

# THE Signal

Bimonthly Publication of the  
Society of Broadcast Engineers

60 YEARS  
SBE  
SINCE 1964

The Association for  
Broadcast and  
Multimedia Professionals

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

Volume 37, Issue 4 • August 2024

## 2024 SBE National Award Winners Announced

The 2024 SBE National Awards, which celebrate excellence among individual members, SBE chapters, and Sustaining Member companies, have been officially announced. Among the prestigious recognitions are the Robert W. Flanders SBE Engineer of the Year and the James C. Wulliman SBE Educator of the Year awards.

James Dalke, CPBE, 8-VSB, AMD, CBNT, from Bellevue, WA, and a member of SBE Chapter 16 in Seattle, WA, has been honored with the Robert W. Flanders SBE Engineer of the Year award for 2024. Dalke, a dedicated SBE member of 26 years, currently serves as the editor of the online publication *The Waveguide* and is actively involved with the Alternative Broadcast Inspection Program (ABIP) through the Washington State Association of Broadcasters. His contributions include numerous technical articles and holding an Amateur Extra Class License as W7PB.

Larry Wilkins, CPBE, AMD, CBNT, of Prattville, AL, and a member of SBE Chapter 118 in Montgomery, AL, has received the James C. Wulliman SBE Educator of the Year award. Wilkins, a 33-year SBE member, has been instrumental in the Alabama Broadcasters Association Engineering Academy as its Director, where he developed curriculum and conducted classes across multiple states. His career highlights include designing numerous radio and television studio and transmitter facilities.

During his tenure at the Engineering Academy, he concentrated on curriculum development for multiple classes a year focused on radio and on television. Following the educational week, students are eligible to sit for an SBE certification exam. Moreover, he has traveled extensively to deliver these classes in various states.

In the technology sector, Telos has been awarded the 2024 Technology Award for its EAS At The Edge, a collaborative effort with Digital Alert Systems, Telos Alliance, and Nautel. This innovation simplifies broadcasters' Emergency Alert System implementations through software standards and AoIP-based techniques, ensuring compliance with FCC regulations while enhancing public safety functions.

For the third consecutive year, Chapter 15 in New York, NY, has been recognized with the Best Chapter Communication award. Instead of a traditional newsletter, Chapter 15 utilizes multiple communication channels including an email list, the [sbe15.com](http://sbe15.com) website, Twitter, Facebook, and Zoom, effectively engaging its members.

Additionally, Cody Hmelar has been awarded Best Technical Article, Paper, or Program by an SBE Student Member for his article titled "Your Phone's About To Get



Dalke



Wilkins

see [AWARDS](#), p. 15

## SBE Plans 2024 National Meeting in Madison, WI

The SBE holds its annual National Meeting in the fall. The event is held in conjunction with another fall broadcasting event, and this year the SBE National Meeting will

be held in Middleton, WI, during the Midwest Regional Broadcasters Clinic, which is jointly produced by the state broadcast associations of Wisconsin and Minnesota.

The highlight of the SBE National Meeting is the annual SBE Membership Meeting, which will be held from 4:00 to 5:00 p.m. on Sept. 11. The Membership Meeting provides information on the latest activities of the SBE, including education, certification and frequency coordination. During the meeting, the newly elected SBE directors and officers will be sworn into office. SBE President Ted Hand, CPBE, 8-VSB, AMD, ATSC3, DRB, will lead the meeting. The meeting will be recorded and posted to the SBE

YouTube channel.

SBE National Meeting events begin on Sept. 10 with meetings of the national SBE

see [MEETING](#), p. 10



The Madison Marriott West

### IN THIS ISSUE

- 3 SBE JobsOnline
- 4 Letter from the President
- 5 The SBE TPT
- 6 Show Your Certification
- 8 SBE Compensation Survey
- 10 Chevron Overturned
- 12 Pushing Metadata
- 14 Member Spotlight

# Gear Up for Sports Remotes



## Affordable Option: Bridge-IT II and ViA

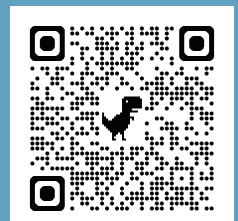
Gear up for summer and fall sports with Bridge-IT II - the ultimate affordable, high performance stereo IP audio codec and pair it with ViA, the sports remote broadcast dream machine. Both codecs support multiple network interfaces, hitless packet switching using SmartStream PLUS, Fuse-IP network bonding, plus connection backup.



## Pro Option: Gateway 4 and ViA

Our pro option for covering sports includes the powerful Gateway 4 codec which supports 2 simultaneous stereo connections, or 4 mono connections. Gateway 4 includes dual NICs and dual AoIP ports, dual internal power supplies, plus multiple layers of redundancy with SmartStream PLUS, Fuse-IP and connection backup.

Features	Bridge-IT II	Gateway 4
Stereo, 2 x Mono	✓	✓
Triple mono, Stereo + Mono IFB, 2 x Stereo, 4 x Mono		✓
AoIP: AES67, SMPTE ST2110-30, Livewire +, Ravenna	✓	✓
AoIP: SMPTE ST2022-7, Ember+, WheatNet-IP, Dante		✓



Scan for more information

**PRESIDENT**

**Ted Hand, CPBE, 8-VSB, AMD, ATSC3, DRB**  
Charlotte, NC  
thand@sbe.org

**VICE PRESIDENT**

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

**SECRETARY**

**Geary Morrill, CPBE, AMD, DRB, CBNE**  
Alpha Media | Saginaw, MI  
gmorrill@sbe.org

**TREASURER**

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

**DIRECTORS**

**David Antoine, CBRE, CBNT**  
Broadcasters General Store | New York, NY  
dantoine@sbe.org

**Greg Dahl, CPBE**

Second Opinion Communications | Rockford, IL  
gdahl@sbe.org

**Terry Douds, CPBE**

WOUB Public Media | Lancaster, OH  
tdouds@sbe.org

**Mark Heller, CPBE**

WTRW, Metro North Communications | Two Rivers, WI  
mheller@sbe.org

**Brad Humphries, CBT**

Beasley Media Group | Charlotte, NC  
mhumphries@sbe.org

**Zhulieta Ibisheva, CBTE**

NBCUniversal | Washington, DC  
zibisheva@sbe.org

**Charles "Ched" Keiler, CPBE, 8-VSB, ATSC3, CBNE**

E Three Services; WPLG | Deerfield Beach, FL  
ckeiler@sbe.org

**Thomas McGinley, CPBE, AMD, CBNT**

McGinley Enterprizes | Missoula, MT  
tmcginley@sbe.org

**David Ratener, CPBE, CBNT**

Salem Media | Seattle, WA  
dratener@sbe.org

**Shane Toven, CPBE, DRB, CBNE**

Triple Helix Technologies | Antelope, CA  
stoven@sbe.org

**Jeff Welton, CBRE**

Nautel | Chester, NS  
jwelton@sbe.org

**Fred Willard, CPBE, 8-VSB, ATSC3, CBNT**

Univision | Washington, DC  
fwillard@sbe.org

**IMMEDIATE PAST PRESIDENT**

**Andrea Cummis, CBT, CTO**

Key Code Media | West Orange, NJ  
acummis@sbe.org

**SBE NATIONAL STAFF**

**James Ragsdale | Executive Director**  
jragsdale@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

**RJ Russell, CPBE, ATSC3, CBNT  
Frequency Coordination Manager**  
rjrussell@sbe.org

The Signal is published bimonthly by the Society of Broadcast Engineers, Inc., 9102 North Meridian Street, Suite 150, Indianapolis, IN 46260.  
©2024 Society of Broadcast Engineers, Inc.  
Editorial content and design: Chriss Scherer, 317-762-9723, cscherer@sbe.org.  
Advertising: Debbie Hennessey, dhennessey@sbe.org, 317-846-9000  
SBE is a registered trademark of the Society of Broadcast Engineers.

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

# SBE Election Ends August 7

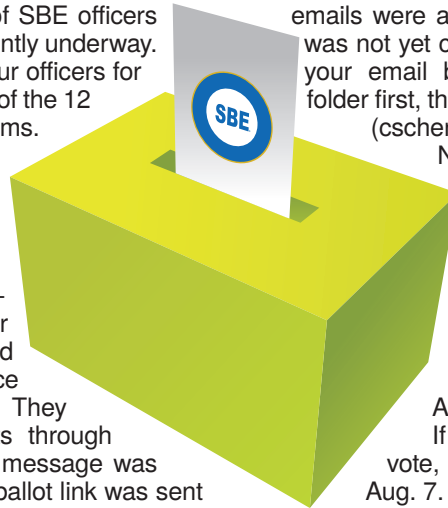
The annual election of SBE officers and directors is currently underway. Up for election are all four officers for one-year terms and half of the 12 directors for two-year terms.

All ballots are due by 4:30 p.m. EDT on Aug. 7. Voting is via an online ballot, except for those members who have opted out of electronic voting this year or who have not provided the SBE national office with an email address. They will receive their ballots through the mail. An email test message was sent on July 2, and the ballot link was sent to valid email addresses on July 8. Reminder

emails were also sent if an online vote was not yet cast. If you did not receive your email ballot, check your spam folder first, then contact Chriss Scherer (cscherer@sbe.org) at the SBE National Office.

For members who received a paper ballot in the mail, your ballot must be received in the SBE National Office by mail, express delivery or in person (no facsimiles) by 4:30 p.m. EDT on Aug. 7.

If you have not yet cast your vote, be sure to do so before Aug. 7.



