

ALISA J. MILLAR HENRIE

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WIL119, UAH
Huntsville, AL 35899

EDUCATION

- PhD** Brigham Young University (BYU), Mechanical Engineering March 2004
Dissertation: “Percolation Paths of Three-Dimensions in Sensitized Stainless Steel”
Committee: Brent L. Adams, Larry L. Howell, Tracy W. Nelson, Carl D. Sorensen,
Michael P. Miles
- MS** Brigham Young University, Mechanical Engineering Dec 1997
Thesis: “Variable Compliance Via Magneto-Rheological Materials”
Advisor: Larry L. Howell
- BS** Brigham Young University, Mechanical Engineering May 1995

TEACHING EXPERIENCE

University of Alabama in Huntsville (UAH), Huntsville, AL Dec. 2019 to present
Clinical Assistant Professor, College of Professional Studies
Engineering Technology Concentration

- Oversee several adjunct professors who teach in the engineering technology concentration.
- Creating academic oversight committee for new engineering technology concentration.
- Designing and implementing online/home labs for engineering technology courses.
- Designing and implementing new lab in WIL 215 for engineering technology students.
- Working towards ABET accreditation and addition of a stand-alone major for engineering technology.
- UAH QEPO (Quality Education Practices Online) Certified Instructor

Classes Taught

- **ET301** Engineering Technology Foundations 1
Developed course for hybrid and online instruction.
- **ET302** Engineering Technology Foundations 2
Developed course for hybrid and online instruction.
- **ET310** (Computer-Aided Design for ET)
Developed course for online instruction in Canvas. Instructor of record, Oversaw industry specialist in teaching material.

- **ET334** Principles of Statics for ET Developed course for hybrid and online instruction.
- **ET335** Strength of Materials for ET
Developing course for hybrid and online instruction.
- **PRO489-02/ET489** Inquiry and Learning for ET/Capstone I for ET
Developed Capstone course and oversaw senior design project.
- **PRO499-02/ET499** Capstone Experience for ET/ Capstone II for ET
Developed Capstone course and oversaw senior design project.
- **ET336** Principles of Dynamics for ET
Developed course for hybrid and online instruction. Will teach first offering Spring 2021.
- **ET341** Introduction to Electrical Systems and Circuits
Overseeing development of course for online and hybrid instruction. Designing at-home and on-campus labs for course. Designing on campus lab. Will be taught first-offering Spring 2021.
- **ET431** Fundamentals of Manufacturing for ET
Developing course for hybrid and online instruction. Will teach first offering Summer 2021.
- **ET433/434** Instrumentations and Measurement Systems for ET
Developing course for hybrid and online instruction. Designing at-home and on-campus instrumentation labs for course. Designing on campus lab. Will be taught first-offering Fall 2021.

KTECH, Madison, AL

Aug 2017 to Dec. 2019

Instructor, Mechatronics and Robotics

- Instructed students in basic Mechanical concepts focusing on hands on opportunities for troubleshooting, following the flow of energy and critical thinking skills.
- Developed quizzes, exams, and homework.
- Mentored students in study skills, life skills and appropriate coping mechanisms.
- Overcame students' obstacles to learning: finding solutions to medical needs, transportation needs, housing needs, and nutrition needs.
- Developed curriculum.

University of New Mexico (UNMLA), Los Alamos, NM

Sept 2003 to April 2006

Adjunct Professor, Physics

Advised curriculum development committee on the creation of two-year programs to help existing lab technicians at Los Alamos National Laboratory earn an AS.

Classes Taught

- **Natural Science 261 & 261L** Natural Science for Educators
For pre-service K-8 teachers. A broad, interdisciplinary introduction to the science of geology, chemistry, physics, and astronomy, with emphasis on the science processes, inquiry, and the integration of technology. Developed course for in-classroom instruction, taught as a night class. Developed hands-on science activities that could be replicated in a K-8 classroom.
- **Physics 105 & 151L** Introduction to Physics
Non-Calculus Physics for non-majors. Developed course for in-classroom instruction. Taught as a night-class.

Brigham Young University (BYU) Provo, UT
Research Assistant, Mechanical Engineering

Sept 1995 to Aug 1997
Sept 1998 to May 2004

- Collaborated with researchers in mathematics to perform detailed statistical analysis of new research. The analysis was performed to determine which factors were significant in the construction of magneto-rheological compliant beams.
- Mentored graduate and undergraduate students
- Tracked the goals, design, and manufacture release of nine graduate and undergraduate students in MEMS (micro-electro mechanical systems).
- Taught sections of Machine Design and Kinematics.

