

# Lucas W. Craig

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## EDUCATION:

### Clarkson University, Potsdam, NY

Ph.D., Mechanical Engineering

August 2012

M.S., Mechanical Engineering

December 2007

B.S., Aeronautical Engineering (Minor in Math)

May 2006

### Jefferson Community College, Watertown, NY

A.S., Engineering

May 2004

## RELEVANT EXPERIENCE:

### Assistant Professor, SUNY Canton, Canton, NY

8/12 - Present

- Developing lesson plans for a variety of mechanical engineering courses
- Mentoring undergraduate students
- Developing new mechanical engineering courses and keeping current with existing ones

### Research Assistant, Clarkson University, Potsdam, NY

10/07 – 8/12

- Investigated the sampling characteristics of airborne samplers using computation fluid dynamics and experimental data.
- Trained students to be professional, organized, and to improve their communication skills by doing weekly presentations, status updates, and reports.
- Supervised undergraduate students for independent research.

### Lead Aircraft Scientist/Engineer, ICE-T, NCAR, St. Croix, USVI

1/11 - 8/11

- Utilized my leadership, project management, and organizational skills to oversee instrument development and installation onto a research aircraft.
- Strengthened my communication skills by collaborating with the project scientists to make sure objectives would be accomplished.
- Tested and modified newly designed airborne instruments to deliver more reliable aerosol-cloud data.
- Educated students about airborne research.

### Lead Aircraft Scientist/Engineer, PLOWS, NCAR, Peoria, IL

9/09 - 3/10

- Researched and developed instrumentation required to sample cloud systems. The instrumentation included pressure, temperature, and relative humidity sensors, flow meters, blowers, and high voltages.
- Developed data acquisition software using MATLAB<sup>®</sup> to run the instrumentation.
- Improved communication skills by having multiple aircraft open houses.
- Established problem solving, teamwork, leadership, and project management skills.

### Internship at NCAR/RAF, NCAR/RAF, Broomfield, CO

5/09 - 9/09

- Obtained experience in the work environment.
- Used computation fluid dynamics to investigate airflow and particle trajectories around aircraft probes to help scientists determine their sampling characteristics.
- Attended multiply aircraft workshops and participated in an aerosol-cloud instrumentation-working group.

- Acquired a knowledge base in aircraft sampling by learning from senior scientists, aircraft technicians and mechanics, and software developed to examine aircraft data.

### ADDITIONAL EXPERIENCE:

**Aircraft Scientist/Engineer**, GRIP, NASA, Fort Lauderdale, FL 9/10 - 10/10

- Researched and developed airborne instrumentation for sampling clouds on a faster and higher research aircraft.
- Improved my professionalism and communication skills by following NASA's high expectations in sampling strategies.

**Lab Instructor**, Clarkson University, Potsdam, NY 1/08 - 5/09

- Established professional teaching skills and improved communication and management skills.
- Taught undergraduate students in a laboratory setting.

**Material Coordinator**, EPS, Fort Drum, NY 6/05 - 8/05

- Hands on experience utilizing basic mechanic tools: wrenches, sockets, drills, etc.
- Tested military radios, examined blueprints, and installed antenna equipment on military vehicles.

### TECHNICAL SKILLS + CERTIFICATIONS + HONORS:

**Software:** Knowledgeable in Microsoft Word, Excel, and PowerPoint, Matlab<sup>®</sup>, 2-D/3-D Fluent<sup>®</sup>, Gambit<sup>®</sup>, AutoCAD 2012, Google SketchUp, and data acquisition software: Lab View and Matlab<sup>®</sup>. Comfortable with three operating systems: Mac, Windows, and Linux.

**Equipment:** Trained to use aerosol instrumentation: SMPS, UHSAS, WPS, and APS.

**Certifications:** Intern Engineer, The University of the State of New York.

**Honors:** NSF Computer Science, Engineering and Mathematics Scholarship, NASA Graduate Student Researchers Program (GSRP) Scholarship, AAAR student poster award (2009, 2010), AMS student poster award (2011).

### PRESENTATIONS:

Craig, L., Barlow, N., Patel, S.N., Kanya, B., and Lin, S.P. Optimal and nonoptimal flows in a swirl atomizer. Presented at the International Conference on Liquid Atomization and Spray Systems, Vail, CO, 2009.

Craig, L., Moharreri, A., Dubey, P., Schanot, A., Rogers, D., Toohey, D., and Dhaniyala, S. Performance analysis of an airborne interstitial particle sampler flown during the PLOWS campaign. Presented at the American Association for Aerosol Research, Portland, OR, 2010.

Craig, L., Moharreri, A., Schanot, A., Rogers, D., and Dhaniyala, S. Cloud droplet shatter artifacts: impact on measurements of different aerosol samplers and cloud probes. Presented at the American Association for Aerosol Research, Orlando, FL, 2011.

### PUBLICATIONS:

Craig, L., N. Barlow, S. Patel, B. Kanya, and S. P. Lin. (2009) Optimal and Nonoptimal Flows in a Swirl Atomizer. *Atomization and Sprays*, 19:12, 1113-1124.

Craig, L., A. Schanot, A. Moharreri, D. C. Rogers, and S. Dhaniyala. (2013) Design and sampling characteristics of a new airborne aerosol inlet for aerosol measurements in clouds. *Journal of Atmospheric and Oceanic Technology* 30, 1123–1135.

Craig, L., A. Moharreri, A. Schanot, D. C. Rogers, B. Anderson, and S. Dhaniyala. (2013) Characterizations of Cloud Droplet Shatter Artifacts in Two Airborne Aerosol Inlets. *Aerosol Science and Technology* 47:6, 662-671.

Craig, L., A. Moharreri, D. C. Rogers, B. Anderson, and S. Dhaniyala. (2014) Aircraft-based Aerosol Sampling in Clouds: Performance Characterization of Flow-Restriction Aerosol Inlets. *Journal of Atmospheric and Oceanic Technology* 31, 2512–2521.

Moharreri A., Craig, L., D. C. Rogers, and S. Dhaniyala. (2013) A New Aircraft Inlet for Sampling Interstitial Aerosol: Design Methodology, Modeling, and Wind Tunnel Tests. *Aerosol Science and Technology* 47:8, 885-894.

Moharreri A., Craig, L., D. C. Rogers, and S. Dhaniyala. (2014) Aircraft Testing of the New Blunt-body Aerosol Sampler (BASE). *Atmospheric Measurement Techniques* 7, 3085-3093.