Space Grant Western Regional Meeting
Armstrong Internships: Past, Present, and Future
September 12, 2019
Overview

• My Background
• Armstrong’s Research Interests
• Armstrong’s Approach to Internships
• Internship Highlights
• Areas to Improve and Collaborate
• Questions
My Background (Past)

• Grew up on a farm just north of Nappanee, Indiana
• Encyclopedia
• 10 year 4H Member
  • Swine Club
  • Rocketry
• Did not know an engineer before I went to college
• High School US history class-”The Right Stuff”
• Attended Purdue University and University of Michigan
• Came out to Dryden as a student over 18 years ago
My Background

- NASA Dryden
  - Propulsion Health Management and formation flight on C-17s
  - Propulsion Engineer
  - Flight Test Engineer
  - Systems Engineer
- NASA Johnson
  - Orion Vehicle-Exploration Flight Test 1
- F-15 Deputy Chief Engineer
- Education
Armstrong’s Research Interests

• Urban Air Mobility
  • Unmanned Aerial Systems in the National Airspace
  • Autonomy

• Sensor and Systems Development

• Flight Test and Integration
Armstrong’s Research Interests

• Supersonics and Lowering Sonic Boom Impacts
Armstrong’s Research Interests

• Electric Propulsion Systems and Aircraft
Armstrong’s Research Interests

- Access to Space, Earth Science, Flying Astronomy
Armstrong’s Approach to Internships

- ~60-80 summer students
- ~10-20 fall/spring students
- “Classic” Internships
  - Working with mentor on mission project
  - Exploring a new capability
- Student team based internships
  - New ideas, concepts, aircraft!
Internship Highlights (Present)

• Team internship: Fiber Optic Sensing System (FOSS)
• First aircraft integrated FOSS flight data collection
Internship Highlights

- Prandtl: Bell Shaped Lift Distribution
- Team based internships
- ARMD partnerships
- Two museum worthy aircraft! (so far)

[Video Link]

- https://www.youtube.com/watch?v=Hr0I6wBFGpY
Mentor Legacy
Internship Highlights

• Mars Glider Swarm
• Team Based Internships
• STMD/CIF Partnerships
• Spinoffs and Degrees
Internship Highlights

• Aeronautics Augmented Reality Education Mobile App
Areas to Improve Collaborate (Future)

• Continual Improvement
  • IT/Reporting
  • Communication
  • Mentor/Student/Project Matching
  • Internship Webinars/SME Seminars

• Internship+
  • Senior Design/Capstone
  • Independent Study
  • Research Experiences for Undergraduates
  • Graduate student research
  • Faculty Research/Seminars/Fellowships
  • Center Innovation Research
  • NASA Early Career Initiatives
  • ARMD Convergent Aeronautical Solutions
Questions
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