

COLLEGE OF ENGINEERING KEVIN T. CROFTON DEPARTMENT OF AEROSPACE AND OCEAN ENGINEERING VIRGINIA TECH.

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# 2019

ACADEMY OF AEROSPACE AND OCEAN ENGINEERING EXCELLENCE and AOE ANNUAL AWARDS BANQUET

Friday, October 4, 2019 Inn at Virginia Tech and Skelton Conference Center



# Kevin T. Crofton Department of AEROSPACE and OCEAN ENGINEERING

2019 Academy of Aerospace And Ocean Engineering Excellence and AOE Annual Awards Banquet

## RECEPTION

6:00 PM

DINNER

6:30 PM

**OPENING REMARKS** 

UNDERGRADUATE SCHOLARSHIPS

GRADUATE FELLOWSHIPS

FACULTY & STAFF AWARDS RECOGNITION

INDUCTION OF NEW MEMBERS -ACADEMY OF AOE EXCELLENCE

**CLOSING COMMENTS** 

Live Music provided by Amber Kalber & Branch House



ACADEMY OF AEROSPACE AND OCEAN ENGINEERING EXCELLENCE AND AOE ANNUAL AWARDS

# UNDERGRADUATE SCHOLARSHIPS

## AEROSPACE ENGINEERING CLASS OF '58

Members of the Class of '58 Aeronautical Engineering alumni and friends established the scholarship for undergraduate students majoring in Aerospace Engineering; recipients are chosen on the basis of demonstrated academic achievement and leadership.

#### Mitchell Mann

#### KEVIN T. CROFTON UNDERGRADUATE SCHOLARSHIP

Established by Kevin Crofton ('82) in 2016 with his remarkable gift to the University and the AOE department, this scholarship provides partial support to undergraduate students majoring in Aerospace or Ocean Engineering. Recipients are chosen on the basis of demonstrated financial need and advancement of AOE diversity goals. Special consideration is given to students who are presently underrepresented in the Virginia Tech College of Engineering student body population.

Bruce Barbour Mason Fitzsimmons Maedini Jayaprakash Isaac Payne Kayla Vickers Matthew Feggeler Susan Hill Zachary Marrano Kathryn Wittek

# UNDERGRADUATE SCHOLARSHIPS

## FRED LUTZE MEMORIAL SCHOLARSHIP

The Fred Lutze Memorial scholarship was established by Dr. Eugene M. Cliff for undergraduate students majoring in Aerospace Engineering. Recipients are chosen on the basis of demonstrated academic achievement and leadership as well as financial need.

Patrick Anzalon Mark Shepheard Jonathan Jaffee

#### MITCHELL MEMORIAL ENDOWED SCHOLARSHIP

The Mitchell Memorial scholarship was established by Norris Mitchell ('58) for undergraduate students majoring in Aerospace Engineering; recipients are chosen on the basis of demonstrated academic achievement and leadership.

Andrew Falsone

Jessica Puodziunas

## CLINTON & HELEN ROBINS MEMORIAL SCHOLARSHIP

Established by Clinton & Helen Robins for undergraduate students majoring in Aerospace Engineering; recipients are chosen on the basis of demonstrated academic achievement and leadership, with preference for students with prior military service.

Christopher Guthrie Mason Fitzsimmons



# UNDERGRADUATE SCHOLARSHIPS

### SNAME UNDERGRADUATE SCHOLARSHIP

The Society of Naval Architects and Marine Engineers (SNAME) offers competitive scholarships to undergraduate and graduate students of naval architecture and marine engineering.

#### Tayo Oladele

# CHARLIE YATES SCHOLARSHIP FOR LEADERSHIP IN AEROSPACE

The scholarship was established by Dr. William Grossman, Jr. to honor Professor Charlie Yates, and is intended to provide full or partial scholarship to a rising sophomore, junior, or senior from the Department of Aerospace and Ocean Engineering. Recipients must exhibit leadership in the areas of academics and service, and preferences are given to students who are members of the Corp of Cadets and/or student athletes.

Christopher Guthrie

**Benjamin Hicks** 

# GRADUATE FELLOWSHIPS

# KEVIN T. CROFTON FELLOWSHIP

Established by Kevin Crofton ('82) in 2016 with his remarkable gift to the University and the AOE department, this fellowship provides partial support to graduate students majoring in Aerospace or Ocean Engineering. Recipients are chosen on the basis of demonstrated financial need and advancement of AOE diversity goals. Special consideration is given to students who are presently underrepresented in the demographics of the Virginia Tech College of Engineering student body population.

