

TECHNOLOGY & ENGINEERING EMMYS

**OCTOBER 9, 2024** 

THE PRINCE GEORGE BALLROOM / NEW YORK







# Congratulations to all the Emmy winners

We are honored to be recognized by the National Academy of Television Arts and Sciences with an Emmy Award for Technology & Engineering:

# **Design and Deployment of Efficient Hardware Video Accelerators for Cloud**

We are proud to be pioneers in cloud-scale video acceleration that is transforming the future of video across live streaming, broadcasting, gaming, and much more, to enable richer experiences at lower costs with improved energy efficiency.

Many thanks to our teams and industry partners who contributed to the development of these technologies and to all of our teammates who continue to drive innovation for our customers.



# TECHNOLOGY & ENGINEERING EMMYS



# **WELCOME**

A MESSAGE FROM THE CHAIRMAN, TERRY O'REILLY



Good evening, and welcome to the 75th Annual Technology & Engineering Emmy® Awards, honoring the very best in technical advancement in television and its related industries.

Tonight, we celebrate the remarkable advancements that have taken us from a time when "television" was a small-screened appliance in a limited number of living rooms to today: where we are privileged to be able to enjoy the best in information and entertainment media, anytime and any-

where. We honor individuals and organizations whose work is so impactful that an expert panel of industry technologists have, after careful deliberation, determined that they are deserving of an Emmy Award.

We are also honored this evening to introduce a new category to our Emmy Awards, spotlighting Excellence in Production Technology. This is a "judged competition" (as contrasted to this evening's other categories): nominees have been evaluated and ranked by a panel of anonymous peer experts, with the result of their confidential balloting known only to the auditors at Lutz & Carr. The winner (or winners) will be announced at this evening's gala.

For decades, it has been the honor and privilege of the National Academy of Television Arts and Sciences to shine its spotlight on excellence in all aspects of the television industry. Tonight, it's my great pleasure to join you in celebrating the remarkable technical achievements that have advanced our industry so far, so fast.

If the past few decades are any indication, we are in for amazing breakthroughs in the years to come.

But first, let's celebrate together the 2024 Technology and Engineering Emmy Award honorees.

I hope you have a great evening!

Terry O'Reilly

Chair

The National Academy of Television Arts & Sciences

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Photography by Joseph Sinnott Photography Photos from the event can be viewed at photos.theemmys.tv

#### **ABOUT NATAS**

The National Academy of Television Arts & Sciences (NATAS) is a service organization dedicated to the advancement of the arts and sciences of television and the promotion of creative leadership for artistic educational, and technical achievements within the television industry. It recognizes excellence in television with the coveted Emmy® Awards for News & Documentary, Sports, Daytime, and Children's & Family programming, as well as achievements in television Technology & Engineering.

NATAS membership consists of more than 18,000 broadcast and media professionals represented in 19 regional chapters across the country. Beyond awards, NATAS has extensive educational programs including regional student television and its Student Award for Excellence and the National Student Production Awards for outstanding journalistic work by high school students, as well as scholarships publications and major activities for both industry professionals and the viewing public.







# **HONOREES**

The National Academy of Television Arts & Sciences (NATAS) was founded in 1955. It is dedicated to the advancement of the arts and sciences of television and the promotion of creative leadership for artistic, educational and technical achievements within the television industry. It recognizes excellence in television with the coveted Emmy® Award. The Technology & Engineering Emmy Awards are awarded to a living individual, a company, or a scientific or technical organization for developments and/or standardization involved in engineering technologies that either represent so extensive an improvement on existing methods or are so innovative in nature that they materially have affected television. Here are this year's honorees:

**CREATION AND** IMPLEMENTATION OF HDR STATIC LUT, SINGLE-STREAM LIVE PRODUCTION

**BBC NBC** 

PIONEERING DEVELOPMENT OF IP ADDRESS GEOLOCATION **TECHNOLOGIES TO PROTECT CONTENT RIGHTS** 

MLB **QUOVA** 

PIONEERING DEVELOPMENT OF INEXPENSIVE VIDEO TECHNOLOGY FOR ANIMATION

LYON LAMB (BRUCE LYON AND JOHN LAMB)

