What is The Vertical Flight Society?

- The international **professional society for those working to advance vertical flight**
  - Founded in 1943 as the American Helicopter Society (AHS)
  - Everything from VTOL MAVs/UAS to helicopters, eVTOL, etc.
- **Expands knowledge** about vertical flight technology and promotes its application around the world
- **Advances safety and acceptability**
- Advocates for vertical flight **R&D funding**
- Helps **educate and support** today’s and tomorrow’s vertical flight engineers and leaders
- **Brings together the community** — industry, academia and government agencies — to tackle the toughest challenges

Join us today: www.vtol.org
Education Outreach

www.vtol.org/...

- **Education** for the workforce
  - Conferences, Short Courses, publications, etc.
- **University** Memberships & Student Chapters
  - Research resources and student clubs
- Online **Video** Library/Short Courses
  - Professional development and education
- Vertical Flight Foundation (**VFF**)
  - $100,000 in annual scholarships
- Student Design Competition (**SDC**)
  - Schools from all over the world designing advanced VTOL aircraft
- **MAV** Student Challenge
  - Universities at annual competition
- Pre-college (**STEM**) outreach
  - Developing curricula and training materials
- “Hover for A Day” **Challenge**
  - Follows Human Powered Helicopter Competition
- **Careers** Center
  - Free online jobs board
eVTOL needs thousands more engineers!
- US Army-Navy-NASA-funded Vertical Lift Research Centers of Excellence (VLRCOE) only producing dozens of grad students. Need more government & industry funding for university research/grads!
- VLRCOEs are inadequately funded for existing demand — need +$20–50M/yr more funding!
- Each company needs 500-1,000 engineers to develop each eVTOL to certification (plus next gen)!

Competition: Helicopter industry needs thousands of more engineers!
- Huge new military and civil rotorcraft development programs — need thousands of more rotorcraft engineers in the coming decade-plus!

Talent pipeline is underfunded — zero sum game!
- Competition fierce for VTOL grads & experienced engineers!

Need a “National eVTOL Strategy” for workforce, aircraft, motors, batteries, infrastructure, etc.!

10,000 additional engineers needed in the next decade!
University Research & Education: Building the eVTOL Workforce

www.vtol.org/workforce

- **Prof. Marilyn J. Smith**, *Director, Vertical Lift Research Center of Excellence (VLRCOE)*, Georgia Institute of Technology

- **Prof. Carlos E. S. Cesnik**, *Director, Active Aeroelasticity and Structures Research Laboratory*, University of Michigan

- **Prof. Farhan Gandhi**, *Aerospace Program Director; and Director, Center for Mobility with Vertical Lift (MOVE)*, Rensselaer Polytechnic Institute
US government must recognize that sustained research investment is required to capitalize on this breakthrough technology

- Current VTOL-trained graduate student production is a fraction of what is needed for national economic and security needs — risk of outsourcing jobs overseas
- +$20M/year govt investment will generate 100 additional VLRCOE graduates
- The VLRCOEs pipeline is well developed but need to turn on the spigot

Industry must recognize that workforce is a critical supply chain item

- If eVTOL industry is investing >$1B/year in vehicles, industry should invest 2-3%/year in university research to support the talent pipeline
- An industry venture capital pool could create a human capital risk reduction fund
- Industry/investor philanthropic funds could support Opportunity Zone projects for university infrastructure/research facilities, etc.