

# NASA Aeronautics: Aviation at the Leading Edge

*Free Webinar Series for University Faculty and Students*



# NASA Aeronautics: Aviation at the Leading Edge

- Webinar series as a first-time collaborative project between Aeronautics Working Group of the National Council of Space Grant Directors and the NASA Aeronautics Research Mission Directorate (ARMD).





# Webinars

**Quiet Supersonic  
Flight Over Land -  
Lowering the Boom**

**October 2, 2019  
7:30 p.m. EDT**



**Electrified Aircraft -  
Tackling the  
Challenges of  
Alternative  
Propulsion**

**November 6, 2019  
7:30 p.m. EST**



**Safe Flight for  
Drones - Designing  
a System for Urban  
Air Mobility**

**October 23, 2019  
7:30 p.m. EDT**



# Goal

- **Provide a series of aeronautics seminars for undergraduate and graduate students at U.S. universities as the primary audience. High school students and the interested public are secondary audiences for archived programs.**



# Objectives

- **Engage university students in learning about areas of research interest to NASA and in support of national aeronautics priorities.**
- **Promote career awareness for U.S. undergraduate and graduate students by modeling gender and diversity in the professionals selected as presenters and by having each presenter briefly talk about her/his own career path, job and what they do in that job.**
- **Provide the content in a manner that is not overly technical and is engaging to early undergraduate as well as graduate students and advanced high school students.**
- **Stimulate student thinking about potential research topics of NASA relevance.**
- **Provide “learn more” materials, such as NASA publications, articles and refereed papers.**

# Planning Committee

- **Karen Rugg** – ARMD Lead for Communications and STEM Engagement
- **Mary Sandy** – Director, Virginia Space Grant Consortium, Member, NCSGD Aeronautics Working Group
- **Haim Baruh** – Director, New Jersey Space Grant Consortium and NCSGD Aeronautics Working Group Lead
- **Michaela Lucas** – Deputy Director, Nebraska Space Grant, Co-Lead, NSCGD Aeronautics Working Group
- **Joeletta Patrick** – OSTEM California Lead
- **Dave Berger** – OSTEM Communications Lead, NASA Armstrong
- **Rob LaSalvia** – OSTEM Communications Lead, NASA Glenn
- **Gina Blystone** – OSTEM Communications Lead, NASA Langley

# NASA AERONAUTICS: AVIATION AT THE LEADING EDGE

A Free Webinar Series for University Students and Faculty!

[HOME](#) [REGISTER](#) [LEARN MORE](#) [ARCHIVED SEMINARS](#) [PARTNERS](#)



## Quiet Supersonic Flight Over Land – Lowering the Boom

**October 2, 2019**



## Safe Flight for Drones – Designing a System for Urban Air Mobility

**October 23, 2019**



## Electrified Aircraft – Tackling the Challenges of Alternative Propulsion

**November 6, 2019**

### THE SERIES

Get to know the people, the ideas and the technology that are driving the revolutionary work done by the first "A" in NASA – NASA Aeronautics. NASA has made decades of contributions to aviation. Every U.S. commercial aircraft and control tower have NASA-developed technology on board. The next great aviation transformation is being designed and engineered right now, from the return of supersonic flight to the emergence of flying cars and electrified aircraft. *Where are you in this future?*

Each webinar will air from 7:30-8:30 pm EDT/EST and feature conversation with NASA Aeronautics researchers who will talk about the technology and also about their educational and career paths. Students can pose questions to the presenters.

### REGISTRATION REQUIRED

Online registration for this series will open on August 30, 2019 at this [link](#).

### ABOUT

This series is offered as a partnership between NASA's Aeronautics Mission Directorate and the National Space Grant Program and produced by Old Dominion University.

<https://vsgc.odu.edu/aeroweinars/>

NASA AERONAUTICS



NATIONAL SPACE GRANT  
PROGRAM



# Funding

**Each partner covered its respective costs for the series.**

- **VSGC contributed time for Director, Media Specialist and supporting staff during productions.**
- **Space Grant Directors who served as moderators covered associated travel costs.**
- **ARMD covered production costs to Old Dominion University and travel for Karen Rugg.**
- **ARMD projects/centers supported time and travel commitments for the Subject Matter Experts.**



# Approach for Webinars

- **A Space Grant Director served as moderator for each webinar**
- **ARMD identified two Subject Matter Experts for each webinar**
- **Modeled gender and racial diversity**
- **Content: technical presentations, career path segment, Q&A session, NASA/Space Grant opportunities**
- **Webinars included live closed captioning**
- **Webinars were archived**
- **Registration and post registrant surveys collected impact and qualitative data.**

