



# National Inventors Hall of Fame<sup>®</sup>

Honor. Inspire. Challenge.





## National Inventors Hall of Fame®

We believe our role as a Hall of Fame is not only to honor the individuals whose inventions have made the world a better place, but also to ensure that American ingenuity continues to thrive in the hands of coming generations. This belief is what drives our mission: recognizing inventors and invention, promoting creativity and advancing the spirit of innovation and entrepreneurship.

True to our mission, we reach beyond embodying and embracing the characteristics of a traditional Hall of Fame to reinvent what a Hall of Fame, a museum and even what a monument can be and do. Instead of being defined by the past, we invest in the future. Instead of being content as a static brick-and-mortar museum, we continue to push the limits and challenge ourselves to be a dynamic monument that comes to life in classrooms, curricula and competitions throughout the country.

In partnership with over 2,800 schools and districts nationwide, we connect inventors to creative minds of all ages to provide these future leaders with the experiences and tools they need to help them realize their innovative potential.

**We are the National Inventors Hall of Fame® (NIHF): the driving force behind lifelong innovation, paying forward America's rich history of invention and securing our country's competitive advantage for the future.**

**Honoring inventors.**

**Inspiring creativity.**

**Challenging the next generation.**



## The NIHF Innovation Ecosystem

### Our Approach to Cultivating Innovation in the World Around Us

NIHF is the expert on innovation. We create the best STEM programming because we are the only organization with a direct connection to insights from world-changing inventors. We have built an Innovation Ecosystem to introduce children to the innovation process early on and continue developing that curious spirit throughout their adult life.

## Innovation Is Our Foundation



NIHF Inductee Victor Lawrence, inventor of Signal Processing in Telecommunications, making a visit to Camp Invention.



NIHF Inductee Eric R. Fossum, inventor of the CMOS Active Pixel Image Sensor Camera-on-a-Chip, making a visit to the NIHF STEM Middle School.



NIHF Inductee Radia Perlman, inventor of Robust Network Routing and Bridging, working with students at Camp Invention.







NIHF Inductee Edmund O. Schweitzer III, inventor of the first microprocessor-based digital protective relay, adds his plaque to the Gallery of Icons™ at the 2019 Illumination Ceremony.



Andrei Iancu, Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office, shakes hands with NIHF Inductee Chieko Asakawa, inventor of the Home Page Reader, the first practical voice browser to provide effective internet access for blind and visually impaired computer users, at the 2019 Induction Ceremony.



The 2019 class of Inductees is joined by past Inductees in attendance at the 47th Annual Induction Ceremony.

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***“I believe that inventing is the core creativity of humanity. We are all in this together and we all invent to help other people. So encourage your peers, encourage your children, encourage yourself to join a great team...the invention team.”***

– Bill Warner, 2019 NIHF Inductee, Digital Nonlinear Editing System

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## Honoring the Greatest Innovators

NIHF was founded in 1973 in partnership with the United States Patent and Trademark Office to honor the individuals who conceived, patented and advanced the greatest technological achievements of our nation. Since then the organization has evolved to be the nation's leading nonprofit providing STEM and innovation-focused education programs, competitions and events. However, we continue to embody the traditional aspects of a Hall of Fame through our annual Induction Ceremony and museum space.

### NIHF Museum

The NIHF Museum is the National Monument to Innovation®, offering unique exhibits that tell the inspirational stories of America's greatest innovators. Located on the campus of the United States Patent and Trademark Office headquarters in Alexandria, Virginia, the museum space enables visitors to explore the nearly 600 Inductees and their technological achievements through interactive kiosks and exhibits. Museum exhibitions are regularly rotated to highlight the current class of Inductees and include various sponsored exhibits focused on the history and importance of intellectual property.

### NIHF Induction Ceremony

The NIHF Induction Ceremony is our nation's Greatest Celebration of American Innovation®, annually honoring and celebrating the world's foremost inventors and their contributions to society. This reverent affair not only hails the outstanding achievements of United States patent holders, but also brings those men and women together with innovation leaders, members of the public and fellow innovators.