## SBE Sustaining Member National Meeting Sponsors

### Membership Meeting



### Fellows Breakfast



### Exhibit Booth Drawing



Awards Dinner & Reception Sponsorships Available. Contact Debbie Hennessey

# Get Notified of SBE JobsOnline Updates

SBE JobsOnline assists SBE members in locating available broadcast engineering positions throughout the country. It is comprised of job openings that have been submitted to this site by prospective employers. Each job listing contains essential information about the position. Jobs are listed in the order they are received, with the most recent listings at the top. Anyone can view the listing summaries, but only SBE members can access the details.

The service has a feature to notify you by email when new job listings are posted. You can also set criteria based on the type of job you are looking for to filter the results. Once a search is entered you can have those results emailed to you regularly.

Go to [sbe.org/jobs](http://sbe.org/jobs) to see the listings. SBE members will log in to see the full details. Once you are logged in, click the "searching" link to set filter criteria (or select all listings), and run the search. You will then see the option to have updates emailed to you.

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



## Certification Question



**CERTIFIED**

Answer on page 6

A 32-bit microprocessor is usually rated in the number of bits it can handle on:

- A. its address bus.
- B. any register.
- C. its control bus.
- D. its data bus.





# LETTER FROM THE PRESIDENT

By Ted Hand, CPBE, 8-VSB, AMD, ATSC3, DRB  
SBE President  
president@sbe.org

## Take Some Time to Look Around

Well, we are almost to the end of another summer. I hope you took time for some winding down and reset/relax session. This is always difficult for the broadcast engineer. I am now fully retired from my job as director of engineering/operations at CMG-Charlotte (WSOC, WAXN). I had a project moving the weather radar that I was working on right up to my last day. The last day I walked out with nothing under my arm as I had packed weeks before. It's hard to believe how much stuff you can cling to in 17 years. I keep dragging around a glass guide wire insulator from an AM tower and red TCR-100 cart. Old, but you get a lot of "What is that?" Great conversation starters.

After retirement, I decided to take a car trip around the country. Leaving North Carolina and heading north I stopped in Washington, DC, at the NAB labs, then visited Gettysburg battlefield. Then I headed to Sagamore Hill on Long Island to visit Theodore Roosevelt's home; a very beautiful place I would recommend if you are ever out on Long Island near Oyster Bay. The ferry ride across Long Island sound is nice but expensive. I am spoiled by state-supported ferries in North Carolina. Arriving in Boston, I saw the Red Sox vs. Yankees, with a Red Sox victory.



The Pro Football Hall of Fame was my next stop in Canton, OH, then a stop in Mason, OH, to visit the VOA museum in Bethany with good friend Jay Adrick. If you are a fan of RF, tubes and the analog way of life, The VOA Museum is a must stop. Check out voamuseum.org for details, it's open weekends noon to 4 p.m. Then I headed west to Indianapolis for the summer SBE Executive Committee meeting. We had a great meeting. We are working on a lot of things that we hope to announce in Madison in the fall.

Heading west, I stopped at the World's largest truck stop in Walcott, IA, and visited Buddy Holly's airplane crash site near Clear Lake, IA. It's a moving place to just stand in a corn field and think about the reality of where you are. In North Dakota, I visited the tallest tower in the US, followed by a quick stop at the Minuteman Missile National Historic site to visit a Minuteman silo at the Delta-09 site.

Then I saw Mt. Rushmore and made a quick stop in Fort Collins to see the WWV/WWVB transmit site. Then to Denver to see family, back on the road to Texas to visit friends, Huntsville, AL, for the US Rocket and Space Center, and then back to North Carolina. Sometimes we fly over the country and never really see it at ground level. There is a lot to see in this country and you can only do it in a car. I can tell you there is a lot of nothing between Mt. Rushmore and Denver. Eastern Wyoming doesn't even have cell coverage in most places.

### Back to Business

I hope you took the time to vote in the SBE election going on in July/August. If you requested a paper ballot, which the SBE is

more than happy to provide, please take the time to vote and return to Indianapolis. If you already have, I thank you.

If you haven't already done so, you need to start making plans for Madison, WI. The Midwest Regional Broadcasters Clinic is Sept. 10-11. The annual SBE National Meeting will be held during the clinic. The group in Madison always puts on a great show, and I know this year will be no exception.

I will be in Hoover, AL, on Aug. 8 for the Alabama Broadcasters Association summer conference. I will lead a discussion on SBE certification.

I would like to congratulate a good friend, Denise Mastrullo on winning the J. J. Freeman Engineer of the Year award given by the Virginia Association of Broadcasters. It is given to the most outstanding broadcast engineer in the Commonwealth of Virginia each year. Denise is the first woman to win this award. We worked together 30+ years ago in the Norfolk, VA, market. Very deserving.

As always, if you need help or information, the great staff at SBE in Indianapolis is there to help. Contact information is located at [sbe.org/contact](http://sbe.org/contact). Any questions or comments or you just want to say hey, I can be reached at [president@sbe.org](mailto:president@sbe.org).



Stops along Ted's tour of the United States, top left and counter-clockwise: Fenway Park and the Green Monster, WWV/WWVB at the NIST site, Mt. Rushmore, the world's largest truck stop in Iowa, and a whimsical sign at the Minuteman Museum in North Dakota.



## EDUCATION UPDATE

By Geary Morrill, CPBE, AMD, DRB, CBNE  
Chair, SBE Education Committee  
gmorrill@sbe.org

# A Technical Professional Training Success Story

**W**hen the Technical Professional Training program launched, the intent was to provide a template and resource bundle to onboard someone recruited with good aptitude and attitude and get them up to speed with a basic menu of technical knowledge. We've heard from a few folks that have utilized TPT, and at this year's NAB I met another. Doug Ducote, CBTE, is chief engineer for Nexstar's Colorado Springs properties. I'll let him tell his story. – Geary

**W**e lost our chief engineer very abruptly, and I moved into that role. With all the normal things everybody's dealing with, budget constraints and the like, it took a while for me to fill the role I left to become chief. The best candidate ended up being an internal hire from news – a technical director/editor who had a desire to learn and the right mentality for engineering. I grew up at this station, a fairly young engineer. My knowledge base is not as broad as your stereotypical 20-year-in-the-industry chief. I realized it might be a struggle for me to facilitate learning consistently. At the same time, I knew my having an SBE MemberPlus membership helped me greatly when I came over to television.

I was pursuing getting a membership for this new engineer, and then I found the SBE Technical Professional Training Program and said, "What's this?" Participants get a copy of the *SBE Engineering Handbook*, which is worth obtaining for anyone because it's such a complete reference. They get SBE MemberPlus, which I have maintained for myself because I can go and watch webinars anytime I have a moment as much as I want. I can just keep piling on those resources. And they link up with a mentor – that seemed valuable because again, I'm fresh, I'm young, I'm not as experienced as your average chief engineer. I signed him up for TPT and maintained his SBE MemberPlus following that first year. Oh, and TPT included his first SBE certification test. He jumped on board, and in nine months had his CBT. That reinforces they're willing to teach themselves something to pursue certification to further their knowledge which resonates with building your resume, building your reputation, building your confidence.

This new engineer is Craig Denton, Jr., CBT. The mentor assigned to Craig was director of technology for a Fox O&O in Texas; the perfect situation. Somebody in a different echelon of engineering than I am. They've got a different perspective when it comes to project planning/project management, the day to day life of an engineer manager versus a station chief. You're talking about Nexstar versus network. You're going to have different practices, different principles. And then you're talking about a different state, a different market range. All of those things created the perfect mentor, somebody who

For more information on any SBE education program click the Education tab at [sbe.org](http://sbe.org), or contact Education Director Cathy Orosz at the SBE National Office at 317-846-9000 or [corosz@sbe.org](mailto:corosz@sbe.org).



**Craig Denton, Jr., CBT, (left) and Doug Ducote, CBTE, who provided his thoughts on the SBE TPT.**

has a great knowledge base and is in a different place than I am so my new engineer is getting a supplementary benefit to their growth. Craig has met with his mentor at least once a month for the last two and a half years – and it's still rewarding. Sometimes they talk for 15 minutes and then don't talk again for a month. Sometimes they'll have an hour plus conversation if somebody introduces something worth having an extended conversation about. It could be a project that we're working on here. It could be a project the mentor is working on and thinks might be a benefit to talk about with Craig.

Craig, in his own adventures through learning new things, comes up with questions to ask. What's really interesting is from time to time, following a mentor meeting, he will come to me and ask a question. Because of something we do differently, or something that is new. And he'll ask me, "Hey, why don't we ...?" A lot of times, it's an opportunity for me to explain my thinking. But every so often, it's, "A-ha! Why don't we do that?" So I've even benefited from it, absolutely. It's worth every penny because if you look at what the society charges for this program, it's really just a bundle deal on a bunch of stuff you need anyway, plus the handbook and a certification exam. You're not paying for the mentorship, and that connection is very valuable. I just can't

say enough good things about it.

I'm so lucky the chief engineer who hired me here as a staff engineer in 2018 said, "You probably want to do this [join the SBE], because there's a lot to learn and I may not be able to keep up with you."

So all around, the Society is something that has real value. When you look at what it costs, you're the one who profits. It's a professional society membership that has real benefits other than just having a badge you can wear at conventions. I don't know why more people don't join.

