



SIXTH ANNUAL  
CONFERENCE  
• PROGRAM •

APRIL 5-7, 2017  
BOSTON, MA

*“Recognizing Pillars of Academic Innovation”*

#NAI2017



  
**The  
Lemelson Foundation**  
improving lives through invention

# Addressing Problems Worth Solving

The challenges we are confronting worldwide are both complex and daunting. In the next 20 years, the most important inventions will be those that address critical social and environmental issues, reaching and serving communities with the greatest needs. These inventions will deliver meaningful change, solve urgent problems, and create sustainable economic value for all.

The Lemelson Foundation focuses on problems that are worth solving—and not simply problems that can be solved. We recognize the need for a strong supportive invention ecosystem to make this happen. We seek to inspire inventors to know that they can make a difference. We work to ensure that the next generation of inventors can become agents of positive change.

*Find out more about how we provide support to foster inventions to improve lives at: [www.lemelson.org/impactinventing](http://www.lemelson.org/impactinventing)*



Photo: Denis Tangney, Jr., THINKSTOCK | Cover Photo: Sean Pavone, THINKSTOCK

## “Recognizing the Pillars of Academic Innovation”

For the sixth annual meeting, the three pillars of Academic Innovation take the spotlight. Throughout the conference program, we will explore issues related to public policy and industry partnerships, investigate the importance of recognizing entrepreneurial faculty, and discuss the best practices in mentoring the next generation of academic innovators.

The conference program cover artwork features George Washington’s iconic statue in the heart of Boston and the Fellows Induction Ceremony will take place at the John F. Kennedy Presidential Library and Museum, pictured above. In their own way, both of these U.S. Presidents understood the importance of discovery and innovation. We, as an Academy, recognize that same importance today and seek to fortify and defend the pillars that can ensure the continued prosperity of innovation for the betterment of society well into the future.

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## FROM THE PRESIDENT

Distinguished Colleagues:

On behalf of the Board of Directors and staff, it is my distinct pleasure to welcome you to Boston for the sixth annual meeting of the National Academy of Inventors. I am honored to be here with you as we celebrate another gathering of inventive minds. I would like to extend a most gracious thank you to our valued sponsors, hosting institutions, program committee, and distinguished presenters, for making this year's events possible.

I am proud to report that the Academy continues to grow and spread awareness for the importance of changing the culture within academia to one that celebrates innovation and the important role patents, licensing and commercialization play in bolstering the nation. Our Membership produces groundbreaking technologies that stimulate the economy and improve quality of life and for this they should be acknowledged. We look forward to your continued friendship and support as we embark on the next chapter of initiatives which will strengthen our organization and help us continue to honor and promote our members and their outstanding contributions to society.

The NAI Fellows Program has grown to 757 prolific academic inventors worldwide who represent nearly 230 prestigious institutions. Collectively, the Fellows hold more than 26,000 issued U.S. patents. These distinguished individuals have generated more than 8,500 licensed technologies and companies, and created more than 1.1 million jobs. In addition, over \$100 billion in revenue has been generated based on these discoveries. This great impact continues to grow each year and we look for new innovative ways in which our Fellows can further share their expertise with the world.

Through the reintroduction of H.R. 976, a bill to grant a Federal Charter to the NAI, the Academy is building a strong presence on Capitol Hill. The legislation would congressionally recognize the NAI as an organization with national interests stemming from our mission, goals, and objectives. The bill would allow our members to be called upon by departments of the government to serve as subject matter experts in basic science, invention, innovation and technology transfer. Thanks to our members H.R. 976 is building momentum, but we need your help to further this legislation. If your state's delegation has not yet signed on as co-sponsors, we hope you will encourage them to do so and NAI staff is happy to assist with this.

The NAI has had an active year in publishing. Alongside the Intellectual Property Owners Association we released the *Top 100 Worldwide Universities Granted U.S. Utility Patents*. Based on data obtained from the USPTO, this list continues to highlight the important role patents play in university research and economic development. The NAI Journal, *Technology and Innovation*, has shifted to an all open access format to facilitate free and unrestricted access to scientific discoveries and has developed new features, such as the NAI Fellow Profile and Innovation in Action, and a commentary by our partner organization, the United States Patent and Trademark Office.

Looking towards the future, we seek your participation and counsel on ways in which the NAI can promote our initiatives to enhance the visibility of academic invention and further our mission. We are committed to being a voice for academic innovation and look forward to your guidance and leadership.

Thank you for being part of the National Academy of Inventors. The success of our organization and this meeting is because of our engaged members, partners and friends. We applaud your accomplishments and look forward to another exciting year. Have a great meeting.

Sincerely,

A handwritten signature in blue ink that reads "Paul R. Sanberg". The signature is written in a cursive, flowing style.

Paul R. Sanberg, Ph.D., D.Sc., FNAI  
President



## SUMMARY AGENDA

### WEDNESDAY, APRIL 5, 2017

- 7:30 AM – 4:00 PM Conference Check-In and Information Table (Ballroom Foyer)
- 8:00 – 9:00 AM Networking Breakfast hosted by Massachusetts General Hospital (*All Invited to Attend*)
- 9:00 AM – 12:00 PM Session A: *Changing The Academic Innovation Landscape*
- 9:45– 10:30 AM Panel 1: *Governmental Relations Information Session*
- 11:00 AM – 12:00 PM Panel 2: *Innovative Approaches to University-Industry Collaboration* hosted by Allied Minds
- 12:00 – 1:00 PM Networking Luncheon hosted by Harvard University (*All Invited to Attend*)
- 1:00 – 1:30 PM Break
- 1:30 – 4:00 PM Session B: *Issues Relating to Public Policy*
- 1:30 – 2:30 PM Panel 3: *Impacting Society through Invention and Entrepreneurship*
- 3:00 – 4:00 PM Panel 4: *Honoring Innovators Through Local NAI Chapters*
- 5:00 – 9:00 PM NAI Board of Directors Off- site Meeting (*Invitation Only*)

### THURSDAY, APRIL 6, 2017

- 7:00 AM – 3:00 PM Conference Check-In and Information Table (Ballroom Foyer)
- 7:30 – 8:45 AM Networking Breakfast and Information Session: *Technology and Innovation, Journal of the National Academy of Inventors* (*All Invited to Attend*) (Harborview Ballroom)
- 9:00 AM – 12:00 PM Session C: *Highlighting the Significant Impact NAI Fellows and Members Have Contributed to the Betterment of Society*
- 9:15 – 10:00 AM Panel 5: *Changing the Culture to Recognize Patents, Licensing and Commercialization toward Tenure and Merit*
- 10:45 – 11:30 AM Panel 6: *Invention Education: Creating the Next Generation of Inventors*
- 11:30 AM – 12:00 PM State of the Academy Address by NAI President Paul R. Sanberg
- 12:00 – 1:00 PM Networking Luncheon hosted by The Lemelson Foundation (*All Invited to Attend*)
- 1:00 – 1:30 PM Break
- 1:30 – 3:00 PM Session D: *Entrepreneurship and Commercialization Drive the Future of Innovation*
- 2:15 – 3:00 PM Keynote Address by H. Robert Horvitz, Massachusetts Institute of Technology
- 3:00 – 5:00 PM Break before Fellows Induction Ceremony and Banquet
- 5:00 & 5:30 PM Buses depart Marriott Long Wharf Hotel for John F. Kennedy Library & Museum
- 5:00 – 7:00 PM Museum exhibits open for guests to enjoy self-guided tours
- 6:00 – 7:00 PM Cocktail Hour hosted by Florida High Tech Corridor (Museum Pavilion)
- 6:45 – 7:00 PM NAI Fellows Photograph (Pavilion Stairway to Smith Hall)
- 7:00 PM Dinner (Smith Hall)
- 7:30 – 8:00 PM Keynote Address by Andrew H. Hirshfeld, U.S. Commissioner for Patents
- 8:00 – 9:30 PM NAI Fellows Induction Ceremony & Presentation of Awards
- 9:45 & 10:00 PM Buses depart John F. Kennedy Library & Museum for the Marriott Long Wharf Hotel

### FRIDAY, APRIL 7, 2017

- 8:00 – 9:00 AM Conference Check-In and Information Table (Ballroom Foyer)
- 8:30 – 9:30 AM Fellow Inductee Breakfast (*Invitation Only for Newly Inducted Fellows*) (Harborview Ballroom)
- 9:00 AM Morning Coffee and Light Refreshments (*All Invited to Attend*) (Grand Ballroom)
- 9:30 – 12:00 PM Session E: *Mentoring the Next Generation of Innovators*
- 9:40 – 10:20 AM Keynote Address by Lisa Seacat DeLuca, IBM Commerce
- 10:20 AM – 12:00 PM NAI Student Innovation Showcase
- 12:00 PM Conference Ends

WEDNESDAY, APRIL 5, 2017

Event Location and Meeting Hotel: Boston Marriott Long Wharf, 296 State St., Boston, MA 02109

Note: Dress is Business Attire

Complimentary Wi-Fi is available in the meeting room. Choose Wireless Network “Marriott\_Conf” and enter access code “NAI2017”

- 7:30 AM – 4:00 PM      **Conference Check-in and Information Table**  
Location: Ballroom Foyer, Level 1, Boston Marriott Long Wharf
- 8:00 – 9:00 AM      **Networking Breakfast hosted by Massachusetts General Hospital**  
*(All Registered Attendees Invited to Attend)*  
Location: Ballroom Foyer, Level 1, Boston Marriott Long Wharf
- 9:00 AM – 12:00 PM      **SESSION A: CHANGING THE ACADEMIC INNOVATION LANDSCAPE**  
Location: Grand Ballroom, Level 1, Boston Marriott Long Wharf  
*Discussing issues related to industry and university partnerships, changing academic culture and navigating the new political climate*  
Session Co-Chairs:  
**Lorne A. Babiuk**, University of Alberta  
**Donna See**, Allied Minds
- 9:00 – 9:15 AM      **Welcome and Opening Remarks**  
Paul R. Sanberg, National Academy of Inventors
- 9:15 – 9:30 AM      **Barbara D. Boyan**, Virginia Commonwealth University  
*“Approaches to an Innovative and Entrepreneurial Culture: Involving and Protecting Students”*
- 9:30 – 9:45 AM      **Milton L. Brown**, Inova Schar Cancer Institute  
*“Inova Schar Cancer Institute: A New Model for Catalyzing Medical Innovations through Drug Discovery”*
- 9:45 – 10:30 AM      **Panel 1: Governmental Relations Information Session**  
Communicating the Value of Innovation in a New Political Climate  
Moderator:  
**Elizabeth L. Dougherty**, United States Patent and Trademark Office  
Panelists:  
**Dana R. Colarulli**, United States Patent and Trademark Office  
**Robert V. Duncan**, Texas Tech University  
**Jessica A. Sebeok**, Association of American Universities  
**Michael A. Waring**, University of Michigan

- 10:30 – 10:45 AM **Ruben G. Carbonell**, North Carolina State University  
*“Inspiring the Next Generation of Innovators Through Industry-University Collaborations”*
- 10:45 – 11:00 AM **Jeffrey L. Duerk**, Case Western Reserve University  
*“Emerging Models of Industry – Academic Collaboration and Engagement”*
- 11:00 AM – 12:00 PM **Panel 2: Innovative Approaches to University-Industry Collaboration**  
 Invited Panel hosted by Allied Minds  
 Moderator:  
**Sethuraman Panchanathan**, Arizona State University  
 Panelists:  
**Gary B. Bronner**, Rambus  
**Andrew D. Hamilton**, New York University  
**Terry McGuire**, Polaris Partners  
**H. Keith Moo-Young**, Washington State University Tri-Cities
- 12:00 – 1:00 PM **Networking Luncheon hosted by Harvard University**  
*(All Registered Attendees Invited to Attend)*  
 Location: Palm Garden, Level 2, Boston Marriott Long Wharf
- 1:00 – 1:30 PM **Break**
- 1:30 – 4:00 PM **SESSION B: ISSUES RELATING TO PUBLIC POLICY**  
 Location: Grand Ballroom, Level 1, Boston Marriott Long Wharf  
*Focusing on recommendations for government support for basic research, and patents, licensing, and commercialization*  
**Afternoon Coffee hosted by Draper Laboratory**  
 Session Co-Chairs:  
**Alexander N. Cartwright**, The State University of New York  
**Arlene A. Garrison**, Oak Ridge Associated Universities
- 1:30 – 2:30 PM **Panel 3: Impacting Society through Invention and Entrepreneurship**  
 Hosted by AAAS-Lemelson Invention Ambassadors  
 Moderator:  
**Michael A. Smith**, Intel Corporation  
 Panelists:  
**Karen J.L. Burg**, University of Georgia  
**Eric R. Fossum**, Dartmouth College  
**Benjamin S. Hsiao**, Stony Brook University
- 2:30 – 2:45 PM **Isiah M. Warner**, Louisiana State University  
*“LSU LA-STEM Research Scholars Program: A Model for Broadening Diversity in STEM Education”*
- 2:45 – 3:00 PM **John T. Schiller**, National Institutes of Health  
*“Patenting from the Perspective of an NIH Inventor”*

3:00 – 4:00 PM **Panel 4: Honoring Innovators Through Local NAI Chapters**  
*Chapters are a useful vehicle to recognize and honor investigators at your institution who translate their research findings to benefit society.*

Moderator:  
**Karen J.L. Burg**, University of Georgia

Panelists:  
**Vikki Hazelwood**, Stevens Institute of Technology  
**Todd S. Keiller**, Worcester Polytechnic Institute  
**Stephen D. Russell**, Space and Naval Warfare Systems Command  
**Jan D. Thornton**, Auburn University

## THURSDAY, APRIL 6, 2017

Event Location and Meeting Hotel: Boston Marriott Long Wharf, 296 State St., Boston, MA 02109

Note: Dress is Business Attire

Complimentary Wi-Fi is available in the meeting room. Choose Wireless Network “Marriott\_Conf” and enter access code “NAI2017”

7:00 AM – 3:00 PM **Conference Check-in and Information Table**  
Location: Ballroom Foyer, Level 1, Boston Marriott Long Wharf

7:30 – 8:45 AM **Networking Breakfast and Information Session: *Technology and Innovation, Journal of the National Academy of Inventors***  
Location: Harborview Ballroom, Level 2, Boston Marriott Long Wharf  
**(All Registered Attendees Invited to Attend)**  
*A unique opportunity to meet the Editorial Board and Editors of the T&I Journal and learn how to get involved with future issues (More details in conference bag)*

9:00 AM – 12:00 PM **SESSION C: HIGHLIGHTING THE SIGNIFICANT IMPACT NAI FELLOWS AND MEMBERS HAVE CONTRIBUTED TO THE BETTERMENT OF SOCIETY**  
Location: Grand Ballroom, Level 1, Boston Marriott Long Wharf  
*NAI Fellows and Members share their expertise in the commercialization process from lab to market and the global impact of their discoveries*  
Session Co-Chairs:  
**Kenneth J. Blank**, Rowan University  
**Carol Dahl**, The Lemelson Foundation

9:00 – 9:15 AM **Welcome and Opening Remarks**  
**Paul R. Sanberg**, National Academy of Inventors

9:15 – 10:00 AM **Panel 5: Changing the Culture to Recognize Patents, Licensing and Commercialization toward Tenure and Merit**  
*University missions have expanded from teaching and research to include economic development and translating university-based research into real products that benefit society. This panel will explore the best practices in managing intellectual property.*



Moderator:  
**Nadine N. Aubry**, Northeastern University

Panelists:  
**Kenneth G. Furton**, Florida International University  
**Paul R. Sanberg**, National Academy of Inventors  
**Tobin L. Smith**, Association for American Universities

- 10:00 – 10:15 AM **Mark S. Humayun**, University of Southern California  
*“Advanced Implants for Ophthalmology”*
- 10:15 – 10:30 AM **Guillermo J. Tearney**, Massachusetts General Hospital  
*“Tethered Capsule Endomicroscopy: A New Window Into the Gastrointestinal Tract”*
- 10:30 – 10:45 AM **Hany Farid**, Dartmouth College  
*“Digital Forensics: From Social Media to Social Impact”*

- 10:45 – 11:30 AM **Panel 6: Invention Education: Creating the Next Generation of Inventors**  
Hosted by The Lemelson Foundation  
*This panel will discuss how invention education can create a pipeline of entrepreneurs by helping young people develop inventive thinking and self-confidence to create new global solutions.*

Moderator:  
**David Coronado**, The Lemelson Foundation

Panelists:  
**Stephanie Couch**, Lemelson-MIT Program  
**Aaron M. Kyle**, Columbia University  
**Doug Scott**, Hopkinton Public Schools  
**Phil Weilerstein**, VentureWell

- 11:30 AM – 12:00 PM **State of the Academy Address**  
**Paul R. Sanberg**, National Academy of Inventors

- 12:00 – 1:00 PM **Networking Luncheon hosted by The Lemelson Foundation**  
Location: Palm Garden, Level 2, Boston Marriott Long Wharf  
*(All Registered Attendees Invited to Attend)*

- 1:00 – 1:30 PM **Break**

- 1:30 – 3:00 PM **SESSION D: ENTREPRENEURSHIP AND COMMERCIALIZATION DRIVE THE FUTURE OF INNOVATION**  
Location: Grand Ballroom, Level 1, Boston Marriott Long Wharf  
*Featuring discussions of entrepreneurial efforts in commercialization, economic development, job creation and mentoring innovative students*

**Afternoon Coffee hosted by Dartmouth College**

Session Co-Chairs:  
**Kurt H. Becker**, New York University  
**Nasser Arshadi**, University of Missouri-St.Louis

