AHS International

The Vertical Flight Technical Society

Marking 70 Years of Service to Vertical Flight

FORUM 69

PHOENIX, AZ

MAY 21 - 23, 2013

Advancing Vertical Flight Technology in Demanding Environments

Registration Kit

www.vtol.org/forum

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YOU'RE INVITED … TO FORUM 69!

For nearly 70 years, the AHS Forum has been the premier event for government, industry and academia to exchange ideas, discuss the latest breakthroughs in theory and technology, and work together to tackle the toughest challenges in vertical flight. Since its inception, the Annual Forum has brought together the best technical minds with the world's leading vertical flight manufacturers and suppliers. This tradition and legacy is still unmatched today by any other event in the world. This year's 69th Annual Forum and Technology Display (Forum 69) returns to the Phoenix Convention Center on May 21-23, 2013 in Phoenix, Arizona. This year's Forum theme is appropriately, ***"Advancing Vertical Flight Technology in Demanding Environments."***

For the vertical flight community, "demanding environments" long meant high altitudes, high temperatures, austere sites and dusty conditions. Today, they include financial challenges facing the world's military and civil operators – budget crises that hobble economies and spur relentless calls for government spending cuts from North America and Europe to Asia and Australia.

Forum 69 will explore these opportunities. With the theme ***"Advancing Vertical Flight Technology in Demanding Environments,"*** the Forum will include panel discussions among leaders of civil and military aircraft manufacturers and top officials of military aircraft programs. Hear firsthand what to expect in the current budget environment, and the prospects for vertical flight modernization efforts.

Forum 69 will feature some **250 technical presentations** on vertical flight research and advanced technology initiatives aimed at meeting these challenges, in disciplines from acoustics to unmanned systems. The Forum will also include **special panel sessions**, the **Vertical Flight Foundation (VFF) Reception**, the **Grand Awards Banquet**, a **simulation workshop**, **industry tours** and the **Technology Display** – the most extensive exposition of cutting-edge vertical flight technologies in the world.

Forum 69 will continue with its new CEO panel format with the chief executives of the international helicopter industry. Moderated by **Graham Warwick**, Senior Editor for Technology, *Aviation Week & Space Technology*, the panel will explore how to continue ***"Advancing Vertical Flight Technology in Demanding Environments."***

Prof. Peretz Friedmann, The University of Michigan, will deliver this year's **Alexander A. Nikolsky Honorary Lectureship** entitled, "On Blade Control of Rotor Vibration, Noise and Performance – Just Around the Corner?" and **Mr. Mark Dreier** (Bell Helicopter) will provide a **Short Course on "Rotorcraft and Wind Turbine Modeling and Simulation."**

Major General Tim Crosby, US Army, Aviation Program Executive Officer for Aviation (PEO AVN), plans to lead the **US Army Aviation Program Manager Briefings**, and **Rear Admiral Paul Grosklags**, US Navy, Program Executive Officer for Air ASW, Assault & Special Mission Programs, PEO(A), plans to moderate the **US Navy/Marine Corps Aviation Program Manager Briefings** [both sessions pending final Army and Navy travel regulations].

In addition, three new special session panels will cover **Technology Needs for Civil Operations**, **Subsystems Technologies** and **Human Powered Helicopters**. Each session will be comprised of leaders in their fields presenting the latest developments. Finally, the introduction of a new **Micro Air Vehicle Student Challenge** will see AHS student members compete in a head-to-head MAV fly-off (see **www.vtol.org/mav**).

With nearly 1500 attendees annually, Forum 69 offers you **networking opportunities** with leading researchers and the key representatives from all of the world's important vertical flight technology organizations, including industry, academia and government – U.S. and international / military and civil.

Plan now to be with us May 21-23, 2013 in Phoenix, Arizona. **You won't want to miss the biggest and best vertical flight technology conference in the world!**

Very sincerely,

Michael J. Hirschberg
AHS Executive Director

"The Department of Defense finds that this event (FORUM 69) meets the minimum regulatory standards for attendance by DoD employees. The finding does not constitute a blanket approval or endorsement for attendance. Individual DoD component commands or organizations are responsible for approving attendance of its DoD employees based on mission requirements and DoD regulations."

