CONTACT INFORMATION

Judith Ann Schneider, PhD, FASM, Professor
Department of Mechanical and Aerospace Engineering
University of Alabama in Huntsville
Huntsville, Al 35899
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EDUCATION

Ph. D. in Engineering, University of California, Davis 1996
Major: Materials Science and Engineering, Mechanical Behavior
Minor: Materials Science and Engineering, Materials Characterization
Dissertation Title:
Processing and Properties of Silicon Nitride Ceramics
Major Advisor: A.K. Mukherjee

M.S. in Engineering, University of California, Davis 1993
Major: Materials Science and Engineering, Mechanical Behavior
Thesis Title:
Mechanical Property Improvement Study for the JBK-75 Alloy in the Cast Form
Major Advisor: A.K. Mukherjee

B.S. in Mechanical Engineering, University of Nebraska, Lincoln 1977

HONORS AND AWARDS

TMS International Fellow	2025
TMS Board of Directors	2020
UAH Outstanding Senior Professor Award	2018
Acta Board of Governors	2015
ASM International Fellow	2015
TMS Distinguished Service Award for SMD	2015
MSU State Pride Award	2010, 2011
Bagley College of Engineering:	
Hearin Faculty Excellence Award	2010, 2011
SE-ASEE Regional Conference, Best Paper Award	2010
MSU Outstanding Researcher, College of Engineering	2005
NSF/ONR Workshop on UltraHigh Temperature Materials	2004
MSU Outstanding Research Paper, College of Engineering	2003
NSF Engineering Education Scholar	2000
NSF/NATO Travel Fellowship	1998
Engineering Ceramics Division of the American Ceramic Society	1997
Technical Presentation Award	
University of California, Davis	1996
Competitive Graduate Student Research Award	
University of California, John Dorn Award	1995
Outstanding Ph.D. Student in Material Science Engineering	

SYNERGISTIC ACTIVITIES

Co-Organizer, TMS World Congress on Reproducibility, Qualification and Standard Development: Additive Manufacturing and Beyond, June 21-25, 2026, Anaheim CA

Organizer, MS&T Symp., Manufacturing Changes and Challenges Associated with Electric Vehicles, 2024.

Co-Organizer, MS&T Symp., Opportunities and Applications of Solid-State Additive Manufacturing Processes — Additive Friction Stir Deposition and Cold Spray, 2024.
Co-organizer, TMS Symp., Additive Manufacturing: Advanced Characterization with Synchrotron, Neutron, and in situ Laboratory-scale Techniques, 2020
Co-organizer, TMS Symp., Additive manufacturing: additive shaping 3D structures, 2019
Co-organizer, TMS Symp., Additive Manufacturing of Metals: Establishing Location-Specific Processing-Microstructure-Property Relationships," 2017, 2018.
Organizer, TMS Symp., Additive Forming of Components," 2016.
Co-Organizer, MS&T Symp., "Deformation and forming of joined materials," 2015.
Co-organizer, MS&T Symp., "Joining Dissimilar Materials", 2015.
Co-organizer, MS&T Symp., Joining of Advanced and Specialty Materials XIV, 2012.
Organizer, MS&T Symp., Joining of Advanced and Specialty Materials XIII, 2011.
Co-organizer, MS&T Symp., Laser Applications in Materials Processing, 2011.
Co-organizer, MS&T Symp., Joining and Sustaining of Superalloys, 2011.
Co-organizer, TMS Symp., General Abstracts: Structural Materials Division, 2011.
Organizer, MS&T Symp., Joining of Advanced and Specialty Materials XII, 2010.
Co-organizer, MS&T Symp., Laser Applications in Materials Processing, 2010.
Co-organizer, MS&T Symp., Advanced Metallic Materials: Technological Exploitation of Mechanical Properties, 2010.
Co-organizer, TMS Symp., General Abstracts: Structural Materials Division, 2010.
Co-organizer, TMS Symp., Dislocations: 75 Years of Deformation Mechanisms, 2009.
Co-organizer, TMS Symp., Nanocomposites, 2009.
Co-organizer, MS&T Symp., Joining of Advanced and Specialty Materials XI, 2007.
Organizer, MS&T Symp., Nanocomposites, 2006.
Organizer, TMS Symp., Processing and Mechanical Response of Engr. Mat'ls, 2006.
Co-organizer, TMS Symp., Mechanical Modeling of Thin Films & Small Structures, 2005.
Organizer, ASTM E08 Student Symposium, November 2003.