Renewal Graduate Research Fellowships

Theresa Blandino

Virginia Smith

New Graduate Research Fellowships

Cameron Harris Wentao Ma William Lambert

# DAVENPORT FELLOWSHIP

Mrs. Eleanor Davenport, the daughter of the late Fred Durham (Class of 1921), established the Eleanor Davenport Leadership Scholarship to support outstanding students enrolled in our College of Engineering. Recipients are chosen on the basis of superior intellectual promise and academic performance, demonstrated leadership ability, personal character, and community service. The donor hopes the Davenport Leadership Scholars/Fellows will seek to assist others in attaining a college education in the future.

Addison Collins

Julie Duetsch



# GRADUATE FELLOWSHIPS

## LAWRENCE LIVERMORE NATIONAL LABORATORY HIGH ENERGY DENSITY FELLOWSHIP

The Lawrence Livermore National Laboratory High Energy Density Graduate Fellows collaborate with staff scientists at Lawrence Livermore and Los Alamos National Laboratories. The program is aimed at enhancing collaborations on experimental, theoretical, and computational research in many disciplines, such as astrophysics, hydrodynamics, turbulence, plasma physics, inertial confinement physics and radiation/particle transport.

#### Robert Masti

## ICTAS DOCTORAL FELLOWSHIP

The ICTAS Doctoral Scholars Program honors exceptional Ph.D. candidates interested in interdisciplinary research with a competitive graduate fellowship. A cooperative effort led by ICTAS, with significant contributions from the Graduate School and each scholar's college and department, the program is targeted for the highest-caliber entering or new Ph.D candidates. Selection criteria include academic credentials, demonstrated dedication to the scholar's chosen field of study, opportunities for interdisciplinary collaboration, and alignment of proposed graduate research with ICTAS' and Virginia Tech's destination and strategic growth areas.

lan Bean

Katherine Mott

# GRADUATE FELLOWSHIPS

## MARTIN-MARIETTA AIRCRAFT FELLOWSHIP

Established by the Glenn L. Martin Company, this award provides financial assistance to students in courses of study applicable to the activities of the Glenn L. Martin Company. Recipient is selected from among students planning to study courses that most applicable to activities of the Glenn L. Martin Company at the time of selection and who are enrolled in the cooperative program. Preference given to resident of states in which plants of Glenn L. Martin Company or subsidiaries are located, and special consideration given to children of employees of the company or subsidiaries.

Megan McCracken

### Stefan Povolny

## BRIAN NERNEY GRADUATE RESEARCH

This Fellowship award shall be used to provide tuition support and a stipend for a graduate research assistant within the Kevin T. Crofton Department of Aerospace and Ocean Engineering. Awards shall be made upon recommendation of the department head to a graduate student providing research support and/or conducting research in the field of aerospace and ocean engineering.

Addison Collins Mark Parsons Nicholas Husser John Rodman



# GRADUATE FELLOWSHIPS

## NEW HORIZONS GRADUATE SCHOLARS

By focusing on the university's plan for the New Horizon - creativity, collaboration, and innovation across disciplines - this community honors the contribution that diversity, broadly defined, can bring to discovery. New Horizons Graduate Scholars are offered professional development opportunities such as travel support to present research project findings at conferences, fellowship proposal writing workshops, and lunch and dinners with invited guest speakers from industry and academia.

Julie Duetsch James Gesham Megan McCracken Daniel Weber Kendy Edmonds William Lambert Alberto Post

# PRATT FELLOWSHIP

This scholarship was created through a gift by John Lee Pratt in 1967, and represents the funding source for your Dean's Scholar award. This was the largest gift received by the University at the time, used to create scholarship programs in several Colleges, including the College of Engineering.

Rachit Prasad Harsh Sharma Zhongshu Ren Karanpreet Singh

# GRADUATE FELLOWSHIPS

# ROBERT & CAROL TOLSON SCHOLARSHIP

Established by Robert H. Tolson ('58), this award is for graduate students or students admitted for graduate study who are members of an underrepresented population of students in the College of Engineering's Department of Aerospace and Ocean Engineering. Preference will be given to individuals demonstrating financial need and secondarily to students demonstrating an interest in space research.

