

# Transformative Vertical Flight 2025

11<sup>th</sup> Biennial Autonomous VTOL Technical Meeting &  
12<sup>th</sup> Annual Electric VTOL Symposium  
Phoenix, AZ, USA | Feb. 4-6, 2025



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**Monday, February 3, 2025: Registration Desk Hours 2:00 pm–5:00 pm (South Ballroom Foyer)**

**8:00 am–5:00 pm: Short Course on Electric VTOL Design, Dr. James Wang (Room 161–162)**

**Tuesday, February 4, 2025: Registration Desk Hours 7:00 am–5:00 pm (South Ballroom Foyer)**

**Plenary Sessions in Room 164-166**

**Welcome Keynotes**

8:00–8:20	Welcomes: <b>Colton Marchessault</b> (Boeing), VFS Arizona Chapter President, and <b>Angelo Collins</b> , VFS Executive Director
8:20–8:50	<b>Dave Shilliday</b> , VP/GM of UAM/UAS, Honeywell Aerospace Technologies (sponsor)
8:50–9:10	<b>Kate Gallego</b> , Mayor, City of Phoenix
9:10–9:30	<b>Chris Speights</b> , Chief Engineer, Vertical Lift, The Boeing Company (sponsor)
<b>9:30–10:15 am Refreshment Break (Exhibit Hall: South Ballroom)</b>	
<b>Government Keynotes:</b> Chaired by Angelo Collins, VFS Executive Director	
10:15–10:40	<b>Derek Gowanlock</b> , Research Flight Test Engineer, National Research Council Canada
10:40–11:10	<b>Dr. Michael Patterson</b> , ConOps and Analysis Lead, AAM Mission Integration Office, NASA
11:10–11:40	<b>LTC Shawn Naigle, PhD, US Army</b> , Dep Asst Dir, Design, Simulation & Experimentation, US Army DEVCOM AvMC TDD
11:40–12:00	GoAERO Update: <b>Gwen Lighter</b> , CEO, GoAERO
<b>12:00–1:30 pm Lunch (Exhibit Hall: South Ballroom)</b>	
<b>Electric VTOL Leaders:</b> Chaired by Elan Head, Senior Editor, The Air Current	
1:30–1:55	<b>Tom Anderson</b> , COO, Archer Aviation
1:55–2:15	<b>Kristen Costello</b> , Regulatory Affairs Lead, Beta Technologies
2:15–2:35	<b>Ryan Naru</b> , Aviation Policy & Regulatory Affairs Lead, Joby Aviation (sponsor)
2:35–2:55	<b>Ken Karklin</b> , CEO, Pivotal (sponsor)
2:55–3:15	<b>Mikaël Cardinal</b> , VP, E-Aviation, Organ Delivery Systems, Unither Bioelectronics (sponsor)
<b>3:15–3:45 pm Refreshment Break (Exhibit Hall: South Ballroom)</b>	
<b>Autonomous VTOL Leaders:</b> Chaired by Ajay Sehgal, Senior Technical Fellow, KBR	
3:45–4:05	<b>Dr. Yemaya Bordain</b> , CCO & President of Americas, Daedalean AI (sponsor)
4:05–4:25	<b>Lyle Chamberlain</b> , CTO, Near Earth Autonomy (sponsor)
4:25–4:45	<b>Erick Corona</b> , Director of Airspace Operational Integration, Wisk Aero (sponsor)
4:45–4:55	Wrap-up: <b>Ariel Louie</b> , Co-Technical Director, VFS Arizona Chapter
<b>5:00–6:30 pm Reception (Exhibit Hall: South Ballroom)</b>	

*Visit our exhibitors in the South Ballroom*



Thank you to the VFS Arizona Chapter for their essential support of this event:

- Technical Chairs: **Ariel Louie** and **Brett Sjostrom** (Boeing)
- Chapter President: **Colton Marchesseault** (Boeing)