TMS Representative, Board of Governors for Acta Materialia, Inc.	2015-2027
ASM, Programming Committee, Member	2023-2025
Immediate Past Chair	2016-2017
Chair	2015-2016
ASM Core & Emerging Technology Council	2023-2024
ASM, Emerging Technologies Committee	2013-present
Vice Chair	2021-2023
Chair	2023-2025
TMS, DEI Committee	2015-present
TMS, Programming Representative	2012-2014
TMS, Content Development & Dissemination Committee	2011-present
Vice Chair	2017-2019
Chair (member of TMS Board)	2020-2022
TMS, SMD Programming Committee	2010-2012
ASM/AWS Critical Joining Technologies Committee, Chair	2009-2011
MSU Materials Working Group, Chair	2003-2007 & 2010-2012
TMS SMD Mechanical Behavior Committee	2001-present
Secretary	2002-2004
Vice Chair	2004-2006
Chair	2006-2008

Reviewer for NSF, ORNL SHaRE proposals and following Journals.
Acta Materialia, Thin Films, American Society for Mechanical Engineers, Metallurgical and Materials Transactions, Journal of Materials Research, International Journal Advanced Manufacturing Technology, International Journal of Machine Tools and Manufacture, Journal Strain Analysis, Journal Manufacturing

Process Technology, Journal of Tribology, Materials Science and Engineering A, and Journal Composite Materials, Met Trans A, Met Trans B, J. Testing and Evaluation, Archives of Metallurgy and Materials

Key Reader, Metallurgical and Materials Transactions A, 2010-2018.
Board for Key Readers of Metallurgical and Materials Transactions,
Vice Chair, 2011-2013.
Chair, 2013-2015.
Guest Editor, Welding Journal, 2011-present.
Guest Co-Editor, JOM, Febr. & April Editions on Bulk Metallic Glasses, 2010.
Organizer/Guest Editor, JOM, Febr. Edition on Dislocations, 2009.
Guest Editor, MSEA Journal, Special Edition, 2007.
Organizer/Guest Editor, JOM,

March Edition on Nanocomposites	2007.
March Edition on Additive Manufacturing	2017.
March Edition on Additive Manufacturing	2018.
March Edition on Additive Manufacturing	2019.
March Edition on Additive Manufacturing	2020.

ACADEMIC EXPERIENCE

University of Alabama in Huntsville, Mechanical and Aerospace Engineering Department

Director, Materials Science Program at UAH	2018-present
Professor	2015-present
Adjunct Professor	2015

University of Alabama in Huntsville, Chemical and Material Science Engineering Department

Adjunct Professor	2019-present

Mississippi State University, Mechanical Engineering Department

Coleman and Whiteside Professor	2013-2015
Interim Associate Department Head	2013-2014
Professor	2011-2013
Associate Professor	2005-2011
Assistant Professor	1999-2005

California State University, Sacramento

Part Time Faculty	Fall ‘95, ‘96

University of California, Davis

Associate Instructor	Spring ‘96
Teaching Assistant	Winter ‘95

RESEARCH EXPERIENCE

Bundesanstalt for Metal for Materialforschung and Pruefung (BAM), Berlin, GE

Guest Scientist	2011, 2017, 2019

NASA-Marshall Space Flight Center, Huntsville, AL

NASA Summer Faculty Program (Advanced Manufacturing)	2014, 2016
Dynetics, Inc. ESTS subcontractor (Welding Consultant)	2013
Jacobs ESTS subcontractor (Welding Consultant)	2010
Intergovernmental Personal Agreement (IPA)	2008-2009
ASEE/NASA Summer Faculty Research Opportunities	2005, 2006, 2007
ASEE/NASA Summer Faculty Program	2002, 2003, 2004, 2015

Research on materials and processing specific to advanced manufacturing processes. Process include: friction stir welding, a solid state joining technique, and additive manufacturing. Efforts include both modeling and experimental support to develop process specifications.