- 1:30 – 1:45 PM **Frances S. Ligler**, North Carolina State University  
*“The Path to a License”*
- 1:45 – 2:00 PM **Nasser Peyghambarian**, The University of Arizona  
*“Entrepreneurial and Commercialization Activities at Universities: The Good, The Bad and The Ugly”*
- 2:00 – 2:15 PM **Jennifer L. West**, Duke University  
*“Fostering Innovation in STEM Students”*
- 2:15 – 3:00 PM **Introduction of the Keynote Speaker**  
**Arthur Daemmrich**, Smithsonian’s Lemelson Center for the Study of Invention and Innovation  
**Keynote Address**  
**H. Robert Horvitz**, Massachusetts Institute of Technology  
*“A Random Walk into Biotech”*
- 3:00 – 5:00 PM **Break before Signature Event**
- 5:00 & 5:30 PM **Buses depart Marriott Long Wharf Hotel’s Main Entrance traveling to John F. Kennedy Presidential Library and Museum**

## SIGNATURE EVENT - NAI FELLOWS INDUCTION CEREMONY AND BANQUET

Thursday, April 6, 2017 - Event Location: John F. Kennedy Presidential Library and Museum, Columbia Point, Boston, MA 02125. Note: Dress is Cocktail Attire  
*(All Registered Attendees Invited to Attend)*

- 5:00 & 5:30 PM **Buses depart Marriott Long Wharf Hotel’s Main Entrance traveling to John F. Kennedy Presidential Library and Museum**  
Free parking is also available at the museum
- 5:00 – 7:00 PM **Museum exhibits open for guests to enjoy self-guided tours**
- 6:00 – 7:00 PM **Cocktail Hour hosted by Florida High Tech Corridor**  
Location: Museum Pavilion
- 6:45 – 7:00 PM **NAI Fellows Photograph**  
All new inductees report to Pavilion stairway at 6:45 PM
- 7:00 PM **Plated Dinner Served**  
Location: Smith Hall
- 7:30 – 8:00 PM **Introduction of the Keynote Speaker**  
**Randy E. Berridge**, Florida High Tech Corridor  
**Keynote Address**  
**Andrew H. Hirshfeld**, U.S. Commissioner for Patents  
United States Patent and Trademark Office

- 8:00 – 9:30 PM **NAI Fellows Induction Ceremony & Presentation of Awards**  
**Andrew H. Hirshfeld**, United States Patent and Trademark Office  
**Paul R. Sanberg**, National Academy of Inventors
- 9:45 & 10:00 PM **Buses depart John F. Kennedy Library for the Marriott Long Wharf Hotel**  
 Immediately following the Fellows Induction Ceremony from Front Entrance

## FRIDAY, APRIL 7, 2017

Event Location and Meeting Hotel: Boston Marriott Long Wharf, 296 State St., Boston, MA 02109  
 Note: Dress is Business Attire  
 Complimentary Wi-Fi is available in the meeting room. Choose Wireless Network “Marriott\_Conf”  
 and enter access code “NAI2017”

- 8:00 AM – 12:00 PM **Conference Check-In and Information Table**  
 Location: Ballroom Foyer, Level 1, Boston Marriott Long Wharf
- 8:30 – 9:30 AM **Fellow Inductee Breakfast** (*Invitation Only*)  
 Location: Harborview Ballroom, Level 2, Boston Marriott Long Wharf  
*A unique opportunity for newly-inducted Fellows to network and learn about their role within the NAI. Fellows are strongly encouraged to attend.*
- 9:00 AM **Morning Coffee and Light Refreshments**  
*(All Registered Attendees Invited to Attend)*
- 9:30 AM – 12:00 PM **SESSION E: MENTORING THE NEXT GENERATION OF INNOVATORS**  
 Location: Grand Ballroom, Level 1, Boston Marriott Long Wharf
- 9:30 – 9:40 AM **Welcome and Opening Remarks**  
**Paul R. Sanberg**, National Academy of Inventors
- 9:40 – 10:20 AM **Introduction of the Keynote Speaker**  
**Yolanda L. Comedy**, American Association for the Advancement of Science  
**Keynote Address**  
**Lisa Seacat DeLuca**, IBM Commerce  
*“What Does an Inventor Look Like?”*

## NAI STUDENT INNOVATION SHOWCASE & EXHIBITION

- 10:20 AM – 12:00 PM **NAI Student Innovation Showcase & Exhibition Hall**  
 Co-hosted by Brandeis University, Lemelson-MIT Program, Northeastern University & University of Massachusetts System  
*Featuring the inventions of six outstanding student teams from NAI Member Institutions across all disciplines, to recognize and strengthen the culture of inventorship for the next generation.*

### Introduction of Finalists

**Vinit Nijhawan**, Boston University

### Student Innovation Showcase Judges

**Michael J. Cima**, Massachusetts Institute of Technology

**Lisa Seacat DeLuca**, IBM Commerce

**Martin M. Matzuk**, Baylor College of Medicine

**Ellen Ochoa**, NASA Johnson Space Center

**Andrew Rathman-Noonan**, National Science & Technology Medals Foundation

10:25 – 10:40 AM

### Ultra-stretchable Conductive Polyester and Muscle Strain Sensor

**Ru Chen**, University of Delaware

Research Advisors: **Norman J. Wagner, FNAI** and **Carlos R. López-Barrón**

*Ultra-stretchable Conductive Polymer and Muscle Strain Sensors are wearable electronic sensors made of a robust soft material with conductivity and the ability to stretch more than traditional materials. Dubbed “stretchable electronics,” the material can be incorporated into clothing and sports equipment. Applications include stretchable batteries, wearable sensors, and integrated circuits. One use for the material is as a sensor athletes can wear to measure the displacement of the muscle around a rotating joint. For example, professional basketball players change their posture while shooting the ball. The sensor can help the players measure how the joint muscle moves to help prevent injuries while their posture changes.*

10:40 – 10:55 AM

### Photoelectron Counting Jot Device and High Speed Readout Circuit for Quanta Image Sensor

**Jiaju Ma** and **Saleh Masoodian**, Dartmouth College

Research Advisor: **Eric R. Fossum, FNAI**

Company Formed from Technology: **Gigajot Technology, LLC**

*The concept of the Quanta Image Sensor (QIS) was developed as the 3<sup>rd</sup> generation of solid-state image sensors after the charge coupled device (CCD) and CIS. The QIS differs from the conventional CIS in that it is sensitive enough to detect the smallest particle of light, one single photon. The QIS works like “digital film,” in which billions of tiny pixels, called “jots,” output binary data (either single-bit or multi-bit) corresponding to the number of collected photo electrons at a high frame rate (e.g. 1000fps). The combination of high sensitivity and fast readout gives this sensor film-like exposure response curve, an exciting feature for the photography community. The operating principle of the QIS is a major paradigm shift in the image sensor world and its success will require a combination of innovations in many engineering fields, such as semiconductor devices integrated circuits, and data processing and transmission.*

10:55 – 11:10 AM

### Plant Based Decellularization

**Joshua R. Gershlak**, Worcester Polytechnic Institute

Research Advisor: **Glenn R. Gaudette**

*Tissue engineering has the potential to increase the number of viable solutions for patients currently awaiting organ and tissue transplantation. However, one of the major factors currently limiting the clinical applicability of tissue engineered grafts is the lack of a viable vascular network. This team investigates the decellularization of plant tissue to act as a scaffold for both tissue engineering and drug screening. Plants follow the same physiological law of the branching structure of the human cardiovascular system and, as such, plants have that innate microvasculature. This team’s decellularization technology should provide a cost-efficient, readily available, “green” technology for creating large volume vascularized mammalian tissues.*

11:10 – 11:25 AM

### **Korwave**

**Patrick S. McFarland and Trung Dinh**, Arizona State University

Research Advisors: **Vincent Pizziconi**

Company Formed from Technology: **Korwave**

*Korwave is a mobile, wireless, home health brain monitoring device for patients with Epilepsy. Korwave looks like a hairband for girls or wireless headphones for boys. When a seizure happens, the device notifies a caretaker, allowing them to assist the patient. If the seizure lasts too long, Korwave can call 911, providing them with the patient's location and medical information. Each month, a digest of seizure activity is sent to the patient's neurologist, as well as to the cloud to create a "big data" profile of Epilepsy. This long term Epilepsy profile is analyzed using machine learning.*

11:25 – 11:40 AM

### **ElectroPure**

**Julie Bliss Mullen**, University of Massachusetts Amherst

Research Advisor: **David A. Reckhow**

Company Formed from Technology: **ElectroPure**

*ElectroPure is a water purification company and its primary technology is a water treatment device for homes and small community systems that corrects water quality issues at a competitive price. The ElectroPure device is the only system that kills all pathogens, maintains water quality throughout plumbing systems, can be fully tuned to particular customer tastes and needs with sensors, can be engineered at a full range of sizes, and will never require any filter replacement unless heavy metals are a concern. The ElectroPure water treatment device uses oxidation as a main treatment mechanism. The device is currently being tested for treatment effectiveness, scalability, and power consumption.*

11:40 – 11:55 AM

### **Traffic Stop**

**Michelle Emamdie, Jessica N. Jones, Isabel Laurenceau, DeKita Moon**,  
University of Florida

Research Advisor: **Juan E. Gilbert, FNAI**

*The media has covered countless news stories involving the tragic killings of both police officers and citizens nationwide during traffic stops. Currently, there are no technology solutions available that serve as a medium of communication between officers and drivers that would protect citizens' rights and help maintain the safety of those involved. Traffic stop is a mobile application that allows drivers to exchange information with officers during traffic stops. Additionally, it allows law enforcers to complete the same tasks that are involved in routine traffic stops without having to leave their patrol car. When a traffic stop is in progress, drivers and police officers can communicate through the mobile devices of drivers and the laptops used in police vehicles.*

12:00 PM

### **Judges' Announcement**

12:00 PM

### **Conference Ends**

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## • About the National Academy of Inventors •

The National Academy of Inventors® is a 501(c)(3) non-profit member organization comprising U.S. and international universities, and governmental and non-profit research institutions, with over 3,000 individual inventor members and Fellows spanning more than 240 institutions, and growing rapidly. It was founded in 2010 to recognize and encourage inventors with patents issued from the U.S. Patent and Trademark Office, enhance the visibility of academic technology and innovation, encourage the disclosure of intellectual property, educate and mentor innovative students, and translate the inventions of its members to benefit society. The NAI publishes the multidisciplinary journal *Technology and Innovation, Journal of the National Academy of Inventors*.

### • GOALS AND OBJECTIVES •

- To recognize publicly a cadre of investigators who are also inventors.
- To enhance visibility of university and non-profit research institute technology development, promote entrepreneurship and be advocates for academic innovation in the local community.
- To be a resource for the local community to facilitate greater industry research contracts and interactions with companies and organizations in order to increase economic impact.
- To increase awareness of intellectual property by mentoring, fostering and encouraging faculty, staff and students to develop their intellectual property and inventions.
- To help shape society by being in a position to understand the translational use of inventions at the university or research institute and elsewhere; and to be a role model in such endeavors for students.
- To develop relevant invention-based activities in collaboration with the institution's administration of patents and licensing.

As the Academy grows and develops, we will continue to seek new ways to recognize and honor academic invention, provide unique opportunities for our Member Institutions, and build strong relationships with innovative groups and companies. There is no doubt that translational technology is critically important; it is the engine that will drive the economies of the 21<sup>st</sup> century. Our research institutions are growing and through their capabilities, we see a limitless future for our nation and the world.

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

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## • 2017 NAI Board of Directors and Officers •

**Paul R. Sanberg**, President, University of South Florida

**Howard J. Federoff**, Vice President, University of California, Irvine

**Sudeep Sarkar**, Treasurer, University of South Florida

**Kurt H. Becker**, New York University

**Karen J.L. Burg**, University of Georgia

**Arthur Daemmrich**, Smithsonian Lemelson Center for the Study of Invention and Innovation

**Robert V. Duncan**, Texas Tech University

**Eric R. Fossum**, Dartmouth College

**Arlene A. Garrison**, Oak Ridge Associated Universities

**Sethuraman Panchanathan**, Arizona State University

**Elizabeth L. Dougherty**, Ex Officio, United States Patent and Trademark Office

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## • 2017 Conference Program Committee •

**Vinit Nijhawan**, Chair, Boston University

**Nadine N. Aubry**, Northeastern University

**Abigail Barrow**, University of Massachusetts System

**Emery N. Brown**, Massachusetts Institute of Technology

**Karen J.L. Burg**, University of Georgia

**Eric R. Fossum**, Dartmouth College

**Arlene A. Garrison**, Oak Ridge Associated Universities

**Edward J. Hackett**, Brandeis University

**Florence P. Haseltine**, National Institutes of Health

**Todd S. Keiller**, Worcester Polytechnic Institute

**Elizabeth Langdon-Gray**, Harvard University

**Marlena Love**, Massachusetts Institute of Technology

**Edith Mathiowitz**, Brown University

**Rebecca Menapace**, Brandeis University

**Sudeep Sarkar**, University of South Florida

**Larry R. Steranka**, Tufts University

**Gloria S. Waters**, Boston University

# H. R. 976

To grant a Federal charter to the National Academy of Inventors.

IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 10, 2015

MR. ROSS (for himself, MR. BILIRAKIS, MS. FRANKEL of Florida, MS. ESTY, MR. LIPINSKI, and MS. CASTOR of Florida) introduced the following bill; which was referred to the Committee on the Judiciary

## A BILL

To grant a Federal charter to the National Academy of Inventors.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

### SECTION 1. GRANT OF FEDERAL CHARTER TO THE NATIONAL ACADEMY OF INVENTORS.

(a) *Grant Of Charter.*—Part B of subtitle II of title 36, United States Code, is amended by inserting after chapter 1503 the following new chapter:

#### “CHAPTER 1504—NATIONAL ACADEMY OF INVENTORS

##### “§ 150401. Findings

“Congress finds the following:

“(1) The majority of our Nation’s basic research is done at our colleges and universities.

“(2) The National Academy of Inventors recognizes and encourages inventors who have a patent issued from the United States Patent and Trademark Office.

“(3) The National Academy of Inventors enhances the visibility of university and non-profit research institute technology and academic innovation.

“(4) The National Academy of Inventors encourages the disclosure of intellectual property.

“(5) The National Academy of Inventors educates and mentors innovative students.

“(6) The systematic application of organized knowledge and information can generate technology and produce creative solutions to existing problems.

“(7) Innovation, based on new inventions and technologies, has proven to be a key factor in the industrial and economic development of the world.

“(8) The National Academy of Inventors serves a valuable role in the translation of science and technology within the university and non-profit research institute community, and for the benefit of society.

“(9) Congress supports the mission of the National Academy of Inventors to encourage the translation of the inventions of its members to benefit society.

*View entire bill at <http://1.usa.gov/1RkDHAN>*



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## Questions and Answers on H.R. 976 to Grant a Federal Charter to the NAI

### What is a federally chartered organization?

Federally chartered organizations were designed to promote a public purpose by leveraging nonfederal partnerships and individuals. This honorific designation symbolizes a federal recognition of the significant national interests stemming from the mission, goals, and objectives of the organization.

### Why should the NAI be granted a Federal Charter?

Currently, universities perform more than half of our nation's basic research and more than 60% of that research is federally funded. It is in our national best interest for that research to be translated for the betterment of society into innovative products, processes, cures, and treatments. Federally recognizing the importance of the NAI will bolster the innovations, technologies, and new businesses spurred as research develops at universities and nonprofit research institutes, elevating their already dynamic role in our national economic development and our global competitiveness. Additionally, if granted a Federal Charter, the NAI is ready and well equipped with subject matter experts to provide advice to the Federal Government on innovation, intellectual property, translational research and commercialization.

### What is the cost of this bill?

There is no cost associated with granting a Federal Charter to the National Academy of Inventors.

### Are similar organizations distinguished as federally chartered organizations?

Yes. The National Academy of Sciences, whose charter was signed into law by President Abraham Lincoln in 1863, remains actively involved in advising the Federal Government on matters of science, engineering, and medicine.

### Does Congress still designate organizations as federally chartered organizations?

Yes, however Congress has drastically limited the frequency with which it enacts charter legislation. Although no formal rule was adopted at the start of this Congress to ban charter legislation, it is the preference of the House Judiciary Committee to not move charter legislation. With enough Members of Congress co-sponsoring, it could be possible to bring the bill out of Committee and directly to the House.

### If the NAI is granted a Federal Charter, what oversight role will the Federal Government have in the future?

The National Academy of Inventors would be required to submit a report to Congress on the activities of the preceding fiscal year, but the Federal Government would not take regulatory or oversight roles.