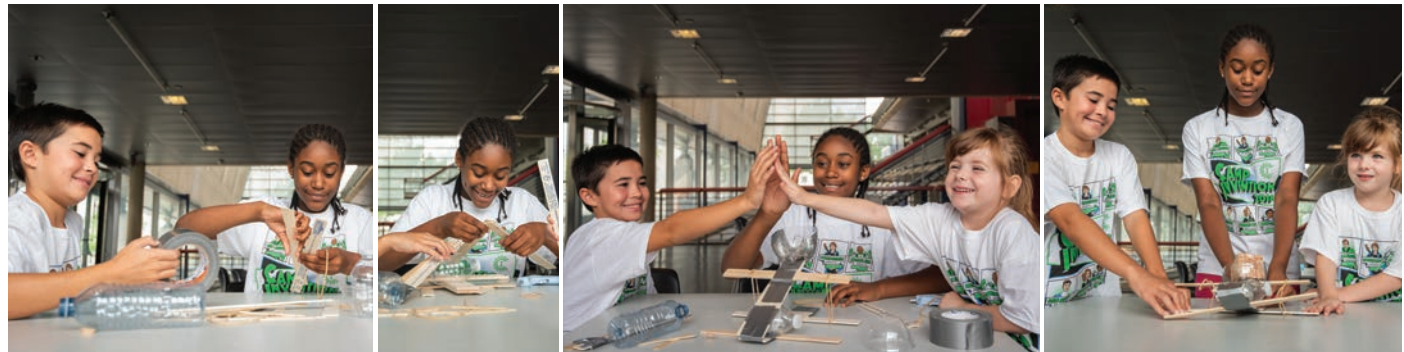
NIHF maintains an annual tradition of selecting Inductees through a process that accepts nominations from all sources and relies on a panel of experts in the fields of science, technology, engineering and intellectual property to screen, vet and make final selections. The criteria for induction into the Hall of Fame require candidates to hold a United States patent that has contributed significantly to the nation's welfare and the advancement of science and useful arts.

# INSPIRE

*"We recognize invention is much more than a eureka moment. Invention is a process that requires collaboration, hands-on application of STEM, creative problem solving, entrepreneurship and an understanding that moments of failure are necessary on the path to success. We are committed to introducing future generations to this process, so they can dream, design and invent what's next."*

– Michael J. Oister, CEO, National Inventors Hall of Fame





Children collaborate in teams to develop a prototype in order to solve one of the many challenges provided at Camp Invention.

## Inspiring Future Innovators

Inspired by NIHF Inductees, our educational programs are designed to impact young minds through fun, hands-on activities infused with the spirit of innovation. Hosted annually by over 2,800 schools and districts nationwide, these immersive enrichment programs are led by local, certified educators and promote STEM concepts, Intellectual Property Literacy™ and 21<sup>st</sup>-century skills such as critical thinking and creative problem solving.

Each program we offer embraces its own unique characteristics, but what ties them all together is an exciting environment with no wrong answers, a chance to brainstorm with peers and dynamic learning opportunities for all children to build confidence in the natural ability to dream and create.

\*All of our educational programs qualify for Title I, Title II, Title III, 21<sup>st</sup> CCLC, Migrant Education and Early Learning Challenge funding as well as state and local district resource funding.

## 4 Pillars of Education



21<sup>st</sup> Century Learning Skills

We foster 21<sup>st</sup>-century competencies by presenting real-world challenges that promote the direct application of critical thinking and communication skills. Through the dynamic lens of innovation, children design prototypes and learn the value of intellectual property, entrepreneurship and much more.



Ease of Implementation

Our programs are all-inclusive; we provide curricula, step-by-step instructions, full registration and promotional support, instructor training and program materials to ensure seamless and consistent delivery in all settings.



STEM Enrichment

Children explore STEM (science, technology, engineering and mathematics) concepts via hands-on, creative problem-solving activities and project-based learning through interdisciplinary curricula. We inspire children to be curious about their world and prepare them for the future.



Professional Development

Our educational programs provide teachers with direct experience in how to integrate STEM content with inquiry-based and project-based learning, 21<sup>st</sup>-century skills and creativity in the classroom. Instructors report transferring these strategies to inspire and motivate their day-to-day teaching in the classroom, enhancing student learning far beyond the summer months.

### Preschool



- Introduces preschool children to foundational STEM concepts through interactive games and guided play.
- Focuses on hands-on learning that encourages children to build inventions and explore the world around them.
- Provides educators with ways to incorporate STEM learning in their day-to-day teaching by using lessons and strategies from NIHF Inductees.
- Creates open-ended exploration for preschoolers with expert and effective teacher instruction.
- Includes curriculum and materials that are age appropriate and designed to enhance a preschooler's innate creativity.