Powder Metal Laboratory, 1999-2000
Max-Planck-Institute für Metallforschung, Stuttgart, Germany
Research Scientist
Investigation of creep resistant SiC ceramics for high temperature applications.
Grain morphology, phase composition, and grain boundaries were examined to increase understanding of creep mechanisms in liquid phase sintered ceramics.

Sandia National Laboratories (SNL), Livermore, CA 1996-1999
Postdoctoral Associate
Research on sub-microindentation techniques to understand effects of film growth and processing on reliability, hardness, fracture toughness, and adhesion of thin films. Responsible for operation of the XRD laboratory and analysis.

University of California, Davis and SNL 1993-1996
Research Associate
Correlation of the microstructural evolution in silicon nitride ceramics with the demonstration of enhanced plasticity.

Aerojet, University of California, Davis, and SNL 1992-1993
Research Associate
Heat treatment study for a cast version of a precipitation strengthened stainless steel alloy (JBK-75 Alloy).

INDUSTRIAL EXPERIENCE

Aerojet Propulsion Division - Sacramento, CA
Lead Design / Project Engineer 1987-1993
Responsible for technical coordination of all planning, budgeting, scheduling, engineering design, fabrication, verification and reporting activities for a $7 million/four year NASA Contract for National Launch System /Advanced Launch System. Previous NASA contracts included: the identification and evaluation of key low cost technologies required for the production of advanced liquid propellant rocket engines.

Nimbus, Inc. - Sacramento, CA
Project / Development Engineer 1982-1987
Responsible for system modeling, detailed design, fabrication, assembly, in vivo and in vitro testing of mechanical hearts and reporting activities for a $3.2 million/four year NIH program.

Aerojet Liquid Rocket Co.-Sacramento, CA
Test/Development Engineer 1977-1982
Developed test methodology for: surface effect ship components, geothermal energy utilization, automation of flow measurements and storable propellant mixing.

GRADUATE STUDENTS

PhD Program

MSU Committee Chairman/Major Advisor (5 PhD complete):

- Joseph Querin, “Deconvoluting the link between weld tool geometry and process parameters," PhD Degree, December 2010. Employer: NASA-MSFC, Huntsville, AL.
- Hayley Brown, “Selection of polymeric composites for cryogenic applications,” PhD Degree, May 2012. Employer: Caterpillar, Peoria, Ill.
- Haley Rubisoff Doude, “Investigation of the dynamics of FSWing and its influence on minimizing defects by optimizing process parameters and tool design,” NASA GSRP Fellowship, PhD May 2014. Employer: NASA-MSFC.
- Josef Cobb, "An Investigation into Friction Stir Welding of CuNb Nanolamellar Composites produced by Accumulative Roll Bonding," PhD August 2016. Employer: NASA-MSFC
- Jamel Alexander, PhD Program, “Feasibility of CNT/Epoxy Based Strain Sensors,” May 2017 (MSU Dissertation Director). Employer: MDA, Huntsville Al.
-

UAH Committee Chairman/Major Advisor <u>(4 PhD complete, 3 PhD current)</u>:

