art RF Hardware Solutions

QVC • 2011
Kevin Wainwright   484-701-3431
Multimedia Retailer

Radio Frequency Systems • 2015
Eddy Vanderkerken   214-471-6693
Broadcast Infratructure Manufacturer

RF Specialties Group • 2008
www.rfspecialties.com
Everything from the Microphone to the Antenna

Rohde & Schwarz • 2003
Walt Gumbert   724-693-8171
Transmitters, Test & Measurement, Video

Ross Video Ltd. • 2000
Jared Schatz   613-228-0688
Manufacturer, Television Broadcast Equipment

Sage Alerting Systems Inc. • 2010
Harold Price   914-872-4069 x113
Emergency Alert Systems Products

SCMS Inc. • 2000
Bob Cauthen   800-438-6040
Audio and RF Broadcast Equipment Supplier

Seacomm Erectors, Inc. • 1997
John Breckenridge   360-793-6564
Tower/Antenna Erections

SEG • 2014
Chris Childs   913-324-6004
Supply Chain Products and Services

Shively Labs • 1996
Dale Ladner   888-SHIVELY
FM Antennas & Combiners

Shure Incorporated • 2012
Bill Ostry   847-600-6282
Microphones, Wireless Systems, Headsets

Sierra Automated Systems and Eng. Inc. • 2011
Al Salci   818-840-6749
Routers, Mixers, Consoles, Intercoms

Silvus Technologies • 2015
Mark Tommey   617-816-6588
Wireless Video Mesh Network

Solid State Logic • 2014
Steve Zaretsky   212-315-1111
Digital Audio Mixing Consoles, Networked Audio Routing, Embedded Audio Solutions

SuiteLife Systems • 2019
Kenny Miller   310-405-0839
Manage. Monitor. Control

Staco Energy Products Co. • 2010
Paul Heiligenberg   937-253-1191 x128
Manufacturer of Voltage Regulators, UPS

Sutro Tower Inc. • 1989
Eric Dausman   415-681-8850
Broadcast Tower Leasing

Technical Broadcast Solutions, Inc. • 2018
Robert Russell   215-983-0855
Engineering and Consulting Services

Tektronix Inc. • 1977
Jim Lang   503-627-2980
Video Test & Measurement, Equipment Manufacturer

Teledyne e2v US • 1997
Dominic Piarulli   845-578-6137
Electronic Components

Televes USA, LLC • 2018
Andy Ruffin   937-475-7255
ATSC 3.0 Transmission Solutions, Antennas

Telos Systems/Omnia/Axia • 2003
John Bisset   216-241-7225
Telos Systems Talk-Show Systems

Teradek • 2011
Jon Landman   949-743-5783
Camera-top ENG Solutions

Tieline The Codec Company • 2003
Dawn Shewmaker or Jacob Daniluck   317-845-8000
Audio Codec Manufacturer

Unimar Inc. • 2001
Thad Fink   315-699-4400, 813-943-4322
Tower Obstruction Lighting Designer, Manufacturer, Distributor

Wheatstone • 2010
Jay Tyler   252-638-7000
IP Consoles, Routers & Processors

Wireless Infrastructure Services • 2006
Travis Donahue   951-371-4900
Repacking Services - West Coast Turnkey Services

Member Spotlight: Taylor Barker

Member Stats

SBE Member Since: 2015
Chapter: 17 Minneapolis
Employer: Pioneer Public Television
Position: Operations Technician/Traffic Assistant
Location: Appleton, MN
I'm Best Known For: Having an announcer's voice

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

A. Being trusted as my chapter's programs chair, and their interest in discussing broad issues.

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

A. I started with the Cougar Sports Network, and then found myself being the first to respond when emergencies developed.

Q. *Who do you consider to be a mentor?*

A. I owe a lot to Dave Harvet, my supervisor when I worked for my school district's IT and video production unit.

Photo: Mark Persons

On July 30, 2019, Chapter 17 discussed the emergence of self-driving vehicles with a look at a VSI Labs vehicle. Taylor is on the far right.