*I couldn't say it any better, Doug. I hope the SBE Technical Professional Training Program can help you and your organization. It's exactly why the SBE created it.*

## Education Almanac

### Webinars by SBE

Aug. 15: The Spectrum Analyzer and VNA Usage  
Aug. 22: Indoor Production Lighting for Broadcast Engineers – Part 2  
[sbe.org/webinars](http://sbe.org/webinars)

### SBE Ennes Workshops

Sept. 7: Jekyll Island, GA  
Sept. 24-25: Biloxi, MS  
Oct. 21: Wichita, KS  
Contact the SBE to arrange an SBE Ennes Workshop in your area.  
[sbe.org/ennes\\_workshop](http://sbe.org/ennes_workshop)







# CERTIFICATION UPDATE

By Megan E. Clappe  
SBE Certification Director  
mclappe@sbe.org

## Show Your Certification Status

On regular occasions, I like to share the graphic that shows the levels of SBE certification, how to list them and how to use the various abbreviations in regular use. I think it is a good visual for those who are interested in certification or maybe looking to upgrade. Sometimes I get questions about how to list an individual's certifications on business cards or an email signature. The SBE has adopted some standards, and it's appreciated when they are followed. Consistency makes a difference.

The SBE also provides an SBE Certified logo. If you have used this logo for more than a few years, take a moment to verify you are using the most current version. You can find the current version online at [sbe.org/logo](http://sbe.org/logo). Help the SBE maintain consistent branding by using the proper logo. Just as your station wouldn't want you to use

an old logo, neither does the SBE.

Remember, you can jump into any certification as long as you have the prerequisite of experience. The same goes for upgrading your certification.



Answer from page 3

The answer is D

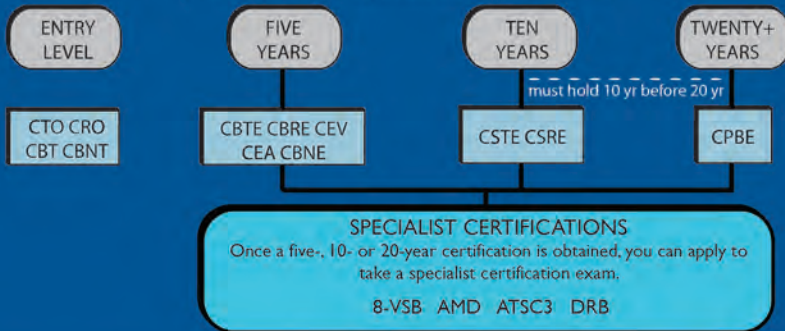
The data bus transfers data to and from the CPU, and its width directly affects the amount of data that can be sent or received in a single operation. While the address bus determines how much memory the processor can address, the data bus specifies the size of the data that can be handled at one time.

### WHAT YOU NEED TO KNOW ABOUT SBE CERTIFICATIONS

The SBE certification program is the only professional recognition available to broadcast engineers, which provides standards of professional competence. It is the primary method of verifying the attainment of educational standards in the industry.

#### YEARS OF EXPERIENCE

SBE certifications are based on years of experience in the broadcast engineering field. Broadcast engineers can apply for a certification once they meet the year requirements. An associate degree counts as two years of experience and a bachelor's degree counts as four years of experience. No experience is required for entry level.



Life certification is available to those who are retired or may also be granted to professional broadcast engineers and senior broadcast engineers who have maintained certification continuously for 20 years and are current members of the SBE upon application.

#### LISTING CERTIFICATIONS

Broadcast engineers may hold multiple certifications. SBE certifications are listed from highest (most experience required) to lowest. Specialist certifications are listed after their corresponding category certification and in alphabetical order.

**EXAMPLES:**  
Joe Brown, CSRE,AMD,CBNT  
Kevin Jones, CBT, CBNT, CRO  
Heather Cosby, CSTE, ATSC3, CBRE, DRB  
Ray Osmond, CPBE, 8-VSB, AMD, CBNT

Most certifications stand alone however, some certifications supersede and replace existing certifications.  
CBTE replace with → CSTE replace with → CPBE  
CBRE replace with → CSRE replace with → CPBE  
CBNT replace with → CBNE

#### CERTIFICATIONS IN PRINT

Certifications may be referred to in various ways in text, including levels or general terms. The colors used with the following general terms correspond with the certifications in the below levels.

**GENERAL TERM KEY:** operator, technologist, audio engineer, video engineer, senior certification, professional certification, networking technologist, broadcast engineer, networking engineer, specialist

OPERATOR LEVEL	SPECIALIST LEVEL	ENGINEERING LEVEL
Certified Radio Operator (CRO)	8-VSB Specialist (8-VSB)	Certified Broadcast Technologist (CBT)
Certified Television Operator (CTO)	AM Directional Specialist (AMD)	Certified Audio Engineer (CEA)
	ATSC 3.0 Specialist (ATSC3)	Certified Video Engineer (CEV)
	Digital Radio Broadcast Specialist (DRB)	Certified Broadcast Radio Engineer (CBRE)
		Certified Broadcast Television Engineer (CBTE)
		Certified Broadcast Networking Engineer (CBNE)
		Certified Senior Radio Engineer (CSRE)
		Certified Senior Television Engineer (CSTE)
		Certified Professional Broadcast Engineer (CPBE)

## ENNES EDUCATIONAL FOUNDATION TRUST

The trust offers scholarship and educational programming and grants that benefit broadcast engineering and the broadcast engineer. Submit tax-deductible donations, payable to the Ennes Educational Foundation Trust, to the Society of Broadcast Engineers; 9102 N. Meridian St., Suite 150; Indianapolis, IN 46260.

### THANKS TO THE FOLLOWING SUPPORTERS FOR THEIR CONTRIBUTIONS

**Youth Scholarship**  
Jacob Daniluck, Indianapolis, IN  
Calvin Smith, Winchester, CA  
Nick Straka, Hackettstown, NJ

**John H. Battison Founder's Scholarship**  
Calvin Smith, Winchester, CA

**Robert D. Greenberg Memorial Scholarship**  
Calvin Smith, Winchester, CA

**Harold E. Ennes Scholarship**  
Evangel Arcega, Abu Dhabi  
David Peabody, Gardner, MA  
Keith Rozendal, Santa Barbara, CA  
Calvin Smith, Winchester, CA  
Stephen Smith, Loudon, TN  
Richard Thomas II, Okemos, MI

**Gino Ricciardelli Scholarship**  
Calvin Smith, Winchester, CA

**General Fund**  
Christopher Benton, Ellenwood, GA

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

# SBE Certification Achievements

## CONGRATULATIONS



<b>LIFE CERTIFICATION</b>	Certified Audio Engineer (CEA) Gregory Friedman, Park City, UT - Chapter 62 Certified Broadcast Technologist (CBT) Curtis Blount, Lucedale, MS - Chapter 125	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.	
<b>CERTIFIED PROFESSIONAL BROADCAST ENGINEER</b>	Romualdo Lintag, Brisbane, CA - Chapter 40	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.	
<b>SBE CERTIFIED SCHOOL COURSE COMPLETION</b>	Certified Broadcast Technologist (CBT) DINFOS James Draper, Converse, TX		
<b>CERTIFIED BY LICENSE</b>	Certified Broadcast Technologist (CBT) John Bradford, Durham, ME - Chapter 11	William Sanders, Portsmouth, VA - Chapter 54	Daniel Works, Lewiston, ME - Chapter 11
<b>CERTIFIED RADIO OPERATOR (CRO)</b>	Todd Christopher Grunwald, Suring, WI Callahan Klein, Phoenix, AZ Richard Maxwell, Phoenix, AZ Kayden Resz, Filer, ID Devyn Standish, Denver, CO Nadia Wescomb, Clearwater, FL	Bedford High School Brayden D'Esposito, Temperance, MI Joshua Kiefer, Petersburg, MI Jacob Henry, Ottawa Lake, MI Rachel Ingels, Temperance, MI Lauren Wencel, Newport, MI	Cave City High School Keith White, Cave City, AR WKHS Alayna Brown, Galena, MD Jonah Elburn, Chestertown, MD Averie Hitzges, Betterton, MD Emma Morris, Clayton, DE
<b>DIAMOND PROJECT</b> The following 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) Robert Branch, Las Vegas, NV - Chapter 128 Charles Bullett, Jr., Emeryville, CA - Chapter 40 Certified Broadcast Radio Engineer (CBRE) Ricardo Esparza, Pasadena, CA - Chapter 47 Certified Broadcast Television Engineer (CBTE) Gregory Clifford, Meridian, ID - Chapter 115	Certified Broadcast Networking Technologist (CBNT) Glen Tapley, Irondale, AL - Chapter 68 Certified Broadcast Technologist (CBT) Joseph Yaeger, East Concord, NY - Chapter 57	
<b>RECERTIFICATION</b> 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) Philip Langston, Weston, WI - Chapter 80 Certified Broadcast Radio Engineer (CBRE) Michael DeLaRosa, Quincy, IL - Chapter 49 Ernesto Tamez Escamilla, Monterrey, NL Mexico Certified Television Operator (CTO) Alan Roberts, Peoria, IL Ramon Villavicencio, Camarillo, CA	Certified Broadcast Technologist (CBT) Rachel Copher, Milwaukee, WI - Chapter 28 Bradley Goehl, Austin, TX - Chapter 79 Tonya Holroyd, Chapin, SC - Chapter 101 David Kalahar, Green Cove Springs, FL - Chapter 39 Steven Pingelski, Cohoes, NY - Chapter 58 Cory Wynn, Louisville, KY - Chapter 35	Certified Radio Operator (CRO) Peter Creamer, Lakewood, CO John Dutton, Marshal, MO James Edwards, Oklahoma City, OK Tonya Holroyd, Chapin, SC - Chapter 101 Eric Wolf, Lakewood, OH

## Mentors Needed for SBE Mentor Program

The SBE Mentor Program continues to see growth since being created in 2016. The program provides broadcast engineers who are new to the field a means to gain insight and work with a seasoned broadcast engineer who can share his or her acquired knowledge. Mentees are paired with mentors based on mutual experiences and career interests.