- Tom Stockman, MAE PhD Program, "An Industrially Applicable Approach to Transient Thermal Modeling and Process Control in Additive Manufacturing Using a Mass-Added Finite Difference Methods," December 2019, employer: LANL, Los Alamos, NM.
- Ben Lund, MAE PhD Program, “A METAL-CUTTING-INSPIRED ANALYTICAL FRAMEWORK FOR PREDICTING OPERATING PARAMETERS IN FRICTION STIR WELDING,” December 2022, employer: PNNL, Richland, WA.
- Ben Beeker, MTS PhD Program (part-time), “Microstructure Control Through the Use of Tungsten Inert Gas Based Additive Manufacturing,” May 2024, employer: Dynetics.
- Jeffrey Gaddes, MAE PhD Program (part-time), “L-PBF of 7A77 advanced aluminum alloy,” May 2024, employer: US Army DevCom.
- Michael Santangelo, Topic: Microstructural evolution in metal additive manufacturing processing,, expected graduation: Dec. 2025.
- Kelby Starchman, MTS PhD Program Topic: TBD (part-time),
- George Winter, MAE PhD, Topic: TBD (part time)
- Elizabeth Andrews, MTS PhD Program Topic: The effect of skew in distributions of glass microspheres on syntactic foam (part-time),

UAH Committee Member <u>(7 PhD complete, 10 PhD current)</u>:

- Matthew Pinkston, MSE PhD Program, “Development of Graphite Reinforced Cementitious Panels for Reverse Bending,” Fall 2019.
- Zhuoran Gan, MTS PhD Program, “Oxidative dehydrogenation of alkane to alkene by Pt-Zn intermetallic nanocatalyst,” Spring 2021.
- Luis Deganis, MSE PhD Program, “Micromechanics Based Damage Model for Structures with Brittle Materials.”
- Niharika Krishna Botcha, MTS PhD Program, “Aqueous Photogeneration of Hydrogen with Mononuclear Ni(II) Complexes and MPA-CdTe Quantum Dots: Electron Transfer Kinetics,” May 2021.
- Pauline Norris, MTS PhD Program, “Critical point phenomena in binary liquid mixtures,” August 2022.
- YoAnn Velez Justiniano, MTS PhD Program, ASSEMBLY AND ANALYSIS OF SPACE BIOFILM-FORMING BACTERIAL MODEL ORGANISMS TOWARDS THE TREATMENT OF WATER SYSTEM BIOFILMS, May 2024.
- Luis Deganis, MAE PhD Program, ‘DEVELOPMENT OF A CONTINUUM DAMAGE CONSTITUTIVE MODEL AND SIMULATION FOR BRITTLE MATERIALS IN SPACE INFRASTRUCTURE APPLICATION,” May 2024.
- Christopher Lyons, MTS PhD Program,

- Lea Johnson, PhD Chemistry, "Poly(amino acids) for drug delivery," Felicia McCarthy, MTS PhD Program, Synthesis and Characterization of Poly(L-Lysine) Derivatives and Their Potential Use for Microgel and Hydrogel Formation
- David Harris, MTS PhD Program, UAH.
- Joseah Amai, MAE PhD Program,
- Oluwasegun Raji, MTS PhD Program, UAH
- MeLanae Garrett, MTS PhD Program, Topic: Heusler alloys, UA
- Hitesh Duggal, MTS PhD Program, UAH
- Jacob Strain, MTS PhD, UA
- Reshma K., MTS PhD, UAH
- Ajibike Joan Farounbi, AAMU PhD

MSU PhD Committee Member (15 PhD complete, 0 PhD current):

- Gabriel Potirniche, PhD, Mechanical Engineering, 2003.
- Rani Sullivan, PhD, Aerospace Engineering, 2003.
- Holly Martin, PhD, Chemical Engineering, 2006.
- Yoshiki Yamada, PhD, Aerospace Engineering, 2009.
- Mathew Rowe, PhD, Chemical Engineering, 2010.
- Devkant Ghandi, PhD, Chemical Engineering, 2011.
- Sheena Reeves, PhD, Chemical Engineering, 2011.
- Jaesang "James" Yu, PhD, Aerospace Engineering, 2011.
- Ben Ma, PhD, Electrical and Computer Science Engineering, 2012.
- Jutima Simsiriwong, PhD, Aerospace Engineering, 2014.
- Yongwu Lu, PhD, ABE Department, 2014.
- Jonathan Rudd, PhD, Mechanical Engineering, 2014.
- Zhenghong Bao, PhD, Forest Products, 2015.
- Bonnie Yang, PhD, Forest Products, 2015.
- Griffin Sullivan PhD Distance, Civil & Environmental Engineering, 2021.