Q. *What do you like most about your job?*

A. Aside from the honor of representing my colleagues at events for the station, seeing videos I've had a hand in - no matter how small - go on air is the privilege of a lifetime.

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

A. The greatest adrenaline rush I've ever felt was in high school, when I got to perform on the Orpheum Theatre as part of the Spotlight Showcase.

Q. *What's your favorite gadget?*

A. It's a close tie between the Comrex Access 2USB and Newtek Tricaster TC350. The latter was everything I needed for my job in one small package. The former was a massive upgrade over my campus radio station's old setup: A homebrewed XLR cable wrapped around a garden hose reel cart.

AES Convention Includes Broadcast and Streaming Track

The 147th Audio Engineering Society Convention will be held in New York City Oct. 16-19 at the Jacob K. Javits Convention Center. Exhibits run Oct. 16-18, and sessions run Oct. 16-19. Alongside the AES Convention, the NAB Show New York will run Oct. 16-17 at the Javits Center.

The AES Convention covers all aspects of audio, including a dedicated Broadcast and Online Delivery Track of sessions running all four days. This group of sessions was organized by SBE member and Track Chair Dave Bialik, CBT.

Sessions cover a wide range of topics, including broadcast/streaming studio design, audio processing, audio for sports, object-based audio, audio for ATSC 3.0, streaming/broadcast convergence, podcast production, networked audio and more. Many presenters and panelists are SBE members.

One session, Emergency Preparedness, is a joint presentation of the AES and the SBE. It will be held Oct. 19 at 1:30 p.m. It's moderated by Scott Fybush. The panelists are SBE President Jim Leifer, CPBE; Howard Price; and Tom Ray, CPBE, AMD, DRB. The many aspects of emergency preparedness will be covered, including working with local emergency management officials, preparing for the ongoing needs of station staff and their families, hardening facilities to better survive a disaster, and current best practices in designing and building backup and disaster recovery facilities for large and small stations.

The SBE will hold an SBE Certification exam session at the convention on Oct. 18. Previous exam registration was required.

aes.org/events/147

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Chapter Check

Ennes Workshop
Murfreesboro, TN

On Aug. 7, the SBE and the Tennessee Association of Broadcasters presented an Ennes Workshop at the Embassy Suites Hotel and Conference Center. 23 people attended the event.

Chapter 124 • North Oregon

On Aug. 3, Chapter 124 met for the chapter's potluck barbecue. Gray Haertig hosted the event, which was sponsored by several broadcast manufacturers.

WELCOME TO THE SBE

NEW MEMBERS

Kaene E. Antonio - Window Rock, AZ
Kevin C. Burke - Archbald, PA
Lilian A. Chavez - San Antonio, TX
Kenneth Chiocchio - Myrtle Beach, SC
Summer M. Coff - Madison, WI
Mark Coleman - El Segundo, CA
William L. Cote - Gunnison, CO
Sean Finn - Perrysburg, OH
Jenna Hill - Redmond, WA
Jason R. Houk - Ashland, OR
Aaron Hume - Shoreline, WA
Thomas Johnson - Dothan, AL
Kody Joiner - St. Petersburg, FL
Jason D. Justman - Seattle, WA
Peter Kalina - Piedmont, SC
Brian D. Krieger - Gainesville, FL
Ar Kar Kyaw Win - Rockville, MD
David Liu - South San Francisco, CA
Andrew A. McHaddad - La Grande, OR
Olin D. Morris - Seattle, WA
Tony J. Nakale - Abuja, FCT, Nigeria
Jeff Ohnstad - Madison, WI
Jordan M. Pena - San Antonio, TX
Jadotte Pierre - Montgomery, AL
Brad S. Pinyon - Kodak, TN
Mike Portz - Blue Springs, MO
Frank H. Roff - Kailua Kona, HI
Steven Rossiter - Quincy, IL
Rolf D. Seichter - Gilford, NH
Tim Sharp - Bettendorf, IA
Patrick Sirois - Rimouski, QB, Canada
Christopher Smelcer - Bountiful, UT
Christina Spurlock - Milton, FL
Todd D. Strenger - Columbus, MN
Scott R. Sutter - Chicago, IL
Jeff Wilson - Quincy, IL