RESEARCH AND INDUSTRY EXPERIENCE

Percolation Paths of Three-Dimensions in Sensitized Stainless Steel,

Brigham Young University (BYU), Provo, UT
Advisor: Brent L Adams

1998 to 2004

- Reconstructed Polycrystalline Microstructures from Two-point Correlation Statistics
- Coordinated the construction of new research lab from scratch, including the installation of a new cutting-edge scanning electron microscope (SFEG) and the infrastructure necessary for its use. Built the polishing and serial-sectioning lab that was used for obtaining 3-D micro-crystallography samples. This lab was then used by many research groups on campus.
- Used mathematical models, computer programming and visualization software to explore grain-boundary engineering to change material behavior. This research is still referenced almost monthly in new publications.

Boeing, Everett, Washington
Senior Design Engineer, Materials Testing

1997 to 1998

- Implemented programs identified by Continuous Improvement for Quality Control to deliver customers what they needed regarding FAA fireworthiness standards.

- Helped lead special team to help airlines update their interiors on all Boeing planes and maintain FAA fireworthiness standards.
- Coordinated between the FAA, testing engineers, design engineers and the airlines.
- Responsible for design and maintenance of 747 interiors. This included championing the 747 and instructing those who worked on other airplanes about her unique nature. Several difficulties were solved to improve quality including lead time needed to manufacture new tooling, flow of work through the line and timing the implementation of new designs to accommodate each aircraft.
- Developed close working relationships with plant personnel, designers and airlines.
- Obtained special training in manufacture and repair of composite panels.

HONORS AND AWARDS

Young Scientist Award 2002

ICOTOM 13, International Conference on Textures and Materials, 2002

ZONTA Amelia Earhart Fellowship 2000

The Fellowship is awarded annually to up to 30 women pursuing Ph.D./doctoral degrees in aerospace-applied sciences or aerospace-applied engineering

Boeing Applause Appreciation Award 1996

Awarded by the Service Engineering Department

PUBLICATIONS

Books

Adams, B.L., Gao, X., and Henrie, A., “Rectangular models for microstructure design,” Dislocations, Plasticity, Damage and Metal Forming: Material Response and Multiscale Modeling, eds. A. Khan, A. Khoei, p.535-538, 2005.

Henrie, A.J. and Carlson, J.D, Magnetorheological Fluids, in the Encyclopedia of Smart Materials, John Wiley and Sons, New York, 2002.

Journal Publications

Reed, B.W., Adams, B.L., Bernier, J.V., Heffernan, C.M., Henrie, A.J.M., Li, S.F.F., Lind, J., Suter, R., Kumar, M., “Experimental Tests of Stereological Estimates of Grain Boundary Population”, Acta Materialia, 60(6-7), 2999-3010, March, 2012.

Reed, B.W., Adams, B.L., Bernier, J., Heffernan, C., Henrie, A.J.M., Li, S., Lind, J., Suter, R., Kumar, M., “Stereology and 3 D Grain Boundary Network Analysis”, Dec. 2011.

Adams, B.L., Gao, X., and Henrie, A., “Design of crystallographic and morphologic texture for elastic/plastic applications,” Materials Science Forum, vol. 495-497, p. 319-324, 2005.

Hansen, B.L., Adams, B.L., Lyon, M.E. and Henrie, A.J., 2003 “On the Reconstruction of Polycrystalline Microstructures from Two-point Correlation Statistics” Journal of Computer-Aided Materials Design; v.10 no. 3 p. 163-173.

Adams, B.L., Henrie, A., Henrie, B., Lyon, M., Kalidindi, S.R., and Garmestani, H., 2001, "Microstructure-sensitive Design of a Compliant Beam," Journal of the Mechanics and Physics of Solids, 49, pp. 1639-1663.

Conference Papers

Henrie, A., Adams, B. L. and Larsen, R. J., “Creating a model for percolation of grain boundaries in polycrystalline materials,” Proc. ICOTOM 13, Textures of Materials, 408-4, 419-24, 2002.

Henrie, A. J. M., Howell, L.L, 1998, "Variable Compliance via Magneto-Rheological Materials," Proceedings of the 43rd International SAMPE Symposium, Anaheim, CA, pp. 431-443, June 1998.

Millar, A.J., Howell, L.L., and Leonard, J.N., 1996, "Design and Evaluation of Compliant Constant-Force Mechanisms," Proceedings of the 1996 ASME Design Engineering Technical Conferences, 96-DETC/MECH-1209.

PRESENTATIONS

University of Alabama in Huntsville, “Tech Trek for Teachers,” 2019

PROFESSIONAL TRAINING

Mechatronics Systems Certification Program Instructor (SMSCP) Level I
Siemens, 2018

FS100 Certified Instructor

YASKAWA, 2018

Certified to teach Operator and Basic Programming for YASKAWA FS100 Controller

COMMUNITY SERVICE

PTA

Space Week Chair, Madison, AL 2010-2018

Science Olympiad Coach

Columbia Elementary School, Madison, AL 2013