### Grades K-6



- Exposes children to world-changing inventors in a relatable and fun way by introducing them to NIHF Inductees as exciting, innovative role models.
- Presents children with real-world, hands-on challenges that emphasize STEM proficiencies, creative problem solving, collaboration and entrepreneurship through motivation.
- Provides teachers with new ways to incorporate STEM skills into their classrooms.
- Introduces new, cutting-edge curriculum each year to ensure that our new and returning participants have an engaging and memorable experience.
- Leads children through the process of invention and teaches them that failure is a necessary step on the path to success.

### Grades 1-6



- Presents participants with fun challenges that emphasize STEM, creative problem solving, collaboration and entrepreneurship through innovation.
- Encourages children to design functional invention prototypes.
- Provides children with an in-depth knowledge of real inventors and their technologies.
- Engages participants in communication, observation, data collection and teamwork activities.

### Grades 1-6



- Promotes children taking risks, building a tolerance for ambiguity and exploring who they are as a maker, inventor and innovator.
- Helps children to build a curious spirit for embracing experimentation and problem solving.
- Shows students the value of intellectual property and the importance of being an entrepreneur as they develop inventions, create marketing materials and present to mock investors.
- Enables participants to discover what it means to be an inventor by applying creativity, innovation, design engineering, design thinking and innovative prototyping.

### Grades 6-9



- Promotes 21<sup>st</sup>-century skills such as teamwork, communication and collaboration, as well as economic literacy, through engaging, hands-on challenges that merge invention and business concepts.
- Brings the wisdom, ingenuity and inspiration of Collegiate Inventors Competition® (CIC) Finalists and NIHF Inductees into both the classroom and lives of the program participants.
- Gives students the opportunity to sketch, incubate, prototype, test, reflect and refine their ideas through activities that promote self-expression and self-confidence.
- Provides an opportunity for middle schoolers to understand the value of their own and others' intellectual property, as well as how the United States' patent and trademark system fuels innovation.

### Grades 7-9

#### Leaders-in-Training

- Instills valuable 21<sup>st</sup>-century leadership skills through our nationally renowned program, Camp Invention.
- Enables participants to put into practice their newly acquired leadership and teamwork skills, act as role models and learn to set and accomplish personal goals.
- Provides the unique opportunity to work with Camp Invention Instructors and assist with daily activities while encouraging and inspiring children to push the limits of their imagination.

\* NOTE: This program is a part of Camp Invention.

### Grades 10-College

#### Leadership Interns

- Introduces formalized leadership training, fundamental entrepreneurship and intellectual property concepts and provides the opportunity to work with participants in our Camp Invention and Invention Project programs.
- Allows participants to experience NIHF Inductee-inspired challenges with their mentee groups and put their newly developed leadership skills into action.
- Enables participants to earn up to 40 volunteer hours that can aid graduation requirements, National Honor Society membership and college applications.

\* NOTE: This program is a part of Invention Project and Camp Invention.

### Educators

#### Professional Development

- Provides educators with practical, research-based strategies to bring innovation and creativity into their classrooms.
- Enhances educators' STEM knowledge and skills through engagement in scientific inquiry and the engineering design process.
- Develops educators' 21<sup>st</sup>-century knowledge and skills in creativity, creative problem solving, innovation, teamwork, collaboration and entrepreneurial mindset.
- Offers a variety of delivery models to accomplish district teacher professional development goals, including effective strategies for developing creative challenges for students.



*"I love seeing the innovative and inventive creations campers produce and genuinely enjoy watching the older students step in as leaders throughout the week of camp."*

— Heather Falotico, Camp Invention Director

## OUR IMPACT

OVER **2 MILLION**  
CHILDREN, EDUCATORS, COLLEGE STUDENTS & INVENTORS IMPACTED

NEARLY **600** WORLD-CHANGING INDUCTEES

LEADERS IN STEM EDUCATION FOR OVER **3 DECADES**

**165,000+**  
CHILDREN

**2,800+**  
SCHOOL & DISTRICT PARTNERSHIPS

PRESENCE IN ALL **50 STATES** & PUERTO RICO & D.C.