TARGETED AD MESSAGES DELIVERED ACROSS PAUSED MEDIA

**DIRECTV** 

SPECTRUM AUCTION DESIGN

FCC **AUCTIONOMICS** 

LARGE SCALE DEPLOYMENT OF SMART TV OPERATING SYSTEMS

**SAMSUNG** LG **SONY VIZIO PANASONIC** 

**PIONEERING TECHNOLOGIES ENABLING** HIGH PERFORMANCE **COMMUNICATIONS OVER CABLE TV SYSTEMS** 

**BROADCOM GENERAL INSTRUMENT (COMMSCOPE)** LANCITY (COMMSCOPE) 3COM (HP)

PIONEERING DEVELOPMENT OF MANIFEST-BASED PLAYOUT FOR FAST (FREE **AD-SUPPORTED STREAMING** TELEVISION)

**AMAGI PLUTO TV TURNER** 

**DESIGN AND DEPLOYMENT** OF EFFICIENT HARDWARE **VIDEO ACCELERATORS** FOR CLOUD

**NETINT AMD GOOGLE** META

**DEVELOPMENT OF STREAM SWITCHING TECHNOLOGY BETWEEN SATELLITE BROADCAST AND INTERNET** TO IMPROVE SIGNAL RELIABILITY

**DIRECTV** 

# **NOMINEES**

## **EXCELLENCE IN PRODUCTION TECHNOLOGY**

**CHRISTMAS AT GRACELAND** 

**NBC / DONE + DUSTED** 

Nic Duggar

THE CORONATION OF H.M. KING CHARLES III

#### **BBC / NEUTRAL WIRELESS / UNIVERSITY OF** STRATHCLYDE / LIVEU

Douglas Allan Dani Anderson Simon Ashton

Kenneth William Barlee

Malcolm Ronald Brew

Simon Elev

David Fowler Purminder Gandhu

Damien Muir **Cameron Speirs** 

**Robert Stewart** 

Andy Reed

Mark Waddell

Ian Wagdin

Samuel Robert Yoffe

#### THE SANTA CLAUSES, SEASON 2

#### **DISNEY+ / INDUSTRIAL LIGHT & MAGIC**

Alan Bucior

Jose Luis Gomez Diaz Stephen Hill

David Hirschfield

Rodney Huff

Mike Jutan

Matthew Lausch Matthew O'Neil

Nick Rasmussen

Scott Richards







# RESILIENT

Entrepreneur, inventor and executive, William Wang, is best known for pioneering the world's first internet-connected TV and creating VIZIO, a leading TV and soundbar maker in the United States. Wang has served as Founder, CEO and Chairman of VIZIO since its inception in 2002. Under his leadership, VIZIO pioneered the smart TV revolution, bringing premium-quality, innovative TVs and soundbars into millions of American homes at affordable prices.

"I started in tech support, because I couldn't really get a job as an engineer...My GPA, I think, was 2.3 or 2.4, and I couldn't get a real engineering job."

- WILLIAM WANG, CEO AND CO-FOUNDER OF VIZIO

He is a shining example of the American dream in action. Born in Taiwan, Wang came to the United States at age 12, where he learned English and eventually earned a Bachelor of Science degree in electrical engineering from the University of Southern California. After a start in customer service for a computer display company, Wang saw an opportunity to build better monitors. In 1986 he founded MAG InnoVision, which later acquired Princeton Graphic Systems. A decade later, when Apple and the internet era began to accelerate, Wang helped create the world's first smart device (TV) and would soon bring plasma displays, HDTV technology and the first internet-connected TVs to consumers. "This was before smartphones. I had this idea: Why don't we put a home screen on the TV?" said Wang.





The project wasn't an overnight success like we may think. "The project was a disaster for me. Lost a lot of money. The market wasn't really there and there weren't enough applications — and at the same time, the internet was too slow," he remembers.

In 2002, after noticing legacy consumer electronics brands would not accelerate the adoption of digital TV in the U.S., he

"William had a whole life before the TV business. He set the standards in the computer industry for what the resolution was, what the scan rate was, the size of monitors. And William and I would sit down and decide what the next standard was going to be and everybody would follow us."

– TED WAITT, CO-FOUNDER, GATEWAY





# LIFETIME ACHIEVEMENT HONOREE

mortgaged his house to start VIZIO, Inc., with the first products hitting U.S. retail shelves in the second quarter of 2003.

