WESLEY LLOYD STONE

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Cullowhee, NC 28723

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828-293-7471 (home)

OBJECTIVE

Continue to develop teaching and research skills in a tenure-track engineering faculty position.

EDUCATION

Georgia Institute of Technology (Mar 99 - Aug 02)
Doctor of Philosophy in Mechanical Engineering; GPA 3.84/4.00
Graduate Research Assistant (Mar 99 - Aug 02): Research: *Thermal Effects on Subsurface Damage During the Surface Grinding of Titanium Aluminide*
Group: Precision Machining Research Consortium
Minor: Industrial and Systems Engineering
Advisor: Dr. Thomas Kurfess

The Pennsylvania State University (Aug 88 - Aug 90)
Masters of Science in Mechanical Engineering; GPA 3.76/4.00
Research Assistant (Jan 89 - Jul 90): Thesis: *The Design and Evaluation of a Chain Drive Test Stand to Investigate the Sources of Chain Noise*; Advisors: Dr. M. W. Trethewey & Dr. K. W. Wang; research, design, construction, experimentation of test stand
Teaching Assistant (Aug 88 - May 89) Vibrations Laboratory

The University of Texas at Austin (Sep 84 - May 88)
Bachelor of Science in Mechanical Engineering; GPA 3.55/4.00
Mechanical Systems emphasis, Graduation with Honors

WORK EXPERIENCE

Western Carolina University – Kimmel School of Construction Management, Engineering and Technology (formerly known as Engineering and Technology Department), Cullowhee, NC
Assistant Professor – Quality/Manufacturing/Solid Mechanics (Aug 04 - present)

- Teaching: mechanical-oriented topics; lab instruction & maintenance (see TEACHING)
- Engagement: Industry contact with regional industry (Caterpillar, Team Industries, ConMet, Genie Products, Liberty Wood Products, Haldex Hydraulics)
- Service: Academic Appeals Committee member (alternate), ABET preparation, faculty search committees, departmental safety committee chair, faculty advisor to 2 student groups
- Academic Advising for 35~45 ET students

Valparaiso University - Department of Mechanical Engineering, Valparaiso, IN
Assistant Professor – Manufacturing/Solid Mechanics (Aug 02 - Aug 04)

- Teaching: topics in manufacturing/solid mechanics; lab instruction & maintenance (see TEACHING)
- Research: workpiece temperatures during machining (see RESEARCH)
- Service: ABET preparation, faculty search committee, recruitment committee
- Academic Advising for 40 ME students

Georgia Institute of Technology - Dept. of Mechanical Engineering, Atlanta, GA
Graduate Research Assistant – Precision Machining Research Consortium (Mar 99 - Aug 02)

- Analytical, numerical, & experimental approach to analyze subsurface damage in grinding titanium aluminide
- CAD/CAM, CNC programming; multi-machine exposure (VMC, surface grinder, wire EDM)
- High-temperature material property analysis at Oak Ridge National Lab

General Electric - Gas Turbines, Greenville, SC
Black Belt (certified) – Airfoils/Rotors Center of Excellence (Nov 96 - Mar 99)
- Six Sigma Training & Projects - Measure-Analyze-Improve-Control methodology, SPC
- Quality Data Collection - plant-wide team conversion to on-line system of data recording
- Train operators & support personnel in use of Six Sigma statistical & quality tools

Cell Engineer/Team Leader – Buckets Cell (Nov 94 - Nov 96)
- Process exposure: Grinding, Casting, CMM's, Milling, Wire EDM, NDT
- Supervised 25 hourly, Team Development for 75 hourly employees across 3 shifts
- DFT (Demand Flow Technology) - implemented to reduce cycle & inventory
- Howmet 1-week casting school (Hampton, VA)
- CMM 1-week training course, DEA (Charlotte, NC)

Process Flow Engineer – Final Assembly (Aug 92 - Oct 94)
- ISO 9001 - facilitated certification as Final Assembly point person
- Supplier Integration to manage small hardware; JIT, point-of-use delivery
- Facilitated Continuous Improvement Team to drive Cycle Reductions & Team Building

General Electric - Aircraft Engines, Evendale, OH (Mfg Mgmt Program)
Process Engineer/Supervisor – Front Casings Machining (Jan 92 - Aug 92)

Process Engineer/Quality – Large Engine Assembly (Aug 91 - Jan 92)