FORUM 69 Sponsors

AHS gratefully thanks the following companies for their generous support of the AHS 69th Annual Forum and Technology Display.

American Eurocopter/EADS
Registration Bags

Automated Dynamics
Technical Session Refreshment Break

Bell Helicopter Textron
Exhibit Hall Lunches

The Boeing Company
Vertical Flight Foundation Reception & The Grand Awards Banquet

GE Aviation
General Session Refreshment Break

Rolls Royce
Proceedings CD

Lord Corporation
Lanyards

Safran USA
Technical Session Refreshment Break

Sikorsky Aircraft
Exhibitor/Industry Reception

Schedule of Events

All events will take place at the Phoenix Convention Center South Building unless otherwise noted.

Sunday, May 19, 2013

Exhibitor Move-In — 9:00 a.m. – 5:00 p.m.
Exhibit Hall F & G (Exhibitors Only)

Exhibitor Registration Open — 9:00 a.m. – 5:00 p.m.
Lobby

Attendee Registration Open — 2:00 p.m. – 5:00 p.m.
Lobby

Monday, May 20, 2013

Show Office — 6:00 a.m. – 5:00 p.m.

Student Volunteer Office — 6:00 a.m. – 5:00 p.m.

Registration Open — 7:00 a.m. – 5:00 p.m.
(Exhibitors and Registrants)
Lobby

Speaker Ready Room — 7:00 a.m. – 5:00 p.m.

Exhibitor Move-In — 8:00 a.m. – 5:30 p.m.
Exhibit Hall F & G (Exhibitors Only)

AHS Technical Council Meeting — 8:00 a.m. – 11:00 a.m.

Modeling & Simulation Short Course — 8:00 a.m. – 3:00 p.m.
Presented by Mark Dreier (Bell Helicopter)

Industry Tours — Times TBD
MD Helicopters, Inc.
The Boeing Company

Journal Editor's Meeting — 11:30 a.m. – 1:30 p.m.

Session Chair Meeting — 1:30 p.m. – 2:30 p.m.

Student Volunteer Meeting — 2:45 p.m. – 3:45 p.m.

Special Panel:
Human Powered Helicopters — 4:00 p.m. – 6:00 p.m.
Moderated by **Ben Hein**, Sikorsky Aircraft Corp.

Simulation Fidelity Workshop — 6:30 p.m. – 9:30 p.m.

Tuesday, May 21, 2013

Show Office — 6:00 a.m. – 5:00 p.m.

Student Volunteer Office — 6:00 a.m. – 5:00 p.m.

Registration Open — 7:00 a.m. – 5:00 p.m.
(Exhibitors and Registrants)
Lobby

Speaker Ready Room — 7:00 a.m. – 5:00 p.m.

Special Session — 8:00 a.m. – 12 noon
US Navy/Marine Corps Aviation Program Manager Briefings
Moderated by **Rear Admiral Paul Grosklags**, US Navy, Program Executive Officer for Air ASW, Assault & Special Mission Programs, PEO(A)

Technical Session A — 8:00 a.m. – 12 noon
- Aerodynamics I
- Dynamics I
- Handling Qualities I
- Operations I
- Product Support Systems Technology
- Structures & Materials I
- Systems Engineering Tools & Processes
- Test & Evaluation I

Technical Session A Refreshment Break — 9:30 a.m. – 10:00 a.m.

Tuesday, May 21, 2013 (Cont.)

Exhibit Hall Open 11:00 a.m. – 7:00 p.m.

Exhibit Hall Luncheon 12 noon – 1:30 p.m.
Sponsored by Bell Helicopter Textron

Opening General Session

Keynote Address 1:30 p.m. – 2:30 p.m.
Honorable Heidi Shyu, Assistant Secretary of the Army For Acquisition, Logistics and Technology (ASAALT) *(Invited)*

CEO Panel 2:30 p.m. – 3:30 p.m.
"Advancing Vertical Flight Technology in Demanding Environments"
Moderated by **Graham Warwick**, Senior Editor for Technology, *Aviation Week & Space Technology*

Break 3:30 p.m. – 4:00 p.m.