A plane crash and business crash survivor, Wang's perseverance led to the introduction of the first line of HDTVs at Costco at one-third of the price of competitors. Within two years, VIZIO was a top-selling TV in America. VIZIO later introduced a smart TV and was among the first to offer the ability to stream Netflix and YouTube on an internet-connected TV. In 2010, VIZIO introduced a new line of soundbars — and in 2016 became the number one selling soundbar brand in America with popularity driven by a combination of affordability, high-quality audio and ease of use.

By 2016 VIZIO launched SmartCast, a smart TV operating system, allowing streaming content from various apps and services. Three years later, VIZIO Ads successfully transformed the hardware company into an integrated platform where software and hardware work together to form the ultimate viewing experience.

His success seemingly knows no bounds. The company enjoyed a public offering in 2021 followed by an acquisition announcement with partner Walmart this year. Wang has applied relentless commitment to creating value for consumers, and turned VISIO into a trusted household name.

"Really, the one of the proudest moments in my career in the last 20 years was when I was looking around and realizing we created an enterprise which is made up by many, many talented individuals," says Wang. Adding, "And it's not just myself anymore. I'm really proud of my team. Everybody who supported us and other consumers who appreciate us. I'm really just a part of that now."

He says the recognition he cherishes most is the impact his innovations have had on improving the everyday lives of consumers and fostering a culture of excellence within his company.

"He comes in with a plan written on a Singapore Airlines napkin. He wrote out the cost of the plasma module, the cost of the chassis and all the import duty costs and everything that he thought just at a fundamental level of what actually it would take to bring a 42 inch plasma to market. And he said. I think we can do this. I know we can do this."

- LAYNIE NEWSOME, CSO AND CO-FOUNDER, VIZIO

"He said he'd be bigger than Sony in three years, and he would do over \$1 billion in five years. And true to his vision, he was bigger than Sony in about two and a half years, and he did over \$1 billion in around five years."

- TIM FARMER, VICE PRESIDENT GMM MERCHANDISING, COSTCO WHOLESALE (1989-2020)

"What made William really special as a leader is that seemingly in the eye of the storm, he has this calmness and ability to rally the troops and really get the best out of the team and get the best out of you."

> - JERRY HUANG, SENIOR VICE PRESIDENT - GENERAL COUNSEL & CORPORATE SECRETARY, VIZIO

"The one thing that William has taught me, in order to make something become a reality, you have to keep grinding at it. You have to keep trying, trying and trying again. Falling down, getting up. Dust yourself off and try it again. Almost nothing ever works the first time around, right? And it's like William has this ability to see the vision, to see the trials and efforts that are going to be required into it and to be able to motivate people to keep putting in that walk to make one step at a time to make this thing into a reality."

- ZEEV NEUMEIER, FOUNDER INSCAPE

"... he's so creative, resilient, and he just keeps trying new ideas. Sometimes he's ahead of where the market is. And he is ahead of the customer, but he just always finds ways to partner with other organizations, find solutions, and put his creativity to work. When it comes to William personally, the thing I respect about William is his work ethic. And the way he cares for other people."

- JOHN FURNER, PRESIDENT AND CEO, WALMART

"William is an entrepreneur, he's an innovative guy. And what I love about him is that he's willing to take risks, even big risks after he had a big and successful company. I think that's very, very hard to do once you've had that success, but William is unique and wanted to do bold things even after that point - and he did!"

- GREG PETERS, CO-CEO, NETFLIX









# We were first.

# VPU category creator.

We created Video Processing Units with AI to exponentially reduce costs, shrink server footprint and expand global reach.

100,000 VPUs sold

ONE TRILLION minutes streamed





# **TELEVISION ENGINEERING PIONEERS**

by Mark Schubin

Under its current rules, the Academy imposes an additional obligation on individuals over companies or organizations. Aside from their work having to "materially have affected television," individuals must also be alive. The Technology and Engineering Awards Committee has enough work judging achievement without having to deal with issues of probate.

Nevertheless, after a demonstration of the Siemens artificial eye (honored with Emmy® Award recognition in 2017), there has not been a single year since 1877 without significant television engineering work taking place, and much of that work was by individuals not associated with companies or organizations. Two of the oldest companies to have been honored with Emmy Awards, AT&T and General Electric, for example, were both established long after 1877.

