December Chapter Meeting

Human Powered Aircraft

The DaSH Project -- building a 'Simple' human powered airplane

Speaker: Alec Proudfoot

Proudfoot Design

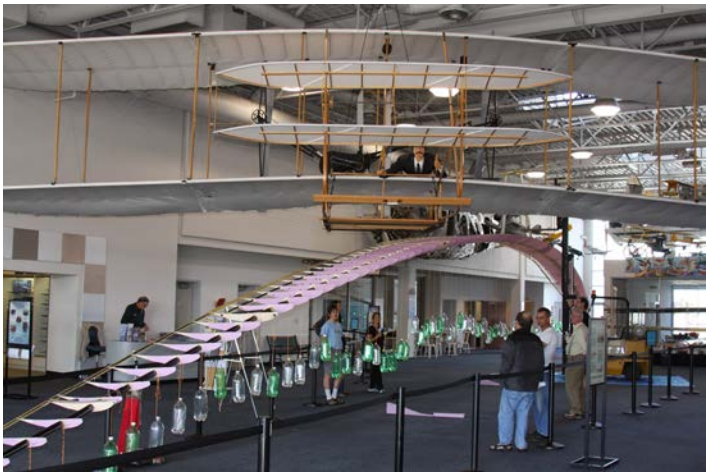
Monday, the 7th of December we will be meeting at **Michael's at Shoreline** 2960 Shoreline Blvd., Mountain View

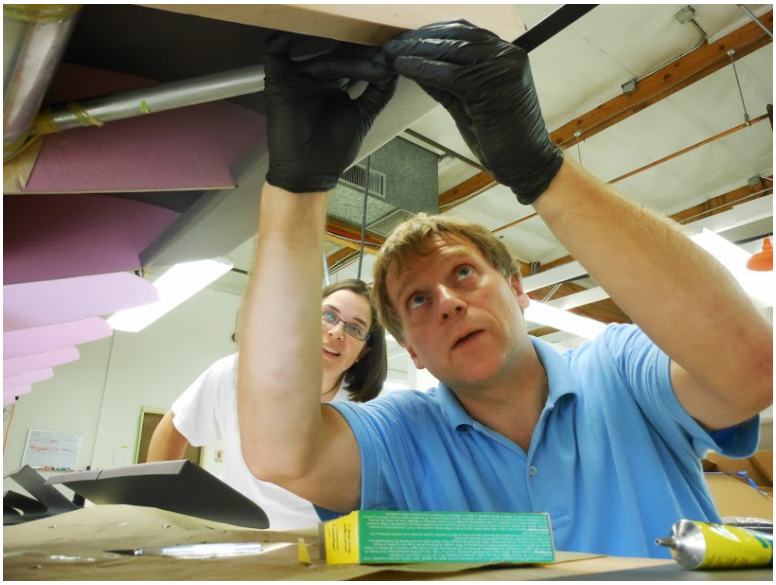
5:30 pm Social/Networking……..…6:15 pm Dinner……7:30 pm Speaker
Buffet Dinner Cost: ASM Members $30……Students $10……Guests $35…..**Talk only - Free**
Reservations: Contact Al Kwong at (408) 248-1916 or al_kwong_41@yahoo.com or Jack Jew at (408) 743-6775 or jack.jew@lmco.com
Please sign up as soon as you can so we can give Michael's sufficient time to support us.

Abstract

The DaSH PA project stands for "Dead Simple Human Powered Airplane", the idea: to take as efficient an approach as possible to building an HPA that flies successfully. It's a project started by a group of engineers just for the fun of it, so we can learn while designing and building something challenging, fun and a little bit out there.

To make a human powered airplane work, one must design an airplane that is incredibly light, but extremely large at the same time -- the base design for DaSH has a wingspan of 33.3 m, with an extended wing version reaching 40 m, yet it weighs under 45 kg (99 lbs).. The way to accomplish this feat involves the use of a combination of lightweight materials, from high strength carbon fiber composites, to plastic films and foams, wood,and a very small amount of metal, bonded together with high strength adhesives, .





The talk will begin by discussing the motivation for the project, followed by a dive into the surprisingly extensive history of human powered flight. Then we'll talk about the design process for the airplane, the engineering challenges, and the final specifications we settled on. Finally, we'll spend the majority of the talk discussing material selection and construction techniques and how one goes about building an airplane that is half the weight of the pilot, but has a wingspan larger than a 737 jetliner.

Parts of the plane will be displayed and passed around so everyone can get a feel for the ultra lightweight construction techniques that must be used to make a successful human powered airplane.

The DaSH project blog is located at: http://dashpa.blogspot.com

Biosketch

Alec Proudfoot of Proudfoot Design is currently Chief Designer on the DaSH human powered airplane project. He was the engineer at Google Inc. who started the RechargeIT plug-in vehicle project. At AeroVironment, he was a member of the engineering team that created the GM Impact prototype. The Impact entered production as the GM EV1, the first modern high power AC induction electric vehicle. Alec has followed the alternative fuel vehicle scene as an engineer, a consumer, and journalist -- some of his footage appeared in the documentary film "Who Killed the Electric Car."