Alexander A. Nikolsky Honorary Lectureship 4:00 p.m. – 5:00 p.m.
Prof. Peretz Friedmann, The University of Michigan
"On Blade Control of Rotor Vibration, Noise and Performance – Just Around the Corner?"

Exhibitor/Industry Reception

5:00 p.m. – 7:00 p.m.
Sponsored by Sikorsky Aircraft Corp.
Micro Air Vehicle Student Challenge
at 5:30 p.m.

Wednesday, May 22, 2013

Show Office 6:00 a.m. – 5:00 p.m.

Student Volunteer Office 6:00 a.m. – 5:00 p.m.

Registration Open 7:00 a.m. – 5:30 p.m.
(Exhibitors and Registrants)
Lobby

Speaker Ready Room 7:00 a.m. – 5:00 p.m.

Special Session: 8:00 a.m. – 12:15 p.m.
US Army Aviation Program Manager Briefings
Moderated by **Maj. Gen. Tim Crosby**, US Army, Program Executive Officer for Aviation, PEO Aviation

Technical Session B 8:00 a.m. – 12:15 p.m.
- Acoustics I
- Aircraft Design I
- CFD/CSD Joint Session
- Crew Stations & Human Factors
- Handling Qualities II
- HUMS I
- Unmanned VTOL Aircraft & Rotorcraft
- Wind Energy I

Technical Session B Coffee Break 9:30 a.m. – 10:15 a.m.
Exhibit Hall

Wednesday, May 22, 2013 (Cont.)

Exhibit Hall Open 9:00 a.m. – 5:00 p.m.

AHS Board of Directors Meeting 9:00 a.m. – 12 noon

Exhibit Hall Luncheon 12:15 p.m. – 1:45 p.m.
Sponsored by Bell Helicopter Textron

Special Session: 1:45 p.m. – 6:00 p.m.
Suppliers & Subsystems Technology Panel
Moderated by **Dan Newman**, The Boeing Company

Technical Session C 1:45 p.m. – 6:00 p.m.
- Aerodynamics II
- Avionics & Systems
- Crash Safety I
- Dynamics II
- HUMS II
- Modeling & Simulation I
- Propulsion I
- Structures & Materials II

Technical Session C Refreshment Break 3:15 p.m. – 4:00 p.m.
Exhibit Hall

Award Recipient Orientation 3:00 p.m. – 4:00 p.m.
(By Invitation Only)

Vertical Flight Foundation Cocktail Reception

6:00 p.m. – 7:00 p.m.
Sponsored by The Boeing Company

Grand Awards Banquet

7:00 p.m. – 9:30 p.m.
Sponsored by The Boeing Company

Thursday, May 23, 2013

Show Office 6:00 a.m. – 5:00 p.m.

Student Volunteer Office 6:00 a.m. – 5:00 p.m.

Registration Open 7:30 a.m. – 1:00 p.m.
Lobby

Tech Committee Chair/Session Chair 7:30 a.m. – 9:00 a.m.

Special Session: 8:00 a.m. – 12:15 p.m.
Technology Needs for Civil Operations Panel
Moderated by **Susan Gorton**, NASA

Technical Session D 8:00 a.m. – 12:15 p.m.
- Aerodynamics III
- Aircraft Design II
- Handling Qualities III
- HUMS III
- Operations II
- Test & Evaluation II
- Unmanned VTOL II
- Wind Energy II

Thursday, May 23, 2013 (Cont.)

Exhibit Hall Open 9:00 a.m. – 12:00 noon

Technical Session D Refreshment Break 9:30 a.m. – 10:15 a.m.
Exhibit Hall

Technical Session E 1:30 p.m. – 5:30 p.m.
- Acoustics II
- Advanced Vertical Flight
- Crash Safety II
- Dynamics III
- History
- Manufacturing Technology & Processes
- Modeling & Simulation II
- Propulsion II

Technical Session E Refreshment Break 3:30 p.m. – 4:00 p.m.