Participants are asked to have regular communication by voice or video at least every other week. In all but a few pairings, mentors and mentees are not in the same city, but this should not impair the

interaction of the participants. Officially, the mentoring lasts one year, but the professional relationship can certainly continue.

Mentors are always needed. Become a mentor and you can give something back to the industry and help educate the next generation of broadcast engineer.

Don't think you have enough time to be a mentor? Become a Mentor Program Subject Matter Expert. SMEs offer knowledge in a specific area of expertise and can offer guidance to a colleague with less experience in that area. SMEs provide support to one-on-one Mentors and offer specific knowledge that may be outside the primary Mentor's experience. SMEs must be current SBE members and in the profession of broadcast engineering.

To become an SBE mentor or SME, go to [sbe.org/mentor](http://sbe.org/mentor) or contact SBE Education Director Cathy Orosz at the SBE National Office.



### What does it take to be an SBE Mentor?

- Current SBE member; values the organization, its mission and its work.
- Currently in the profession of broadcast engineering.
- Minimum of five years working in the profession.
- Desire to help others grow and excel in their careers.
- Positive attitude toward the profession and learning.

## Get Your SBE 60<sup>th</sup> Anniversary Pin

As the SBE celebrates 60 years since its founding, you can show your SBE pride with the special 60<sup>th</sup> anniversary member pin.



Order yours through the SBE Store today.

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

# SBE 2024 Compensation Survey: SBE Certification Pays



The SBE conducted its ninth compensation survey in April and May. The survey 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 job title category. 437 respondents answered the 25 survey questions about salary and benefits. SBE membership was not required to take the survey.

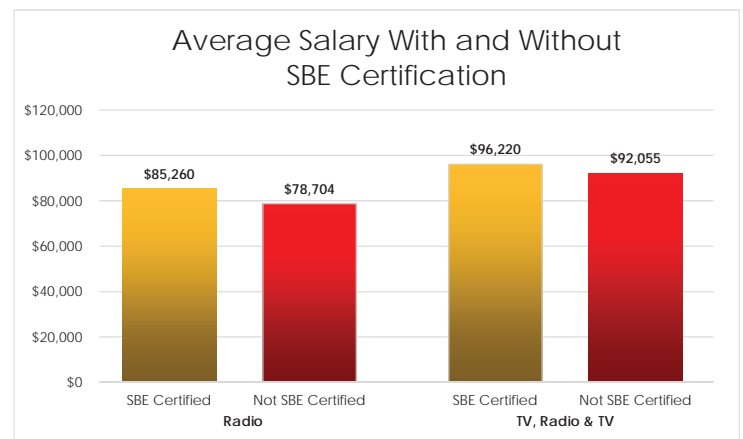
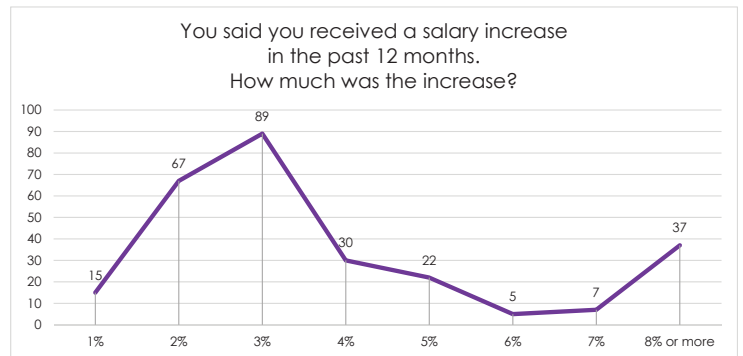
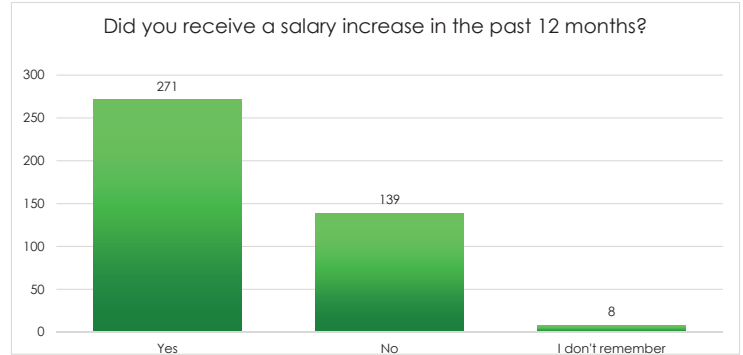
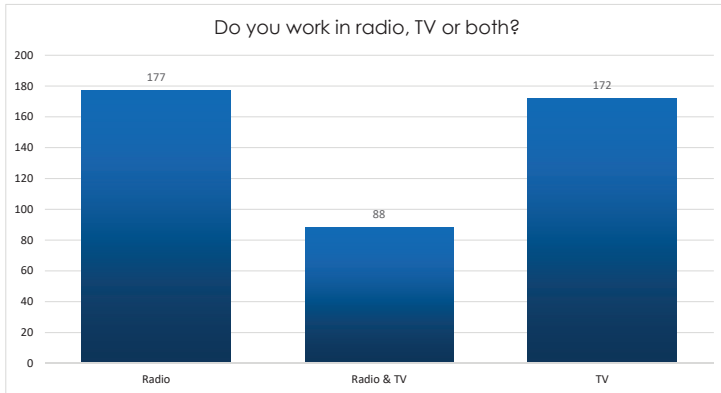
We asked if respondents received a raise in the last year, and if so, how much, and to report benefits received. We also asked about contract engineering rates and practices.

Respondents were asked if they held any broadcast or media-relevant professional certifications. We compared

salaries of respondents with and without SBE Certification and reported the trend compared to past salaries. Typically, those who hold SBE certification earn a higher wage than those who do not.

The survey report is available via the SBE Bookstore and is free to SBE members as a member benefit. You will need your SBE website login to access it. Also, the PDF report is password protected. The password is noted on the download page. Non-members can purchase the survey via the SBE Bookstore. Some survey highlights are shown here.

If you participated in the survey this year, thank you. We encourage your participation next year so we can provide the most useful results.





# Membership Drive Draws 80 New Members

Each year, the Society of Broadcast Engineers, the association for broadcast and multimedia technology professionals, conducts a member recruitment drive. The drive calls on current SBE members to encourage their non-member colleagues to join the association. This year, 79 individual members and one Sustaining member were recruited.

The SBE Membership Drive ran from March 1 through May 31. As a recruiting incentive to members, the SBE asks for prize donations from SBE sustaining member companies. In addition, the recruiter will earn \$5 per new member (up to \$25) off his or her 2025 membership dues. Four sustaining member companies plus the SBE provided prizes this year, ranging from shirts and hats to broadcast equipment. The SBE donated logo items, a copy of CertPreview, a free Webinars by SBE registration, and books. The theme for the 2024 drive was Shape the Future: Recruit a New SBE Member.

All the recruiters were eligible for the Membership Drive Grand Prize: A trip to the SBE National Meeting this fall. (A cash prize option is available if the winner is not able to travel to the SBE National Meeting.) That meeting will be held during the Midwest Regional Broadcasters Clinic in Madison, WI. The Grand Prize winner this year is Mark Johnson of Gray Television, Atlanta.

The SBE thanks the sustaining members who provided prizes: Davicom, Heartland Video Systems, Orban, and Telos. The list of prizes and the winning recruiters are on page 14 of this issue of *The Signal* and on the SBE website.

The close of the drive resulted in 80 new recruited members, who were sponsored by 53 current members. The recruiters represent 44 different SBE chapters.

## Golden Recruiter Awards

The SBE also recognizes the chapters that recruit the most members during the drive with the Golden Recruiter Awards. Chapters are divided into two classes: Class A chapter are

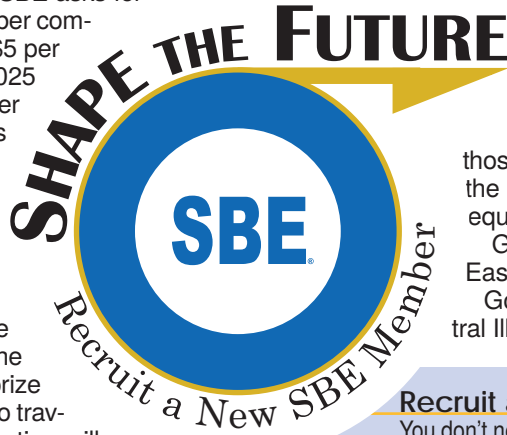
those with fewer members than the chapter member average, Class B are those with equal to or more than the chapter member average.

Golden Recruiter Award, Class A: Chapter 148 Eastern Europe

Golden Recruiter Award, Class B: Chapter 49 Central Illinois



Johnson



## Recruit a New Member Any Time

You don't need to wait for the annual Membership Drive to recruit a new SBE member. You probably know someone who would benefit from SBE membership. Perhaps someone comes to your chapter meetings regularly. Encourage them to join the SBE today.

[sbe.org/join](https://sbe.org/join)



# OBSTRUCTION LIGHTING ELEVATED



DRAKEWAY ENTERPRISES INC.