Other PhD Committee Member (13 PhD complete, 6 PhD current):

- Ihab Ragai , McGill University, PhD, Mechanical Engineering, 2006.
- Hossein NajafabadiY, University of Alberta, PhD, Materials Engineering Department, 2013.
- Kourosh Darvish, Auckland University of Technology, "Effects of Increasing Laser Power on Microstructure Formed during Selective Laser Melting of Co-29Cr-6Mo Alloy," PhD, Mechanical Engineering 2018.
- Van Thuong Nguyen, The University of Queensland, "Equiatomic and non-equiatomic Ti-Zr-Nb-Ta refractory medium entropy alloys," PhD, Mechanical Engineering 2020.
- Ashu Garg, Indian Institute of Technology Patna, "Studies on similar and dissimilar joining by friction stirring," PhD, Mechanical Engineering 2020.
- Kourosh Darvish, Auckland University of Technology, "Effects of Increasing Laser Power on Microstructure Formed during Selective Laser Melting of Co-29Cr-6Mo Alloy," PhD, 2021.
- Ning Zhu, University of Alabama, "Process-Microstructure-Property Relation of High-Pressure Cold Spray Deposition of AA7050 after in situ Laser Heat Treatment," May 2022.
- Monowar Hossain, University of Alabama, "Understanding the microstructural evolution and mechanical properties in a thick gauge high strength niobium-microalloyed line pipe steel," May 2022.
- Ambadas, National Institute of Technology Warangal, Telangana India, "Dissimilar joining of Ti-6Al-4V to Pure Aluminium for Aerospace Pressure Vessel Applications," Spring 2023.

- Chris Roper, University of Alabama, “MICROSTRUCTURAL EVOLUTION IN COLD SPRAYED AND HEAT TREATED AUSTENITIC STAINLESS STEEL 304L,” August 2023.
- Michael Pavel, MTS PhD Program, “DESIGN STRATEGIES FOR IMPROVING THE OXIDATION RESISTANCE OF MULTI-PRINCIPAL ELEMENT ALLOYS,” May 2024 UA home campus.
- AFM Monowar Hossain, MTS PhD Program, “Understanding the microstructural evolution and mechanical properties in a thick gauge high strength niobium-microalloyed line pipe steel,” December 2024, UA home campus.
- Akinmola Titus Adekunle, MTS PhD Program, “Design and Synthesis of Crosslinkable Amphiphilic PEGylated Poly (amino acid) Copolymers for SPION encapsulation,” May 2025, UAH home campus.
- Jacob Strain, MTS PhD Program, The Effect Composition and Heat Input on the Intermetallic Precipitates within Aluminum-Zinc-Magnesium Alloys Processed via Additive Friction Stir Deposition, UA home campus.
- Tariq Islam, MTS PhD Program, “The Effect of Extrinsic Impurities on the Brittle-to-Ductile Temperature Transition of Tungsten ,” UA home campus.
- Justin Geisler, MTS PhD Program, “Processing-Structure-Property-Performance Relationships on the Corrosion Properties of Additive Friction Stir Deposited 7xxx-Series Aerospace Alloys,” UA home campus.
- MeLanae Garrett, MTS PhD Program, “Microstructural and magnetic characterization of X_2FeAl and X_2TiAl compounds,” UA home campus.
- Oluwasegun Yusuf Raji, MTS PhD Program, “Optimizing metal-organic frameworks (MOFs) for chromate adsorption: exploring defects, particles sizes and redox mechanisms,” UAH home campus.
- Christopher Lyons, MTS PhD Program, “Critical Temperature Shift in TiO_2 and VO_2 Solutions,” UAH home campus.