General Electric - Aerospace, Burlington, VT (Mfg Mgmt Program)
Supervisor/Facilitator – Tool Crib & Stockroom (Feb 91 - Aug 91)

Material Planner – Electrical Components (Aug 90 - Feb 91)

Microelectronics & Computer Technology Corporation (MCC), Austin, TX
Electromechanical Designer – Packaging Group, CAD responsibilities (May - Aug 88)

RESEARCH EXPERIENCE

Laser Micro-Machining
- Research performed at Western Carolina University on the Oxford Laser Micro-Machining Center
- Experimental investigation into the quality of data matrices (2-D barcodes)
- DOE (design of experiments) to investigate the factors that most affect the quality of 1-mm x 1-mm data matrices.

Surface Grinding Titanium Aluminide
- Research performed at Georgia Tech's Precision Machining Research Consortium – NSF funding
- Theoretical, numerical, & experimental approach to investigate thermal effects on subsurface plastic deformation during the surface grinding of titanium aluminide (TiAl)
- Force-control grinding with thermocouples instrumented to monitor internal workpiece temperatures

Material Property Characterization of TiAl
- Research performed at Oak Ridge National Laboratory, Oak Ridge, TN through the Users Program
- High-temperature material property determination for TiAl alloy – establishing the following properties as a function of temperature from ambient conditions to 800°C: elastic modulus, Poisson's ratio, thermal diffusivity, thermal expansion, specific heat, Vickers hardness

3D CNC Milling of Airfoil
- Research performed at Georgia Tech's Precision Machining Research Consortium – GE funding
- 3-dimensional CNC milling of gas turbine airfoil
- Fixture design, CAD/CAM, tooling, on-machine probing

Noise Control in Roller Chains
- Research performed at Penn State – GM funding
- Design & construction of test stand with multiple sensors to evaluate roller chain noise
- Dynamic strain gage & accelerometer signals extracted from sprocket rotating at speeds up to 3000 rpm via slip ring

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TEACHING EXPERIENCE & DEVELOPMENT

Assistant Professor – Western Carolina University:

- Spring 2007 – Engineering Analysis (lecture), Integrated Systems Project (lecture/lab), graduate-level Quality Assurance (lecture), academic advising
- Fall 2006 – Statics & Strength of Materials (lecture), Engineering Analysis (lecture), Quality Systems (lecture), academic advising
- Spring 2006 – Statics & Strength of Materials (lecture), Engineering Analysis (lecture), Integrated Systems Project (lecture/lab), academic advising
- Fall 2005 – Fluid Power (lecture), Statics & Strength of Materials (lecture), graduate-level Quality Assurance (lecture), academic advising
- Spring 2005 – Statics & Strength of Materials (lecture), Reverse Engineering (lecture & lab), Engineering Analysis (lecture), academic advising
- Fall 2004 – Fluid Power (lecture), Freshman Seminar–Technology Systems (lecture), graduate-level Directed Projects, academic advising

Assistant Professor – Valparaiso University:

- Spring 2004 – Machine Design II (lecture & lab), Materials Science (lecture & lab), Senior Design, academic advising
- Fall 2003 – Mechanics of Materials (lecture), Manufacturing Processes (lab), Manufacturing System Design (lecture), Senior Design (instruction & advising), academic advising
- Summer 2003 – Valparaiso University new faculty workshop on vocation at Cambridge University (May 03); NSF Project Catalyst Workshop on engineering education at Bucknell University (July 03); Dale Kempf curriculum development award to restructure capstone Senior Design course
- Spring 2003 – Machine Design II (lecture & lab), Materials Science (lecture & lab), Senior Design (advising), academic advising
- Fall 2002 – Mechanics of Materials (lecture), Manufacturing Processes (lab), Machine Design I (lecture), Senior Design (advising), Exploring Engineering (freshman intro course, lab), academic advising

Guest Lecturer – Georgia Tech, guest lectures on grinding and non-traditional processes; Summer 2001; Course: Manufacturing Processes and Engineering; Instructor: Dr. Cheng Zhang

Teaching Practicum – Georgia Tech, 1-semester program to develop teaching skills in Ph.D. students; Fall 2000; Course: System Dynamics and Controls; prepare & deliver lectures, design & grade homework & exams, hold office hours; Advisor: Dr. William Singhose