## V2 HIGH INTENSITY SYSTEM

- ▶ GROUND-BASED POWER AND CONTROL COMPONENTS
- ▶ LIGHTWEIGHT FLASH HEADS
- ▶▶▶ REDUCED TOWER LOADING
- ▶ TOUCH SCREEN INTERFACE
- ▶ OPTIONAL PULL-OUT SCREEN
- ▶ IR COMPLIANT
- ▶ SBE PRESENTATIONS ZOOM OR LIVE



## LEGAL PERSPECTIVE

By Coe Ramsey, Patrick Cross and Noah Hock  
SBE Regulatory Counsels  
cramsey@sbe.org, prcross@sbe.org, nhock@sbe.org

# Chevron Overruled

## How Will the Supreme Court's Doctrinal Shift Affect Broadcast Engineers?

It has been widely reported that the U.S. Supreme Court recently overruled the longstanding Chevron case and accompanying doctrine, which informed the procedure federal courts must follow when reviewing the legal sufficiency of regulatory actions taken by federal agencies, including the Federal Communications Commission. Overruling Chevron represents a major shift in governing judicial doctrine, and so, as you might expect, there is ample discussion and debate over how this will affect agency decisions now and in the future. The broadcast industry is heavily regulated by the FCC, so it is natural to wonder what effect this decision may have on the operation of your stations. Let's take a look at the Chevron Doctrine, how it operated in the past, and how this change may affect agency decision-making at the FCC and elsewhere.

**What is the Chevron Doctrine?** The Chevron Doctrine stems from the 1984 Supreme Court case *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, where the court laid out a process for evaluating an agency's rulemaking when the legislation on which the rule relies is arguably ambiguous. Fundamentally, federal agencies derive the power to act from congressional delegation; in other words, Congress passes legislation that tells an agency what it should be doing. The agency then makes rules based on that grant of authority from Congress. If that legislative grant of authority is "ambiguous," then the Chevron Doctrine provides a judicial method for evaluating the resulting agency rule that is somewhat different than the method a court would typically apply to entities other than agencies. Importantly, the Doctrine was largely deferential to the agency in these circumstances—establishing that if the underlying legislation was ambiguous, the court would defer to the agency interpretation of the legislation, so long as that interpretation was at least plausible. The Doctrine eventually came to stand for the concept that agencies have the greatest expertise and experience in the areas over which they exercise regulatory authority, and so the agencies are in the best position to interpret legislation in those areas whenever it is ambiguous or unclear. Importantly, however, the Chevron Doctrine was not applied in cases where the governing legislation is clear, or where agencies are expressly given the power to establish certain rules.

**With Chevron Overruled, What Will Replace It?** It is not yet entirely clear how, precisely, courts will evaluate agency rulemaking in the absence of Chevron, although one candidate may be the pre-Chevron case of *Skidmore v. Swift & Co.* and its own accompanying form of deference. (Generally speaking, courts using *Skidmore* to analyze an agency's interpretation of an ambiguous statute will consider various factors that might make the agency's interpretation more persuasive, such as if the agency has consistently interpreted the statute the same way over time or if the statute addresses an area where the agency has substantial expertise.) Courts also have a number of other, traditional tools for interpreting ambiguous legislation. Regardless what analytical doctrine(s) is or are applied going forward, when an agency rule is challenged, it appears that the court will independently evaluate the rule and underlying legislation to determine whether the agency action is authorized by the legislation. The court will no longer defer to any reasonable agency interpretation of ambiguous legislation, but instead the agency's position will be just one factor in the court's independent legal analysis.

**What Does This Mean for Broadcast Engineers' Day-to-Day Lives?** Likely not much. Overruling Chevron may seem like an im-

portant sea change for regulated industries, and indeed it is a significant shift in federal court administrative law jurisprudence. However, this change is not likely to have a substantial impact on engineers' day-to-day dealings with FCC regulatory authority. Remember, Chevron only applied in cases of challenges to agency authority based upon ambiguous Congressional legislation—the vast majority of agency actions are based upon clear legislative authority, in which case any challenges would be addressed by considering the clear language of the legislation, as courts have always done. And in the rare case where a challenged agency action is based on ambiguous legislation, the court will still place weight on the agency's interpretation as part of the court's full analysis. In fact, as noted above, when the challenged action involves highly technical matters, courts are even more likely to place great weight on the agency's interpretations, as the agency typically does have expertise in the minute details of its regulatory sector. So, while this change may well result in more frequent legal challenges to FCC rulemaking, those challenges are likely to target more hot-button "policy" issues, rather than the technical rules that broadcast engineers interface with every day.

### MEETING, from p. 1

Certification and Education Committees and the SBE Board of Directors. On Sept. 11, activities continue with the annual SBE Fellows Breakfast (invitation-only), sponsored by Kathrein USA, and the SBE Annual Membership Meeting, sponsored by Blackmagic Design and Dielectric. Dielectric is also sponsoring the SBE exhibit booth drawing.

That is followed by the SBE Annual Awards Reception, and the SBE National Awards Dinner. Presentation of the society's major awards will be made, including Robert W. Flanders SBE Broadcast Engineer of the Year James Dalke, James C. Wulliman SBE Educator of the Year Larry Wilkins, the SBE Technology Award to Telos Alliance, and the Best Technical Article, Book or Program by an SBE student member to Cody Hmelar.

SBE chapters will be presented with awards recognizing achievement for Best Chapter Communications, Greatest Member Growth, Highest SBE Certified Chapter and Highest Meeting Attendance. Winners of the local SBE Chapter Engineer of the Year will also be recognized.

The Midwest Regional Broadcasters Clinic will be held at the Madison Marriott West in Middleton, WI. The clinic events are held on Sept. 10 and 11, with a trade show and technical presentations. The annual event attracts broadcast engineers and technicians from Wisconsin, Minnesota, Iowa, Illinois and the surrounding states.

Registration for the Clinic is required and costs \$160. Visit the Clinic website ([wi-broadcasters.org](http://wi-broadcasters.org)) for details and to register.

Tickets for the SBE National Awards Reception and Dinner are \$19 and are available through the SBE website ([sbe.org](http://sbe.org)) and by telephone, Monday through Friday from 8:30 a.m. to 4:30 p.m. EDT at 317-846-9000. There is no registration required or fee to attend the Annual SBE Membership Meeting.

Accommodations are available at the Madison Marriott West. A limited room block has been set aside for our guests. A hotel registration link is on the SBE website at [sbe.org/sbe-2024-national-meeting](http://sbe.org/sbe-2024-national-meeting).

The SBE invites all SBE members to take advantage of this opportunity and attend all of the events on Sept. 10 and 11.





## FOCUS ON THE SBE

By James Ragsdale  
SBE Executive Director  
jragdale@sbe.org

# 58 Chapters Earn Chapter Rebates

For many SBE members, the local chapter provides access to affordable continuing education and a ready network of contacts and friends in the industry. The SBE likes to recognize chapters that meet those needs by rewarding them with an annual rebate of a portion of the SBE dues paid by its members.

The chapters have to qualify for the rebate by holding at least five meetings during the calendar year and documenting those meetings to the SBE National Office. Documentation includes a brief description of the meeting and a list of attendees.

In 2023, 58 chapters qualified for chapter rebates and the SBE

paid a total of almost \$29,000 to them. Chapters typically use the money to fund their own operations. Expenses can include website hosting fees, printing, postage, scholarship programs, and sometimes meals for chapter meetings or social events. The SBE instituted the rebate system many years ago to help chapters avoid the administrative burden of collecting local dues, instead, allowing them to concentrate on producing successful meetings and other chapter functions. Below is a list of chapters that qualified during 2023 and received a cash rebate from the national SBE office in June of this year. Our congratulations to them and to their leadership!

Chapter	Chapter Chair
1 Binghamton	Gary L. Talkiewicz
2 NE Pennsylvania	Al Kornak
3 Kansas	John R. Langer, CBTE
9 Phoenix	Eric B. Schecter, CBRE
14 Connecticut Valley	Frederick T. Krampits, CPBE, CBNT
15 New York City	Jeffrey F. Schick, CBT
16 Seattle	Brian R. Walker
17 Central Minnesota	Michael A. Davison, CBNT
24 Madison	Russ Awe
25 Indianapolis	Joshua J. Heymig
30 South Bend	Leon W. Amstutz, CBRTE
33 Southwestern Ohio	James M. Stitt, CPBE
37 District of Columbia	William Harrison, CSRE, CBT, CBNE, CRO
38 El Paso	Jose A. Castro
39 Tampa Bay Area	Dave Anderson, CBRE
40 San Francisco	Arthur Lebermann, CPBE
46 Baltimore	Perry V. Priestley
47 Los Angeles	Matthew W. Anderson, CSRE
48 Denver	Amanda J. Hopp, CBRE
49 Central Illinois	Michael J. DeLaRosa, CBRE
51 Tri-Cities	Walter R. Cox
52 Central Ohio	John R. Owen
53 South Florida	Carlos M. Sanchez, CPBE
54 Hampton Roads	Todd TS Washburn, CEA
55 St. Louis	Terrence E. Dupuis
56 Tulsa	Roger W. Newton, CSTE, CBNT
57 Rochester	Gregory S. Carter, CBT, CBNT
58 Northeast NY	Scott C. Mason
59 Kansas City	Stephen J. Hendrix, CBT