In addition to his alternative fuel vehicle work, Alec has had a diverse engineering career, spanning fields from aviation to medical devices to telecommunications, and has also worked as a professional helicopter pilot. Most recently, Alec was a renewable energy engineer at Google working on the RE<C project, and previously worked as an engineering manager on imaging related applications for projects including Google Book Search and Google Maps. In his "20% time," Alec advised Google.org, Google's philanthropic organization, on energy and transportation issues.

SAN JOSÉ STATE UNIVERSITY

SJSU Students Materials Advantage:

The engineering students are always seeking available lab time, materials or guidance on projects from our professional members. Department website: http://bcme.sjsu.edu/

Feel free to contact Prof Richard Chung (richard.chung@sjsu.edu) if you wish to lend a hand.

Proposed Season Schedule

Meeting Date	Speaker	Topic	Calendar Link
Sept 16	Dr. Lawrence Muray, Keysight Technologies	Miniature Electron Beam Columns: Materials, Technology, Applications and Moore's Law	 ASMI Sept - EBeam Columns.ics
Oct 14	Dr. Meyya Meyyappan, NASA Ames	Nanomaterials and Application Development at NASA Ames	 ASMI Oct - Nanomaterials00.ics
Nov 2-6	Volunteers Needed !	SJSU MatE 25	
Nov 17	Mahmood Khan	Future of IOT (Internet of Things)	 SVEC Open house Future of IOT.ics
Nov 18	SJSU Senior Students	SJSU Senior Student Projects	 ASMI Nov - Senior Projects.ics
Dec 7	Alec Proudfoot	Human Powered Aircraft	 ASMI Dec - Human Powered Aircraft.ics
Jan 13		Molten Salt Thorium Reactors	 ASMI Jan- Thorium Reactors.ics
Feb 10		3D Printing of Metals	 ASMI Feb- 3D Printing of Metals.ics
Feb 18		SVEC Engineering Week Banquet	
Mar 17	Judging Science Fair	San Jose Convention Center	 The 2016 Synopsys Championship .ics
Mar 9	Dr. Steve Sinton, Lockheed Martin ATC	Graphene Film Materials for Membrane and Barrier Applications	 ASMI Mar- Graphene Membranes.ics
Apr 13		Polycarbonate in Biomedical Applications ASME/SAMPE Joint Meeting	 ASMI Apr- Biomedical Polycarbonate.ics
May 11	Ravi Ravindran ASMI Trustee	Light Weight High Performance Alloys / Chapter Elections	 ASMI May- Light Weight Alloys Electio

Contact Us!

Any comments, corrections, additions or suggestions will reach us through our email: **asm.scv.secretary@gmail.com** We will be happy to hear from you.

Other Events of possible interest to the ASMI-SCV audience:

Dec 7, GGPF Meeting at Michael's Shoreline
"Soft Surface Science and Engineering: Serendipitous Discoveries (easy) and Targeted Design and Outcomes (tough)."
Prof. Kenneth J. Wynne,
Commonwealth Professor, Dept. of Chemical & Life Science Engineering,
Virginia Commonwealth University
Details and registration on web page, www.GGPF.org

Joint ASME/ASMI Happy Hour

The Bay area chapter of ASME hosts a gathering at the Lily Mac's Pub in Sunnyvale every third Thursday as a networking event. The SCV chapter of ASMI has been invited to join them on a drop-in basis.

The Biomedical Engineering Society at San Jose State University is pleased to announce the **7th Annual Bay Area Biomedical Device Conference** which will be held on **March 30th, 2016** in the **Student Union Ballroom at San Jose State University**.
Details at: **www.biomedconference.org**

If you have any questions, please do not hesitate to email us at info@biomedconference.org.

Chapter Sustaining Members

We would like to thank the following corporations who support our chapter through sustaining membership support.

THERMOFUSION
"Specialists in Heat Treating and Brazing"

LOCKHEED MARTIN
SPACE SYSTEMS COMPANY

Job Openings

Tesla Motors is looking for a few materials engineers.
See the links below
Chemical: https://chc.tbe.taleo.net/chc01/ats/careers/requisition.jsp?org=TESLA&cws=1&rid=31913
Polymer: https://chc.tbe.taleo.net/chc01/ats/careers/requisition.jsp?org=TESLA&cws=1&rid=31911
Metals: https://chc.tbe.taleo.net/chc01/ats/careers/requisition.jsp?org=TESLA&cws=1&rid=31711
Fasteners: https://chc.tbe.taleo.net/chc01/ats/careers/requisition.jsp?org=TESLA&cws=1&rid=31912

BAE SYSTEMS Has an opening for a metallographic technician. See the link below:
http://www.baesystems.jobs/job-metallographic-technician-i-13178br#summary