NEW STUDENT MEMBERS

Erick O. Corporan - Bloomfield, NJ
Andrew G. Sichling - Davenport, IA
Shannon Williams - Denton, TX

NEW YOUTH MEMBERS

Melanie E. Freedman - Seatac, WA

RETURNING MEMBERS

Robert M. Amoroso - Petaluma, CA
Sergio Beristain - Mexico City, Mexico
Keith L. Blaisdell - Harrisburg, PA
Andrew V. Bodker - Basalt, CO
Tom Bray - San Antonio, TX
Ken R. Brown - Edgewood, NM
Matthew A. Chambers - Atlanta, MO
Chuck J. Condron - Phoenix, AZ
Benjamin R. Datin - Apopka, FL
David A. Dumas - Pittsburgh, PA
Robbie Green - Katy, TX
Michael D. Holderfield - Dothan, AL
James R. Mabrey - Columbia, SC
William W. Martin - Arlington, TX
Tom Matthews - Charlotte, NC
Raymond H. Mayberry - Richmond, VA
Michael A. McGuire - Mason, NH
Stephen R. Quinn - North Haven, CT
Gerald L. Weaver - Georgetown, TX
Allen R. Yaden - Shoreline, WA

Members On The Move

Randy Hisle, CBTE, CBNE, is a broadcast technician at DynCon International, Williamsburg, VA.

Roswell Clark, CPBE, CBNT, is the chair of the 2020 NAB Show Broadcast Engineering and IT Conference Committee.

Have a new job? Received a promotion? Send your news to Chriss Scherer at cscherer@sbe.org.

MARK YOUR CALENDAR
S	M	T	W	T	F	S

SBE National Meeting
Madison, WI
Oct. 15-16, 2019 — sbe.org

WBA Broadcasters Clinic
Madison, WI
Oct. 15-17, 2019 — wi-broadcasters.org

SBE Certification Exams
AES Convention
Oct. 18, 2019 — sbe.org/certification
Application deadline closed

Webinar: RF201, Module 8 - AM Multiplexed Antenna Systems
online
Oct. 23, 2019 — sbe.org/webinars

SBE Certification Exams
Local Chapters
Nov. 1-11, 2019 — sbe.org/certification
Application deadline closed

Webinar: RF201, Module 9 - TV Combiners
online
Nov. 6, 2019 — sbe.org/webinars

Webinar: SNMP - Part 2
online
Nov. 14, 2019 — sbe.org/webinars

Midwest Broadcast & Multimedia Technology Summit
Columbus, OH
Nov. 14, 2019 — mbmtc.oab.org

Webinar: Workbench Tips
online
Dec. 12, 2019 — sbe.org/webinars
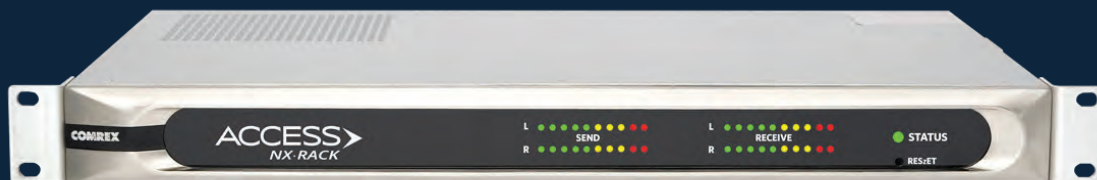
SBE Certification Exams
Local Chapters
Feb. 7-17, 2020 — sbe.org/certification
Application Dec. 31, 2019