NATIONAL ACADEMY OF INVENTORS®

# 2016 NAI FELLOWS

*Honoring 175 academic luminaries of innovation and invention*

To be inducted as NAI Fellows at the NAI Annual Conference, April 6, 2017,  
at the John F. Kennedy Presidential Library & Museum in Boston, MA

David Akopian • The University of Texas at San Antonio  
Kamal S. Ali • Jackson State University  
A. Paul Alivisatos • University of California, Berkeley  
Carl R. Alving • Walter Reed Army Institute of Research  
Hamid Arastoopour • Illinois Institute of Technology  
Peter Arsenaull • Tufts University  
B. Jayant Baliga • North Carolina State University  
Zhenan Bao • Stanford University  
Richard G. Baraniuk • Rice University  
Francis Barany • Cornell University  
Jean-Marie Basset • King Abdullah University of Science and Technology  
Paula J. Bates • University of Louisville  
Craig C. Beeson • Medical University of South Carolina  
K. Darrell Berlin • Oklahoma State University  
Sarit B. Bhaduri • The University of Toledo  
Pallab K. Bhattacharya • University of Michigan  
Dieter H. Bimberg • Technical University of Berlin, Germany  
Christopher N. Bowman • University of Colorado Boulder  
Barbara D. Boyan • Virginia Commonwealth University  
Mindy M. Brashears • Texas Tech University  
Donald J. Buchsbaum • The University of Alabama at Birmingham  
Ruben G. Carbonell • North Carolina State University  
John F. Carpenter • University of Colorado Anschutz Medical Campus  
Raghunath V. Chaudhari • The University of Kansas  
Junhong Chen • University of Wisconsin-Milwaukee  
Liang-Gee Chen • National Taiwan University, Taiwan  
Simon R. Cherry • University of California, Davis  
Michael J. Cima • Massachusetts Institute of Technology  
Adrienne E. Clarke • La Trobe University, Australia  
Larry A. Coldren • University of California, Santa Barbara  
Rita R. Colwell • University of Maryland  
Diane J. Cook • Washington State University  
Peter A. Crooks • University of Arkansas for Medical Sciences  
Riccardo Dalla-Favera • Columbia University  
Suman Datta • University of Notre Dame  
Delbert E. Day • Missouri University of Science and Technology  
Roger A. de la Torre • University of Missouri, Columbia  
Stephen W. Director • Northeastern University  
Jeffrey L. Duerk • Case Western Reserve University  
James L. Dye • Michigan State University  
Richard L. Ehman • Mayo Foundation for Medical Education and Research  
Gary A. Eiceman • New Mexico State University  
Ali Emadi • McMaster University, Canada  
Ronald M. Evans • Salk Institute for Biological Studies  
Stanley Falkow • Stanford University  
Hany Farid • Dartmouth College  
Shane M. Farritor • University of Nebraska-Lincoln  
Philippe M. Fauchet • Vanderbilt University  
Denise L. Faustman • Massachusetts General Hospital  
David R. Fischell • Cornell University  
Vincent A. Fischetti • The Rockefeller University  
David P. Fries • Florida Institute for Human and Machine Cognition  
Kenneth G. Furton • Florida International University  
Kanad Ghose • Binghamton University, SUNY  
Juan E. Gilbert • University of Florida  
Linda C. Giudice • University of California, San Francisco  
Herbert Gleiter • Karlsruhe Institute of Technology, Germany  
Dan M. Goebel • NASA Jet Propulsion Laboratory  
Forouzan Golshani • California State University, Long Beach

Lorne M. Golub • Stony Brook University, SUNY  
John B. Goodenough • The University of Texas at Austin  
Michael Graetzel • Ecole Polytechnique Fédérale de Lausanne, Switzerland  
Robert J. Greenberg • Alfred E. Mann Foundation for Scientific Research  
Richard M. Greenwald • Dartmouth College  
Patrick G. Halbur • Iowa State University  
Henry R. Halperin • Johns Hopkins University  
Amy E. Herr • University of California, Berkeley  
D. Craig Hooper • Thomas Jefferson University  
Edward A. Hoover • Colorado State University  
Oliver Yoa-Pu Hu • National Defense Medical Center, Taiwan  
David Huang • Oregon Health & Science University  
Mark S. Humayun • University of Southern California  
Joseph P. Iannotti • Cleveland Clinic  
Enrique Iglesia • University of California, Berkeley  
Sungho Jin • University of California, San Diego  
Barry W. Johnson • University of Virginia  
William L. Johnson • California Institute of Technology  
John L. Junkins • Texas A&M University  
Michelle Khine • University of California, Irvine  
John Klier • University of Massachusetts Amherst  
Thomas J. Kodadek • The Scripps Research Institute  
Harold L. Kohn • The University of North Carolina at Chapel Hill  
Steven M. Kuznicki • University of Alberta, Canada  
Enrique J. Laverna • University of California, Irvine  
Nicholas J. Lawrence • H. Lee Moffitt Cancer Center & Research Institute  
Leslie A. Leinwand • University of Colorado Boulder  
Frances S. Ligler • North Carolina State University  
Yilu Liu • The University of Tennessee, Knoxville  
Jennifer K. Lodge • Washington University in St. Louis  
Gabriel P. López • The University of New Mexico  
Mandi J. Lopez • Louisiana State University  
Surya K. Mallapragada • Iowa State University  
Seth R. Marder • Georgia Institute of Technology  
Alan G. Marshall • Florida State University  
Raghunath A. Mashelkar • National Innovation Foundation-India  
Kouki Matsuse • Meiji University, Japan  
Martin M. Matzuk • Baylor College of Medicine  
T. Dwayne McKay • Florida Institute of Technology  
James W. McGinity • The University of Texas at Austin  
Thomas J. Meade • Northwestern University  
Katrina L. Mealey • Washington State University  
Edward W. Merrill • Massachusetts Institute of Technology  
Paul L. Modrich • Duke University  
H. Keith Moo-Young • Washington State University Tri-Cities  
David J. Mooney • Harvard University  
Israel J. Morejon • University of South Florida  
Harold L. Moses • Vanderbilt University  
Joseph R. Moskal • Northwestern University  
Nazim Z. Muradov • University of Central Florida  
Nicholas Muzyczka • University of Florida  
Lakshmi S. Nair • University of Connecticut  
Shrikanth S. Narayanan • University of Southern California  
Erin K. O'Shea • Howard Hughes Medical Institute  
Ellen Ochoa • NASA Johnson Space Center  
Francis A. Papay • Cleveland Clinic  
Kevin J. Parker • University of Rochester  
Yvonne J. Paterson • University of Pennsylvania  
George N. Pavlakis • National Institutes of Health

Kenneth H. Perlin • New York University  
Nasser Peyghambarian • The University of Arizona  
Gary A. Piazza • University of South Alabama  
Christophe Pierre • Stevens Institute of Technology  
Michael C. Pirrung • University of California, Riverside  
Michael V. Pishko • University of Wyoming  
Garth Powis • Sanford Burnham Prebys Medical Discovery Institute  
Paras N. Prasad • University at Buffalo, SUNY  
Ronald T. Raines • University of Wisconsin-Madison  
Ragunathan (Raj) Rajkumar • Carnegie Mellon University  
Michael P. Rastatter • East Carolina University  
Jacob (Kobi) Richter • Technion-Israel Institute of Technology, Israel  
Richard E. Riman • Rutgers, The State University of New Jersey  
Andrew G. Rinzler • University of Florida  
Bruce E. Rittmann • Arizona State University  
Nabeel A. Riza • University College Cork, Ireland  
Kenneth J. Rothschild • Boston University  
Stuart H. Rubin • Space and Naval Warfare Systems Center  
Linda J. Saif • The Ohio State University  
Sudeep Sarkar • University of South Florida  
John T. Schiller • National Institutes of Health  
Diane G. Schmidt • University of Cincinnati  
Wayne S. Seames • University of North Dakota  
Michael S. Shur • Rensselaer Polytechnic Institute  
David Sidransky • Johns Hopkins University  
Mrityunjay Singh • Ohio Aerospace Institute  
Kamalesh K. Sirkar • New Jersey Institute of Technology  
David R. Smith • Duke University  
James E. Smith • West Virginia University  
Terrance P. Snutch • The University of British Columbia, Canada  
Ponisseril Somasundaran • Columbia University  
Gerald Sonnenfeld • University of Rhode Island  
James S. Speck • University of California, Santa Barbara  
Sidlgata V. Sreenivasan • The University of Texas at Austin  
Bruce W. Stillman • Cold Spring Harbor Laboratory  
Daniele C. Struppa • Chapman University  
Kenneth S. Suslick • University of Illinois at Urbana-Champaign  
Mark J. Suto • Southern Research Institute  
Yu-Chong Tai • California Institute of Technology  
Nelson Tansu • Lehigh University  
Fleur T. Tehrani • California State University, Fullerton  
Marc T. Tessier-Lavigne • Stanford University  
Madhukar (Mathew) L. Thakur • Thomas Jefferson University  
Mehmet Toner • Massachusetts General Hospital  
Jan T. Vilcek • New York University  
Anil V. Virkar • The University of Utah  
John F. Wager • Oregon State University  
William R. Wagner • University of Pittsburgh  
Isiah M. Warner • Louisiana State University  
John D. Weete • Auburn University  
Andrew M. Weiner • Purdue University  
Ralph Weissleder • Massachusetts General Hospital  
Thomas M. Weller • University of South Florida  
Jennifer L. West • Duke University  
Amnon Yariv • California Institute of Technology  
Yun Yen • Taipei Medical University, Taiwan  
Warren M. Zapol • Massachusetts General Hospital

Collectively, the 2016 NAI Fellows hold nearly 5,500 patents and represent 135 institutions



NAI Fellows have generated more than  
**8,500**  
LICENSED  
TECHNOLOGIES



**OVER \$100 BILLION**  
in revenue generated  
by the inventions  
of Fellows

**NAI**  
NATIONAL ACADEMY OF INVENTORS  
[www.AcademyofInventors.org](http://www.AcademyofInventors.org)

OVER  
**1.1 MILLION**  
JOBS CREATED

as a result of  
NAI Fellows  
inventions  
& companies

\*Based on all Fellows years 2012-2015

## • Presenter and Speaker Biographies •

WEDNESDAY, APRIL 5, 2017

### SESSION A | CHANGING THE ACADEMIC INNOVATION LANDSCAPE



**Co-Chair**

**Lorne A. Babiuk**

*Vice President for Research  
University of Alberta*

Lorne A. Babiuk, Ph.D., D.Sc., is vice president for research at the University of Alberta. Babiuk is a global leader in vaccinology, virology, and immunology. He is an Officer of the Order of Canada and the recipient of the Saskatchewan Order of Merit, the Killam Prize, Gairdner Wightman Award, McLaughlin Medal, Prix Galien Canada Research Prize, GCHERA World Agriculture Prize, and the Queen Elizabeth II Diamond Jubilee Medal. He holds 42 U.S. patents that have been licensed to numerous companies. He has published 600 peer reviewed manuscripts and 80 review articles and book chapters. He serves as associate editor for *Vaccine* and *Emerging Microbes and Infections*. Babiuk is a Fellow of NAI, the Royal Society of Canada, and the Canadian Academy of Sciences, and an honorary fellow of the Royal College of Physicians and Surgeons Canada. He holds three Honorary Doctorates from Colorado State University, University of Guelph, and University of Saskatchewan.



**Co-Chair**

**Donna See**

*Vice President  
Allied Minds*

Donna See, MBA, is vice president at Allied Minds, a publicly-traded venture capital firm (London Stock Exchange: ALM) and vice president of Allied-Bristol Life Sciences, a joint venture between Allied Minds and Bristol-Myers Squibb. Throughout her career, See has served as an architect and active contributor to numerous programs and initiatives that advance translation of scientific and engineering breakthroughs, with over 15 years of experience in technology commercialization, as an investor, founder, and advisor to more than 30 start-ups in the life sciences and technology sectors. She leads Allied Minds' pipeline development, overseeing scouting, diligence, and founding of new ventures based on intellectual property created by Allied Minds' network of over 160 university and federal lab partners. See has negotiated hundreds of IP licensing, equity, acquisition, and other commercial agreements, as well as fundraising from private and public sources of early stage capital. See received a master's degree in business from Columbia Business School and master's in public health policy and management from Columbia University.



**Presentation: *Approaches to an Innovative and Entrepreneurial Culture: Involving and Protecting Students***

**Barbara D. Boyan**

*Dean, School of Engineering and  
Alice T. and William H. Goodwin, Jr. Chair in Biomedical Engineering  
Virginia Commonwealth University*

Barbara D. Boyan, Ph.D., is Alice T. and William H. Goodwin, Jr. Chair in biomedical engineering and dean of the School of Engineering at Virginia Commonwealth University. Boyan is also professor emerita at the Georgia Institute of Technology and directs the Virginia branch of the FDA-sponsored Atlantic Pediatric Device Consortium. Her laboratory researches all aspects of bone and cartilage biology, from basic science studies on steroid hormone signaling to the use of cells for regenerative medicine strategies, focusing on how cells interact with biomaterial surfaces. She was appointed to the national materials advisory board of the National Academies and chaired their Roundtable on Biomedical Engineering Materials and Applications. Boyan has founded numerous biomedical technology companies and served on the boards of public and private companies. She is author of more than 460 peer-reviewed papers, reviews, and book chapters and holds 22 U.S. patents. Boyan is a member of NAE and Fellow of NAI, AAAS, AIMBE and World Congress of Biomaterials.



**Presentation: *Inova Schar Cancer Institute: A New Model for Catalyzing Medical Innovations through Drug Discovery***

**Milton L. Brown**

*Director, Drug Discovery and Development and Deputy Director for Drug Discovery  
Inova Schar Cancer Institute*

Milton L. Brown, M.D., Ph.D., is deputy director for drug discovery and development at Inova Schar Cancer Institute and director of the Drug Discovery Center at the Inova Center for Personalized Health. Brown has focused research expertise primarily in the discovery and development of anti-cancer agents (prostate, breast, Ewing sarcomas), radiation modifying agents, radiation countermeasures, neuro-therapeutics (epilepsy, pain and traumatic brain injury), and cardiovascular innovations (new anti-hypertensive/renal protective agents). He received the Exemplar Mentor Award from the Urban Education Institute in recognition of his contributions to raising the achievement and performance levels of people of color in STEM fields. He has 15 issued U.S. patents, which have been licensed to commercial partners for development and led to the founding of a startup company. He is presently a consultant with several companies in the areas of drug development, medicinal chemistry and pharmacology. Brown is a 2015 Fellow of NAI.

**PANEL 1 | GOVERNMENTAL RELATIONS INFORMATION SESSION**



**Moderator**

**Elizabeth L. Dougherty**

*United States Patent and Trademark Office  
Board Member, National Academy of Inventors*

Elizabeth L. Dougherty, J.D., is director of Inventor Education, Outreach, and Recognition in the Office of Innovation Development at the USPTO. In this capacity she develops, implements and supervises programs that support the independent inventor community, small businesses, entrepreneurs and the intellectual property interests of colleges and universities. She also supervises the development of outreach programs to women, minority and other underserved communities. Dougherty is currently on a special assignment to the USPTO's Office of Government Affairs where she builds and maintains relationships with members of Congress, their staffs and constituents. In particular, Dougherty is developing programs that support invention and innovation in the U.S. aimed at Congressional Caucuses and their target audiences. She has spearheaded a number of special projects with organizations such as the Smithsonian Institution and oversees a portfolio of ongoing and future initiatives designed to assist diverse USPTO stakeholders. Dougherty is a member of the NAI board of directors.



**Panelist**

**Dana R. Colarulli**

*Director, Office of Government Affairs  
United States Patent and Trademark Office*

Dana R. Colarulli is the director of the Office of Governmental Affairs and serves on the executive management team at the U.S. Patent and Trademark Office. He has more than 20 years of experience working in and with the Federal government and U.S. Congress. As the top legislative liaison at the Department of Commerce on Intellectual Property issues, Colarulli has facilitated substantive patent, copyright and trademark and related policy discussions and advocated for USPTO operational priorities. He also coordinated USPTO personnel to facilitate enactment of various legislative reforms including the 2011 American Invents Act (AIA). Prior to his current role, he served as director of government relations for the Intellectual Property Owners Association. He has worked in the U.S. Senate, at a DC-based Law Firm, and at the U.S. Small Business Administration. He is a member of the Massachusetts Bar.



**Panelist**

**Robert V. Duncan**

*Vice President for Strategic Research Initiatives  
Texas Tech University*

Robert V. Duncan, Ph.D., is vice president for strategic research initiatives and professor of physics at Texas Tech University. Duncan formerly served as vice chancellor for research at the University of Missouri (MU) and was the Gordon and Betty Moore Distinguished Scholar in the Division of Physics, Mathematics, and Astronomy at Caltech. He has published extensively in low-temperature physics, and he chaired a NAS panel on the Future of Fundamental Physics in Space in 2011. He holds 10 U.S. patents with multiple international filings. Duncan co-invented a less-invasive type of percutaneous and intravascular cryosurgery that is currently in human clinical trials and which is based upon a genuinely new cryogenic technology. As an administrator, Duncan has supported innovation broadly within academia and has started new student entrepreneurial programs. He is a Fellow and board member of NAI.



**Panelist**

**Jessica A. Sebeok**

*Associate Vice President for Policy  
Association of American Universities*

Jessica A. Sebeok, J.D., is associate vice president and counsel for policy at the Association of American Universities. Her portfolio includes intellectual property, tax, and a range of legal issues. She previously served as counsel for policy and international affairs in the U.S. Copyright Office, special assistant to the Assistant Secretary of State for Educational and Cultural Affairs, and as assistant general counsel of Yale University. Sebeok received her juris doctor degree from Yale Law School and her master's degree from the University of Oxford, where she was a Marshall Scholar. Sebeok also has a bachelor's degree in history from the University of Chicago.



**Panelist**

**Michael A. Waring**

*Executive Director of Federal Relations  
University of Michigan*

Michael A. Waring is executive director of federal relations for the University of Michigan and serves as the head of the Washington D.C. office. There, he leads a team of four government relations professionals who advocate for the university's agenda with the federal government. He also serves as head of advocacy for the AUTM and chairs the Intellectual Property/Tech Transfer Task Force for the Association of American Universities, where he has been extremely active on patents and related issues. Before coming to Michigan, Waring was vice president of government relations for the National Association of Broadcasters and also worked on Capitol Hill for Rep. Harold Rogers (R-KY). He graduated with a bachelor's degree in journalism from the University of Michigan.



**Presentation: Inspiring the Next Generation of Innovators Through Industry-University Collaboration**

**Ruben G. Carbonell**

*Frank Hawkins Kenan Distinguished Professor of Chemical and Biomolecular Engineering  
North Carolina State University*

Ruben G. Carbonell, Ph.D., is professor of chemical and biomolecular engineering at North Carolina State University. Carbonell has made significant contributions in the areas of isolation and purification of biological molecules, thin film coatings using high-pressure fluids, and transport processes in chemically reacting systems. He holds more than 30 patents and is co-founder of Pathogen Removal and Detection Technologies (PRDT), Inc., Oryx Bio, and Green Clean LLC. He and his colleagues founded PRDT, Inc., to commercialize affinity ligand resins to remove the infectious prion protein (responsible for Mad Cow Disease) from blood and blood products. Octapharma AG adopted resins with these prion-capture-ligands for their antibody production process. The new prion-safe product has been approved in over 11 different countries, including the U.S. He has published over 250 peer-reviewed articles. Carbonell is a member of NAE and Fellow of NAI, AIChE and ACS.