Vertical Lift Consortium Meeting 2:00 p.m. – 5:00 p.m.
(VLC Members Only)

General Information

All Forum 69 attendees must register to receive a badge. Badges must be visibly displayed to gain admittance to both the Exhibit Hall and the technical sessions. FULL THREE-DAY REGISTRATION includes:

- Admittance to all sessions and coffee breaks
- Entry to the Exhibit Hall during scheduled hours
- Tickets to Luncheons, the Exhibitor/Industry Reception, Vertical Flight Foundation Reception and Grand Awards Banquet
- Forum 69 Proceedings on CD-ROM

Registration Hours

Sunday, May 19, 2013	2:00 p.m. – 5:00 p.m.
Monday, May 20, 2013	7:00 a.m. – 5:00 p.m.
Tuesday, May 21, 2013	7:00 a.m. – 5:00 p.m.
Wednesday, May 22, 2013	7:00 a.m. – 5:30 p.m.
Thursday, May 23, 2013	7:00 a.m. – 1:00 p.m.

Forum 69 Proceedings

Proceedings will be available in two formats – printed or the CD-ROM version – and contain all papers presented at the technical sessions. Printed Proceedings will not be available until after the Forum.

The CD-ROM is complimentary for all Full Three-Day Registrants! Other registrants may purchase it onsite at the reduced rate of $255.00.

Registration Fees

(member / non-member)

	Three Days (by April 18th)	Three Days (after April 18th)	Two Days	One Day
Regular Attendee	**$750 / $850**	**$830 / $930**	**$645 / $745**	**$470 / $570**
Speaker or Gov't Employee	**$690 / $790**	**$770 / $870**	**$595 / $695**	**$360 / $460**
Full-Time Student / Fully Retired / Uniformed Military	**$275 / $325**	**$335 / $385**	**$240 / $290**	**$165 / $215**
Accompanying Spouse	**$200**	**$225**	**$150**	**$100**

What registration includes:

- Admittance to all technical and special sessions and entry to the Exhibit Hall during scheduled hours
- Tickets to luncheon(s) and access to all refreshment breaks
- Tickets to the Vertical Flight Foundation Reception and the Grand Awards Banquet *(3 Day Registrants Only! $89 for all other attendees.)*
- Forum 69 Proceedings on CD-ROM *(3 Day Registrants Only! $205 for all other attendees.)*
- Discounted attendance at the Rotorcraft Technology Short Course

How to register:

- If you are an AHS member, go to **www.vtol.org/my-AHS**. Log in and click the link for Forum 69 Online registration under "Register online for upcoming meetings and events!" As a way of saying thanks to our loyal members, and to help celebrate 70 years of being the world's premier professional vertical flight technical society, we're offering special registration discounts at this year's Forum. Log in to My AHS to get your individual coupon code and a 5% discount for every 5 years of membership. Been a member for 20 years? You'll get 20% off! The discount applies only to online registration.
- If you are not an AHS member, you may register online by visiting our membership portal **https://ahs.portal.daxko.com**. Select the link for "Forum 69" under "Register for Featured Events." If you have previously registered on this website, log in with your existing Login ID and Password. Those who register at the non-member rate receive a complimentary 1-year membership in AHS.
- You can also download the printable registration form at **www.vtol.org/forum** and fax it to AHS at +1-703-739-9279, ATTN: Holly Cafferelli.
- Should you have any questions about registration, please contact **Holly Cafferelli** (+1-703-684-6777 x100 or hcafferelli@vtol.org).
- Exhibitors have a separate registration site; if you have already applied for exhibit space and wish to register booth personnel, the link for this site will be sent to your booth's point of contact. For further information, please contact **Liz Malleck** (+1-703-684- 6777 x 107). Speakers may not register as exhibitors.

Publication Bins

Publication bins will be located in the registration area stocked with the May-June 2013 issue of *Vertiflite* and industry relevant periodicals and literature.

Message Board

A message board for Forum 69 attendees will be located in the AHS Registration area. Messages will be posted alphabetically. Attendees are encouraged to check the board for messages throughout the day. Additionally, any last-minute changes to the Schedule of Events will also be posted next to the Message Board.

Speaker Ready Room

Speakers may organize and review their presentations in the Speaker Ready Room. Hours are from 7:00 a.m. – 5:00 p.m. on Monday, Tuesday, and Wednesday and from 7:00 a.m. – 3:00 p.m. on Thursday.