Megan McCracken

John Rodman

# VIRGINIA SPACE GRANT CONSORTIUM GRADUATE FELLOWSHIP

The Virginia Space Grant Consortium (VSGC) Graduate Research STEM Fellowship Program provides fellowships of \$6,000 in addon support to graduate students to supplement and enhance basic research support. Applicants must be enrolled full-time in a program of study in science, technology, engineering, or math (STEM) and have a specific faculty-mentored research project that has NASA or aerospace relevance.

Renewal Graduate Research Fellowships

Katherine Mott

New Graduate Research Fellowships Christopher Krier



# FACULTY & STAFF AWARDS

## DEAN'S AWARD FOR RESEARCH EXCELLENCE

The Dean's Award for Research Excellence recognizes faculty who have performed at an extraordinary level during the previous two calendar years. Research excellence is demonstrated through high-impact publications, invited articles of particular merit, significant invited lectures, exceptional record of graduation of Ph.D. students and their career success, significant awards by professional societies or other such entities, significant successes in sponsored research, and extraordinary impact of research on industry or government.

The Faculty Fellow Award carries a \$5000 account for three years to be used for supporting the recipient's research.

Bhuvana Srinivasan

# AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS AEROACOUSTIC AWARD

The AIAA Aeroacoustic Award is presented for outstanding technical or scientific achievement resulting from an individual's contribution to the field of aircraft community noise reduction. The Aeroacoustics Award was established in 1973, and the honoree is presented with a medal and certificate of citation during the recognition dinner at the AIAA/CEAS Aeroacoustics Conference.

#### William Devenport

# FACULTY & STAFF AWARDS

# FELLOW OF THE AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS

The AIAA Confers The Distinction Of Fellow Upon Individuals In Recognition Of Their Notable And Valuable Contributions To The Arts, Sciences Or Technology Of Aeronautics And Astronautics.

Robert Canfield

Rakesh Kapania

# FELLOW OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

The American Society of Mechanical Engineers (ASME) Committee of Past Presidents confers the Fellow grade of membership on worthy candidates to recognize their outstanding engineering achievements. A Fellow is defined as one who has attained a membership grade of distinction, at the time of advancement shall be a corporate member of the Society, shall have been responsible for significant engineering achievements, and shall have not had less than 10 years of active practice and 10 years of corporate membership in ASME.

Dr. Michael Philen



## JEAN-FRANÇOIS BARTHELEMY



Dr. Jean-François (J.F.) Barthelemy is on special assignment with the Office of the Chief Technologist at NASA HQ as Agency Digital Transformation Lead. He is responsible for assessing the state of the Agency's Digital Transformation initiatives and to recommend how to effectively integrate the diverse initiatives.

Prior to that assignment, since January 2015, he

was the NASA Langley Research Center (LaRC) Chief Technologist. He advised the LaRC Office of the Director and Senior Staff on technology matters and provided technical leadership for planning, management and evaluation of comprehensive, Center-wide advanced technology development activities. Prior to that, he was Deputy Director of the LaRC Systems Analysis and Concept Directorate and of the LaRC Office of Strategic Analysis, Communication, Business Development.

Upon hiring on at NASA Langley in 1986, he joined the Interdisciplinary Research Office where he contributed original developments in sensitivity analysis and optimization methods for engineering problems and applied those to aeronautics and space challenges.

J.F. has degrees in Aerospace Engineering from the Université of Liège in Belgium (MS, 1978) and Virginia Tech (MS, 1980 and PhD, 1983) and completed the Harvard Business School Program for Management Development (2004). He has served temporary assignments at NASA HQ and the Boeing Commercial Airplane Group. He has authored or co-authored over 50 technical publications. He is an Associate Fellow of the AIAA, and a recipient of the NASA Exceptional Service Medal.

# 2019 ACADEMY INDUCTEES

#### KARL BILIMORIA



Dr. Karl Bilimoria is an aerospace engineer in the Flight Trajectory Dynamics and Controls branch at NASA Ames Research Center, where he has worked since 1994, leading research projects in the areas of air traffic management, spacecraft handling qualities, and space traffic management. After earning his doctoral degree from Virginia Tech, he began his career as an assistant professor of aerospace engineering at Arizona State University.

Dr. Bilimoria is a Fellow of the American Institute of Aeronautics and Astronautics (AIAA). He is the inaugural Editor-in-Chief of the Journal of Air Transportation and previously served as an Associate Editor for the Journal of Guidance, Control, and Dynamics, as well as Guest Editor for a special issue of the Air Traffic Control Quarterly. He has served on four AIAA national committees, including the Publications Committee where he chaired the Books sub-committee. He is a recipient of AIAA's Sustained Service Award.