Teaching Assistant – Penn State; Fall 88 – Spring 89; Course: Vibrations Lab; prepare & deliver all lectures, monitor experiments, grade reports, determine final grades; Advisor: Dr. Martin W. Trethewey

General Electric – Various roles as facilitator/instructor, teaching subjects such as Six Sigma, Demand Flow Technology, and Continuous Improvement to groups of hourly & salaried employees on all 3 shifts

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PUBLICATIONS & PRESENTATIONS

In Print:

Stone, W. L., Ferguson, C. W., & Ball, A. (2006), Engagement in Industry: Preparing Undergraduate Engineering Technology Students for Graduate Study. *Proceedings of the 2006 American Society for Engineering Education Annual Conference & Exposition* (peer-reviewed paper).

Stone, W. L. (2005). The History of Robotics. In T. R. Kurfess (Ed.), *Robotics and Automation Handbook*. (pp. 1-1 to 1-12). Boca Raton, Florida: CRC Press (chapter in technical handbook, peer-reviewed).

Ferguson, C. W., Ball, A., Stone, W. L., & McCrary, P. (2005), Engaging Industry in Graduate Engineering/Technology Education. *Proceedings of the 2005 American Society for Engineering Education Annual Conference & Exposition* (peer-reviewed paper).

Sanger, P. A., Ball, A., Ferguson, C., McDaniel, B., & Stone, W. (2005), Teaming in Engineering Technology Education: Lessons Learned and Experience that Works. *Proceedings of the 2005 American Society for Engineering Education Annual Conference & Exposition* (peer-reviewed paper).

Stone, W., & Kurfess, T. (2004). Grinding Titanium Aluminide: Subsurface Damage. *Grinding and Abrasives Magazine*, 22-26.

Stone, W. L., & Will, J. D. (2004). Optimizing the Structure for a Multidisciplinary Senior Design Experience. *Proceedings of the 2004 American Society for Engineering Education Annual Conference & Exposition* (peer-reviewed paper).

Stone, W. L., & Kurfess, T. R. (2002). Titanium Aluminide – Material Properties as a Function of Temperature. *Proceedings of the Japan - USA Symposium on Flexible Automation*, 1, 533-536 (peer-reviewed paper).

Stone, W. L., & Kurfess, T. R. (2002). Titanium Aluminide Thermal Diffusivity, Heat Capacitance, and Coefficient of Thermal Expansion as a Function of Temperature. Transactions of the North American Research Institute, 30, 417-421 (peer-reviewed paper).

In Process:
Stone, W., & Kurfess, T. R., Grinding Titanium Aluminide—Subsurface Damage. *International Journal of Manufacturing Technology and Management* (peer-reviewed journal paper, accepted for publication in 2007).

Stone, W., & Kuhn, Z., Integrating Laser Machining Applications into a Quality Course for Engineering Technology Students. *Proceedings of the 2007 American Society for Engineering Education Annual Conference & Exposition* (peer-reviewed paper accepted for publication in conference proceedings).

COMPUTER/OTHER SKILLS

Experience with PC's, Macintosh, Mainframes; FORTRAN, BASIC, Assembly; Databasing, Microsoft Office Suite, MATLAB, SurfCAM, IronCAD, AutoCAD, CNC Programming, ANSYS, LabVIEW; speak, read, write German

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HONORS, ACTIVITIES, & PROFESSIONAL SOCIETIES

ASME – American Society of Mechanical Engineers
ASQ – American Society for Quality
ASEE – American Society for Engineering Education
Tau Beta Pi (Engineering Honor Society), President (U. Texas)
Pi Tau Sigma (ME Honor Society), Treasurer (U. Texas)
Texas Society of Professional Engineers, student chapter, Vice President (U. Texas)
Georgia Tech Presidential Fellowship, 3 years
College of Engineering Scholarship (Joe D. Kubicek), 1 year (U. Texas)
ME Dept. Scholarships (Dow, Exxon), 3 years (U. Texas)
Manufacturing Training Programs Association, President (GE)
Mentoring Volunteer Program - 2 Students (Cincinnati, OH)
Tutoring Volunteer Program - 4 Students (Greenville, SC)
Soccer Coach - Volunteer for Under-6 & Under-8 Teams (Greenville, SC & Valparaiso, IN)
Eagle Scout