AHS Novelty Desk

AHS publications, shirts, hats, mugs, key chains, golf balls and other new novelty items will be available for purchase at the Novelty Desk located in the AHS Registration area.

Technology Display

Be sure to allocate ample time to visit the Forum 69 Technology Display in the Exhibit Hall. Scores of companies and organizations will be presenting the latest developments in vertical flight technology and showing the advancements in airframe, propulsion, avionics, systems integration, simulation technology and much more.

To maximize the opportunity to view exhibits, the Exhibit Hall Technical Briefings and social events such as lunches on Tuesday and Wednesday and the Exhibitor/Industry Reception are held in the Exhibit Hall. The technology display is open to registrants. AHS reserves the right to make modest changes to the Exhibit Hall hours without advance notification to exhibitors or registrants.

Exhibit Hall Hours and Events

Tuesday, May 21, 2013

Exhibit Hall Open	11:00 a.m. – 7:00 p.m.
Exhibit Hall Luncheon	12 noon – 1:30 p.m.
Refreshment Break	3:00 p.m. – 3:30 p.m.
Exhibitor/Industry Reception	5:00 p.m. – 7:00 p.m.

Wednesday, May 22, 2013

Exhibit Hall Open	9:00 a.m. – 5:00 p.m.
Refreshment Break	9:30 a.m. – 10:15 a.m.
Exhibit Hall Luncheon	12:15 p.m. – 1:45 p.m.
Refreshment Break	3:15 p.m. – 4:00 p.m.

Thursday, May 23, 2013

Exhibit Hall Open	9:00 a.m. – 12:00 noon
Refreshment Break	9:30 a.m. – 10:15 a.m.

Exhibit Hall Technical Briefings

Industry technical briefings from exhibiting companies will be held at the company's booth in the Exhibit Hall. Plus, some briefings will be conducted in meeting rooms. These briefings will provide attendees with a more comprehensive overview of the company's capabilities and services. Exhibitors are invited to contact AHS International to arrange briefings and have the announcement published in the AHS International Forum 69 Final Program. This is a genuine value-added benefit offered to exhibiting companies and attendees.

Exhibitor/Industry Reception

Tuesday, May 21, 2013 5:00 p.m. – 7:00 p.m.
Exhibit Hall F & G
All exhibitors and Forum 69 attendees registered for Tuesday will automatically receive tickets to this event.

Vertical Flight Foundation (VFF) Reception and Grand Awards Banquet

Wednesday, May 22, 2013
The VFF Reception will be held 6:00 p.m. – 7:00 p.m. and the Grand Awards Banquet 7:00 p.m. – 9:30 p.m. Distinguished guests from government agencies and military branches, as well as the international vertical flight industry, will be among the attendees. This exciting event will honor distinguished award recipients for their achievements. Attendees will enjoy an excellent dinner and entertainment. Full registration includes a ticket to this event; all others must purchase tickets in advance. The event is business attire and military uniforms.

Exhibit Hall Luncheons

Tuesday, May 21, 2013	12 noon – 1:30 p.m.
Wednesday, May 22, 2013	12:15 p.m. – 1:45 p.m.

Hotel Reservations

AHS International has negotiated exceptional rates with the Phoenix Hyatt hotel.

ALL ROOM RESERVATIONS MUST BE MADE ONLINE AT **www.vtol.org/forum-hotel.** PLEASE DO NOT CONTACT HOTEL DIRECTLY. Please book through this link as it defrays the cost of Forum 69, keeping your costs to a minimum.

To receive a discounted Forum 69 room rate, you must confirm reservations with one of the official hotels by **April 18, 2013**. After this date, Forum 69 room reservations will be confirmed on a space-available basis at the prevailing room rate. A deposit equal to one night's room and tax is required and will be charged to the credit card used to guarantee the reservation after **April 18, 2013**. All deposits for individual room reservations are fully refundable if a room is cancelled within the stated cancellation period. Please be sure to note the cancellation policy before you book a reservation. Individuals will be limited to five guestroom reservations under one name or credit card. A limited guestroom sub-block may be created if approved by AHS.