Dr. Bilimoria has published over 100 technical articles on the dynamics and control of aerospace vehicles. He has received numerous professional awards, including the NASA Exceptional Technology Achievement Medal for his work in air traffic management. He is a co-inventor of the Future Air traffic management Concepts Evaluation Tool (FACET), which has received two U.S. patents and prestigious awards from NASA, FAA, and AIAA. He led a team that received two NASA Group Achievement Awards for their work in spacecraft handling qualities, conducting a series of piloted flight simulation studies to build a knowledge base of pilot control systems and cockpit displays for the next generation of crewed spacecraft; over 30 astronauts from the Space Shuttle and Apollo programs participated in these studies. Dr. Bilimoria was a finalist in the 1996 NASA Astronaut Candidate selection.

Bilimoria holds a bachelor in technology degree in Aeronautical Engineering from the Indian Institute of Technology ('82), and a masters degree in Aerospace Engineering ('84) and a Ph.D. in Aerospace Engineering ('86) from Virginia Tech.



## STEPHEN KRACINOVICH



Stephen Kracinovich is the Director of the Naval Air System Command (NAVAIR) Autonomy Strategy. He is responsible for establishing NAVAIR Autonomy and Artificial Intelligence (AI) policy, processes, and capabilities. He directs numerous autonomy and AI research and development efforts as well as related education.

Prior to joining the NAVAIR team, Mr. Kracinovich

was involved in flight test of the latest advances in Navy/Marine Corps vertical flight aircraft for the Naval Air Test Center. This included an assignment as the first Lead Flight Test Engineer for the V-22 tiltrotor program.

Mr. Kracinovich has been the head of the systems integration branch for Unmanned Air Systems (UAS), targets, and rotorcraft; and the head of the systems integration division for NAVAIR. He was the Assistant to the Program Executive Officer of Unmanned Systems & Weapons for Engineering (APEO(U&W)-E) for over twelve years. In that role, he acted as the chief engineer for PEO(U&W) and oversaw the technical efforts of all UAS, cruise missile, and mission planning programs within NAVAIR. In these roles, he has lead or supported over a dozen independent reviews and chaired dozens of technical reviews.

Mr. Kracinovich was the vice president of the Seafarer chapter of the Association for Unmanned Vehicle Systems International (AUVSI) and the chairman of the UAS technical panel of The Technical Cooperation Program (TTCP), an international government defense research organization. He is on the advisory board for the College of Southern Maryland engineering curriculum and the University System of Maryland Autonomous System Research Center in Southern Maryland. Additionally, he was a former elected member and chairman of the St. Mary's County Board of Education.

Throughout his career he has been awarded the Department of the Navy Meritorious Service Award; the Navy Superior Civilian Service Award and earned First Place in the American Helicopter Society Graduate Design Competition.

Kracinovich holds a bachelors degree in Aerospace and Ocean Engineering from Virginia Tech ('83); is a graduate of the United States Naval Test Pilot School ('86); holds a masters in Aviation Systems Engineering from University of Tennessee ('89) and a masters in Aerospace Engineering from Georgia Tech ('92).



#### RONI G. MODICA



Ms. Roni Modica is a Defense Intelligence Senior Level Executive serving as a Technical Advisor in the Office of the Under Secretary of Defense for Intelligence (OUSD(I)). From 2017-2018, she was detailed to serve as the Director, Special Program for Missile Defeat (SPMD). The SPMD was a Deputy Secretary of Defense project that was part of the Department's Defense Innovation Initiative and

Advanced Capability Deterrence Panel effort associated with countering road mobile missiles.

In 2017, she was selected by the Deputy Secretary of Defense to lead a small, high performing team to develop innovative solutions to address one of the nation's top national security challenges. Ms. Modica established a test infrastructure and process for demonstrating innovative capabilities integrated with current operational systems working across all Services,the Combatant Commands, and the Intelligence Community. In less than 18 months, her team developed and demonstrated new capabilities to deliver persistent intelligence in an operational environment to address mobile missiles and other time critical targeting needs. For her accomplishments, Ms. Modica received the Department of Defense Exceptional Civilian Service Award from the Secretary of Defense in 2017 and the 2018 Presidential Rank Award.

She joined OUSD(I) in September 2014. Ms. Modica is a Special Technical Advisor for space and missile defense activities supporting the Director for Defense Intelligence for Strategy, Programs and Resources. She is also a member of the Defense Acquisition Corps.