**50,000+**  
UNDERSERVED CHILDREN

**20,000+**  
EDUCATORS & STAFF

**2,000+**  
COLLEGIATE INVENTORS COMPETITION EXPO ATTENDEES





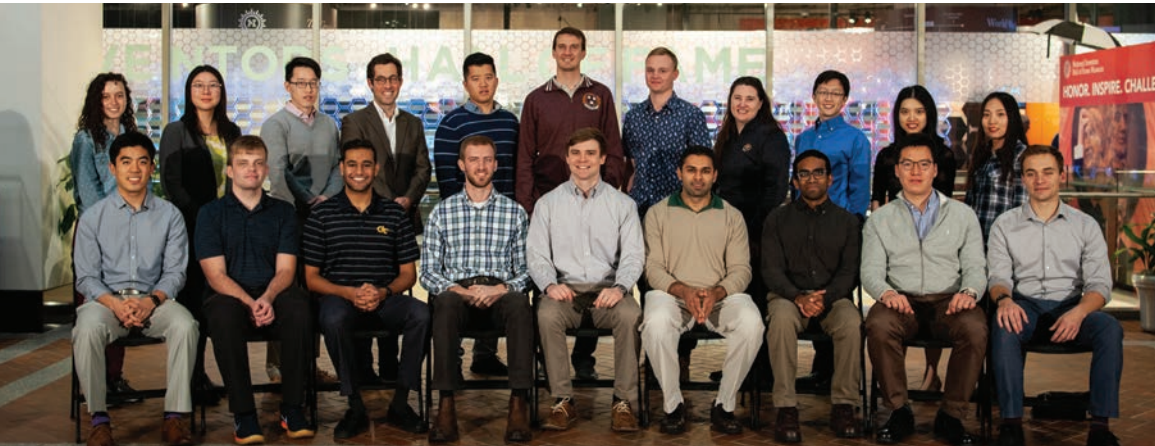
2018 CIC Finalists Dev Mandavia and Cassidy Wang present their work developing Neuraline, a device that improves the administration of epidurals.

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***“Invention is important because our world is constantly changing and progressing, and in order to keep up with all of the different demands and the different changes in our society, we need to change the way we use products, interact with people, interact with our environment, and solve our health problems. And so, invention is really the gateway to solving these things.”***

– Nicole Black, Harvard University, 2018 CIC Finalist

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2018 CIC Finalists gather for a group photo in front of the NIH Museum.



2018 CIC Finalists Michael J. Kreder and Nicole Black visit their featured student display in the United States Patent and Trademark Office atrium.



2018 CIC Finalist Charit Tipparedy presents his team's research on the Optimized Solar Purification with a Reusable Indicator (OSPRI) sensor.

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# Challenging Today's Innovators

CIC was founded in 1990 to encourage and drive innovation and entrepreneurship at the collegiate level. The competition recognizes and rewards students engaged in cutting-edge research and discovery. With the help of our sponsors, we have awarded over \$1 million to the country's most innovative collegiate students.

CIC is marketed to faculty and students at over 1,000 colleges and universities across the nation. The competition receives entries from colleges and universities including Johns Hopkins University, MIT, Harvard and the University of California system. Entries include outstanding inventions in disciplines as varied as medical technology, biotechnology, nanotechnology, renewable energy, robotics and systems engineering.

Finalists gather at the United States Patent and Trademark Office headquarters to present their research and prototypes to the most influential innovators and invention experts in the nation – NIH Inductees and intellectual property experts. This panel not only judges the Finalists' entries, but also provides feedback, brainstorming and encouragement to take inventions to the next level. CIC Finalists also have the opportunity to showcase their inventions to program sponsors, media representatives and the general public at the CIC Expo.



# The Innovation Force

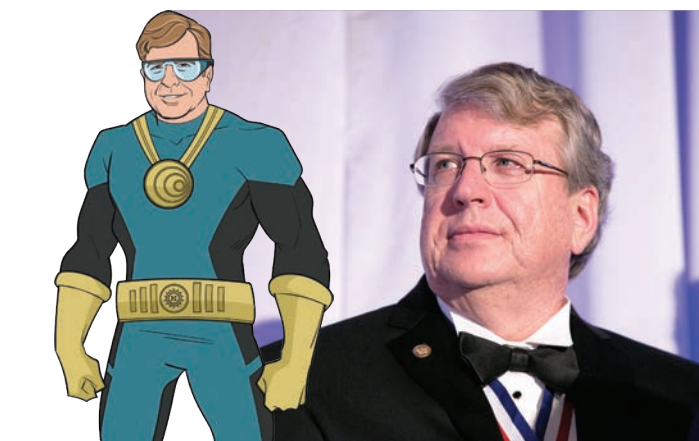
## Who They Are and What They Represent

NIHF is on a mission to bring innovation to the next generation. Research done by the Equality of Opportunity Project tells us that relatable exposure to innovation during early childhood has a significant effect on whether a child will become a successful inventor.<sup>1</sup> That's why we created the Innovation Force®. This group of NIHF Inductees turned action-packed superheroes are mentors that children can identify with.