AHS International Staff Members and Volunteers

The following AHS staff members and industry volunteers are available to assist you:

Forum 69 Programs and Events:
Mike Hirschberg, Executive Director

Technical Sessions & Special Sessions:
Kay Brackins, Deputy Director

Exhibits & Sponsorships:
David M. Renzi, Director of Meetings & Advertising

Audio Visual Oversight:
Dr. Cliff Smith and **Dr. Anita Tracy**

Onsite Registration:
Randy Johnson, Director of Information Resources (Onsite Registrar);
and **Liz Malleck**, Director of Membership (Exhibitor Registration, Corporate Membership Contact, Awards POC)

AHS Novelty Desk:
Holly Cafferelli, Director of Administration (Pre-Forum Registrar, Novelty Sales, Proceedings, Speaker Briefing Drop-Off)

AHS International offers its sincere thanks to the Forum 69 Chairs:

Mr. Daniel Newman, The Boeing Company – AHS Technical Director

Mr. Michael Smith, Bell Helicopter Textron, Inc. – Forum 69 Forum Technical Chair

Dr. Marilyn Smith, Georgia Institute of Technology – Forum 69 Forum Deputy Technical Chair

Mr. Timothy Samuels, Bell Helicopter Textron, Inc. – Acoustics Session Chair

Mr Christopher Hobbs, Wyle Labs – Acoustics Deputy Session Chair

Mr. Kit Borden, U.S. Army – Advanced Vertical Flight Session Chair

Dr. Janet Sater, Institute of Defense Analyses – Advanced Vertical Flight Deputy Session Chair

Dr. Chunhua Sheng, University of Toledo – Aerodynamics Session Chair

Mr. Mark Potsdam, U.S. Army – Aerodynamics Deputy Session Chair

Mr. Charles Kilmain, Bell Helicopter Textron, Inc. – Aircraft Design Session Chair

Mr. Dennis McGuire, Lord Corporation – Aircraft Design Deputy Session Chair

Dr. Melvin Johnson, U.S. Army – Avionics and Systems Session Chair

Dr. Walter Rawle, Ultra Electronic Flightline Systems – Avionics and Systems Deputy Session Chair

Dr. Cheng-Ho Tho, Bell Helicopter Textron, Inc. – Crash Safety Session Chair

Dr. Akif Bolukbasi, The Boeing Company – Crash Safety Deputy Session Chair

Ms. Kristin Little, The Boeing Company – Crew Stations Session Chair

Mr. Jeffery Erwin, Bell Helicopter Textron, Inc. – Crew Stations Deputy Session Chair

Dr. Mark Wasikowski, Bell Helicopter Textron, Inc. – Dynamics Session Chair

Dr. Matthew Floros, U.S. Army – Dynamics Deputy Session Chair

Mr. Marc Hoefinger, German Aerospace Research Center (DLR) – Handling Qualities Session Chair

Dr. Michael Jump, The University of Liverpool – Handling Qualities Deputy Session Chair

Mr. Mark Davis, Sikorsky Aircraft Corporation – Health and Usage Monitoring Systems (HUMS) Session Chair

Mr. Brian Tucker, Bell Helicopter Textron, Inc. – Health and Usage Monitoring Systems (HUMS) Deputy Session Chair

Dr. Bruce Charnov, Hofstra University – History Session Chair

Mr. William Harris, Sikorsky Aircraft Corporation – Manufacturing Technology and Processing Session Chair

Mr. Jon Schuck, U.S. Army – Manufacturing Technology and Processing Deputy Session Chair

Dr. Rajneesh Singh, U.S. Army Research Labs – Modeling and Simulation Session Chair

Dr. Mark White, The University of Liverpool – Modeling and Simulation Deputy Session Chair

Mr. Malcolm Dinning, U.S. Army – Operations Session Chair

Mr. John Barber, Bell Helicopter Textron, Inc. – Operations Deputy Session Chair

Mr. Ronald Walterick, U.S. Army – Product Support Systems Technology Session Chair

Mr. Treven Baker, U.S. Army – Product Support Systems Technology Deputy Session Chair