**Wednesday, February 5, 2025: Registration Desk Hours 7:00 am–5:00pm (South Ballroom Foyer)**

Autonomous VTOL Technical Meeting (Room 161–162)		Electric VTOL Symposium (Rooms 164–166)	
8:00–9:30	<b>Titans of Autonomy: Invited Presentations</b> <i>Session Chair: Colton Marchesseault, The Boeing Company</i>	8:00–9:30	<b>Session 1. eVTOL Progress</b> <i>Chair: Ben Goldstein, AAM Report, Aviation Week</i>
8:00–8:30	<b>Collision-Resilient Drones – High-Fidelity Simulations and Precision Control Studies:</b> Prof. Wenlong Zhang, Arizona State University	8:00–8:20	Kenji Nakagawa, Dir, AirMobility Business Development, SkyDrive *
8:30–9:00	<b>Flight Dynamics, Control and Autonomy for Army Vertical Lift Systems:</b> Dr. Jeffery Lusardi, US Army	8:30–8:50	Tiago Gomes, Head of Aeronautics, Eve Air Mobility
9:00–9:30	<b>Concept of Operations for Airspace Integration of AAM:</b> Nate Isbell, SkyGrid	8:50–9:10	Dr. Simon Briceno, CCO, Jaunt Air Mobility
		9:10–9:30	Pulkit Agrawal, Lead of Regulatory Affairs UAS/UAM, and Dan Newman, CTO, Honeywell Aerospace *
<b>9:30–10:00 am Refreshment Break (Exhibit Hall: South Ballroom)</b>			
10:00–12:00	<b>Vehicle Design I</b> <i>Session Chair: Prof. Wenlong Zhang, Arizona State Univ.</i>	10:00–12:00	<b>Session 2-3. AAM Perspectives</b> <i>Chair: Tom Perkowski, Founding Principal, Apex View</i>
10:00–10:30	<b>Enhancing Yaw Control Authority and Resilience for eVTOL Aircraft through Rotor Canting Configuration:</b> Prof. James Wang, Nanyang Technological Univ. Singapore	10:00–10:20	Tom Perkowski, Founding Principal, Apex View
10:30–11:00	<b>Application of an Inverse Airfoil Design for Improved Proprotor Performance:</b> Elvin Puchuela, Georgia Institute of Technology	10:20–10:40	Willi Tacke, CEO, eFlight Journal
11:00–11:30	<b>Building Enhanced Resilience into Aviation:</b> Larry Young, NASA Ames	10:40–11:00	Sergio Cecutta, Partner, SMG Consulting
11:30–12:00		11:00–11:20	Elan Head, Senior Editor, The Air Current
		11:20–11:40	James Wang, Director of eVTOL Research & Innovation Centre, Nanyang Technical University, Singapore
		11:40–12:00	Discussion
<b>12:00–1:00 pm Lunch (Exhibit Hall: South Ballroom)</b>			
1:00–3:00	<b>Autonomy and AI</b> <i>Session Chair: Gary Klein, The Boeing Company</i>	1:00–2:00	<b>Session 4. Hybrid-Electric VTOL</b> <i>Chair: Peter Schmidt, COO, Transcend Air</i>
1:00–1:30	<b>VTOL UAS Auto-recovery Using A Tested Long-Term Motion Prediction Method to Define the Deck Environment (Invited Presentation):</b> Prof. Stefano Brizzolara (VA Tech/Fincantieri Marinette Marine)	1:00–1:20	Eric Bartsch, CEO, VerdeGo Aero