Chapter	Chapter Chair
60 Richmond	Mike A. Friedman
66 Fresno	Jaime D. Gonzalez
67 North Texas	William R. Ryan
68 Birmingham	Tim Costley
69 Alamo Area	Christopher O. Anderson
70 Northeast Ohio	Blake E. Thompson, CBNT
72 New Orleans	Ernest J. Kain
74 Midland	Matthew S. Sperling
76 Eugene	Dennis R. Hunt
78 Blue Ridge	Robert P. Jenkins
79 Austin	Edward A. Rupp, CBTE
80 Fox Valley	Matthew T. Converse, CBRE, CBT, CRO
85 Central Western	Brian L. Ryel, CBTE
91 Central Michigan	Gary W. Blievernicht
93 Raleigh-Durham	Christopher I. Pandich
96 Rockford	Michael I. Real
102 Grand Rapids	Mark V. Wittkoski, CBNT
103 Nashville	James C. Campbell, III, CPBE
105 Houston	Albert M. Flores, CBNT
109 Des Moines	Gregg T. Richwine, CSTE
111 Huntsville	Kevin C. Kidd, CSRE, AMD
113 Knoxville	Joseph B. Stuart
115 Southern Idaho	Thomas R. Kettwig, CBT
118 Montgomery	Wiely S. Boswell, CBRE, CBNE
122 Youngstown, OH	Robert J. Flis
124 North Oregon	Everett E. Helm, CPBE
131 Inland Empire	Zachary R. Brockett, CSTE
145 Magic Valley ID	Thomas P. Lowther, CPBE, CBNT
148 Eastern Europe	Davit Robakidze, CTO

**Want to be a mentor or a mentee?**

The SBE Mentor Program pairs an experienced broadcast engineer with someone who is a newer broadcast or multimedia technology professional. The SBE Mentor Program provides a means for SBE members to share knowledge and experience.

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

*In Memoriam*  
**Richard W. Burden**  
Member #450  
1931 - 2024  
Fellow Member  
2005 SBE Lifetime Achievement Award



# ENGINEERING PERSPECTIVE

Tony Peterle, CPBE  
Proprietor, Tony Peterle Technology Services  
Trustee, Ennes Educational Foundation Trust  
tpeterle@sbe.org

## Pushing Metadata: Connectivity and Syntax

**B**roadcast and media operations have expanded in many ways over the last 20 years. Digital radio (IBOC and DAB) have opened up new real-time delivery channels, the popularity of podcasts is increasing, and many stations have websites that not only offer live streaming, but an archive of recently played titles.

Each of these delivery pathways can be enhanced by the inclusion of timely metadata in the system, but there may be some challenges to overcome in order to properly populate the various data fields in the different delivery systems. But two common factors are vital to all metadata distribution pathways – connectivity and syntax.



Laptop or Metadata Source (MS) running PuTTY or other software

Communication Path  
RS-232, TCP/IP, UDP



Metadata Target (MT): RDS Encoder, HD System, Streaming website

For this article, connectivity refers only to the communication pathway between the system that is pushing the metadata (call it the Metadata Source, or MS) and the devices that are receiving that information and incorporating it into the consumer experience. For simplicity, we will give all of those devices Metadata Targets, or MT.

Metadata targets are often not stand-alone units. RDS generation capability has been built into many modern solid-state transmitters, also into audio processors and other multipurpose devices. Targets for HD metadata can be transmitters or other parts of the HD broadcast chain.

The most popular syntax for metadata systems has historically been ASCII text. This is typically sent over a serial connection (including serial over IP), or a true IP connection using UDP or TCP-IP protocols. Some MT can simply echo the text as received, displaying it in RDS data fields such as PS and RT, or in the Program Associated Data (PAD) function in IBOC systems. Other MT require more formal commands, or different syntax such as XML files, sent to or fetched by the MT from the MS, using FTP.

Serial communication is perhaps the easiest connection – with an actual physical cable between the MS and the MT, there is little to go awry. Make sure the serial protocols are matched – bit rate, data size, parity, and stop bit. This is commonly expressed in numbers like 9600, 8, n, 1. If the parameters on both ends do not match, communication may not work. In some cases a null modem connection must be used between the two, depending on whether the RS-232 ports are designed as DTE (terminal equipment, printers, PCs etc., male DB9) or DCE (communications equipment such as modems, usually a female DB9). A null modem cable can be constructed by inverting pins 2 and 3 on the DB9. Provided no handshaking is needed, only those two wires and a ground may be sufficient for the connection.

Should it be impossible to make a physical serial cable connection (the typical distance limit on RS-232 is 50 feet), a serial-over-IP adapter can be employed, one small unit on each end of an Ethernet

path can transport the serial data across any distance. This system will be subject to any of the challenges faced when establishing a pure IP link.

### Enter IP

With IP, the complexity goes up a lot. Each device on the network segment (subnet) must have a unique IP address, and each of those addresses can host more than 65,000 data ports, each of which can have a different purpose and require a unique protocol.

And, at each point in the network where the path travels through a switch, firewall, or modem, any of those ports may be blocked by default or by a specific security practice. Typically, communications emanating from inside a protected subnet out to the wider Web are allowed, but often a specific configuration must be applied to the gateway on the other end, so the incoming data can be accepted from the public network and routed to the correct destination IP and port on the internal subnet.

A laptop is a vital tool for diagnosing any kind of link. With software like PuTTY, it can send and receive communication via a serial link, or over a network using TCP-IP. Other software such as Port Peeker can allow you to see data being received on any IP port on the laptop.

So, basic testing can begin with the PC that hosts the Metadata Send capability. In many cases, this can be the automation software itself, many can export metadata and associated commands to the MT devices. Some have more flexibility than others. For more complex metadata needs (album art, etc.) it is frequently necessary to employ one of the 3rd party software solutions to acquire the meta-



Metadata Source (MS): Automation system or third-party software

Communication Path  
RS-232, TCP/IP, UDP



Laptop replaces Metadata Target MT on the network running PortPeeker, WireShark, etc.

data and route it to multiple MT devices, each in its preferred syntax.

In any case, that MS machine should be able to 'see' the MTs on the network. A simple ping command is a start, but it cannot verify availability of any specific destination port. Using PuTTY you can try to establish a TCP-IP link to port 23 (the default Telnet port) on the MT, and if the metadata port is configured for TCP-IP, you should be able to make a connection to that specific port. Check the firewall on the receiving end to make sure the port is open.

If that can be accomplished, it can be assumed that the MS software can also communicate to the MT (watch for PC firewall settings that can block outgoing communications by default).

*Important note:* If the data is traveling across an open public Internet link (no VPN or other protection) you should at minimum employ

see [METADATA](#), p. 14



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

**Alabama Broadcasters Association • 2024**  
 Sharon Tinsley 205-982-5001  
 Alabama Association for Radio & TV Broadcasters

**American Amplifier Technology/ Shively Labs • 1996**  
 Steve Wilde 916-978-1899  
 Quality Broadcast Products

**American Tower Corporation • 2000**  
 Tiffany Yu 603-930-9091  
 Development/Construction/Management

**ANCO Wireless • 2024**  
 Scott Gordon 605-496-3475  
 Broadcast Tower Construction Maintenance

**Aqua Broadcast • 2024**  
 Brendan Lofty +44 203411 0387  
 COBALT FM Transmitters

**Barnfind-USA, Inc. • 2021**  
 George Gonos 919-748-7373  
 Fiber Transport Solutions

**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**  
 Tim Jobe 305-281-7540  
 TV, Satellite, Radio, IP

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

**Broadcast Electronics Inc. • 1978**  
 Perry Priestley 217-224-9600  
 Radio Equipment Manufacturer

**Broadcast Software International • 2016**  
 Marie Summers 541-338-8588  
 Radio Automation, Audio Logging

**Broadcast Supply Worldwide • 1986**  
 Brian Walker 800-426-8434  
 Audio Broadcast Equipment Supplier

**Broadcasters General Store • 2004**  
 Karly Kerstin McBride 352-622-7700  
 Broadcast Audio Video Distributor

**Burk Technology • 2019**  
 Matt Leland 978-486-0086 x703  
 Transmitter Facility Control Systems

**Cavell, Mertz & Associates Inc., a Division of Capitol Airspace Group, LLC • 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

**Crawford Broadcasting Company • 2021**  
 Cris Alexander 303-481-1800  
 Media Company

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

**Cumulus Media, Inc. • 2021**  
 Conrad Trautmann 212-419-2940  
 Audio Media Company

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

**Dielectric • 1995**  
 Cory Edwards 207-655-8131  
 Radio & TV Antenna Systems and Monitoring

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

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

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

**ENCO Systems Inc. • 2003**  
 Samantha Bortz 248-827-4440  
 Playout and Automation Solutions

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

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

**GatesAir • 1977**  
 Mark Goins 513-459-3710  
 Radio/TV Transmitters, STL Codecs

**Georgia Association of Broadcasters, Inc. • 2024**  
 Allison Fulton 770-395-7200  
 Georgia Association for Radio & TV Broadcasters

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

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

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

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

**Iowa Broadcasters Association • 2024**  
 Lisa Reynolds 515-224-7237  
 Iowa Association for Radio and TV Broadcasters

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

**Kathrein USA Inc. • 1985**  
 Les Kutasi 541-879-2312  
 Antennas for Broadcasting & Communications

**Kentucky Broadcasters Association • 2024**  
 Roger Gribbins 502-460-6712  
 Kentucky Association for Radio & TV Broadcasters

**Kintronc Labs, Inc. • 2015**  
 Brad Holly 423-878-3141  
 Radio Broadcast Antenna Systems - ISO9001 Registered Company