The Television Engineering Pioneers List, therefore, was established by the Academy to honor those deceased individuals whose efforts materially have affected television but have not yet been recognized by an Emmy Award and have been deemed ineligible to be recognized by a future Emmy Award. Pioneers List candidates are investigated and evaluated just as Technology and Engineering Emmy Award candidates.

The list already has members from France, Germany, Ireland, Poland, Portugal, the United Kingdom, and the U.S. It is expected that new members will be added each year.

#### THE PREVIOUS INDUCTEES:

- 1 "THE CLASS OF 1877" George Roswell Carey, Adriano de Paiva, Frederick Harrison Glew, Julijan Ochorowicz, William Edward Sawyer, and Constantin-Marie Senlecq
- 2 EARLIEST-KNOWN VIDEO IMAGE Denis Daniel Redmond
- 3 ESTABLISHING TELEVISION RESEARCH AS REAL -William Edward Ayrton, John Perry, and Shelford Bidwell
- 4 A VISIONARY Maurice Leblanc
- 5 FIRST TELEVISION PATENT Paul Gottlieb Nipkow
- 6 THE REFLECTORS Llewelyn Birchall Atkinson and Jean Lazare Weiller
- 7 THE INFLUENCERS Thomas Alva Edison, Jan Szczepanik, and Constantin Dmitrievich Perskyi (in Russian константин дмитриевич перский)

#### THE 2024 INDUCTEES:

#### **3** CATHODE RAY TUBES (CRT) — Karl Ferdinand Braun, Boris Lvovich Rosing and Alan Archibald **Campbell Swinton**

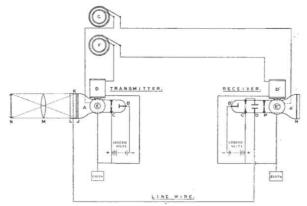
Although others before him discovered cathode rays and created tubes that demonstrated them, Braun's work on the CRT was so influential that in many parts of the world, including Germany, Japan, and Korea, a CRT is known as a Braun tube. Braun was the first to suggest the use of a CRT with scanning as a display device in an 1897 paper, but the paper described the study of variable currents, not television. He shared the 1909 Nobel Prize in physics with Guglielmo Marconi for their work in wireless telegraphy.



Braun is sometimes credited with the invention of the television picture tube. He did not do so. His 1909 Nobel lecture makes reference to the CRT but not to any form of television. Rosing appears to have been the first to apply a CRT to television by introducing a critical element not in Braun's tube,

the ability to modulate the electron beam to allow the display of shades of gray. Rosing filed a patent application in Germany in 1907 for a television system using a picture-tube display and later demonstrated it for Scientific American. Rosing's student, who worked on the picture-tube project, was Vladimir Kosma Zworykin, who would later work on electronic television systems at Westinghouse and RCA.

Rosing's picture tube was entirely electronic, but his camera used mechanical mirror-drum scanning. Campbell Swinton first publicly suggested the possibility of a camera tube in a letter to Nature in 1908, though he made some attempts to create one as early as 1903. In a 1911 address, he added a diagram of all-electronic scanned television. It is, essentially, a diagram of television as it existed from 1937 until the advent of solid-state cameras and flat-panel displays.

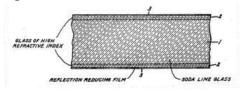


#### **O** DEVELOPMENT OF LIGHTING, VENTILATION. **AND LENS-COATING TECHNOLOGIES – Hertha Ayrton and Katharine Burr Blodgett**

All of the members of the Television Technology Pioneers List to this point were trying to figure out the most basic ways that images might be captured, transmitted, and displayed, but there's much more to television technology. Consider that the first recognizable video image of a human face almost wasn't seen because that person feared the hot lighting would set his hair on fire. Lighting and ventilation are two key elements of modern television systems, and all modern television cameras use lenses. Two pioneers made sure the before-thesensor technology was ready, and they were women.

Born Phoebe Sarah Marks in 1854, Ayrton adopted the name Hertha (the ancient Germanic earth goddess) as a teenager; her surname came from her teacher and husband, Television Technology Pioneers List member William Ayrton, whom she assisted in his television work. The Ayrtons wanted her to gain her own reputation, so she began researching and experimenting on electric arc lighting, which tended to flicker and hiss at the time. She was the first woman to read her own paper, "The Hissing of the Electric Arc," before the Institution of Electrical Engineers and became its first female member. She was also the first woman to win a prize from the Royal Society for another paper on the subject. She eliminated both problems, allowing electric-arc lighting to be used for television production. She later researched air movement and developed a ventilation system that saved many lives from gas attacks in World War I. She was issued 26 British patents, 13 related to arc lighting and eight to ventilation systems. Cambridge University offers a research fellowship named in her honor.

