# Frank J. Kody

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## EDUCATION

**The Pennsylvania State University** — State College, Pennsylvania
Masters of Science Aerospace Engineering; *Aero/Fluids Concentration* — **Expected Graduation:** August 2013
Cumulative G.P.A. 3.67 — **Current Standing:** 2nd Year Masters

**Saint Louis University, Parks College of Engineering** — St. Louis, Missouri
Bachelor of Science Aerospace Engineering — **Graduation Date:** May 2011
Major G.P.A. 3.83 — **Current Standing:** Graduated
Cumulative G.P.A. 3.60
Graduation Honors/Awards:

- *cum laude*
- *Tau Beta Pi*, engineering honors society
- *Oliver L. Parks Award*, an award granted to one graduating senior out of the entire engineering college for academic excellence, leadership, and service to the surround community.
- *Outstanding Senior Design Award*, an award given to one senior design team within each engineering discipline which displayed the best capstone design project.

## EXPERIENCE

**Vertical Lift Research Center of Excellence, Penn State** — State College, Pennsylvania
Graduate Research Assistant, Funded by a U.S. Army VLRCOE Grant — Fall 2011- Present

- Investigating the fundamental physics of deploying active control devices to reduce thickness noise without incurring a net performance penalty
- Employing the use of RCAS, OVERFLOW, and PSU-WOPWOP to develop integrated design tools which will be used to model and study this task
- Emphasizing constant collaboration between the aerodynamic and acoustic communities, while receiving valuable input and realistic expectations from the structures community

**Summer Undergraduate Research Experience at Parks College of Engineering** — St. Louis, Missouri
Undergraduate Researcher — Summer 2010

- Computationally investigated a passively deploying low-Reynolds Number high-lift device
- Employed the use of SC Tetra CFD program
- Created 2D airfoil flow physics models in CFD for high-lift device behavioral analysis

**NASA's Glenn Research Center w/ ASRC Aerospace** — Cleveland, Ohio
Engineering Intern in Structures and Mechanics Division — Summers 2008 and 2009

- Performed materials testing in support of Aging Aircraft Program and Constellation Project
- Utilized Scanning Electron Microscopy to analyze material microstructures
- Enhanced testing skills through use of universal axial testing machines

**Experimental Research at Parks College of Engineering** — St. Louis, Missouri
Research Assistant
*Aerodynamics* — Fall 2009 - 2011

- Experimentally investigated a passive low-Reynolds Number high-lift device
- Established and performed sub-sonic wind tunnel testing of high-lift device

*Aircraft Design* — Spring 2009 - 2011

- Developing a foam hybrid-inflatable wing for hand-launched UAVs
- Performing inflation, structural, and flight testing of foam inflatable wing

## PUBLICATIONS/PRESENTATIONS

**2012 AIAA Aerospace Science Meeting, Conference, International Student Paper Competition Finals**

- Paper Title: *An Integrated Aircraft Design and Performance Prediction Tool – Design, Validation and Demonstration*
- Won 1st Place at the 2011 AIAA Region V Student Paper Conference, Undergraduate Category
- Advanced to 2011 International AIAA Student Paper Competition in Jan. 2012 to compete against the 8 regional winners
- Designed, developed, and utilized a user-friendly integrated aircraft design tool, entitled iFly, for the low-cost and time efficient development of small unmanned aerial vehicles

**International Journal of Micro Air Vehicles**

- F. Kody, and G Bramesfeld, Small UAV Design Using and Integrated Design Tool, *International Journal of Micro Air Vehicles*, Vol. 4, Number 2, 2012.

**2013 AIAA Aerospace Sciences Meeting, Conference**

- F. Kody, G. Bramesfeld, and S. Schmitz, Winglet Design for Sailplanes Using a Multi-Objective Evolutionary Algorithm, 2013 AIAA ASM, Grapevine, TX, *Abstract Accepted*

## ACTIVITIES

**Society of Automotive Engineers Aero Design Team, Parks College** St. Louis, Missouri
Title: President (2 years), Treasure (1 year) 2008 – Spring 2011

- Leader of the Design teams
- Lead Designer for 1st Place Overall and Design Advanced Class Entry at 2010 Aero Design West
- Lead Designer for 2nd Place Overall and 1st Place Technical Presentation Advanced Class Entry at 2011 Aero Design West
- Lead Designer for 3rd Place Overall and 1st Place Technical Presentation Advanced Class Entry at 2011 Aero Design East
- Created aircraft optimization, aerodynamic, and stability codes in MATLAB for design purposes
- Conducted aerodynamic and propulsive wind tunnel testing
- Allocated funds of $15,000 each year
- Mentored underclassmen to embrace leadership positions and to further improve upon current success for years to come

**Big Brothers Big Sisters of America** St. Louis, Missouri
Youth Mentor Spring 2007 – Spring 2011

- Big Brother to a boy named Rashad Hamilton
- Watched him graduate from Grade School and move onto a highly competitive Preparatory High School

**American Institute of Aeronautics and Astronautics**
Student Member from 2007- Present

**American Helicopter Society**
Student Member from 2011- Present

## GRANTS

**Vertical Lift Research Center of Excellence** Penn State
Graduate Research Assistant Fall 2011 – Present

- Member of a research grant provided by the U.S. Army for the VLRCOE Program

## COMPUTER SKILLS

Expert in RCAS (Rotorcraft Comprehensive Analysis), OVERFLOW (CFD), Chimera Grid Tools (Structured Grid Generation), SC Tetra (Unstructured CFD), Pro Engineer (CAD), MATLAB, Java, C++, FORTRAN, XFOIL, XFLR5, Linux/Unix