**Presentation: Emerging Models of Industry – Academic Collaboration and Engagement**

**Jeffrey L. Duerk**

*Dean, School of Engineering and Professor of Biomedical Engineering, Electrical Engineering and Radiology  
Case Western Reserve University*

Jeffrey L. Duerk, Ph.D., is dean of engineering at Case Western Reserve University. Duerk is recognized for important contributions to magnetic resonance imaging (MRI), most notably the development of system hardware and software leading to MRI's expanded role in real-time image-guided procedures. He is the recipient of the IEEE Silver Medal and holds 40 U.S. patents and three foreign patents that have been licensed to major biomedical imaging companies. He is the founder of Interventional Imaging, Inc. He has published over 185 scientific articles and twelve book chapters and serves on the editorial boards of *Magnetic Resonance in Medicine* and *Journal of MRI*. Duerk is a Fellow of NAI, IEEE, AIMBE, the International Society for Medical Resonance in Medicine and member of the inaugural class of Distinguished Radiology Researchers of the Academy of Radiology Research.

## PANEL 2 | INNOVATIVE APPROACHES TO UNIVERSITY-INDUSTRY COLLABORATION



**Moderator**

### **Sethuraman Panchanathan**

*Executive Vice President and Chief Research and Innovation Officer of Knowledge Enterprise Development  
Arizona State University*

Sethuraman (Panch) Panchanathan, Ph.D., is executive vice president and chief research and innovation office of Knowledge Enterprise Development at Arizona State University (ASU), where he strives to advance research, innovation, strategic partnerships, entrepreneurship, and international and economic development. In 2014, Panchanathan was appointed by President Barack Obama to the U.S. National Science Board and has been appointed to the National Advisory Council on Innovation and Entrepreneurship. He is currently serving as the chair-elect in the Council on Research within the Association of Public and Land-grant Universities. At ASU his achievements include founding the Center for Cognitive Ubiquitous Computing and serving as the founding director of the School of Computing and Informatics. His research interests include human-centered multimedia computing, haptic user interfaces, technologies for individuals with disabilities and machine learning for multimedia applications. Panchanathan is a board member and Fellow of NAI, and fellow of the Canadian Academy of Engineering and IEEE.



**Panelist**

### **Gary B. Bronner**

*Vice President  
Rambus Labs*

Gary B. Bronner, Ph.D., is vice president of Rambus Labs, where he has worked for the last 10 years. Bronner is responsible for his company's long term research in all aspects of memory, spanning from basic memory cell technology to memory device architecture and memory systems and software. He is also responsible for Rambus' work in computational sensing and imaging. His organization sponsors research work with selected university partners and has successful collaborations in flight in the United States, Europe, and Asia. Prior to joining Rambus, Bronner worked for IBM in both the Research Division and later the Microelectronics business. During his tenure, he was responsible for the development and transfer of memory and logic technology from research through development and into manufacturing. He is author or co-author of over 80 issued U.S. patents along with numerous journal and conference publications. He received his bachelor's degree from Brown University and master's and doctorate degrees from Stanford University. Bronner is a fellow of the IEEE.



**Panelist**

### **Andrew D. Hamilton**

*President  
New York University*

Andrew D. Hamilton, Ph.D., is the 16<sup>th</sup> president of New York University. He previously served as the vice chancellor of Oxford University, the university's senior officer, after an academic career that took him from Princeton to the University of Pittsburgh and then to Yale, where he was named provost. In addition to his record as an academic leader, he is a noted, award-winning, widely published chemist and continues his scholarly work, including an active research laboratory. Hamilton's research lies at the intersection of organic and biologic chemistry. He received his doctoral degree from Cambridge University, his master's degree from the University of British Columbia, and his bachelor's degree from Exeter University. He is a Fellow of NAI, the Royal Society, member of the American Academy of Arts and Sciences and a named inventor on 24 issued U.S. patents.



**Panelist**

**Terry McGuire**

*Founding Partner  
Polaris Partners*

Terry McGuire, MBA, is founding partner at Polaris Partners and specializes in successful early stage investing experience to the healthcare industry. He has invested in more than 50 companies, co-founding MicroCHIPS, Inspire Pharmaceuticals and Advanced Inhalation Research, and serves on the boards for several companies. McGuire serves on the boards of Dartmouth's Thayer School of Engineering, MIT's Koch Institute for Integrative Cancer Research, Harvard's Rock Center for Entrepreneurship, and at Brigham & Women's Hospital. He is also chairman of the Global Venture Capital Congress and chairman emeritus of the National Venture Capital Association. He has been named to Forbes Midas list multiple times and was listed as one of Scientific American's Worldview 100. He was awarded honorary doctorate degrees from Ohio Wesleyan University and Canisius College for his work in translational science and recently received the Guys Who Get It Award from Women in the Enterprise of Science & Technology. McGuire holds a master's degree in business from Harvard Business School, and master's in engineering from The Thayer School, Dartmouth College, and a bachelor's degree in physics and economics from Hobart.



**Panelist**

**H. Keith Moo-Young**

*Chancellor  
Washington State University Tri-Cities*

H. Keith Moo-Young, Ph.D., P.E., is chancellor of Washington State University Tri-Cities. A licensed professional engineer, Moo-Young's research interests include solid and hazardous waste management, environmental containment and remediation technologies. He led an industrial consortium with 15 utilities which resulted in a patented device to determine environmental contamination. He has received numerous awards and honors, including U.S. Black Engineer of the Year, National Defense Science and Engineering Graduate Fellowship, and General Electric Faculty Fellowship. He has more than 200 peer-reviewed papers and invited talks. Moo-Young has developed innovation communities to increase entrepreneurship and small business partnered with universities in Pennsylvania, California and Washington. As a result of his research and public policy work, Moo-Young was named a Fellow of NAI, AAAS, ASCE, and the American Academy of Environmental Engineers and Scientists.

**SESSION B | ISSUES RELATING TO PUBLIC POLICY**



**Co-Chair**

**Alexander N. Cartwright**

*Provost and Executive Vice Chancellor  
The State University of New York*

Alexander N. Cartwright, Ph.D., is provost and executive vice chancellor of The State University of New York (SUNY). Cartwright drives academic policy across the 64-campus system, overseeing: diversity, equity, and inclusion; student success; academic planning and assessment; enrollment management; global affairs; and SUNY's broad research enterprise. He most recently served as vice president for research and economic development and acting executive director of the NYS Center of Excellence in Bioinformatics and Life Sciences at SUNY's University at Buffalo. An internationally recognized scholar in optical sensors, his technology for fabricating a rainbow-colored polymer using a one-step, low-cost holographic lithography method was named to the Society of Manufacturing Engineer's 2013 list of Innovations that Could Change the Way You Manufacture. A prolific scholar, Cartwright holds four patents and his work has been licensed by three startup companies. His doctorate degree in electrical and computer engineering is from the University of Iowa. Cartwright is a Fellow of NAI.





**Co-Chair**

**Arlene A. Garrison**

*Vice President for University Partnerships  
Oak Ridge Associated Universities*

Arlene Garrison, Ph.D., is vice president of university partnerships at Oak Ridge Associated Universities (ORAU), responsible for enhancing ORAU's scientific research opportunities and expanding partnerships with universities, national laboratories and private industry. Garrison brings more than 35 years of experience in science and education to ORAU's university partnership and research programs. Prior to joining ORAU, she served as a program director for the National Science Foundation. Garrison has a doctorate in analytical chemistry and a bachelor's degree in electrical engineering from the University of Tennessee. Active in community and scientific organizations, she currently serves on the National Science Foundation Advisory Committee for the Small Business Innovation Research program, the board of the Southern Appalachian Science and Engineering Fair, and is a member of the American Chemical Society. In recognition of her volunteer work in science outreach to pre-college students, Garrison was selected as a torch bearer for the 1996 Olympic Games. Garrison is a member of the NAI Board of Directors.

**PANEL 3 | IMPACTING SOCIETY THROUGH INVENTION AND ENTREPRENEURSHIP**



**Moderator**

**Michael A. Smith**

*Director of Intel® Software Academic Program  
Intel Corporation*

Michael A. Smith, Ph.D., is director of the Intel Software Academic Program for Perceptual Computing and the Internet of Things and a visual computing architect. He is a specialist in image and video analytics with a focus on automated media understanding for video search and visualization. He has given over 100 invited presentations and is the author of numerous scientific publications and a book on video indexing, search and summarization. Before joining Intel, Smith was director of research with France Telecom R&D. Smith is a pioneer in health systems for remote monitoring and is a co-founder of the Urban Health initiative for improving patient wellness in underrepresented communities.



**Panelist**

**Karen J.L. Burg**

*Harbor Lights Endowed Chair in the Department of Small Animal Medicine and Surgery  
University of Georgia*

Karen J.L. Burg, Ph.D., is professor and Harbor Lights Endowed Chair in the department of small animal medicine and surgery at the University of Georgia (UGA). Previously, she served as vice president for research and a professor of chemical engineering at Kansas State University. Honors to Burg include a Presidential Early Career Award for Scientists and Engineers, inaugural Swiss AO Research Prize, recognition as a MIT's TR100 Young Innovator, a DoD Era of Hope Scholar, and an AAAS-Lemelson Invention Ambassador. She has seven patents issued, 13 disclosures and/or provisional patent applications recorded, with one patent serving as the basis for a diagnostics startup company. She has given over 200 invited presentations and authored over 140 peer-reviewed publications on the subject of engineered tissues. A Burg invention was one of 10 technologies featured in the inaugural Avon Foundation for Women - NIH - Center for Advancing Innovation Breast Cancer Start-Up Challenge. She is a Fellow and board member of NAI, and fellow of AIMBE and American Council on Education.



**Panelist**

**Eric R. Fossum**

*Professor of Engineering, Director, Ph.D. Innovation Program  
Dartmouth College*

Eric R. Fossum, Ph.D., is professor at the Thayer School of Engineering at Dartmouth and director of the Ph.D. Innovation Program. Previously, while at JPL/Caltech, he invented the CMOS image sensor used in billions of camera phones, webcams, DSLRs, swallowable pill cameras, dental x-ray sensors, and many other applications. He co-founded and led Photobit to further develop and commercialize the technology which was eventually acquired by Micron. He holds over 150 U.S. patents and was inducted into NIHF and the Space Technology Hall of Fame, and awarded the 2017 Queen Elizabeth Prize. He has published over 270 papers, and received the IEEE Andrew Grove Award and the NASA Exceptional Achievement Medal. He is a founder and past-president of the International Image Sensor Society, serves on several boards, and is a Trustee of Trinity College. Fossum is a member of NAE, fellow of IEEE, and board member and Charter Fellow of NAI.



**Panelist**

**Benjamin S. Hsiao**

*Distinguished Professor in Chemistry  
Stony Brook University*

Benjamin S. Hsiao, Ph.D., is a Distinguished Professor in chemistry at Stony Brook University. Hsiao has a notable reputation in polymer science. His current research interests are mainly focused on the development of sustainable nanostructured biomaterials for water purification applications. He is the recipient of SUNY Distinguished Professor, Chang-Jiang Scholar from Education Ministry of China, Co-operative Research Award from Division of Polymeric Materials Science and Engineering of American Chemical Society, NSF Special Creativity Award and DuPont Young Faculty Award. He holds 21 U.S. patents and 15 foreign patents that have been licensed to 3 companies. He is the founder of Liquidity Nanotech, which has recently won the TechCrunch Disrupt NY 2015 Startup Battlefield award. He has published over 457 peer-reviewed scientific papers, 45 reviews and chapters in books and encyclopaedias, and serves as editorial board member for 6 scientific journals. Hsiao is a Fellow of NAI, AAAS, ACS, APS, and MRS, and is an AAAS-Lemelson Invention Ambassador.



**Presentation: LSU LA-STEM Research Scholars Program: A Model for Broadening Diversity in STEM Education**

**Isiah M. Warner**

*Vice President for Strategic Initiatives and Philip W. West Professor of Analytical & Environmental Chemistry  
Louisiana State University*

Isiah M. Warner, Ph.D., is Philip West Professor of Chemistry and Boyd Professor of the Louisiana State University, and HHMI Professor. Warner's research expertise, of more than 35 years, is in the area of fluorescence spectroscopy. Most recently, his research has focused in the area of ionic liquid chemistry applied to solid phase materials for applications in materials chemistry and nanomaterials. He is involved in numerous research projects that focus in the general areas of analytical and materials chemistry. Warner has received many awards including the Southeastern Conference Professor of the Year Award, Stanley C. Israel Regional Award for Advancing Diversity in the Chemical Sciences, ACS Award in Analytical Chemistry, and Presidential Award for Excellence in STEM Mentoring. He has published more than 350 peer-reviewed publications and holds eight issued U.S. patents. Warner is a member of the American Academy and Fellow of NAI.



**Presentation: *Patenting from the Perspective of an NIH Inventor***

**John T. Schiller**

*NIH Distinguished Investigator at the Center for Cancer Research of the National Cancer Institute  
National Institute of Health*

John T. Schiller, Ph.D., is NIH Distinguished Investigator at the Center for Cancer Research of the National Institutes of Health. Schiller led in the discovery, characterization, and clinical testing of vaccines to prevent the HPV infections that cause cervical and other cancers. He has received numerous awards for this work including the 2007 Service to America Medal-Federal Employee of the year and 2014 National Medal of Technology and Innovation from President Obama. He holds 22 U.S. patents that have been licensed to numerous pharmaceutical companies, including Merck, GlaxoSmithKline and Sanofi Pasteur. He has published more than 250 peer-reviewed research articles and has served as associate editor or on the editorial boards of several virology and vaccinology journals. He also serves on the NCI Technology Review Group and the Public Health Service Technology Transfer Policy Board. Schiller is a Fellow of NAI.

**PANEL 4 | HONORING INNOVATORS THROUGH LOCAL NAI CHAPTERS**

**Moderator**

**Karen J.L. Burg**

*Harbor Lights Endowed Chair in the Department of Small Animal Medicine and Surgery  
University of Georgia*

*See page 23*



**Panelist**

**Vikki Hazelwood**

*Professor and Director of Biomedical Engineering  
Stevens Institute of Technology*

Vikki Hazelwood, Ph.D., is director of the Biomedical Engineering Program at Stevens Institute of Technology. Hazelwood has been PI or Investigator for more than a dozen clinical trials aimed at bringing new technologies to practice. She has developed and led a program that formally indoctrinates all of her students to the invention process. Hazelwood received the Advancement of Invention Award from the New Jersey Inventors Hall of Fame and multiple awards for teaching excellence at Stevens. She holds four U.S. medical device patents with her student co-inventors. The ee patents have been licensed to three different companies including one start-up company that she founded, and her students remained engaged in these companies after graduation. She has written 25 articles, one book, and two book chapters related to innovation-education and advancing medical technology. Hazelwood is president of the Stevens chapter of the NAI, a member of AIMBE, and Fellow of NAI.



**Panelist**

**Todd S. Keiller**

*Director of Intellectual Property and Innovation  
Worcester Polytechnic Institute*

Todd S. Keiller is director of intellectual property and innovation at Worcester Polytechnic Institute (WPI). Keiller joined WPI in 2011 to run their technology transfer office and has over 30 years of licensing, business development, and marketing experience. He worked for 16 years in the industrial sector in a variety of sales, marketing, and business development roles, 10 of which were with Corning Glass Works in their Science and Medical Products Divisions. He has over 20 years of academic licensing experience and is former vice president, ventures of the Brigham and Women's Hospital in Boston. Previously, he formed the technology commercialization office at the University of Vermont where he formed the successful UVM Ventures, an internal gap fund intended to create a "valley of birth" by funding projects that had commercial promise but were too early for initial outside investment. He has just formed a similar WPI accelerator fund. Keiller has founded or co-founded 6 companies independent of his academic tech transfer startups. He holds a master's degree in business from the Tuck School of Business Administration at Dartmouth College.



**Panelist**

**Stephen D. Russell**

*Director of Science & Technology and Chief Technology Officer  
Space and Naval Warfare Systems Command*

Stephen D. Russell, Ph.D., Senior Executive Service (SES), is director of science and technology and CTO at Space and Naval Warfare Systems Command. He leads a highly technical team of 800+ personnel and influences \$1.2B supporting R&D in command and control, communications, computers, intelligence, surveillance and reconnaissance. He is the recipient of many awards including: AFCEA's International Gold Medal in Engineering, SSC Pacific's Lauritsen-Bennett Award for Science, Navy Meritorious Civilian Service Award and the FLC Excellence in Technology Transition Award. He holds 115 U.S. and foreign patents and over 20 percent of his IP portfolio has been commercially licensed. He has authored or co-authored over 70 articles in peer-reviewed journals, conference proceedings, and technical reports and serves on the editorial board for *Naval Science & Technology Future Force Magazine*. Russell received his master's and doctoral degrees from University of Michigan and bachelor's degree from SUNY Stony Brook. He is a member of APS and SPIE and a Fellow of NAI.



**Panelist**

**Jan D. Thornton**

*Director, Office of Innovation Advancement and Commercialization  
Auburn University*

Jan D. Thornton, MBA, is director for the Office of Innovation Advancement and Commercialization (IAC) at Auburn University (AU). Thornton has served in this capacity for over 22 years. She is responsible for the leadership and management of the IAC office, its technology commercialization, industry relations, intellectual property management and policy development. Additionally, she serves as liaison for the AU Chapter of the National Academy of Inventors with the AU research enterprise, assisting the chapter with its objectives and initiatives. Thornton holds a master's degree in business from the University of Alabama and a law degree from the Cumberland School of Law.