MS Program

MSU MS Committee Chairman/Major Advisor (<u>26 MS complete, 0 MS current</u>):

- Jaton Nakia Wince, “Modeling chip formation in orthogonal metal cutting using finite element analysis,” MS Thesis in College of Engineering, August 2000. Employer: Eglin Air Force Base, FL.
- C. Delfina Joseph, “Experimental measurement and finite element simulation of springback in stamping aluminum alloy sheets for auto-body panel application,” MS Thesis in College of Engineering, August 2003. Employer: Decoma-Decostar Industries, Atlanta, GA.
- C. Aaron Daniel, Non-Thesis Option, Fatigue Testing of Aluminum Alloys, MS Thesis in College of Engineering, May 2004. Employer: Bell Helicopter, TX.
- James Gordon Ragsdale, “Development of an experimental apparatus and method for characterizing the leakage of helium gas through composites due to cyrogenic operation,” MS Thesis in College of Engineering, August 2004. Employer: Anteon Corporation, Gaution, MS.
- Mark Breen, “Heat transfer during baking in a conventional residential oven,” MS Thesis in College of Engineering, December 2004. Employer: Lockheed Martin, Slidell, LA.
- Joseph Querin, “Microstructural characterization of AA6022-T43 aluminum alloy sheet during monotonic loading," MS Thesis in College of Engineering, August 2005.
- Justin Jackson, “Fracture toughness of polymer resins at cyrogenic temperatures,” MS Thesis in College of Engineering, December 2005. Employer: NASA-MSFC, Huntsville, AL.

- Dustin McKnight, “Determination of threshold behavior of aluminum alloys,” MS Thesis in College of Engineering, December 2005. Employer: Bodycote Testing Group, San Antonio, TX.
- Johnny Sanders, “Quantifying the metal flow conditions during friction stir welding,” MS Thesis in College of Engineering, May 2006. Employer: Northrop Grumman, Pascagoola, MS.
- Andrew Howard, "Design and fabrication of a miniature tensile testing machine," MS Thesis in College of Engineering, May 2007. Employer: Steel Dynamics Inc., Columbus, MS.
- Brian Hamburg, “Micro-Structural Response of DP 600 to High Strain Rate Deformation,” MS Thesis in College of Engineering, December 2007. Employer: Triton, Gulf Port MS.
- Mark Dyess, “Interfacial strength between fiber and resin as affected by environment," MS Thesis in College of Engineering, May 2008. Employer: Griffon Aerospace, Huntsville AL.
- W. Chad Hastings, “Single fiber strength as affected by environment,” MS Thesis in College of Engineering, May 2008. Employer: NASA-MSFC, Huntsville Al.
- Haley Rubisoff, “Microstructural Characterization of Friction Stir Welded Ti-6Al-4V,” MS Thesis in College of Engineering, August 2009.
- A. Matt Davis, "Interaction of the Friction Stir Welding tool and Work-piece as Influenced by Process Parameters in Friction Stir Welding.” MS Thesis in College of Engineering, May 2010. Employer: Eaton Aerospace Valves, Jackson MS.
- Lei Dong, “Modeling the FSW Process using Metal Cutting Theory,” MSME Program, December 2010. Employer: Milwaukee Electric Tool Corporation, Greenwood, MS.
- Jun Wang, “Improved fracture toughness of epoxy resins at cryogenic temperatures,” MSME Program, August 2011. Employer: Severstal, Columbus, MS.
- Mike Brendel, “Long-Range Oscillations in Material Flow Patterns during the Friction Stir Welding of Aluminum,” MSME Program, May 2012. Employer: Blue Origin, Seattle, WA.
- Deidra Clark, MSME Program, “Impact Toughness of DP600,” May 2013. Employer: Lockheed Martin TOC, Stennis Space Center, MS.
- David Williston, MSME Program, " Comparison of joining processes for Haynes 230 nickel based super alloy," August 2013. Employer: Baker Hughes Incorp., Houston, TX.
- Taylor Murphy, MS Program, "High strain rate behavior of aluminum alloys," August 2014. Employer: Halliburton, Lafayette, LA.
- Walter Contreras, Jr., Non-Thesis Option, Bobbin welding of 6061, MS Thesis in College of Engineering, December 2014. Employer: Nissan, Canton, MS.
- Zach Myers, MS Program, "Increasing interlaminar shear strength (ILSS) in out-of-autoclave (OoA) composites," May 2015.
- Tom Stockman, MS Program "Thermal modeling of free form additive manufacturing structures," August 2015.
- Sylvester Stafford, "Metal cutting analogy for friction stir welding", Dec. 2015. Employer: NSA, Silver Spring, MD.
- Bryan Patton, "Engineering Entrepreneurialism", May, 2016. Employer: Contract Fabricators, Holly Springs, MS.