**latakoo • 2021**  
 Paul Adrian 214-683-0791  
 Media Workflow Automation

**LBA Technology Inc. • 2002**  
 Jerry Brown 252-757-0279 x228  
 AM/MW Antenna Equipment & Systems

**Leeward Software • 2019**  
 Nigel Brownnett 310-405-0839  
 Manage. Monitor. Control

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

**LumenServe • 2023**  
 Bear Poth 512-423-8323  
 Tower Lighting

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

**Markertek • 2002**  
 Adam June 845-246-2357  
 Specialized Broadcast & Pro-Audio Supplier

**Maryland/DC/Delaware Broadcasters Association • 2024**  
 Lisa Reynolds 919-714-7400  
 Maryland/DC/Delaware Association for Radio and TV Broadcasters

**MASV • 2024**  
 Jon Riis 613-299-4253  
 Large File Transfer

**Michigan Association of Broadcasters • 2024**  
 Dan Kelley 517-484-7449  
 Michigan Association for Radio and TV Broadcasters

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

**Minnesota Broadcasters Association • 2024**  
 Wendy Paulson 612-926-8123  
 Minnesota Association for Radio and TV Broadcasters

**Missouri Broadcasters Association • 2024**  
 Terry Harper 573-636-6692  
 Missouri Association for Radio & TV Broadcasters

**Montana Broadcasters Association • 2024**  
 Dewey Bruce 406-431-2139  
 Montana Association for Radio and TV Broadcasters

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

**MSWLab • 2024**  
 Michael Wells 806-433-2923  
 Broadcast IT Consulting Engineer

**MusicMaster • 2014**  
 Jerry Butler 352-231-8922  
 Advanced Music Scheduling Solutions

**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

**Nebraska Broadcasters Association • 2024**  
 Jim Timm 402-933-5995  
 Nebraska Association for Radio and TV Broadcasters

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

**North Carolina Association of Broadcasters • 2024**  
 Lisa Reynolds 919-821-7300  
 North Carolina Association for Radio and TV Broadcasters

**Ohio Association of Broadcasters • 2024**  
 Christine H. Merritt 614-228-4052  
 Ohio Association for Radio & TV Broadcasters

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

**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

**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

**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

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

**South Carolina Broadcasters Association • 2024**  
 Dody Yarbrough 803-732-1186  
 South Carolina Association for Radio and TV Broadcasters

**South Dakota Broadcasters Association • 2024**  
 Steve Willard 605-224-1034  
 South Dakota Association for Radio & TV Broadcasters

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

**Sutro Tower Inc. • 1989**  
 Raul Velez 415-681-8850  
 Broadcast Tower Leasing

**Synthax Inc. • 2020**  
 Brittany Hilton 754-206-4220  
 Audio Codecs and Converter Solutions

**TBC Consoles • 2023**  
 Steve Struhs 631-293-4068  
 Technical Furniture for Broadcast/AV

**Technical Broadcast Solutions, Inc. • 2018**  
 Robert Russell 302-414-0055  
 Engineering and Consulting Services

**Telestream • 2013**  
 Bryn McFadden 530-470-1300  
 Video and Workflow Solutions

**Televs USA, LLC • 2021**  
 Andy Ruffin 937-475-7255  
 Antennas Transmitters Measurement Distribution

**NEW SUSTAINING MEMBERS**

**IBA**  
 IOWA BROADCASTERS ASSOCIATION

**MDCD**  
 MARYLAND DC DELAWARE BROADCASTERS ASSOCIATION

**MAB**  
 Michigan Association of Broadcasters

**mbo**  
 minnesota broadcasters association

**NCAB**  
 NORTH CAROLINA ASSOCIATION OF BROADCASTERS

**TAB**  
 Tennessee Association of Broadcasters

**vab**  
 VIRGINIA ASSOCIATION OF BROADCASTERS  
 Live. Local. Keeping You Connected.

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

**Tennessee Association of Broadcasters • 2024**  
 Chris Baker 615-365-1840  
 Tennessee Association for Radio and TV Broadcasters

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

**Texas Association of Broadcasters • 2024**  
 Sydney Haisler Herrmann 512-322-9944  
 Texas Association for Radio & TV Broadcasters

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

**Unimur Inc. • 2001**  
 US Sales 315-699-4400  
 Tower Obstruction Lighting Designer, Manufacturer, Distributor

**Virginia Association of Broadcasters • 2024**  
 Douglas Easter 434-326-9819  
 Virginia Association for Radio and TV Broadcasters

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

**WideOrbit • 2012**  
 Brad Young 415-675-6700  
 Radio Automation and Playout

**Wisconsin Broadcasters Association • 2024**  
 Michelle Vetterkind 608-255-2600  
 Wisconsin Association for Radio & TV Broadcasters

**Members With 25 or More Years of Membership New Sustaining Members**  
 Become a sustaining member.  
 Apply online or call 317-846-9000.

# Member Spotlight: Mark K. Johnson

## Member Stats

**SBE Member Since:** 2001  
**Employer:** Gray Media Group WANF/WPCH/WKTB/WPGA  
**Position:** Director of Engineering  
**Location:** Atlanta  
**Chapter:** 5, Atlanta  
**I'm Best Known For:** Keeping a calm demeanor during times of stress

showed me everything I wanted to see or know more about in the back of the racks of the TV station.

**Mark riding with his wife, Lynnette, in Richmond, VA, and with his dog, Belle, in Mackinaw City, MI.**



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

**A.** The networking between the members and helping each other out when needed.

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

**A.** Walking into the first TV station as a five-year-old to be on a children's afternoon live TV show "Happy's Place" on WFFT in Fort Wayne. Walking through the hall back to the studio, I could see the control rooms and was amazed.

**Q.** Who was your mentor or who do you admire?

**A.** The late Tom Miller, former chief engineer at WFWA in Fort Wayne. He was the first engineer I got to work with, and he

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

**A.** I love the projects, big or small. Anything that I can do to improve the station and make it better for the next person is what makes me most satisfied.

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

**A.** ...I love riding my mountain bike. Give me a trail and let me go. It gives me time to escape and enjoy the outdoors. Having my dogs ride with me is a bonus! The dogs are small and well protected on the ride!

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

**A.** My first overseas adventure was to South Africa where I was able to work with a small video content creation team on storytelling, techniques, and general workflow solutions to power their projects. This spring boarded me to travel around to help other small content creators in several different countries around the world.

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

**A.** Tektronix Video WFM2300. I'm a video geek. I love this device.

## SBE 2024 Membership Drive Prize Winners

Congratulations to these Membership Drive recruiters. Information about the Drive is on page 8 of this issue.

Prize Donor	Prize	Winner	Location	Ch.
SBE	Trip to the SBE National Meeting	Mark Johnson	Atlanta, GA	5
Davicom	\$50 Amazon gift card	Gregory Carter	Fairport, NY	57
Heartland Video Systems	Yeti insulated tumbler and mini-light	Russ Awe	Madison, WI	24
Heartland Video Systems	blue drinking glass and mouse pad	Anthony Butler	Twin Falls, ID	145
Heartland Video Systems	clear drinking glass and mouse pad	Robert Jenkins	Staunton, VA	78
Heartland Video Systems	graph-ruled notebook, tote bag and mini-light	Geary Morrill	Saginaw, MI	91
Heartland Video Systems	Rocketbook notebook	Geary Morrill	Saginaw, MI	91
Heartland Video Systems	office desktop pack	Garren Warwick	Greenville, SC	86
Heartland Video Systems	\$100 Amazon gift card	Tom Zocolo	Youngstown, OH	122
Orban	Optimod-PCn 1600 with Nielsen license	Garren Warwick	Greenville, SC	86
Telos	Telos swag bag (2)	John Conway	Owasso, OK	56
Telos	Telos swag bag (1)	Mackeznie Jacobson	Quincy, IL	49
SBE	copy of CertPreview	Tim Berry	Knoxville, TN	113
SBE	Webinars by SBE registration	Michael Echenique	Redlands, CA	131
SBE	\$25 gift certificate to SBE Store	Mark Jenkins	Wichita, KS	3
SBE	SBE-logoed shirt	Jeffrey Oestreich Sr.	Harrisburg, IL	121
SBE	SBE-logoed hat	Anthony McDaid	San Diego, CA	36
SBE	SBE coffee mug	Geary Morrill	Saginaw, MI	91
SBE	SBE coffee mug	Dana Nahumck	S. Burlington, VT	22
SBE	Next-Generation Video Coding and Streaming	Zachary Brockett	Grand Terrace, CA	131
SBE	Basic Electronics Theory and Practice	Mackeznie Jacobson	Quincy, IL	49
SBE	Cybersecurity	Raymond Mayberry	Richmond, VA	60
SBE	Multimedia Networks	Brian Zittlau	Winterset, IA	109
SBE	Video Over Wireless	Garren Warwick	Greenville, SC	86

## METADATA, from p. 12

Network Address Translation (NAT). In this practice, the commonly used IP ports (80, 443, 21, 22, 23) are 'translated' so they appear on random, little-used ports on the public side of the firewall. It's certainly not the only security practice that you should apply, but it's something, at least.

If you can communicate with the MT from the MS machine, but things are still not working, flip the laptop to the other end of the pathway. Ideally, you would set up the laptop with the same IP address as the MT, *unplug the MT from the network* and use that same cable to connect the laptop. Launch Port Peeker and set it to record the data coming in on the designated IP port as configured on the MT. If you can receive the data coming from the MS device, then any remaining issue is one of MT configuration or syntax.

Capture some of the incoming data from the MS, that will be useful for diagnostics. Since MT and MS are typically not from the same manufacturer, be aware that some correspondence and communication will be necessary to iron out the syntax minutiae.