**SESSION C | HIGHLIGHTING THE SIGNIFICANT IMPACT NAI FELLOWS AND MEMBERS HAVE CONTRIBUTED TO THE BETTERMENT OF SOCIETY**



**Co-Chair**

**Kenneth J. Blank**

*Senior Vice President for Health Sciences  
Rowan University*

Kenneth J. Blank, Ph.D., is senior vice president for health sciences at Rowan University. Blank's research interests include molecular and cellular basis for host/virus interactions in the development of persistent retrovirus infection and retrovirus-induced leukemogenesis. His role in academic administration has focused on fostering use-inspired research programs that result in technology development and commercialization that promote regional economic development. He serves as vice chair of the board of directors of the University City Science Center in Philadelphia and is a member of the New Jersey Council on Innovation. Blank holds three U.S. patents, has received numerous grants and contracts from the NIH and U.S. DoD and has over 60 publications on molecular and cellular pathology and genetics. He is the recipient of a Leukemia Society of America Scholar Award (presently the Leukemia and Lymphoma Society) and is a Fellow of NAI and of the Philadelphia College of Physicians.



**Co-Chair**

**Carol Dahl**

*Executive Director  
The Lemelson Foundation*

Carol Dahl, Ph.D., is executive director of The Lemelson Foundation whose mission is to use the power of invention to improve lives. The Foundation inspires and enables the next generation of inventors and invention-based enterprises to promote economic growth in the U.S., and social and economic progress for the poor in developing countries. The Foundation focuses on Impact Inventing, targeting social impact, environmental responsibility and creation of products and businesses that are financially self-sustaining. Prior to joining the Foundation, Dahl was founding director of the Global Health Discovery Program at the Bill & Melinda Gates Foundation where she led the development of the Grand Challenges in Global Health and Grand Challenges Explorations programs. Previously, she worked at NIH at the National Cancer Institute and National Center for Human Genome Research, at a start-up diagnostics company, and on the faculty of the University of Pittsburgh.

## PANEL 5 | CHANGING THE CULTURE TO RECOGNIZE PATENTS, LICENSING AND COMMERCIALIZATION TOWARD TENURE AND MERIT



**Moderator**

**Nadine N. Aubry**

*Dean, College of Engineering  
Northeastern University*

Nadine Aubry, Ph.D., is University Distinguished Professor and dean of the College of Engineering at Northeastern University. Aubry has made contributions to fluid dynamics, including low-dimensional models of turbulence and microfluidics. She is the 2017 recipient of the G.I. Taylor Medal of SES for her work in fluid mechanics. Aubry currently serves as president of the International Union of Theoretical and Applied Mechanics, secretary of NAE's mechanical engineering section, chair of NAE's frontiers of engineering education advisory committee, and on the International Council of Science, the AAAS Engineering Section executive committee, and four NAE/NAS committees including the NAE Bernard M. Gordon Prize for Innovation in Engineering and Technology Education selection committee. She has published 165 peer-reviewed articles and book chapters, and is member of NAE and Fellow of NAI, AAAS, AIAA, APS, and ASME.



**Panelist**

**Kenneth G. Furton**

*Provost and Executive Vice President  
Florida International University*

Kenneth G. Furton, Ph.D., is professor of chemistry and biochemistry at Florida International University (FIU) where he also serves as provost, executive vice president and chief operating officer. Furton has made important innovations in detection technologies including human scent identification. He holds several U.S. patents and patents pending and is a founder of an FIU startup company, Innovative Detection Concepts, Inc. He has also been a strong advocate for the inventor community nationally and during his tenure as provost at FIU he has created a culture of invention and innovation with patent disclosures and startups on a rapid rise and issued patents increasing from two in 2013 to sixteen in 2016. He has more than 800 articles, books, book chapters and conference presentations. Furton is a Fellow of NAI, American Academy of Forensic Science, ACS member and chairs Scientific Working Group on Dog and Orthogonal Detection Guidelines and the Dogs and Sensors subcommittee of Overseas Security Advisory Council.



**Panelist**

**Paul R. Sanberg**

*President  
National Academy of Inventors*

Paul R. Sanberg, Ph.D., D.Sc., FNAI, is founder and president of the National Academy of Inventors, and senior vice president for research, innovation, and economic development at the University of South Florida. He trained at York University, University of British Columbia, Australian National University and Johns Hopkins University School of Medicine, among others, and held academic positions at Ohio University, University of Cincinnati, and Brown University. He holds 43 U.S. and 110 foreign patents and has served on numerous scientific advisory boards for health-related foundations and companies. He is author of more than 600 scientific articles and 14 books, with over 27,000 citations to his work, co-editor-in-chief of *Technology and Innovation*, and serves on editorial boards for more than 30 scientific journals. He is a Charter Fellow of the NAI, and fellow of the American Association for the Advancement of Science and the American Institute for Medical and Biological Engineering, AAAS-Lemelson Invention Ambassador, Florida Inventors Hall of Fame inductee, Florida Academy of Sciences Medalist, and serves on the nomination evaluation committee of the United States National Medal of Technology and Innovation.



**Panelist**

**Tobin L. Smith**

*Vice President for Policy  
Association of American Universities*

Tobin (Toby) L. Smith is vice president for policy at the Association of American Universities (AAU), an organization of 62 leading U.S. and Canadian research universities devoted to helping shape policy for higher education, science and innovation; promoting best practices in undergraduate and graduate education; and strengthening the contributions of research universities to society. Smith oversees AAU's policy and policy analysis activities, and the Undergraduate STEM Education Initiative. He handles issues relating to science and innovation policy, academic research, research regulations, compliance and costs, technology transfer, public access, export controls, and preserving scientific openness and security. Previously, Smith was a federal relations representative in the D.C. office of the University of Michigan and the Massachusetts Institute of Technology, and served as a legislative assistant to Congressman Bob Traxler (D-Michigan). Smith is co-author of *Beyond Sputnik – U.S. Science Policy in the 21<sup>st</sup> Century*, a book on national science policy. He is currently a member of the NAS Roundtable on the Communication and Use of Social and Behavioral Sciences and sits on several advisory boards. Smith is a fellow of AAAS.

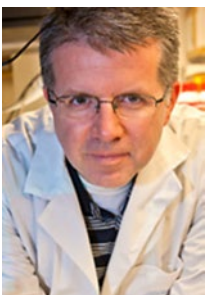


**Presentation: *Advanced Implants for Ophthalmology***

**Mark S. Humayun**

*Cornelius J. Pings Chair in Biomedical Sciences, Professor of Ophthalmology, Biomedical Engineering and Cell and Neurobiology, and Director of the Institute for Biomedical Therapeutics  
University of Southern California*

Mark S. Humayun, M.D., Ph.D., is Cornelius J. Pings Professor of biomedical sciences at the University of Southern California (USC) with joint appointments at the Keck School of Medicine and the Viterbi School of Engineering. He is also director of the Institute for Biomedical Therapeutics and co-director of the USC Roski Eye Institute. Humayun is recognized worldwide as a pioneer in restoring sight to the blind. For his accomplishments in bioelectronics in medicine, he received the 2015 National Medal of Technology and Innovation, the nation's highest award for technological achievement. He has more than 100 patents and patent applications and more than 200 peer-reviewed publications. He is co-inventor of the first FDA approved retinal prosthesis, Argus II, which restores functional sight to those with complete retinal blindness. Humayun is a member of NAM and NAE, and Fellow of NAI.



**Presentation: *Tethering Capsule Endomicroscopy: A New Window Into the Gastrointestinal Tract***

**Guillermo J. Tearney**

*Mike and Sue Hazard Family MGH Research Scholar and Professor of Pathology at Harvard Medical School  
Massachusetts General Hospital*

Guillermo (Gary) J. Tearney, M.D., Ph.D., is professor of pathology at Harvard Medical School, pathologist at Massachusetts General Hospital (MGH), affiliate faculty of the Harvard-MIT Division of Health Sciences and Technology, and a faculty member of the Wellman Center for Photomedicine. Tearney's research interests are focused on the development and clinical validation of noninvasive, high-resolution optical imaging methods for human disease diagnosis. He received the Edward M. Kennedy Award for Health Care Innovation and was named a Mike and Sue Hazard Family MGH Research Scholar and a Top Translational Researcher by Nature Biotechnology. He holds 341 U.S. and 416 foreign patents licensed to nine companies. He has published 220+ articles, is editor of Handbook of Optical Coherence Tomography, has written 20+ book chapters, and serves on the editorial board of Lasers in Surgery and Medicine. He is a Fellow of NAI and the American College of Cardiology and College of American Pathologists. He is founder and co-chair of the International Working Group for Intravascular OCT Standardization and Validation and vice chair of the College of American Pathologists In Vivo Microscopy Committee.



**Presentation:** *Digital Forensics: From Social Media to Social Impact*

### **Hany Farid**

*Albert Bradley 1915 Third Century Professor of Computer Science  
Dartmouth College*

Hany Farid, Ph.D., is Albert Bradley 1915 Third Century Professor of computer science at Dartmouth College. Farid is a pioneer of the field of photo forensics. He is the recipient of an Alfred P. Sloan Fellowship and a John Simon Guggenheim Fellowship. He holds six U.S. patents, two of which have been licensed to one company. He is the co-founder and chief technology officer of Fourandsix Technologies. He has published one book, two book chapters and over 100 peer-reviewed papers. He has served as a founding associate editor for *IEEE Transactions on Information Forensics and Security*. Farid is a senior member of IEEE and Fellow of NAI.

## **PANEL 6 | INVENTION EDUCATION: CREATING THE NEXT GENERATION OF INVENTORS**



**Moderator**

### **David Coronado**

*Program Officer  
The Lemelson Foundation*

David Coronado is program officer at The Lemelson Foundation. Coronado works to support student growth by promoting equal access to invention education, STEM coursework, and out-of-school learning in K-12 schools. He is passionate about breaking the cycle of poverty that prevents many young people from succeeding, and providing alternative pathways that involve inspiration, education and graduation. Before joining The Lemelson Foundation, he spent over a decade as executive director of the Oregon MESA (Mathematics, Engineering, and Science Achievement) program at Portland State University. He managed all aspects of Oregon MESA's work to help students from underserved communities gain access to STEM and invention education. Nationally, he served as president of the MESA USA organization. In addition, Coronado served as an academic coordinator at Harvey Mudd College Math and Science Center and as president of the Oregon College Access Network.



**Panelist**

### **Stephanie Couch**

*Executive Director  
Lemelson-MIT Program*

Stephanie Couch joined the Lemelson-MIT Program as executive director in July, 2016. She has dedicated her career to K-12 and higher education policy issues in school finance and education technology in California. Her passion is advancing invention education and STEM learning opportunities for students across the nation, with an emphasis on students from underrepresented backgrounds. Prior to joining the Lemelson-MIT Program, Couch was the interim associate vice president of research and professional development at California State University, East Bay, served as bayer executive director of the Institute for STEM Education, and was the director for Gateways East Bay STEM Network. She was named Biotechnology Educator of the Year by the California Life Sciences Association in 2015 for her commitment to identifying strategic areas for joint action, addressing STEM education challenges, and increasing the understanding of best practices for attracting and preparing STEM teachers in urban schools.





**Panelist**

**Aaron M. Kyle**

*Senior Lecturer in Biomedical Engineering Design  
Columbia University*

Aaron M. Kyle, Ph.D., is a senior lecturer in the department of biomedical engineering at Columbia University. Kyle believes that engineering design is a foundational skillset that should be taught to students early and often. The tangible achievements that arise when students apply design to real-world biomedical problems will motivate them to pursue STEM careers and stimulate the next generation of innovators. With this in mind, he co-founded the Hk Maker Lab, a suite of programs focused on introducing high school students, particularly those from minority groups and underserved schools, to the engineering design and biotechnology. Since its inception in 2014, the Hk Maker Lab has trained over 70 high school students in engineering design and provided many of them with biotechnology internships. The program has received meritorious funding from NIH and the Pinkerton Foundation and continues to expand, serving more students throughout NYC.



**Panelist**

**Doug Scott**

*Hopkinton School District Technology and Engineering Educator Master Teacher  
Lemelson-MIT Program*

Doug Scott has been a technology and robotics teacher, coach and STEM advocate for the past 14 years. He is the technology/engineering subject matter leader in Hopkinton Public Schools in Massachusetts, where he leads educators and teaches engineering and robotics. Scott runs after school robotics and engineering clubs at the high school and middle school. He has orchestrated multiple STEM events for female students to promote and develop female enrollment in various programs. He coached a Lemelson-MIT InvenTeam that was awarded a U.S. patent for a robotic vehicle for ice search-and-rescue showcased at MIT and the White House. The students matriculated to engineering programs in college. Scott continues to assist the LemelsonMIT program as a master teacher, helping to support current InvenTeams and their educators implement invention education. He was the 2014 STEM Teacher of the Year in Massachusetts and continues to learn from his students each day.



**Panelist**

**Phil Weilerstein**

*President  
VentureWell*

Phil Weilerstein is chief executive of VentureWell, a U.S. based non-profit formed to stimulate and support the incorporation of innovation and entrepreneurship in higher education. He has held the position since 1996. From the beginning, Weilerstein's focus for VentureWell has been to help bring socially beneficial applications of STEM inventions to market. He has accomplished this goal by designing and overseeing programs that encourage curricular innovation and student venture creation, provide resources for faculty and student entrepreneurs, and develop community through conferences and workshops for faculty and students. He is a founder and past chair of ASEE Entrepreneurship Division, and a recipient of the 2008 Price Foundation Innovative Entrepreneurship Educators Award, ASEE's Engineering Entrepreneurship Pioneers Award, and 2016 Deshpande Symposium Award for Outstanding Contributions to Advancing Innovation and Entrepreneurship in Higher Education.

## STATE OF THE ACADEMY ADDRESS

### **Paul R. Sanberg**

*President*

*National Academy of Inventors*

*See page 28*

## SESSION D | ENTREPRENEURSHIP AND COMMERCIALIZATION DRIVE THE FUTURE OF INNOVATION



**Co-Chair**

### **Kurt H. Becker**

*Vice Dean for Research, Innovation, and Entrepreneurship*

*New York University*

Kurt H. Becker, Ph.D., is vice dean for research, innovation, and entrepreneurship and professor of applied physics and mechanical engineering at New York University's Tandon School of Engineering. Prior to joining NYU in 2007, he was on the faculty of Stevens Institute of Technology and associate director of the Stevens Center for Environmental Systems. He also held faculty positions at Lehigh University and the City College of CUNY. Becker earned a master's degree and doctorate degree from the Universität des Saarlandes, Saarbrücken, Germany in 1978 and 1981, respectively. He is a Fellow of NAI and APS, and the recipient of the Dr. Eduard-Martin Prize for Excellence in Research from the Universität des Saarlandes, the Thomas Edison Patent Award, and the SASP Erwin Schrödinger Medal. Becker also holds an honorary professorship at the Leopold Franzens Universität Innsbruck, Austria.



**Co-Chair**

### **Nasser Arshadi**

*Professor of Finance*

*University of Missouri-St.Louis*

Nasser Arshadi, Ph.D., is professor of finance at the University of Missouri-St.Louis. He received his doctorate degree from the University of Nebraska-Lincoln. Arshadi has published extensively in leading economics and finance journals on capital markets and the microeconomics of corporations with an emphasis on assessing and managing risk. He has published two books on financial intermediation (Prentice Hall) and insider trading (Kluwer Academic Publishing). Currently he is a senior editor of *Technology and Innovation*, the Journal of NAI. He is also serves on the editorial board of *Public and Municipal Finance*. He has served as an economist and policy analyst at the Board of Governors of the Federal Reserve System in Washington, DC, and as a consultant to the American Bankers Association, Treasury Management Association, Securities Industry Automation Corporation, Deutsche Financial Services, and Commerce Bancshares. Arshadi is a member of board of directors of the Center for Emerging Technologies, serving on its executive committee and is former member of the NAI board of directors.

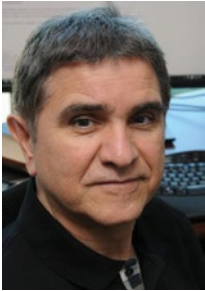


**Presentation:** *The Path to a License*

**Frances S. Ligler**

*Lampe Distinguished Professor of Biomedical Engineering  
North Carolina State University*

Frances S. Ligler, D.Phil., D.Sc., is Lampe Distinguished Professor in the Joint Department of Biomedical Engineering of North Carolina State University and The University of North Carolina at Chapel Hill. Previously, she served as U.S. Navy senior scientist for biosensors and biomaterials at the Naval Research Laboratory. Ligler has made seminal contributions to optical biosensors and microfluidics. She was recognized with the Presidential Rank Awards of Distinguished Senior Professional and of Meritorious Senior Professional in 2003 and 2012, respectively, and inducted into NIH in 2017. She is the recipient of the Christopher Columbus Foundation Homeland Security Award, Navy Superior Civilian Service Medal, five NRL Edison Patent Awards, and an honorary doctorate from the Agricultural University of Athens, among other honors. She holds 28 U.S. and 14 foreign patents, which have been licensed to multiple corporations. She has published 368 articles, books, and book chapters, and serves on the editorial boards of five scientific journals. Ligler is a member of NAE and Fellow of NAI, AAAS, AIMBE and SPIE.