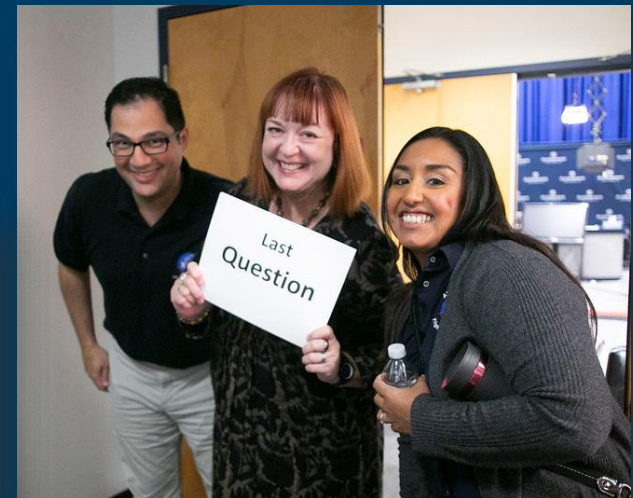
# Quiet Supersonic Flight Over Land

- **Moderator:** Scott Tarry, Director, Nebraska Space Grant Consortium
- **Technical Presenters:**
  - Mary Stringer, Aerospace Researcher, NASA Langley Research Center
  - Corey Diebler, X-59 Flight Dynamics and Simulation Lead, NASA Langley Research Center



# Electrified Aircraft

- **Moderator:** Steve Ruffin, Director, Georgia Space Grant Consortium and Professor and Associate Chair, Aerospace Engineering, Georgia Institute of Technology
- **Technical Presenters:**
  - Claudia Herrera, Deputy Chief Engineer for the X-57 Maxwell, NASA Armstrong Flight Research Center
  - Dave Avanesian, Component Lead for High Efficiency Aircraft Thermal Research, NASA Glenn Research Center



# Safe Flight for Drones

- **Moderator:** **Suzanne Smith**, Director, Kentucky Space Grant; Director, University of Kentucky's Unmanned Systems Research Consortium; and Professor, Mechanical Engineering
- **Technical Presenters:**
  - **Starr Ginn**, Lead for NASA's Urban Air Mobility Grand Challenge, NASA Armstrong Flight Research Center
  - **Jeff Homola**, Integration and Testing Lead for Unmanned Aerial Systems Traffic Management, NASA Ames Research Center





# Audience Results

- **Total Estimated Live Audience – 2,071 students and faculty**
- **44 states plus D.C. and Puerto Rico**
- **Good Space Grant engagement in marketing the program and hosting viewing sites. Many schools offered this as a department or college program with multiple attendees.**
- **Non U.S. Callers: Australia, British Columbia, China, France, Germany, Greece, India (25), Iran, Italy, Malaysia, Mexico (13), Pakistan, Philippines, Quebec, Scotland South Korea, Thailand, United Kingdom, Venezuela**
- **NASA is working to make webinar videos compliant for [nasa.gov/aero](https://nasa.gov/aero) posting and for NASA TV block scheduling**
- **Post Program Downloads from Website (as of February 14, 2020):**
  - **Total = 1006: Supersonic Flight Over Land 401; Safe Flight for Drones 420**
  - **Electrified Aircraft 165**

# Post Program Survey (168 responses)

- The material was presented in an engaging way – 92.81%
- The technical content was understandable – 98.20%
- More than 98% of respondents would be interested in participating in more webinars on NASA research topics.
- 167 respondents listed a wide range of suggested future topics including: human and planetary exploration, VTOL, swept wings, autonomous system safety, Artemis, electric/autonomous aircraft, alternative fuels/alternative energy, more on electric aircraft, superconductors and their use in electrified aircraft, the role of machine learning in future of aero-vehicle design, planetary exploration, earth science.

# Post Program Survey (con't)

- The seminar raised my career awareness of opportunities in the topic or field – 91.02%
- 87.35% of respondents will discuss the webinar contents with others
- Reason for choosing to participate in the webinars: (some respondents selected more than one answer)
  - Personal interest – 82.53%
  - Departmental or college event – 13.86%
  - Class assignment – 11.45%
  - Student society program – 3.61%
  - Other – 9.64 %
- Respondents indicated that the ODU telephone number for technical assistance worked well if they needed it.

# Survey Feedback for Future Webinars

- **Very positive on value of the webinars overall.**
  - **“I look forward to more online webinars.”**
  - **“ I learned a lot from the webinar and can’t wait to watch more.”**
  - **“I would also like to thank you for how informative and helpful the webinars were.”**
- **Many were glad the programs were being archived for class use, sharing or subsequent viewing.**
- **Key message -- Students and faculty want more in-depth technical content of interest to upper classmen and graduate students. Want to know in greater detail about the research and how it is being done.**
- **Suggested longer programs with more time for questions and answers. Students really liked the Q&A component. “Post answers to questions you don’t get to in the program.”**



# Experience Takeaways

- **Positive activity for ARMD/Space Grant that met project goals.**
- **Excellent and mutually beneficial partnership between ARMD and National Space Grant network.**
- **Great choices for NASA subject matter experts and for Space Grant moderators even with some not having on-camera experience.**
- **Old Dominion University Office of Distance Learning was extremely professional and provided great production support at minimal cost as a courtesy to VSGC – less than \$2000 for all three programs.**
- **Space Grant student and faculty participants want more and longer webinars with higher levels of technical content and Q&A opportunities.**
- **For future webinars, provide individual registration passwords**