1:30–2:00	<b>Minimum Waypoint Spacing for VTOL Rotorcraft Trajectory Guidance using B-Spline Midpoint Refinement:</b> Bryan Chu, Arizona State University	1:20–1:40	Ray McFall, Emerging & Disruptive Capabilities Lead, Pratt & Whitney
2:00–2:30	<b>Application of Machine Learning to Maximize Power Density of Propulsion Motors for VTOL Applications:</b> Tadashi Sawata, Collins Aerospace	1:40–2:00	Darek Zatorski, Principal Engineer, GE Aerospace
2:30–3:00	<b>Canadian Vertical Lift Autonomy Demonstration – High Level Concepts for the Development of Autonomy (Invited Presentation):</b> Kris Ellis, National Research Council Canada	2:00–3:00	<b>Session 5. Hydrogen-Electric VTOL</b> <i>Chair: Mike Hirschberg, VFS Director of Strategy</i>
		2:00–2:20	John Scott, PM Hydrogen Propulsion Technology, Piasecki Aircraft Corp. *
		2:20–2:40	Gad Shaanan, CEO, Unmanned Aerospace
		2:40–3:00	Ian Randall, CEO, MagLev Aero
<b>3:00–3:30 pm Refreshment Break (Exhibit Hall: South Ballroom)</b>			
3:30–5:00	<b>Simulation &amp; Testing I</b> <i>Session Chair: Dr. Kendra Befort, The Boeing Company</i>	3:30–4:15	<b>Session 6. Autonomous VTOL Panel</b> <i>Chair: Elan Head, Senior Editor, The Air Current</i>
3:30–4:00	<b>Exploring Transition Profiles for the RAVEN Multi-Tiltrotor Aircraft:</b> Tristan Huang, Georgia Institute of Technology	<ul style="list-style-type: none"> <li>• Dr. Yemaya Bordain, CCO &amp; President of Americas, Daedalean AI *</li> <li>• Dr. Hector Xu, CEO, Rotor Technologies</li> <li>• Howard Kass, VP, Government and Legal Affairs, Skyryse</li> </ul>	
4:00–4:30	<b>Aerodynamic Design and Analysis of An Autonomous eVTOL Using Computational Fluid Dynamics:</b> Prof. Chunhua Sheng, University of Toledo		
4:30–5:00	<b>Airfoil Table Generation Comparison Utilizing XFOIL and UNS2D Flow Solvers:</b> Gianmarco Sahragard-Monfared, NASA Ames		
5:00–5:30	<b>Sensitivity Analysis and Aerodynamic Modeling of eVTOL Low-speed Predicted Handling Qualities:</b> Prof. Giuseppe Quaranta, Politecnico di Milano		
		4:15–5:15	<b>Session 7. Arizona AAM Stakeholders Panel</b> <i>Chair: Taylor Alberstadt, Honeywell *</i>
			<ul style="list-style-type: none"> <li>• Angela Aspito, Managing Dir, Southwest Mission Acceleration Center</li> <li>• Sarah J. Demory, COO/Assistant Aviation Director, City of Phoenix *</li> <li>• Prof. Tony Waas, Director, School for Engineering of Matter, Transport and Energy, Arizona State University</li> <li>• Marisa Walker, Executive VP, Infrastructure, AZ Commerce Authority</li> </ul>