**Presentation:** *Entrepreneurial and Commercialization Activities at Universities: The Good, Th Bad and Th Ugly*

**Nasser Peyghambarian**

*Chair of Photonics and Lasers and Director of NSF Engineering Research Center for Integrated Access Networks  
The University of Arizona*

Nasser Peyghambarian, Ph.D., is professor in the College of Optical Sciences and the department of materials science & engineering at the University of Arizona (UA). Peyghambarian is also director of the NSF Engineering Research Center for Integrated Access Networks and UA chair of photonics and lasers. He has made significant contributions in the areas of photonics and optoelectronics. He has 35 patents and has founded two startup companies, TIPD, LLC and NP Photonics, Inc., both of which are commercializing technology developed at UA. He has over 600 scientific publications in peer-reviewed journals, authored or co-authored 28 books and book chapters, and more than 700 invited talks, published conference proceedings and contributed presentations. Peyghambarian is a Fellow of NAI, AAAS, OSA, APS and SPIE.



**Presentation:** *Fostering Innovation in STEM Students*

**Jennifer L. West**

*Fitzpatrick Family University Professor of Engineering  
Duke University*

Jennifer L. West, Ph.D., is Fitzpatrick Family University Professor of engineering at Duke University and HHMI Professor. West is a leader in the development and application of novel biomaterials. She is the recipient of numerous awards including the SFB Clemson Award, the O'Donnell Prize from the Academy of Medicine, Engineering and Science of Texas, the McDonald Award and the Columbus Scholar Award. She was also named Texas Inventor of the Year and an Admiral in the Texas Navy, the highest honor the governor of Texas can bestow on a civilian. She holds 15 U.S. patents that have been licensed to 10 companies, and is the founder of Nanospectra Biosciences, Inc. She has over 190 publications. West is a member of NAE and a Fellow of NAI, BMES and AIMBE.

## KEYNOTE ADDRESS



### Introduction of the Keynote Speaker

#### Arthur Daemmrich

*Director*

*Smithsonian's Lemelson Center for the Study of Invention and Innovation*

Arthur Daemmrich, Ph.D., is director of the Smithsonian's Lemelson Center for the Study of Invention and Innovation. Daemmrich's research explores relationships between regulation and innovation through historical and comparative studies of the pharmaceutical industry, chemicals sector, and healthcare systems. He is the author of *Pharmacopolitics: Drug Regulation in the United States and Germany* and has published over 25 peer-reviewed journal articles and book chapters in science and technology studies, the history of science, technology and medicine, and health and business policy, as well as numerous teaching cases and notes. Previously, he was associate professor at the University of Kansas School of Medicine, assistant professor at Harvard Business School, visiting professor at the China Europe International Business School, and director of the Center for Contemporary History and Policy at the Chemical Heritage Foundation. Daemmrich holds a doctorate degree from Cornell University in science and technology studies and a bachelor's degree from the University of Pennsylvania in the history and sociology of science.



### Keynote Address: *A Random Walk into Biotech*

#### H. Robert Horvitz

*Nobel Laureate, David H. Koch Professor of Biology*

*Massachusetts Institute of Technology*

H. Robert Horvitz, Ph.D., is professor of biology at the Massachusetts Institute of Technology and Investigator of the Howard Hughes Medical Institute. Horvitz's research has helped define evolutionarily conserved molecular genetic pathways important in human biology and human disease, including the pathway responsible for programmed cell death, or apoptosis. He is the recipient of many honors and awards, including the 2002 Nobel Prize in Physiology or Medicine. Horvitz holds numerous patents, has co-founded four biotechnology companies (NemaPharm, Idun, Epizyme, Mitobridge) and has advised pharmaceutical and venture capital companies. He has published many scientific articles and one book and served on many editorial boards. Horvitz is a member of NAS, NAM, and the American Philosophical Society and Royal Society of London, and is a Fellow of NAI, the American Academy of Arts and Sciences, and the American Academy of Microbiology.

## SIGNATURE EVENT - NAI FELLOWS INDUCTION CEREMONY AND BANQUET



### Introduction of the Keynote Speaker

#### Randy E. Berridge

*Former President*

*Florida High Tech Corridor Council*

Randy E. Berridge held the position of president of the Florida High Tech Corridor Council since its inception in 1996. He recently announced his retirement but will continue to serve in a leadership and planning support role until June 30<sup>th</sup>. Berridge also serves as president of the Berridge Consulting Group, Inc. Previously he held management positions with AT&T including chair of its Central Florida Management Council, district manager of public relations for the Florida division and manager in the legal, HR and manufacturing divisions. Berridge currently serves on the board of governors of the Florida Chamber of Commerce and chair of the 2017 Selection Committee for the Florida Inventors Hall of Fame. He is a past member of the Enterprise Florida Stakeholder Council, Florida Research Consortium, Foundation for Florida's State Colleges and the National Center for Simulation. He is an Emeritus Board Member of the Astronauts Memorial Foundation.



### Fellows Keynote Address & Presentation of Awards

#### Andrew H. Hirshfeld

*U.S. Commissioner for Patents*

*United States Patent and Trademark Office*

Andrew H. Hirshfeld, Esq., is commissioner for patents for the United States Patent and Trademark Office (USPTO). He was appointed to the position in July 2015. Hirshfeld leads and manages more than 10,000 employees as the patent organization's chief operating officer, and manages and directs all aspects of patent operations, examination policy, patent quality management, international patent cooperation, resources and planning, and budget administration. In his previous role as deputy commissioner for patent examination policy, he served as an authority on patent laws, rules, and examining practice and procedure, and provided oversight and direction for the Office of Petitions, Patent Legal Administration, and the Manual of Patent Examining Procedure. Hirshfeld previously served as Chief of Staff to the Under Secretary of Commerce for Intellectual Property and Director of the USPTO. He began his career at the USPTO in 1994 as a Patent Examiner, became a Supervisory Patent Examiner in 2001, and was promoted to the Senior Executive Service in 2008 as a Group Director in Technology Center 2100, Computer Architecture and Software. Hirshfeld holds a bachelor's degree from the University of Vermont, and a juris doctorate degree from Western New England College School of Law. Hirshfeld served as a member of the NAI Fellows Selection Committee.

### Presentation of Awards

#### Paul R. Sanberg

*President*

*National Academy of Inventors*

*See page 28*

**FRIDAY, APRIL 7, 2017**

## KEYNOTE ADDRESS



### Introduction of the Keynote Speaker

#### Vinit Nijhawan

*Entrepreneur, Venture Capitalist, Lecturer*

*Boston University*

Vinit Nijhawan teaches courses on entrepreneurship for the MBA Program at Boston University's Questrom School of Business. Nijhawan previously was managing director of the Office of Technology Development at BU, where he launched eight venture-backed spinoffs and successfully executed a patent monetization program. He has over 30 years of experience building five startups, as CEO of three, five were acquired. He was venture partner at Key Venture Partners and his one investment was acquired for \$430M. He is an advisor and board member to several technology startups and was a Mass High Tech All-Star in 2005. Nijhawan has participated in over 240 panel discussions and paper presentations, and was a board member of Mass Ventures, an early stage, quasi-public Massachusetts venture capital firm, co-founder of EdTech Accelerator/Incubator LearnLaunch, president of Massachusetts Association of Technology Transfer Offices and board member of VentureCafe. Nijhawan earned a bachelor's degree in electrical engineering from the University of Waterloo in Ontario, Canada. He has also served on the board of directors for NAI and chaired the 2017 NAI Conference Program Committee.



**Keynote Address: *What Does an Inventor Look Like?***

**Lisa Seacat DeLuca**

*Technology Strategist  
IBM Commerce*

Lisa Seacat DeLuca is technology strategist for IBM Commerce and is the most prolific female inventor in IBM history. At only 33 years old she is one of the youngest inventors at IBM to ever reach the 100<sup>th</sup> Invention Plateau Award (an IBM internal patent award system). DeLuca holds a master's degree in technology commercialization from The University of Texas McCombs School of Business, and a bachelor's degree in computer science from Carnegie Mellon University with minor in business administration and multimedia productions. In 2016, she was named one of the Most Influential Women in IoT. Previous honors include one of MIT's 35 Innovators Under 35, LinkedIn's NextWave of 10 Enterprise Technologists Under 35, Fast Company's 100 Most Creative People in Business, IBM's Working Mother of the Year for *Working Mother Magazine*, and Network World's 50 Most Fascinating People in the World of Technology. She self-published and authored a children's book titled *A Robot Story*. Her innovation portfolio includes over 650 U.S. and foreign patent applications filed, of which 250 have been granted to date. The subject of her patents range from areas such as cloud, mobile, IoT, social, security, cognitive, commerce and everything in between. DeLuca is a TED speaker, AAAS-Lemelson Inventor Ambassador, and has spoken at numerous tech conferences and written articles to share her technology and innovation passion with others.

**NAI STUDENT INNOVATION SHOWCASE & EXHIBITION**

**Introduction of Finalists**

**Vinit Nijhawan**

*Entrepreneur, Venture Capitalist, Lecturer  
Boston University*

*See page 35*



**Student Innovation Showcase Judge**

**Michael J. Cima**

*David H. Koch Professor of Engineering  
Massachusetts Institute of Technology*

Michael J. Cima, Ph.D., is professor of materials science and engineering at the Massachusetts Institute of Technology. Cima is developing engineered systems for improvement in human health such as treatments for cancer, metabolic diseases, trauma, urological disorders and hydration status assessment. He is a recognized expert in the fields of drug delivery, medical devices, materials processing and drug formulation. Cima holds 70 U.S. patents which have been licensed to over 14 companies for such diverse applications as 3D printing, high temperature superconductors, electronic drug delivery and devices for drug delivery to the bladder. He is a founder of Taris Biomedical Inc., MicroChips Biotech Inc. and T2 Biosystems Inc. He is author or co-author of over 275 peer-reviewed scientific publications. Cima is a Fellow of NAI, ACS and member of NAE.

**Student Innovation Showcase Judge**

**Lisa Seacat DeLuca**

*Technology Strategist  
IBM Commerce  
See page 36*



**Student Innovation Showcase Judge**

**Martin M. Matzuk**

*Director, Center for Drug Discovery  
Baylor College of Medicine*

Martin M. Matzuk, M.D., Ph.D., is director of the Center for Drug Discovery and holds the Stuart A. Wallace Chair and Robert L. Moody, Sr. Chair in pathology at Baylor College of Medicine. Matzuk is recognized for his contributions to reproductive medicine and therapeutics. He has chaired the NIH Cellular, Molecular and Integrative Reproduction Study Section [CMIR] and the Burroughs Wellcome Fund CABS and CAMS review panels. He is a recipient of an NIH MERIT award, Trainee Mentoring Award and Research Award from the Society for the Study of Reproduction, Richard Weitzman Award and Roy Greep Award from the Endocrine Society, HypoCCS Award from Eli Lilly, Pfizer Outstanding Investigator Award from ASIP, and International Fundacion IVI Award in Reproductive Medicine. He holds 13 U.S. patents, has published over 325 papers, has generated more than 100 genetically-engineered mouse lines, and has been funded continuously by National Institute of Child Health and Human Development since 1991. Matzuk is a member of NAS and the Academy of Medicine, Engineering and Science of Texas. He is a Fellow of NAI.



**Student Innovation Showcase Judge**

**Ellen Ochoa**

*Director  
NASA Johnson Space Center*

Ellen Ochoa, Ph.D., is director of NASA's Lyndon B. Johnson Space Center. As an astronaut and government executive, Ochoa has encouraged and invested in innovation and technology. She is the recipient of numerous awards including OSA Leadership Award/New Focus Prize, Hispanic Engineer National Achievement Awards Engineer of the Year, George Washington Carver Award, Harvard Foundation Science Award, James Smithson Bicentennial Medal and honorary degrees from the University of Pennsylvania, The Johns Hopkins University, and Worcester Polytechnic Institute. She also has five schools named after her. She is co-inventor on three U.S. patents and one foreign patent, and has published two dozen articles in the area of optical information processing. Ochoa is a Fellow of NAI, AAAS, and AIAA and chairs the Nomination Evaluation Committee for the National Medal of Technology and Innovation.



**Student Innovation Showcase Judge**

**Andy Rathmann-Noonan**

*Executive Director*

*National Science and Technology Medals Foundation*

Andy Rathmann-Noonan is the Executive Director of the National Science and Technology Medals Foundation (NSTMF). The NSTMF is a D.C. based non-profit that focuses on inspiring the next generation of STEM professionals and the general public through the incredible stories and contributions of the National Medal of Science (NMS) and National Medal of Technology and Innovation (NMTI) Laureates. The Foundation works with the White House, USPTO, and NSF to support the NMS and NMTI programs while also independently creating programs that create environments where inspiration can occur. The NSTMF focuses on bringing the accomplishments of the Laureates into the public space through the celebration and acknowledgment of America's best and brightest. Rathmann-Noonan believes that the individual narratives of each Laureate as well as their accomplishments can serve as powerful positive motivating forces for individuals both young and old.



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## • The NAI Staff •



### **Keara A. Leach**

*Program Director*

Keara A. Leach, MBA, is program director for the National Academy of Inventors. She works closely with leadership from member institutions, NAI Fellows, and partnering organizations to encourage and honor academic invention and innovation in support of the mission and goals of the Academy. Leach directs all programs of the NAI including member institution relations and launching local Chapters, nomination and election of NAI Fellows and the NAI annual conference. The conference serves as an arena where innovation and entrepreneurship leading to local and national economic development is recognized, honored, and cultivated in the academic world. The event is a collaborative forum for leadership and inventors from over 150 prestigious research institutions to come together and share their innovative initiatives. Leach began her career with the NAI in 2011 and holds masters' degrees in business administration and entrepreneurship in applied technologies and a bachelor's degree in marketing and mass communications from the University of South Florida.



### **Lauren H. Maradei**

*Assistant Program Director*

Lauren H. Maradei, M.S., is assistant program director for the National Academy of Inventors. She joined NAI in March 2014, and she handles a wide variety of managerial duties including overseeing the marketing and communications for NAI, including the website, newsletters, and social media. Maradei recruits and manages new member institutions and provides customer service for members at all levels, encouraging the launch of new local chapters. She also facilitates the election and induction of Fellows and leads numerous engagement initiatives for NAI membership. She has a bachelor's degree in hospitality management from the University of Central Florida and a master's degree in marketing from the University of Tampa. Contact her with any marketing needs or to learn more about becoming a member institution and starting a chapter.



### **Autumn N. Pandolfo**

*Special Projects Coordinator*

Autumn N. Pandolfo, MBA, is special projects coordinator for the National Academy of Inventors. She joined NAI in May 2015 and handles a variety of duties including managing and facilitating the annual conference, workshops, events, and public functions. Pandolfo serves as a primary liaison with a national program committee helping to plan and coordinate conference speakers and other external constituents like potential sponsors and candidates for presentations. She has a bachelor's degree in psychology from the University of South Florida and a master's degree in business administration with a graduate certificate in nonprofit management from the University of Tampa. Contact her for all questions regarding the NAI annual meeting including, sponsorship, speaking opportunities and registration.



## Vickie Chachere

*Director of Strategic Communications, Office of Research & Innovation  
University of South Florida*

Vickie Chachere leads communications efforts for University of South Florida (USF) Office of Research & Innovation, telling the story of one of the nation's most dynamic public research universities to audiences on a state, national, and global level. Chachere joined USF eight years ago, previously serving as speechwriter for President Judy Genshaft and leading the university's wide-reaching media effort in the wake of the Deepwater Horizon oil spill. A veteran journalist, she worked as a supervisory correspondent for the Associated Press in Florida, and was an editorial writer and reporter for *The Tampa Tribune*. She is a graduate of the Walter Cronkite School of Journalism and Mass Communication at Arizona State University and completed a graduate certificate in Globalization at USF.



## Monica J. Richter

*Director of Federal Government Relations  
University of South Florida*

Monica J. Richter, M.A., is director of federal government relations at the University of South Florida (USF). She works closely with Congress and federal agencies to develop and grow opportunities for USF to engage nationally. Richter supports the National Academy of Inventors, particularly on its efforts to gain Congressional support for H.R. 976, to grant a federal charter to the National Academy of Inventors. She joined the USF team in 2013 after working as a legislative staffer for six years on Capitol Hill. She holds a bachelor's degree in political science from USF and a master's degree in national security and strategic studies from the United States Naval War College.



## Kimberly A. Macuare

*Assistant Editor  
Technology and Innovation, Journal of the National Academy of Inventors*

Kimberly A. Macuare, Ph.D., is assistant editor for *Technology and Innovation, Journal of the National Academy of Inventors (T&I)*. She is involved in all facets of the journal's work, including business operations, strategic planning, marketing, writing, and editing. She works closely with the authors, reviewers, and editorial staff to make *T&I* a central part of the NAI's mission to promote invention and honor academic inventors. She holds a bachelor's degree in English from the University of Cincinnati and a master's degree in English and a doctorate in English with a specialization in medieval literature and economics from The Ohio State University. Contact her for all questions regarding *T&I*, including submissions, opportunities for guest editorships, and journal sponsorship.



## Terrance T. Anderson

*Administrative Specialist*

Terrance T. Anderson is administrative specialist for the National Academy of Inventors. He joined NAI in September 2015, and handles a wide variety of administrative duties including maintaining internal accounting records, assisting with invoicing and membership activities, conducting research, preparing reports and processing information requests. He has been working in the administrative role with the State of Florida for over 20 years, and for the past 6 years with the University of South Florida.

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• **NAI Sustaining Members** •



Arizona State University (ASU) is a top-ranked public metropolitan research university, with five campuses across greater Phoenix and four regional learning centers throughout Arizona. ASU is a comprehensive public research university, measured not by whom we exclude, but rather by whom we include and how they succeed; advancing research and discovery of public value; and assuming fundamental responsibility for the economic, social, cultural and overall health of the communities it serves. For two years in a row, *U.S. News & World Report* has ranked ASU as the #1 Most Innovative School in America.