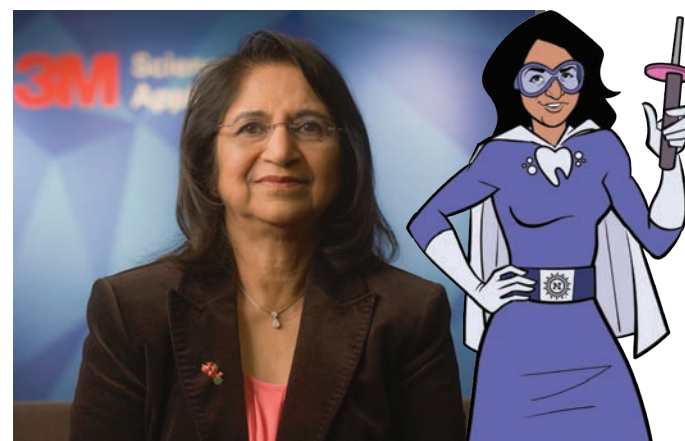
No matter your age, everyone benefits from having a positive role model. Because of this, all of our programs, from Camp Invention to CIC, integrate our Inductees. These visionary inventors have conceived, patented and advanced some of our nation's greatest technology. That's why they are superheroes!

## My Innovation Icon

Our economy depends on innovation. We cannot let our children miss out on cultivating their curiosity and discovering their innovative potential. The objective of our Innovation Icon initiative is to introduce children to inventors who have made a significant impact on our world so they will begin identifying these innovators as their role models. By 2020, our goal is to have 100% of our program participants name an inventor as their career role model.



2011 NIHF Inductee Eric R. Fossum, inventor of the CMOS Active Pixel Image Sensor Camera-on-a-Chip



2018 NIHF Inductee Sumita Mitra, inventor of Nanocomposite Dental Materials



2016 NIHF Inductee Radia Perlman, inventor of Robust Network Routing and Bridging



2015 NIHF Inductee George Alcorn, inventor of the X-Ray Spectrometer

<sup>1</sup> Bell, A., Chetty, R., Jaravel, X., Petkova, N., & Van Reenen, J. (December 2017). Who becomes an inventor in America? The importance of exposure to Innovation. DOI: 10.3386/w24062.

# Words of Wisdom from our Innovation Force



**"You have to stand on somebody's shoulder before you can see far. And so, it's very important that I have a strong shoulder for others to stand on, so they can see far and they can do greater things."**

2016 NIHF Inductee Victor Lawrence, inventor of Signal Processing in Telecommunications



**"Playing is a part of broadening your knowledge. While you're playing, you learn, and it stimulates your brain."**

2015 NIHF Inductee Jaap Haartsen, inventor of Bluetooth® Wireless Technology



**"The future of the world is in the hands of the people we're training today, and it gives me fulfillment to contribute to creating the next generation of scientists who can make the world a better place."**

2017 NIHF Inductee Carolyn Bertozzi, inventor of Bioorthogonal Chemistry



# Thanks to Our Sponsors!



"The United States Patent and Trademark Office is proud to partner with the National Inventors Hall of Fame. NIHF's unique programs inspire creativity, innovation, interest in STEM and Intellectual Property Literacy® in students, teachers and aspiring inventors nationwide. Our joint effort and investment in the future of American innovation set the stage for a skilled, vibrant workforce pipeline and our country's future success."

- Andrei Iancu  
Under Secretary of Commerce for Intellectual Property and Director,  
United States Patent and Trademark Office

Below are a few of our 2,800+ sponsors. For a full list, please visit [invent.org](http://invent.org).

*"The National Inventors Hall of Fame's PreK through 12 educational programs and Collegiate Inventors Competition give us as Inductees the opportunity to inspire and challenge children and college students with the learnings we have gathered throughout our own careers as inventors. Developing future inventors, innovators, and entrepreneurs and instilling the core values of creative problem-solving sets the National Inventors Hall of Fame programs apart from the rest. Participants truly do leave with skills that will last a lifetime."*

- Steve Sasson  
2011 National Inventors Hall of Fame Inductee  
and Inventor of the Digital Camera







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