



Douglas Keller Jr.

Education

- Fall 2017 – **Master of Science: Mechanical Engineering**, *University of Alaska Fairbanks*, Fairbanks, Alaska,
Fall 2018 USA.
- Fall 2014 – **Bachelor of Science: Mechanical Engineering**, *University of Alaska Fairbanks*, Fairbanks, Alaska,
Fall 2018 USA.

Research Experience

- Fall 2017 – **Master of Science Thesis**, *University of Alaska Fairbanks*, Fairbanks, Alaska, USA.
Fall 2018 (*In collaboration with and funded by NASA's Armstrong Flight Research Center*)
Determined the effect of electromagnetic interference from electric motors on load sensing strain gauges.
- Fall 2017 – **Alaska Space Grant Undergraduate Research Fellowship**, *Geophysical Institute, University of Alaska Fairbanks*, Fairbanks, Alaska, USA.
Summer 2018 Studied the atmospheric boundary layer (ABL) with NASA's network of micro-pulse lidars (MPLNET).
- Fall 2016 **Raman Spectroscopy Lidar**, *Geophysical Institute, University of Alaska Fairbanks*, Fairbanks, Alaska, USA.
(*Funded by the National Science Foundation*)
Assisted with the setup of a Raman spectroscopy lidar and developed mechanical fixtures for application.

Vocational Experience

- Spring 2019 – **Temporary Research Technician**, *Alaska Center for Energy and Power, University of Alaska Fairbanks*, Fairbanks, Alaska, USA.
Present Rewriting the Alaska Center for Energy and Power's (ACEP) Energy Technology Facility's (ETF) safety manual.
- Spring 2017 – **Teaching Assistant**, *College of Engineering and Mines, University of Alaska Fairbanks*, Fairbanks, Alaska, USA.
Fall 2018 Graded homework and exams, and assisted students with studies in engineering.
- Summer 2017 **Mechanical Engineering Intern**, *NASA Armstrong Flight Research Center*, Edwards, California, USA.
Tested thermodynamics and heat transfer of the initial Fiber Optic Sensing System (FOSS) enclosure concept for the Quiet Supersonic Technology (QueSST) X-Plane (now the X-59).

Publications

D. Keller, D. R. Eagan, G. J. Fochesatto, R. Peterson. "Advantages of Fiber Bragg Gratings over Resistance-Based Strain Gauges in the Presence of Electromagnetic Interference Emitted from an Electric Motor for Aerospace Application." *Review of Scientific Instruments*

Submitted

D. Keller, G. J. Fochesatto. "Seasonal Variation of Subarctic and Arctic Superior Mirages with GPSRO." *Applied Optics*

Conference Proceedings

G. J. Fochesatto, O. Galvez, P. Ristori, D. Keller, and E. L. Fochesatto. "Lidar to Determine the Fractions of Ice, Liquid and Water Vapor in Polar Tropospheric Cloud." *Proceedings of the 28th International Laser Radar Conference*, Bucharest, Romania. 25-30 June 2017.

Sports

- Winter 2017 – **Krav Maga Instructor**, *Alaska Krav Maga & Fitness*, Fairbanks, Alaska, USA.
Winter 2018 Taught Krav Maga, Muay Thai, and fitness classes to students at varying levels of skill. Also trained in Brazilian Jiu Jitsu.

Hockey Played hockey competitively until 2014, peaking at the Junior A Tier III level in the AWWHL (now part of the NA3HL). Played intramurals and beer league from then on.