**NEW YORK UNIVERSITY**

Founded in 1831, NYU is one of the world's foremost research universities and is a member of the selective Association of American Universities. NYU has degree-granting university campuses in New York, Abu Dhabi, and Shanghai; has eleven other global academic sites, including London, Paris, Florence, Tel Aviv, Buenos Aires, and Accra; and both sends more students to study abroad and educates more international students than any other U.S. college or university. Through its numerous schools and colleges, NYU is a leader in conducting research and providing education in the arts and sciences, engineering, law, medicine, business, dentistry, education, nursing, the cinematic and performing arts, music and studio arts, public administration, social work, and professional studies, among other areas.



**TEXAS TECH UNIVERSITY**

Texas Tech University is located in Lubbock, Texas. Created by legislative action in 1923 as Texas Technological College, the name was changed to Texas Tech University in 1969. Campus physical facilities include a total of 7,449,218 square feet in 188 buildings. The university is composed of more than 26,400 undergraduate, 5,200 graduate and 700 law students. Annually, total research expenditures exceed \$125 million. The Carnegie Foundation classifies Texas Tech University as a RU/H: Research Universities (high research activity).



Founded in 1965, University of California, Irvine is the youngest member of the prestigious Association of American Universities. The campus has produced three Nobel laureates and is known for its academic achievement, premier research, innovation and anteater mascot. Led by Chancellor Howard Gillman, UCI has more than 30,000 students and offers 192 degree programs. It's located in one of the world's safest and most economically vibrant communities and is Orange County's second-largest employer, contributing \$5 billion annually to the local economy. For more on UCI, visit [www.uci.edu](http://www.uci.edu).



## UNIVERSITY OF CENTRAL FLORIDA

The University of Central Florida (UCF) and its 13 colleges provide opportunities to 60,000 students from all 50 states and 140 countries. Located in Orlando, Florida, UCF is the nation's second-largest university with 210 degree programs to choose from. UCF is ranked as one of the "Most Innovative" universities by *U.S. News & World Report*, a best-value university by *The Princeton Review* and *Kiplinger's*, and one of the nation's most affordable colleges by *Forbes*.



The University of Florida (UF), established in 1853, is the state's is a major, public, comprehensive, land-grant, research university and is also among the nation's most academically diverse public universities. UF is consistently ranked among the nation's top universities: No. 14 in *U.S. News & World Report* "Top Public Universities" (2016); No. 2 in *Kiplinger's* "Best Values in Public Colleges" (2015); and No. 2 on the *Forbes* list of best value public universities (2016). Additionally, UF ranked No. 6 in the *New York Times* list of universities that do the most to help low-income students (2015). UF has nearly 5,000 faculty members with distinguished records in teaching, research and service, including 37 Eminent Scholar chairs and 42 faculty elections to the National Academy of Sciences, Engineering, the Institute of Medicine, or the American Academy of Arts and Sciences. UF is an AAU University and research funding totaled a record \$724 million in fiscal year 2015-16.



The University of Nebraska–Lincoln is a top-tier national research university and a member of the Big Ten Academic Alliance. Like the university's founders in 1869, students and faculty at Nebraska look challenges and opportunities in the eye, using fresh thinking and creativity to forge new paths. The expansive geography of the state fosters a closeness and collaboration that makes way for solutions applied nearby and around the world, including innovative public-private partnerships, such as a new research campus. Nebraska is the state's flagship and land-grant university and continues to grow in size and prominence. It welcomed its largest and most diverse incoming class in 2016 and ranked 9<sup>th</sup> on Springer Nature's international list of Rising Stars. Nebraska now has nearly 26,000 students and more than 150 undergraduate and 135 graduate degree programs, and is ranked as a best-value university by *The Princeton Review*.



The University of South Florida, established in 1956 and located in Tampa, is a high-impact, global research university dedicated to student success. The USF System includes three, separately accredited institutions: USF; USF St. Petersburg; and USF Sarasota-Manatee. Serving more than 49,000 students, the USF System has an annual budget of \$1.6 billion and an annual economic impact of \$4.4 billion. USF is ranked in the Top 30 nationally for research expenditures among public universities, according to the National Science Foundation. In 2016, the Florida Legislature designated USF as "Emerging Preeminent," placing USF in an elite category among the state's 12 public universities. USF is a member of the American Athletic Conference.

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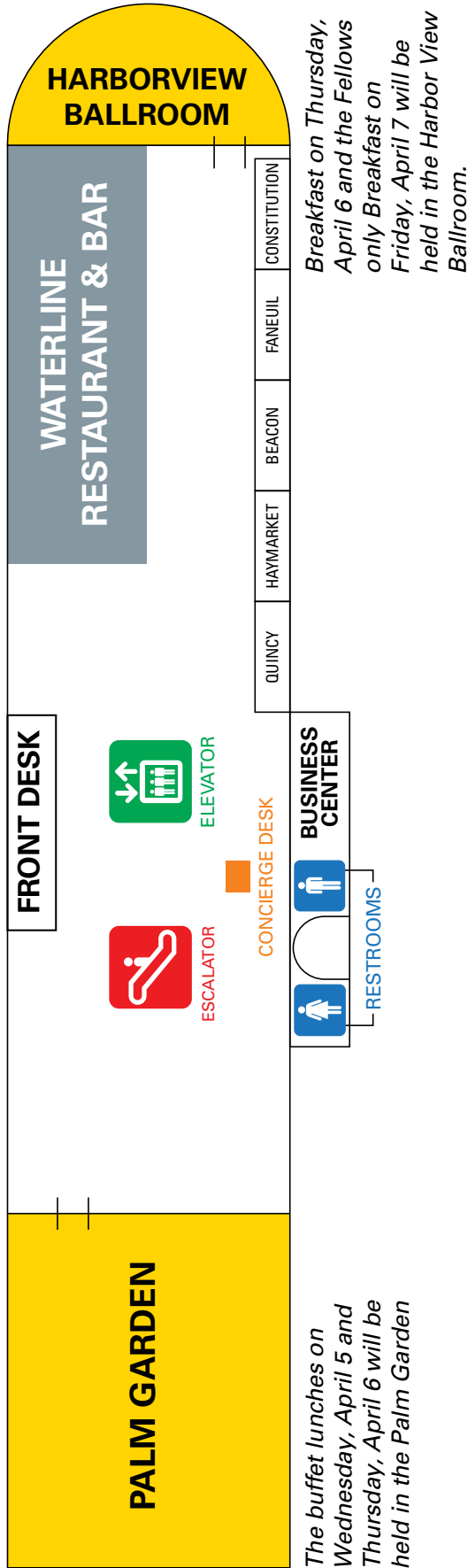
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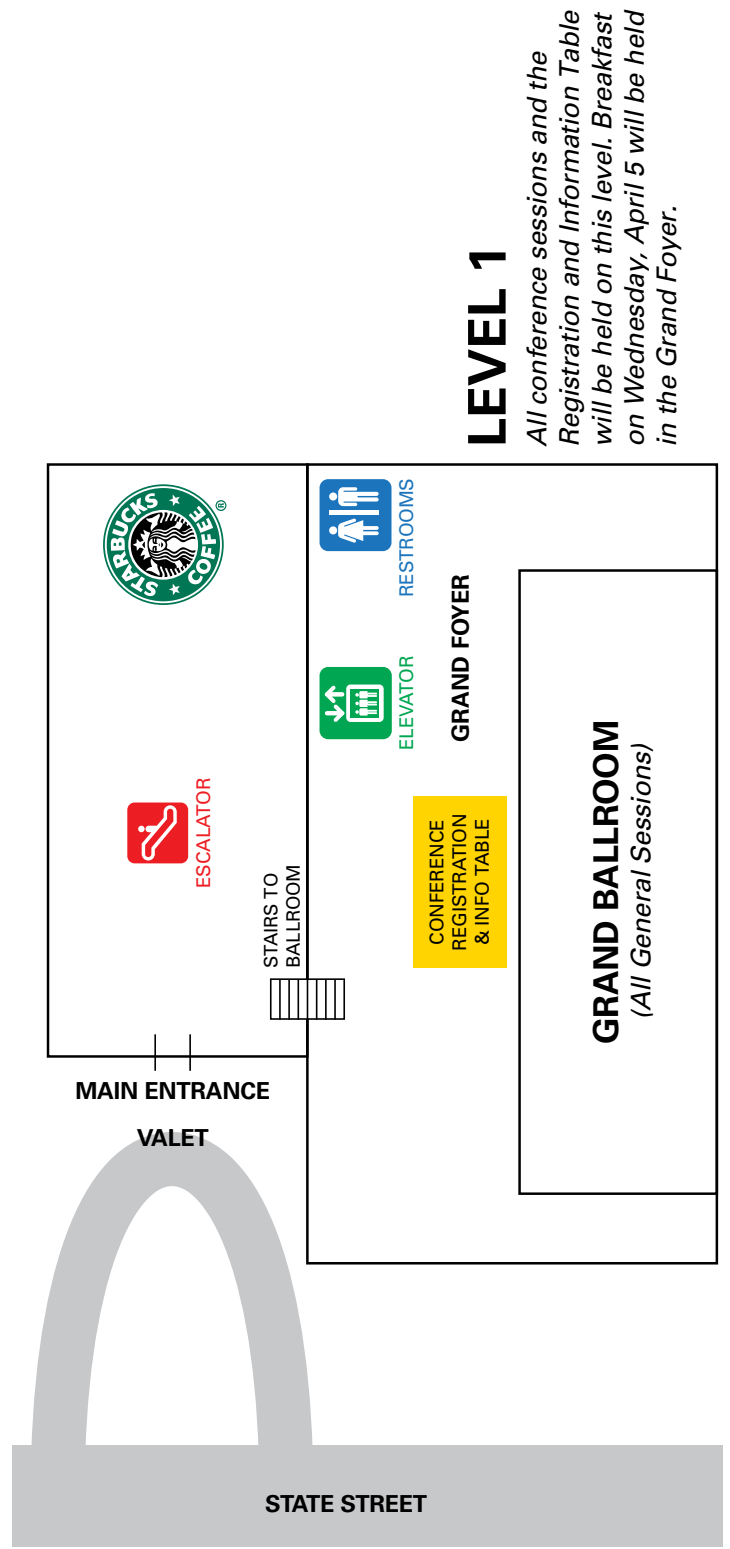
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*\*Joined since the last annual meeting of the National Academy of Inventors*

## LEVEL 2



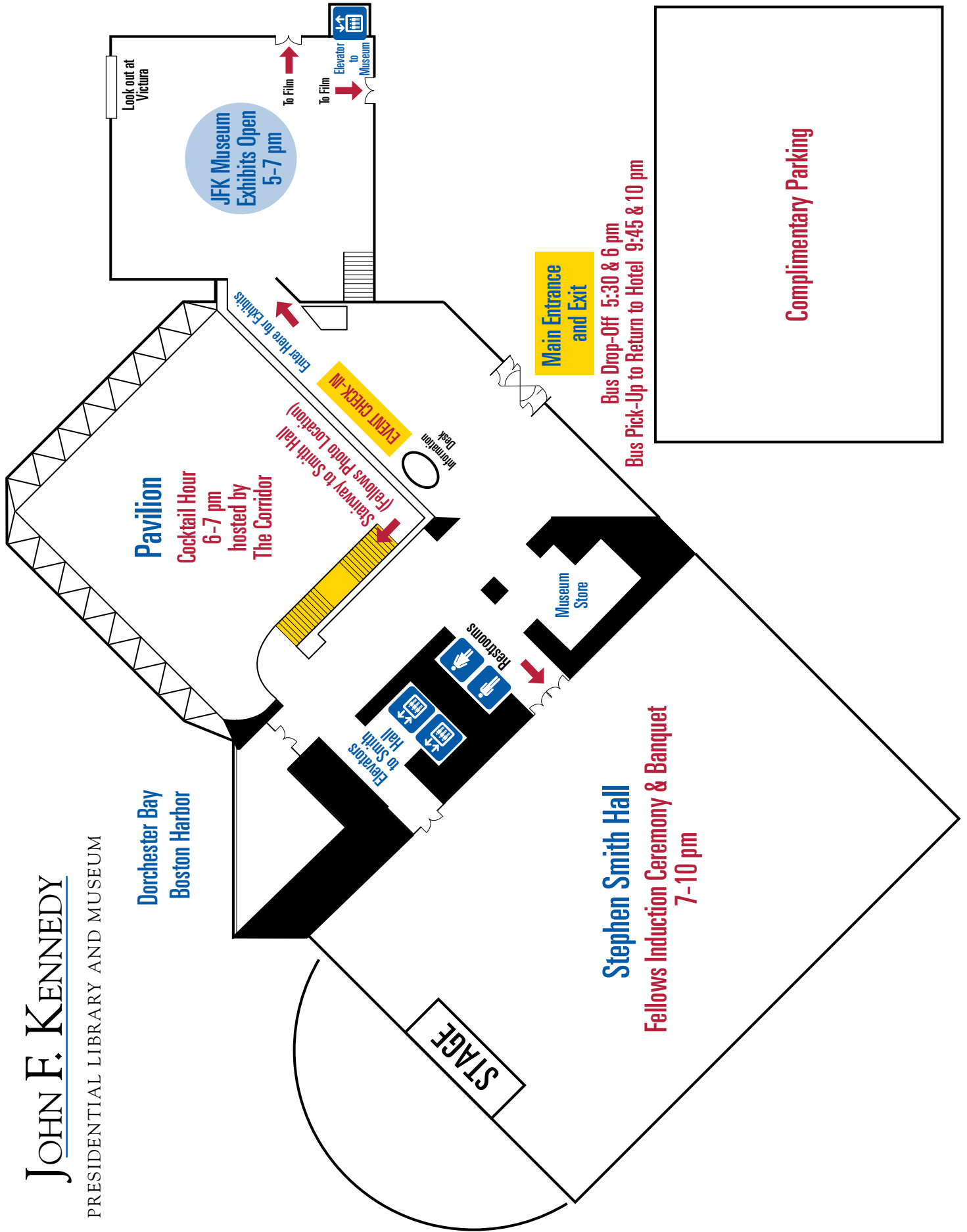
## LEVEL 1





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# The United States Patent and Trademark Office Congratulates NAI Fellows

The USPTO is proud to collaborate with the National Academy of Inventors and congratulates the new Inductees. Visit [www.uspto.gov/inventors](http://www.uspto.gov/inventors) to learn more about how the USPTO supports academic and independent inventors.

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Based in Portland, The Lemelson Foundation uses the power of invention to improve lives. Inspired by the belief that invention can solve many of the biggest economic and social challenges of our time, the Foundation helps the next generation of inventors and invention-based businesses to flourish. The Lemelson Foundation was established in the early 1990s by prolific inventor Jerome Lemelson and his wife Dorothy. To date the Foundation has made grants totaling over \$200 million in support of its mission. For more information, visit <http://lemelson.org>.



The Florida High Tech Corridor Council (The Corridor) is a regional economic development initiative of the University of Central Florida (UCF), the University of South Florida (USF) and the University of Florida (UF) whose mission is to grow high tech industry and innovation through partnerships that support research, marketing, workforce and partnerships. The Corridor includes more than 25 local and regional economic development organizations and 14 state/community colleges. It is co-chaired by the presidents of UCF, USF and UF.

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Boston University (BU), founded in 1839, is the fourth-largest private university in the nation and one of the 62 member universities of the AAU. BU's 17 schools and colleges are home to more than 33,000 undergraduate and graduate students each year. U.S. News & World Report ranked BU 32nd among global universities. Research at BU spans dozens of fields with a special focus on 7 major research peaks. There are more than 20 research facilities across BU's two campuses that provide services, expertise, and instruments for high-quality research. More than \$368 million in research awards were generated by BU faculty in 2016 and there are over 200 companies developing and selling products based on BU discoveries.

## Brandeis University

Brandeis University, located in Waltham, Massachusetts, is a prestigious private research university with a focus on undergraduate education. It has 5,500 undergraduate and graduate students and more than 550 faculty members, among whom are 11 National Academy of Science inductees, three Howard Hughes Medical Institute Investigators, two MacArthur Foundation Fellows, three Pulitzer Prize winners and 21 members of the American Association for the Advancement of Science. The University is a member of the Association of American Universities (AAU), which represents 62 leading research universities in the United States and Canada. In FY 2016, Brandeis received \$59 million in sponsored research funding from such sources as the National Institutes of Health, the National Science Foundation, the US Department of Health and Human Services, and a range of foundations. The Carnegie Foundation for the Advancement of Teaching has designated Brandeis a "very high research activity" university, an honor accorded to only 35 private universities in the U.S.

## Dartmouth

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Harvard University is devoted to excellence in teaching, learning, and research, and to developing leaders in many disciplines who make a difference globally. The University, which is based in Cambridge and Boston, Massachusetts, has an enrollment of over 20,000 degree candidates, including undergraduate, graduate, and professional students. Harvard has more than 360,000 alumni around the world. Research is supported by more than \$800 million of sponsored research funds each year, and it is carried out both in the departments of the Schools and the Radcliffe Institute for Advanced Study, and at more than 100 research centers, on campus and around the world. Researchers include faculty members, visiting scholars, post-doctoral fellows, and graduate and undergraduate students, and they collaborate with colleagues across the University, at affiliated institutions, and at other research institutions.



iRunway, a wholly owned subsidiary of UnitedLex, helps universities, law firms & corporations unlock and protect the value of patents. We combine technology expertise with practical business insight to analyze patent portfolios and profoundly improve licensing outcomes. iRunway's Academic Research Commercialization program targets unlicensed patent portfolios with a low friction, shared success business model. Over twenty private and public research institutions have engaged with iRunway to commercialize their unlicensed patent portfolios. Research faculty, including NAI Fellows, are benefiting from this program. Find industry technology and business reports on cancer immunotherapy, LEDs, Nuclear Fusion, etc: [i-runway.com/technology-resources/industry-reports.html](http://i-runway.com/technology-resources/industry-reports.html)

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KULPER & COMPANY, LLC, celebrating its 20<sup>th</sup> year of service, is nationally known for its highly personalized and effective executive search consulting service to universities, institutes, corporations and not-for-profit organizations seeking to hire experienced leaders for their most important positions. KULPER & COMPANY is pleased to offer member organizations a 10% discount of all fees associated with our search consulting service during 2017. Please contact us to arrange for a confidential discussion of your hiring requirements.