# WELCOME TO THE SBE

## NEW MEMBERS

Juan A. Acevedo - North Potomac, MD  
 Eva A. Anderson - Bemidji, MN  
 Bryan J. Anderson - Garden Grove, CA  
 Josh L. Artman - Allston, MA  
 Greg Berry - Tulsa, OK  
 Karl Bloom - Youngstown, OH  
 Alexander Bohne - Womelsdorf, PA  
 Tudor Bologan - New Castle, DE  
 Sarah Breitbart Frischling - Needham, MA  
 Austin N. Burch - Rio Rancho, NM  
 Jeff C. Crane - Vista, CA  
 Cory A. Cullip - Twin Falls, ID  
 Thomas Dutra - Gainesville, GA  
 Randy Elder - Newton, KS

Mitchell D. Elliott - Park City, UT  
 Adam Ferguson - Webster, MA  
 Alex Ferrel - Peoria, IL  
 Matthew P. Finamore - Bel Air, MD  
 Darrin Frazier - Dale City, VA  
 Phillip Gebers - Lincoln, NE  
 Craig Georg - Juneau, AK  
 Alexandra R. Giles - Canisteo, NY  
 Henry Goodman - Henrico, VA  
 Charles J. Helstein - Phoenix, AZ  
 Shane R. Honeycutt - Nashville, TN  
 Justin R. Hosa - Billings, MT  
 Samir Jafarov - New Castle, DE  
 Matthew Johnston - Billings, MT

Keith Kennett - Geneseo, IL  
 Christopher J. Larke - Vancouver, BC  
 Ted Lothrop - Los Angeles, CA  
 Gerome Maloloy-on - Edmonton, AB  
 David J. McDonald - Wichita, KS  
 Brandon L. Meiklejohn - Baltimore, MD  
 Ethan A. Moore - Stanton, KY  
 Alakbar Nasirov - New Castle, DE  
 Tyler C. Norling - Dade City, FL  
 Lauren A. Padua - London, ON  
 Jeffery D. Perry - Lansing, MI  
 Stewart M. Pierce - Cincinnati, OH  
 Alex P. Polge - Rochester, NY  
 Collin Potter - Pullman, WA

Blane E. Quilhot - Marshall, MI  
 Steven Rangel - Garland, TX  
 Tyler Rieves - Grand Ledge, MI  
 William D. Sanders - Portsmouth, VA  
 Matthew L. Schrecke - Liberty, IL  
 Jeff D. Sengpiel - Simi Valley, CA  
 Malaman Serghei - New Castle, DE  
 James Sheldon - Bozeman, MT  
 Alan R. Smith - Brighton, TN  
 John H. Sommer - Minneapolis, MN  
 Anthony J. Spano - New Windsor, NY  
 Mark D. Stanley - Minneapolis, MN  
 Tracy Strode - Carbondale, CO  
 Ed Trefzger - Rochester, NY  
 Gherman Victor - New Castle, DE  
 Kris A. Wotipka - Lafayette, LA  
 Kyle Yardley - Provo, UT  
 Viktor Zabelin - Broken Arrow, OK

## NEW STUDENT MEMBERS

James L. Draper - Converse, TX  
 Alex K. Fregger - Amarillo, TX  
 Dejaun T. Guishard - Long Island, NY  
 Remy Rattner - Cos Cob, CT  
 Nolan L. Trapp - Rochester, NY  
 Jackson Warren - Yorktown, NY  
 Jackson W. Young - Huntsville, ON  
 Hollis Zimmerman - New Market, MD

## RETURNING MEMBERS

Brian K. Adams - Horseheads, NY  
 Kelsey Black - Boise, ID  
 Anthony D. Butler - Twin Falls, ID  
 Paul T. Garrett - Pinellas Park, FL  
 Edward A. Jones - Columbus, OH  
 Richard W. Krumreig, III - Sheffield Village, OH

David W. Lankinen - Roseville, MN  
 Jeremy D. Morris - Senoia, GA  
 Garry L. Moss - Sandy, UT  
 Nolan E. Stephany - Webster, NY  
 Joseph M. Strobel - South Riding, VA  
 Timothy A. Tinney - Carrollton, GA  
 Hunter E. White - Charlottesville, VA

## NEW ASSOCIATE MEMBERS

Ellen K. Langsetmo - Crystal, MN

## RETURNING SENIOR MEMBERS

Craig L. Beardsley - Chicago, IL

## RETURNING STUDENT MEMBERS

Emily B. Campbell - Mineola, NY

## In Memoriam

Haldene L. Beach - Huntsville, AL  
 Richard Burden - Canoga Park, CA  
 Mark G. Burg - West Salem, WI  
 Lawrence Kozal - Grand Rapids, MI  
 Albert L. Smith, Jr. - Harleton, PA

## AWARDS, from p. 1



## Telos Alliance EAS At The Edge

Loud. Here's how to manage the National Emergency Alert System Test<sup>®</sup> published on techradar.com on October 3, 2023.

## Chapter Check

### SBE Chapter Engineers of the Year

In conjunction with the SBE National Awards program, SBE members who are honored by chapters as a chapter engineer of the year were automatically entered into consideration for the Robert W. Flanders SBE Engineer of the Year award.

Chapters set their own criteria to make their selections. These seven SBE members were selected by their chapters for the local honor this year. The chapter honorees will be featured in an upcoming issue of *The Signal*.

- Chapter 15 New York:** Herb Squire, CSRE
- Chapter 16 Seattle:** James Dalke, CPBE, 8-VSB, AMD, CBNT
- Chapter 17 Central Minnesota:** Taylor Barker
- Chapter 22 Central New York:** Alan Jurison, CPBE, AMD, DRB, CBNE
- Chapter 38 El Paso:** Mario Jimenez
- Chapter 70 Northeast Ohio:** Tracey Liston
- Chapter 148 Eastern Europe:** Davit Robakidze, CTO

## Statistical Awards

The following awards are determined with statistical information based on Dec. 31, 2023, figures on file at the SBE National Office. Chapters with 26 members (the chapter median) or fewer are Class A. Chapters with 27 member or more are Class B.



SBE15.com website

### Percentage Growth of New Members:

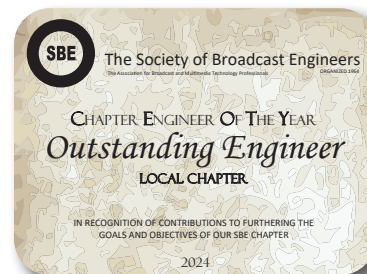
- Class A: 111 Huntsville
- Class B: 60 Richmond

### Highest Percentage of Certified Members:

- Class A: 115 Southern Idaho
- Class B: 131 Inland Empire

### Highest Percentage of Member Attendance at Meetings:

- Class A: 145 Magic Valley, ID
- Class B: 60 Richmond



## MEMBERS ON THE MOVE



➤ **Matthew Chambers**, CBRE, is a broadcast engineer at Griffin Media.

➤ **Catalin**

**Popescu**, CPBE, PE, is principal electronics engineer, production engineering at Abiomed, Saco, ME.



➤ **Matt Leland** is now vice president of sales at Burk Technology, Oxford, ME.



## MARK YOUR CALENDAR

S | M | T | W | T | F | S

**SBE Certification Exams** *Local Chapters*  
 Aug. 2-12, 2024 [sbe.org/certification](http://sbe.org/certification)  
*Application deadline closed*

**SBE Election Ends**  
 Aug. 7, 2024 [sbe.org](http://sbe.org)

**SBE WEBxtra** *online*  
 Aug. 19, 2024 [sbe.org/webxtra](http://sbe.org/webxtra)

**SBE Ennes Workshop** *Jekyll Island, GA*  
 Sept. 7, 2024 [sbe.org](http://sbe.org)

**SBE National Meeting** *Middleton, WI*  
 Sept. 10-11, 2024 [sbe.org](http://sbe.org)

**Midwest Regional Broadcasters Clinic** *Middleton, WI*  
 Sept. 10-11, 2024 [wi-broadcasters.org](http://wi-broadcasters.org)

**SBE WEBxtra** *online*  
 Sept. 23, 2024 [sbe.org/webxtra](http://sbe.org/webxtra)

**SBE Ennes Workshop** *Biloxi, MS*  
 Sept. 24-25, 2024 [sbe.org](http://sbe.org)

**Midwest Broadcast & Multimedia Technology Conference** *Columbus, OH*  
 Oct. 2-3, 2024 [mbmtc.oab.org](http://mbmtc.oab.org)

**SBE Ennes Workshop** *Wichita, KS*  
 Oct. 21, 2024 [sbe.org](http://sbe.org)

**SBE WEBxtra** *online*  
 Oct. 21, 2024 [sbe.org/webxtra](http://sbe.org/webxtra)

**SBE Certification Exams** *Local Chapters*  
 Nov. 1-11, 2024 [sbe.org/certification](http://sbe.org/certification)  
*Application deadline Sept. 6, 2024*

**SBE WEBxtra** *online*  
 Nov. 18, 2024 [sbe.org/webxtra](http://sbe.org/webxtra)

**SBE WEBxtra** *online*  
 Dec. 16, 2024 [sbe.org/webxtra](http://sbe.org/webxtra)

Send your news to Chriss Scherer at [cscherer@sbe.org](mailto:cscherer@sbe.org).

# Live & Local — National & Worldwide

Do it all with  
**ACCESS**   
**NX**

A portable IP audio codec for going live from anywhere & delivering any story, no matter how big or small.



[info@comrex.com](mailto:info@comrex.com) | 1-978-784-1776 | [www.comrex.com](http://www.comrex.com)