From 2012-2014, Ms. Modica was a Technical Intelligence Officer in the Office of Global Access in the Directorate for Science and Technology (DS&T) at

# 2019 ACADEMY INDUCTEES

the Central Intelligence Agency (CIA). She was the program manager for one of the CIA DS&T's largest development efforts.

From 2002-2012, Ms. Modica held several positions at the Missile Defense Agency (MDA). She served as the Ballistic Missile Defense System (BMDS) Space Architect reporting to the Director of Engineering and was responsible for concept development, prototyping, testing and acquisition for the BMDS space layer. Ms. Modica also served as the MDA liaison to the Intelligence Community (IC) responsible for establishing partnerships with NRO, NGA, DIA, NSA, CIA and ODNI to identify, demonstrate, and integrate IC capabilities that could support the missile defense mission. She was the program manager for multiple classified advanced technology programs that evolved from her IC liaison role. Ms. Modica delivered one of MDA's most successful advanced technology demonstration programs. Ms. Modica also served as the Director for Systems Engineering and Integration for Special Programs and as the Chief Engineer for the Kinetic Energy Boost Phase Interceptor program.

From 1987-2002, Ms. Modica was a systems engineer at the Naval Surface Warfare Center, NAVSEA Dahlgren Division. She led multiple engineering efforts in support of the development and certification of various Navy systems, including TRIDENT II, TOMAHAWK, AEGIS, Standard Missile, and the Navy Anti-Satellite (ASAT) Program. In 1999, Ms. Modica received the Navy Meritorious Civilian Service Award for her leadership and technical contributions to the Navy Theater Ballistic Missile Defense System. Ms. Modica started her career with the Navy as a participant in the Federal Government's Cooperative Education Program in 1987 as a college sophomore engineering student.

In 1989, Ms. Modica received a Bachelor of Science Degree in Aerospace Engineering from Virginia Tech.



#### RON A. MURRAY



Ron Murray is the vice president of Quality at Newport News Shipbuilding, the nation's sole builder of nuclear-powered aircraft carriers and one of only two companies that builds nuclear-powered submarines for the U.S. Navy. Named to this position in 2012, he is responsible for the shipyard's quality assurance, quality control and compliance policies and programs. He also oversees the planning, development and enforcement of comprehensive and integrated quality and continuous improvement

across the shipyard.

Mr. Murray, a native of Virginia, began his professional career with NKF Engineering as a shock and vibration engineer supporting several different shipbuilding programs. After three years, Mr. Murray returned to his hometown and began his career at Newport News Shipbuilding, following three generations of Murrays before him. He has held several roles of increasing responsibility in the areas of design, construction and maintenance of submarines. During this time he was most notably the manager of the SUBSAFE Program responsible for the oversight and certification of all submarine pressure hull fabrication and all submarine sea connected systems. In 2009, Mr. Murray was promoted to director of quality assurance. In this role he was responsible for quality assurance activities for all submarine and aircraft carrier construction and maintenance across the Newport News Shipbuilding enterprise.

Mr. Murray serves on the Board of Directors for VersAbility Resources, as well as the Foundation Board for Riverside Health Systems, and is a member of the American Society for Quality and the Society of Naval Architects and Marine Engineers. He holds a bachelors degree in Aerospace and Ocean Engineering ('86) and a masters in Ocean Engineering ('04) from Virginia Tech.

# THE ACADEMY OF AEROSPACE AND OCEAN ENGINEERING EXCELLENCE

## 2018

Rodney D.W. Bowersox Gordon J. Follin Chris C. McCormick

## 2017

Jeff Babione Fayette Collier

## 2016

H. Pat Artis Toby Bright Kevin Crofton Fred DeJarnette Keith L. Englander William Grossmann Charles F. Harris Christopher C. Kraft , Jr.\* Peter R. Kurzhals John McKav\* Norris Mitchell Helen I. Reed A. Warner Robins Joseph Schetz Jerry C. South, Jr. Thomas Thornton Robert Warrington

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\* Deceased



# Kevin T. Crofton Department of AEROSPACE and OCEAN ENGINEERING

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\* American Institute of Aeronautics and Astronautics (AIAA) Associate Fellow

\* Society of Naval Architects and Marine Engineers (SNAME) Fellow

++ Royal Aeronautical Society Fellow

^ Fellow of The American Society of Mechanical Engineers (ASME)

^^ Fellow of the Institute of Navigation

# Kevin T. Crofton Department of AEROSPACE and OCEAN ENGINEERING

Romesh Batra

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