Born in 1898, Blodgett became the first woman awarded a Ph.D. by Cambridge University. Like Ayrton, Blodgett studied gas warfare, in her case the chemical composition of gas masks. At General Electric, she worked on thin films, eventually coming up with a coating said to make glass "invisible." Uncoated glass typically reflects about 4% of incident light per surface. A modern television zoom lens might have 36 elements, or 72 surfaces; if each surface reflected 4% of the light, less than 6% would make it through the lens, and the remaining reflections would wreak havoc on the picture quality. Blodgett's "invisible glass" essentially made high-quality television camera lenses possible. She was issued eight U.S. patents, four associated with "invisible glass" and two related to the technology that makes flat-panel television displays possible. As an indication of the regard given to female scientists at the time, her patent lawyer referred to himself as "His Attorney;" she was also recognized as one of the most distinguished scientists in the U.S. in American Men of Science. London's Institute of Physics awards an annual Katharine Burr Blodgett Medal and Prize in her honor.



More information on the Television Engineering Pioneers List may be found at theemmys.tv/tech/pioneers/.





# THE NATIONAL ACADEMY OF **TELEVISION ARTS & SCIENCES**

TECHNOLOGY & ENGINEERING EMMYS

A Non-Profit Association Dedicated to the Advancement of Television

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#### **Executive Producers**

LISA ARMSTRONG ADAM SHARP

#### Director

NIC DUGGER

Host DAVID POGUE

Writer, Editor & Stage Manager STEVE ULRICH

> Associate Produce DELROY BINGER

Emmy Envoy LOUISA SCHRAMM

Lifetime Achievement Honoree WILLIAM WANG

**Production Support By** Ansonia Prompting **Teleprompter Operator** 

MARICLARE RIVERA **Production Support By** 

> Wizard Studios **Project Manager** PAUL VASSALLO

**Audio Lead** ADAM WOZNIAK

Audio Tech **ANTHONY FRASER** 

**Video / Projection Technicians** OLIVER ALLAUX **EVAN LUKASH** 

Lighting Programmer **ELIJAH LATTY** 

**Lighting Technicians** JOHNNY PERILLA **CHRISTOPHER SANTANA** 

**Camera Operators EMILIO GUARINO** KYLE HARRIGAN STEVE MARCHIARULLO

Shader STEVE DOMBROWSKI

**Production Staff** CARA FORTUNA LARA GATES **CHERIE HOUSLEY** DÉSIRÉE M. JEAN-JÉROME LUKE SMITH

JESSICA WARD

**Art Director** ADAM SHARP

**Graphic Design By SPILLT** SARAH BIASELLO, Producer

ED RHINE, Executive Creative Director HOLLEE WINANS, Design & Animation

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# THIS YEAR'S HOST: DAVID POGUE



David Pogue has won seven Emmys® as a correspondent on CBS Sunday Morning. He's also a New York Times bestselling author, a five-time TED speaker, and host of 20 NOVA science specials on PBS. He's written or cowritten more than 120 books, including two

novels, six books in the for Dummies series, and a how-to book called, How to Prepare for Climate Change.

In his earlier life, he wrote the weekly tech column for The New York Times for 13 years, and before that, he spent ten years conducting Broadway musicals. Oh – and he was the Ohio spelling bee champion in 1976

# Join us TOMORROW for a special panel at



# AI TAKES THE FIELD: The A-List Panel on the Future of Real-Time Sports Broadcasting

Al and machine learning are transforming how we experience sports by generating real-time, personalized highlight reels, allowing viewers to engage with the best moments instantly. What once required significant time and resources is now done automatically, making highlights faster, smarter, and more accessible than ever. But this is just the beginning. This panel will explore how Al is set to revolutionize not just highlight curation, but the entire landscape of sports broadcasting — from real-time updates to fully personalized viewing experiences — reshaping how we watch sports on television and beyond.

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Senior Vice President, Global
Entertainment Engineering, Comcast



AARON BAUGHMAN
Fellow & Master Inventor, IBM



AMIR GELMAN
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