Mr. Isaac Lopez, NASA Glenn Research Center – Propulsion Session Chair

Mr. Eric Sinusas, Bell Helicopter Textron, Inc. – Propulsion Deputy Session Chair

Dr. Stephen Conlon, Pennsylvania State University – Structures and Materials Session Chair

Mr. Jeffrey Schaff, Sikorsky Aircraft Corporation – Structures and Materials Deputy Session Chair

Ms. Oxana Fedak, The Boeing Company – System Engineering Session Chair

Dr. Loan Pham, Sikorsky Aircraft Corporation – System Engineering Deputy Session Chair

Dr. Jose Palacios, Pennsylvania State University – Test and Evaluation Session Chair

Mr. Jay Fletcher, U.S. Army – Test and Evaluation Deputy Session Chair

Dr. Harshad Sane, Sikorsky Aircraft Corporation – Unmanned VTOL Aircraft and Rotorcraft Session Chair

Mr. Patrick Fabiani, ONERA – Unmanned VTOL Aircraft and Rotorcraft Deputy Session Chair

Mr. Michael Derby, US Department of Energy – Wind Energy Technology Session Chair

Dr. Glen Whitehouse, Continuum Dynamics, Inc. – Wind Energy Technology Deputy Session Chair

FORUM 69 Highlights

You Don't Want to Miss:

- **Some 250 technical papers!** Learn from leaders in their fields as they discuss the latest theories and breakthroughs in vertical flight technology.
- A special panel on **Human Powered Helicopters**.
- **Major General Tim Crosby**, US Army, Aviation Program Executive Officer for Aviation (PEO AVN), will lead the **US Army Aviation Program Manager Briefings**, and **Rear Admiral Paul Grosklags**, US Navy, Program Executive Officer for Air ASW, Assault & Special Mission Programs, PEO(A), will moderate the **US Navy/Marine Corps Aviation Program Manager Briefings**.
- A **Keynote Address** by **The Honorable Heidi Shyu**, Assistant Secretary of the Army For Acquisition, Logistics and Technology (ASAALT).
- A moderated **CEO panel** with the chief executives of the international helicopter industry. Led by **Graham Warwick**, Senior Editor for Technology, *Aviation Week & Space Technology*, the panel will explore the **"Advancing Vertical Flght Technologies in Demanding Environments"**.
- **Professor Peretz Friedmann**, The University of Michigan, will deliver this year's **Alexander A. Nikolsky Honorary Lecture** "On Blade Control of Rotor Vibration, Noise and Performance – Just Around the Corner?"
- A new special session panel, moderated by **Dan Newman**, The Boeing Company, on **Suppliers & Subsystems Technology.**
- The new **Micro Air Vehicle Student Challenge** during the Exhibitor/Industry Reception.
- A new special session will feature **Technology Needs for Civil Operations**, moderated by **Susan Gorton**, NASA Langley Research Center.
- See the latest capabilities from leading manufacturers, service providers, defense agencies, universities and research & development organizations in our extensive **technology display**.
- **Network** with 1300+ of the world's leading vertical flight professionals. •Recognition of AHS award winners and scholarship recipients at the **Vertical Flight Foundation Reception and The Grand Awards Banquet**.
- And **much, much more**!

Short Course on Rotorcraft and Horizontal Axis Wind Turbine Simulation

Presented by **Mark E. Dreier,** Staff Engineer in the Advanced Concepts group at Bell Helicopter Textron, Inc.

Rotorcraft and horizontal axis wind turbines (HAWT) have far more in common than first meet the eye, but they are also as different as night and day despite their obvious commonality. In this course, we will explore some of the most important problems associated with modeling rotorcraft and HAWTs, discussing how their similarities allow the attendee to accurately predict performance while recognizing, through their differences, how and why rotorcraft and HAWTs require their own specialized analyses. Students new to the rotorcraft industry and seasoned professionals who want a refresher course on rotorcraft basics comprise the target audience. But this year, we invite also those who want a first look at HAWTs.

This will be a 6-7 hour short course, divided roughly equally between rotorcraft and wind turbine modeling. Participants will receive course notes, a CD with some executables, and a copy of the book *Introduction to Helicopter and Tiltrotor Flight Simulation*.

AHS International
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