Mary Lou Dordan

FAA Aviation & Space Education Outreach Program (AVSED)

William J. Hughes
Technical Center
Atlantic City Intl. Airport
New Jersey
AVSED Mission

- Increase knowledge of general public of the dynamics of aviation and the key role air transportation plays in improving the economic & social life of all Americans.

- Acquaint young people with careers in air transportation systems & general aviation.
FAA AVSED Managers Are A Resource For You!

- Provide ideas
- Locate materials
- Connect with partners and/or resources

Customers reached in one year:
- Students: 317,995
- Educators: 9,411
- General Public: 378,099
Some Facts...

- The U.S. is rapidly losing its global technological superiority.

- China graduates 4x the engineers as the U.S.A.

- South Korea, (1/6th the population of USA) graduates nearly the same number of engineers each year as the U.S.A.

- By 12th grade, mathematics and science test scores of students in the U.S.A. rank near the bottom of leading industrialized countries.

- There is a shortage of math and science teachers.

- 40% of students earning engineering and science doctorates at U.S. colleges and universities are from other countries, and they often return to their homelands after completing their studies.
# Worldwide Engineering Degrees Awarded by Country:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Degrees Awarded</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>China</td>
<td>219,563</td>
<td>21%</td>
</tr>
<tr>
<td>2.</td>
<td>E.U.</td>
<td>179,929</td>
<td>17%</td>
</tr>
<tr>
<td>3.</td>
<td>Japan</td>
<td>104,478</td>
<td>10%</td>
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<tr>
<td>4.</td>
<td>Russia</td>
<td>82,409</td>
<td>8%</td>
</tr>
<tr>
<td>5.</td>
<td>India</td>
<td>82,107</td>
<td>8%</td>
</tr>
<tr>
<td>6.</td>
<td>U.S.A.</td>
<td>59,536</td>
<td>6%</td>
</tr>
<tr>
<td>7.</td>
<td>So. Korea</td>
<td>56,508</td>
<td>5%</td>
</tr>
<tr>
<td>8.</td>
<td>Taiwan</td>
<td>26,587</td>
<td>3%</td>
</tr>
<tr>
<td>9.</td>
<td>Mexico</td>
<td>24,184</td>
<td>2%</td>
</tr>
<tr>
<td>10.</td>
<td>Poland</td>
<td>21,618</td>
<td>2%</td>
</tr>
</tbody>
</table>
ORGANIZATIONAL EXCELLENCE

Strategy:
Promote aviation related science, technology, engineering, and mathematics (STEM) skills in the emerging and future aviation workforce.

Initiative
In partnership with other Federal, state and local agencies, aerospace oriented consortiums, and other private sector aviation organizations, enlarge the pipeline of students who are prepared to enter college and graduate with an aerospace oriented degree in science, technology, engineering, and mathematics (STEM).
The best way for FAA to invest in our nation’s future human capital is through educational outreach.

We inform and direct talented youth towards aviation/aerospace pathways at their earliest educational stages.

FAA’s AVSED Outreach Program provides diverse learning opportunities for students.

Through AVSED leadership, FAA volunteerism and industry partnerships, FAA’s AVSED program delivers quality education programs to the public.
What we do...

- Career fairs
- Boy/Girl Scout events
- Science fairs
- ACE Academies
- FAA facility tours
- Airshows/Expos
- Teacher workshops
- School administrators/educators conventions
- Aviation workshops/conferences
- Classroom presentations to students
Partnerships

- Academia
- Aviation industry
- Aviation community
- Non-profit organizations
Partnerships

- Build-A-Plane
- Jamail Larkins
- Civil Air Patrol (CAP)
- Department of Transportation (DOT)
- Experimental Aircraft Association (EAA)
- Aircraft Operators & Pilots Assoc. (AOPA)
- National Aeronautics & Space Administration (NASA)
- National Coalition for Aviation Education (NCAE)
- American Institute of Aeronautics and Astronautics (AIAA)
Aircraft deconstruction & reconstruction.

Hands-on real world project connects with aviation and aerospace.

Curricula teaches science, technology, engineering, math, and maintenance skills leading to career awareness and pathways to success.
Real World Design Challenge

Annual competition provides high school students the opportunity to work on real world engineering challenges in a team environment.

Student teams address a challenge that confronts our nation's leading industries, and utilize professional engineering software to develop their solutions. Students generate presentations that convincingly demonstrate the value of their solutions. The RWDC provides students with opportunities to apply the lessons of the classroom to the technical problems that are being faced in the workplace.
Real World Design Challenge

The Challenge for 2011-2012:
Design an efficient, low-carbon-emission and environmentally friendly personal light sport aircraft. The aircraft must accommodate two team members and fly 200 miles in less than two hours at a cruise altitude of 1000 feet above ground level (AGL) minimum.

New Jersey POC:
Michael Heinz
Office of STEM
Science Coordinator/ MSP Program Officer/
PAEMST Coordinator
100 Riverview Plaza, Trenton, NJ 08625
609.984.7453

***Mentors***
Deadlines for RWDC

Team Registration Deadline: November 18, 2011

Solution Submission Deadline: February 6, 2012

State Challenge Digital Submissions Scored by Judges: February 7-17, 2012


http://www.realworlddesignchallenge.org
National Airport Design Competition

➤ Undergraduate and graduate students at U.S. colleges
➤ Addresses issues relating to airports
➤ Students address technical challenges regarding safety, capacity and efficiency of the nation’s airports, offer innovative solutions, and win cash for outstanding proposals.

Four broad categories:

Airport Operation and Maintenance
Runway Safety/Runway Incursions/Runway Excursions
Airport Environmental Interactions
Airport Management and Planning

Provides educational experience for individual students or students working in teams either as part of a class assignment, independent study, or a project undertaken by a student, professional society. Challenges are interdisciplinary in nature, encouraging participation with many S.T.E.M. disciplines.

http://FAADesignCompetition.odu.edu
International Aviation Art Contest

“Silent Flight”

Entries must be postmarked by Friday, January 13, 2012, and mailed to:

Clare Mansfield
New Jersey Department of Transportation
Division of Aeronautics
1035 Parkway Avenue
PO Box 600
Trenton, NJ 08625-0600
Youngest pilot to solo a powered aircraft, and first and youngest student pilot in the U.S. to solo a Cirrus SR20.
Civil Air Patrol (C.A.P.)
NASA – Smart Skies

- Web-based, ATC simulation
- Math for Grades 5-9
- Aligned with Core Curriculum Content Standards
- FREE
Aviation Career Education (ACE) Academy
ACE Academy
Student Career Experience Program Program Program at FAA Technical Center

Tiffany Smith
Human Resources Specialist
Student Career Experience Program (SCEP) Liaison
FAA William J. Hughes Technical Center
Atlantic City International Airport, NJ 08405
Phone: 609-485-8891

9-ACT-INTERNSHIPS@faa.gov
What Is an Engineer?

- Engineers are Applied Scientists & Mathematicians Who Take Scientific Discoveries & Turn Them Into Useful Inventions.
- Engineers Are Problem Solvers Who Make Things Work Better, More Efficiently, Quicker and Less Expensively.
- Engineers Use Math and Science Skills and “Common Sense” to Solve Problems.
- Engineers Run the World.
What engineers do?
What engineers do?
What does the future hold?

Space Ship I
Space Ship II

Space Station Freedom with earth, moon, & Mars