**Thursday, February 6, 2025: Registration Desk Hours 7:00 am–2:00 pm (South Ballroom Foyer)**

<b>Autonomous VTOL Technical Meeting (Rooms 161–162)</b>		<b>Electric VTOL Symposium (Rooms 164–166)</b>	
8:00–9:30	<b>Vehicle Design II</b> <i>Session Chair: Ariel Louie, VFS AZ Co-Technical Director</i>	8:00–9:30	<b>Session 8. Manufacturing &amp; Development</b> <i>Chair: Mike Hirschberg, VFS Director of Strategy</i>
8:00–8:30	<b>A Future for Rotorcraft that Engages with New Application Domains:</b> Larry Young, NASA Ames	8:00–8:25	Matt Farides, VP Business Development, Evolito *
8:30–9:00	<b>Novel Control of a Propeller Driven Rotor as a Swashplateless System:</b> Robert Brown, US Navy	8:25–8:50	DeWayne Howell, Application Development and Expert Service Field Mgr, Toray Advanced Composites *
9:00–9:30	<b>Improvements to the Da Vinci Aerial Screw as a VTOL Thrusting Alternative:</b> Ron Berlin, University of Maryland	8:50–9:10	Dr. Behnam Afsharpoya, Sr Industry Process Consultant, Dassault Systèmes *
		9:10–9:30	Peter Blume, CEO, Bloomy Controls *
<b>9:30–10:00 am Refreshment Break (Exhibit Hall: South Ballroom)</b>			
10:00–12:00	<b>Electric Propulsion</b> <i>Session Chair: Colton Marchesseault, The Boeing Company</i>	10:00–11:00	<b>Session 9-10. Regulatory Pathways for AAM</b> <i>Chair: David Dunning, GAMA</i>
10:00–10:30	<b>Considerations for both Silicon and Wide-Bandgap Semiconductors in Electric Aircraft:</b> Bill Dillard, Microchip	10:00–10:05	David Dunning, Director of Global Innovation & Policy, General Aviation Manufacturers Association
10:30–11:00	<b>Assessment of Retrofitting an Existing Helicopter with Electric Propulsion Technologies:</b> Dounya Jarrad, Georgia Institute of Technology	10:05–10:30	Kristen Costello, Regulatory Affairs Lead, Beta Technologies
11:00–11:30	<b>Testing Battery Sensitivities of Electric Aircraft Systems Using a Battery Surrogate:</b> Grant Gothing, Bloomy Controls, Inc.	10:30–10:55	Ryan Naru, Aviation Policy & Regulatory Affairs Lead, Joby Aviation *
11:30–12:00	<b>Silicon Batteries with High Energy and Power Density for Electric Mobility:</b> Ionel Stefan, Amprius Technologies, Inc.	10:55–11:20	Tom Gunnarson, Lead of Regulatory Affairs, Wisk Aero*
		11:20–11:45	Robert Bassey, Airports Design & Construction Engineer, Office of Airports (AAS-110), FAA
		11:45–12:00	Recap: David Dunning, GAMA, and Mike Hirschberg, Vertical Flight Society
<b>12:00–1:00 pm Lunch (Exhibit Hall: South Ballroom)</b>			
1:00–3:00	<b>Simulation &amp; Testing II</b> <i>Session Chair: Dr. Kendra Befort, The Boeing Company</i>	1:00–2:00	<b>Session 11. Commercial Air Transport eVTOL</b> <i>Chair: Andy Mearns, Multicopter Aerospace Consulting</i>
1:00–1:30	<b>CFD Analysis of Quadrotor Biplane Tailsitter Hover-to-Cruise Transition:</b> Paulo Arias, University of Maryland	1:00–1:20	Furqan, CEO, Sora Aviation
1:30–2:00	<b>Aeroelastic Simulation of Complex VTOL Configurations:</b> Connor Schultz and Dr. Thomas Hays, Answer Engineering	1:20–1:40	Peter Schmidt, COO, Transcend Air
2:00–2:30	<b>Emerging CFD Simulation Technologies for eVTOL Aerodynamics, Fluid Management, and Powertrain Optimization:</b> Jun Li, AVL Mobility Technologies, Inc.	1:40–2:00	Andy Mearns, Multicopter Aerospace Consulting
2:30–3:00	<b>Agricultural Application using Autonomous UAS:</b> Daniel Wachspres, Continuum Dynamics Inc.	2:00–3:00	<b>Session 12. Logistics eVTOL Development Panel</b> <i>Chair: Jonny Gilchrist, FalconWorks, BAE Systems</i>
			<ul style="list-style-type: none"> <li>• Jonny Gilchrist, Head of US Business Development, FalconWorks, BAE Systems *</li> <li>• Mark Butkiewicz, VP, Applied Technology Sector, SURVICE Engineering</li> <li>• James O’Neill, Deputy CTO, Malloy Aeronautics</li> </ul>
<b>3:00–3:30 pm Refreshment Break (Foyer: Room 161–166)</b>			
3:30–5:00	<b>Enabling Systems &amp; Human SI</b> <i>Session Chair: Ariel Louie, VFS AZ Co-Technical Director</i>	3:00–5:00	<b>Session 13. Cargo &amp; Military Applications</b> <i>Chair: Dan Newman, CTO, Honeywell AAM</i>
3:30–4:00	<b>The Potential Role of Digital Twins for UAS/Ship Interface Artificial Intelligence (AI) Systems:</b> Prof. Stefano Brizzolara, VA Tech/Fincantieri Marinette Marine	3:30–3:50	Lauren Wolfe, SPRINT Performance Lead, Aurora Flight Sciences
4:00–4:30	<b>Real-Time Control Power Margin and Gust Estimation for Distributed Electric Propulsion (DEP) Aircraft:</b> Robert McKillip, Continuum Dynamics Inc.	3:50–4:10	Andrew Clare, CEO, Elroy Air
4:30–5:00	<b>Novel Human Factors Challenges, Unexpected Events, and Safety Hazards Associated with Operation of Battery-powered eVTOL Aircraft:</b> Kendall Carmody, Florida Institute of Technology	4:10–4:30	James Dorris, CEO, Odys Aviation
		4:30–4:50	Discussion
		4:50–5:00	Wrap-Up: Mike Hirschberg