## MASSACHUSETTS GENERAL HOSPITAL

Massachusetts General Hospital, founded in 1811, is the original and largest teaching hospital of Harvard Medical School. The MGH Research Institute conducts the largest hospital-based research program in the nation, with an annual research budget of more than \$800 million and major research centers in HIV/AIDS, cardiovascular research, cancer, computational and integrative biology, cutaneous biology, human genetics, medical imaging, neurodegenerative disorders, regenerative medicine, reproductive biology, systems biology, photomedicine and transplantation biology. The MGH topped the 2015 Nature Index list of health care organizations publishing in leading scientific journals, was again the #1 NIH funded hospital, and earned the prestigious 2015 Foster G. McGaw Prize for Excellence in Community Service. In August 2016 the MGH was once again named to the Honor Roll in the *U.S. News & World Report* list of “America’s Best Hospitals.”



The Lemelson-MIT Program celebrates outstanding inventors and inspires young people to pursue creative lives and careers through invention. Jerome H. Lemelson, one of U.S. history’s most prolific inventors, and his wife Dorothy founded the Lemelson-MIT Program at the Massachusetts Institute of Technology in 1994. It is funded by The Lemelson Foundation and administered by the School of Engineering at MIT, an institution with a strong ongoing commitment to creating meaningful opportunities for K-12 STEM education. For more information, visit [Lemelson.MIT.edu](http://Lemelson.MIT.edu).



## Northeastern University

Founded in 1898, Northeastern is a global research university and a leader in experiential learning, offering students opportunities for professional work, research, service, and learning in 133 countries on seven continents. The university is in the top tier for research activity among U.S. colleges and universities, according to the Carnegie Classification of Institutions of Higher Education. Our solutions-focused research enterprise is strategically aligned with three global imperatives: health, security, and sustainability. Northeastern offers a comprehensive range of undergraduate and graduate degrees in nine colleges and schools, and select advanced degrees at graduate campuses in Seattle, Silicon Valley, Toronto, and Charlotte, North Carolina.



## Olin College of Engineering

Established in 1997, Olin College of Engineering is an undergraduate engineering institution that is forging new models for educating engineers, while working collaboratively with other institutions to accelerate fundamental change in STEM education. Olin’s innovative learning environment balances engineering with entrepreneurship, design, humanities and the arts to produce innovators with the skills and perspectives to tackle the world’s greatest challenges. Enrolling approximately 360 students, the college is located in Needham, MA. Further information is available at [www.olin.edu](http://www.olin.edu).



Pabst Patent Group LLP is an intellectual property law firm specializing in biotechnology, pharmaceutical, and chemical intellectual property law. We counsel our clients in the acquisition, protection and commercialization of intellectual property. Our firm was founded over a decade ago by a group of patent attorneys who, after working in large international law firms for many years, realized that they could better serve the needs of their clients in a specialized boutique environment. We provide high quality legal services with the same support network and safeguards as are found in large law firms, but without the cost and inherent conflict problems. The depth and breadth of our experience, the quality of our work, our business approach to intellectual property management and our ability to provide sophisticated intellectual property legal services in a cost effective manner sets us apart from other firms.



Tufts University, located on campuses in Boston, Medford/Somerville and Grafton, Massachusetts, and in Talloires, France, is recognized among the premier research universities in the United States. Tufts enjoys a global reputation for academic excellence and for the preparation of students as leaders in a wide range of professions. A growing number of innovative teaching and research initiatives span all Tufts campuses, and collaboration among the faculty and students in the undergraduate, graduate and professional programs across the university's schools is widely encouraged.



The University of Massachusetts is a five-campus public research university system renowned for the quality of its academic programs, the scope and excellence of its research, and its enduring adherence to its public service mission. With \$630 million in annual research, UMass is the fourth-largest research university in New England, earning \$22.3 million in licensing revenue and launching 13 start-up companies last year alone. The university's mission is to provide a high-quality, affordable education and to conduct programs of research and public service that advance knowledge and improve the lives of the people of the Commonwealth, the nation and the world.



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Founded in 1865 in Worcester, Mass., Worcester Polytechnic Institute (WPI) is one of the nation's first engineering and technology universities. Its 14 academic departments offer more than 50 undergraduate and graduate degree programs in science, engineering, technology, business, the social sciences, and the humanities and arts, leading to bachelor's, master's and doctoral degrees. WPI's talented faculty work with students on interdisciplinary research that seeks solutions to important and socially relevant problems in fields as diverse as the life sciences and bioengineering, energy, information security, materials processing, and robotics. Students also have the opportunity to make a difference to communities and organizations around the world through the university's innovative Global Projects Program. There are more than 45 WPI project centers throughout the Americas, Africa, Asia-Pacific, and Europe.

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# TECHNOLOGY & INNOVATION

Journal of the National Academy of Inventors

*Technology and Innovation (T&I)* presents information encompassing the entire field of applied sciences, with a special focus on transformative technology and academic innovation.

Regular features of *T&I* include commentaries contributed by the United States Patent and Trademark Office and in-depth profiles of Fellows of the National Academy of Inventors®.

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Volume 18, Numbers 2-3

*Outcomes and Advances in Assistive Technologies for Rehabilitation*

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Residual Limb Ulcer Management for Leg Amputees	115

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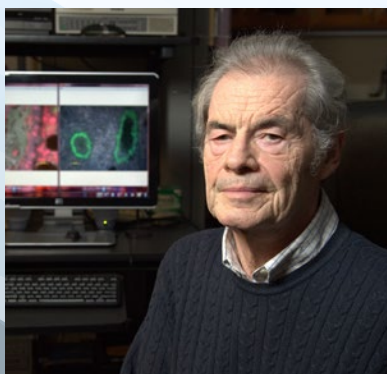
Auburn University, a founding NAI charter member, and the Auburn Research and Technology Foundation congratulate John Weete upon being named a 2016 National Academy of Inventors Fellow.



## John Weete

Throughout his career, Professor Emeritus John Weete facilitated the advancement of countless inventions and patents by faculty at Auburn University and previously at West Virginia University. He holds four U.S. patents involving processes for obtaining emulsifiers from soybean gum. His service at Auburn includes the positions of Alumni Professor in the Department of Botany and Microbiology (now Biological Sciences), Associate Dean for Research in the College of Sciences and Mathematics, Acting Assistant Vice President for Technology Transfer, and Executive Director of the Auburn Research and Technology Foundation. He was Vice President for Research and Economic Development at West Virginia.

## AUBURN UNIVERSITY'S PREVIOUS NAI FELLOWS



### Vitaly Vodyanoy

**2013 Fellow**

*Professor of Physiology  
College of Veterinary Medicine*

Inventor of an advanced illumination system that greatly enhances the resolution power of the light microscope

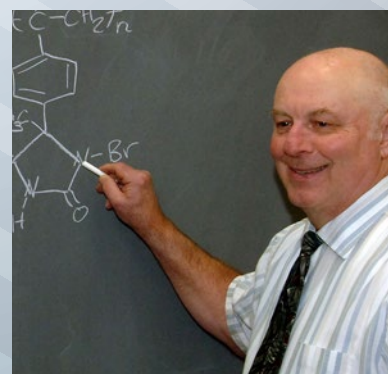


### Bruce Tatarchuk

**2014 Fellow**

*Professor of Chemical Engineering  
Samuel Ginn College of Engineering*

Pioneer in microfibrinous entrapped sorbents, catalysts, and electrocatalysts which facilitate extremely high levels of chemical reactivity



### S.D. "Dave" Worley

**2014 Fellow**

*Professor Emeritus of Chemistry  
and Biochemistry  
College of Sciences and Mathematics*

Inventor of advanced water filters containing polystyrene beads that hold oxidative chlorine or bromine atoms for long periods of time



[auburn.edu](http://auburn.edu)

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# Junhong Chen

*UWM Distinguished Professor of Mechanical Engineering*

**2016 Fellow of the National Academy of Inventors**

*University of Wisconsin-Milwaukee congratulates Dr. Junhong Chen  
for innovative work resulting in new nano-materials for  
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*Congratulations to*

2016 National Academy of  
Inventors Fellow

**William Wagner, PhD,**

director of the McGowan Institute  
for Regenerative Medicine.

Dr. Wagner joins University of Pittsburgh  
NAI fellows, Rory Cooper 2014 and Mir Imran 2015.

**PITT**



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**H. KEITH MOO-YOUNG**  
2016 FELLOW OF THE NATIONAL ACADEMY OF INVENTORS

CHANCELLOR H. KEITH MOO-YOUNG JOINS OTHER NAI FELLOWS FROM WASHINGTON STATE UNIVERSITY

AMIT BANDYOPADHYAY (WSU PULLMAN, 2014) | YONG WANG (WSU PULLMAN, 2015)

DIANE J. COOK (WSU PULLMAN, 2016) | KATRINA MEALEY (WSU PULLMAN, 2016)



**WE SALUTE**  
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The Washington University School of Medicine  
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*congratulate*

2016 National Academy of Inventors Fellow Inductee

**Jennifer K. Lodge, PhD**

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*Other Washington University NAI Fellows*

H. Holden Thorp, PhD (2012) • Mark S. Wrighton, PhD (2013)



Washington University in St. Louis

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Stevens Institute of Technology congratulates Provost and Vice President for Academic Affairs **Christophe Pierre**, 2016 Fellow of the National Academy of Inventors. His leadership in the fields of vibrations, structural dynamics and nonlinear dynamics, and his pioneering research in numerous areas of mechanical and aerospace engineering inspires the Stevens culture of innovation.



Dr. Pierre joins other NAI Fellows from Stevens Institute of Technology  
Yu-Dong Yao (2015) | Vikki Hazelwood (2014) | Nariman Farvardin (2013)  
George Korfiatis (2013) | Christos Christodoulatos (2013) | Victor Lawrence (2012)

Stevens congratulates all of the 2016 NAI Fellow Inductees for their achievements in technological innovation.



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*The University of South Florida salutes the  
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on its sixth anniversary conference  
and congratulates our distinguished USF  
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**Israel J. Morejon**



**Sudeep Sarkar**



**Thomas W. Weller**

***Previous USF NAI Fellows***

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Shyam Mohapatra, Paul R. Sanberg

2013: Clifford M. Gross, Stephen B. Liggett, James J. Wynne

2014: Robert H. Byrne, Michael W. Fountain, Victor L. Poirier

2015: Selim A. Chacour, David M. Eddy, Dean F. Martin



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# Dr. Ali Emadi

**2017 National Academy  
of Inventors Fellow**

.....

*for his entrepreneurial  
drive, his passion for  
discovery and his  
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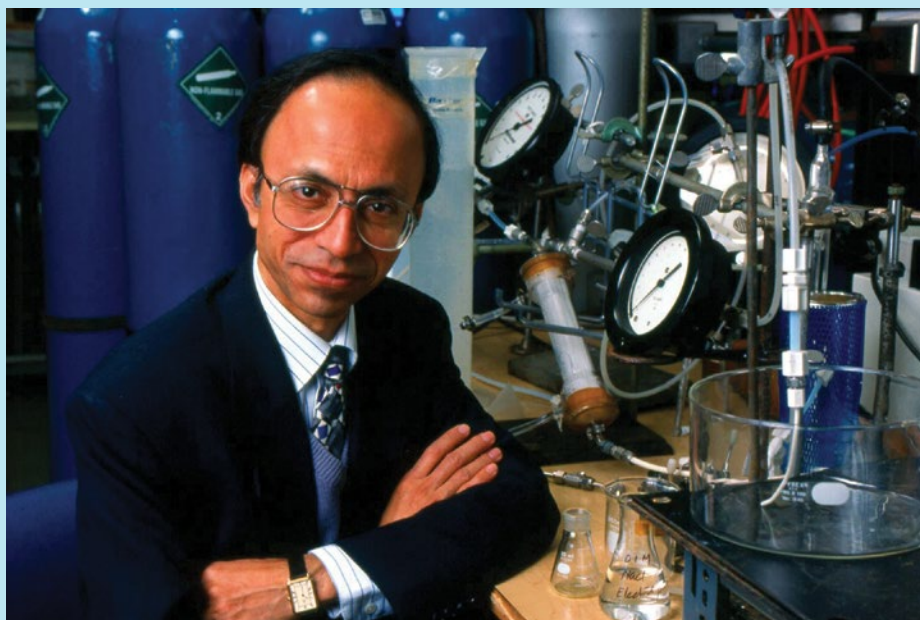
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Dr. McCay is a renowned engineer and research scientist. He holds joint appointments as professor in physics and space sciences and mechanical and aerospace engineering at Florida Tech.



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Missouri University of Science and Technology congratulates Dr. Day for his latest achievement as a 2016 Fellow of the National Academy of Inventors — and celebrates his many accomplishments in research, entrepreneurship and service to humanity.

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Florida International University (FIU)  
**2016 National Academy of Inventors Fellow**

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Florida International University, 11200 SW 8<sup>th</sup> St, Miami, Florida 33199. **FIU.EDU**



The University of Nebraska–Lincoln congratulates  
Lederer Professor of Engineering

**SHANE M. FARRITOR**  
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John A. Woollam (2014) | Rodney S. Markin (2015)





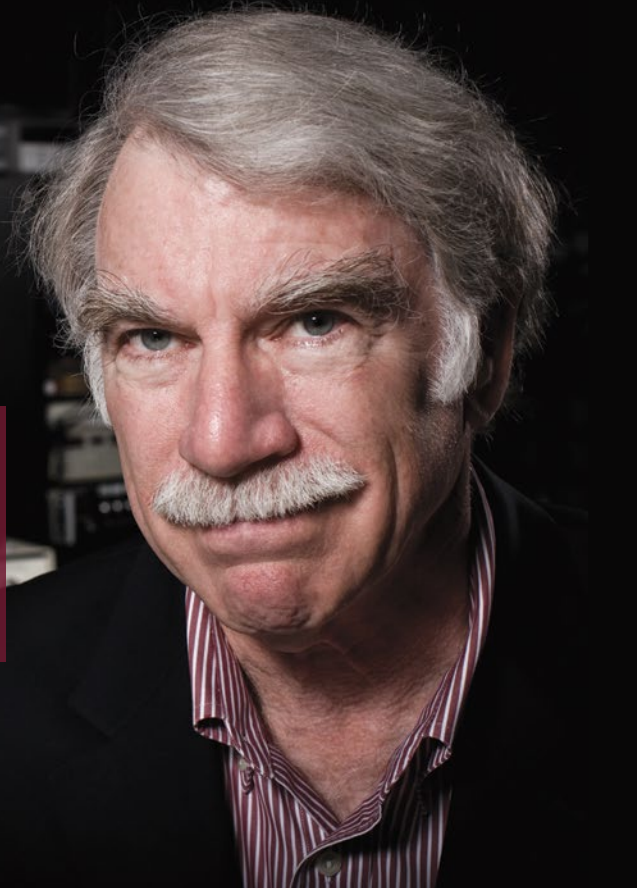
FLORIDA STATE UNIVERSITY

Florida State University and the National High Magnetic Field Laboratory congratulate

## Dr. Alan G. Marshall

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The University of Tennessee  
congratulates 2016 NAI Fellow,

**Yilu Liu**

Professor of Electrical Engineering  
and Computer Science and  
UT-ORNL Governor's Chair

**Congratulations**  
to Dartmouth's Newest NAI Fellows



**Hany Farid**  
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Digital Forensics, Image Analysis  
Human Perception



**Richard Greenwald**  
Engineering

Sports Injury Prevention  
Medical Devices

INVENTORS, PROFESSORS, MENTORS



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AT DARTMOUTH

**2016 NAI FELLOW  
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**Raghunath Chaudhari**

Deane E.Ackers Distinguished Professor  
Department of Chemical & Petroleum Engineering  
University of Kansas School of Engineering

**CONGRATULATIONS**



From your friends and colleagues  
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## COMMON ABBREVIATIONS

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AAAS .....	American Association for the Advancement of Science
AAIC .....	The Association for the Advancement of Industrial Crops
ACS.....	American Chemical Society
AIChE .....	American Institute of Chemical Engineers
AIST .....	Association for Iron & Steel Technology
AIMBE.....	American Institute for Medical and Biological Engineering
APS.....	American Physical Society
ASEE.....	American Society for Engineering Education
ASME .....	American Society of Mechanical Engineers
ASM.....	American Society for Metals
BMES .....	Biomedical Engineering Society
DARPA.....	Defense Advanced Research Projects Agency
DHS.....	United States Department of Homeland Security
FDA .....	U.S. Food and Drug Administration
IEEE.....	Institute of Electrical and Electronics Engineers
ITE.....	International Institute of Transportation Engineers
MRS.....	Materials Research Society
NAE.....	National Academy of Engineering
NAM.....	National Academy of Medicine
NAS .....	National Academy of Sciences
NIH .....	National Institutes of Health
NIHF .....	National Inventors Hall of Fame
NSF .....	National Science Foundation
OSA .....	Optical Society of America
SFB.....	Society for Biomaterials
SPIE.....	International Society of Optical Engineering
U.S. DOE....	United States Department of Energy
USDA .....	United States Department of Agriculture



**The key to success is** focus.

Randy Wadle runs NetWise Technology based in Bradenton, Florida. He's grown his company since 1999 with the help of fellow entrepreneurs and small-business resources available throughout the state. One invaluable resource is the Florida Virtual Entrepreneur Center (FLVEC), which Randy says, "has opened doors to new business."

FLVEC lists local and state resources so entrepreneurs like Randy can take the next step in business.

Check out **FLVEC.com** for more of Randy's story and others across the state.



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