MSU MS Committee Member (<u>10 MS complete, 0 MS current</u>):

- Dillard, MSU-MS, Aerospace Engineering, 2003.
- Allan Hammock, MSU - MS, Mechanical Engineering, 2006.

- Crissy Costin-Hogan, MSU – MS, Chemistry, 2008.
- Patrick Fratesi, MSU - MS, Mechanical Engineering, 2012.
- Brennan Anderson, MSU – MS, Civil Engineering, 2013.
- Jose Morfa, MSU-MS, Mechanical Engineering, 2013.
- B. Tim Brown, MS in Engineering, December 2012. Employer: Ingalls Shipyards, Pascagoula, MS.
- Joshua Dier, MS in Engineering, August 2013. Employer: Ingalls Shipyards, Pascagoula, MS.
- Adam Whitaker, non-thesis option, August 2014.
- Matt McGough, MSU-MS, Mechanical Engineering, non-thesis, December 2014.

UAH MS Committee Chairman/Major Advisor (<u>23 MS complete, 11 current</u>):

- Sam Cordner, "Evaluation of Porosity in Additively Manufactured Inconel 718 through Density and Metallography", 8/17/2016, employer: NASA-MSFC, Huntsville, Al.
- Chris Hill, "Free form additive manufacturing of bi-metallic builds," May 2018, Employer: NASA MSFC, employer: NASA-MSFC, Huntsville, Al.
- Ryan Anderson, "CHARACTERIZATION OF DIRECT METAL DEPOSITION (DMD) BIMETALLIC INTERFACES", May 2018, Employer: Artic Slope, Huntsville, Al.
- Will Tilson, "Fatigue of additive manufactured components", Dec. 2019, employer: NASA-MSFC, Huntsville, Al.
- Jordan Terrell, Topic: "Characterization of bimetallic joints formed using direct metal deposition processes", MSE MS Program, May 2020, employer: US Steel Corp, Birmingham, Al.
- Jared Stone, "Predicting Resultant Microstructure of an Additive Manufactured Build with a Global Transient Thermal Model," May 2020, Employer: Monte Sano Research Corporation, Huntsville Al.
- Laura Farris, "Non-homogeneous distribution of solidification phases in Inconel 718 fabricated by powder bed fusion," May 2020, employer: Dynetics, Huntsville, Al.
- David Attig, "3D printing using regolith materials," non-thesis, May 2020.
- Myles Fullen, "Heat treatment studies of blown powder, additive manufactured Inconel 625," Aug. 2020, employer: Blue Origin, Huntsville Al.
- Noah Naden, "Mechanisms of mixing in bi-metallic AM builds," May 2022, employer: Blue Origin.
- Gavin St. Pierre, "Additive Manufacturing of Iron based superalloys," non-thesis MS, May 2022, employer: ORNL.
- Giancarlo Puerto, "Characterization of additively manufactured, arc-wire, directed energy deposition of JBK-75," August 2022. Employer: Jacobs ESSSCA, Huntsville Al.
- Erin Lanigan, "In-situ monitoring of metal additive manufacturing processes", December 2022. Employer: NASA-MSFC, Huntsville Al
- Japheth Hayman, "Advanced manufacturing to support lunar colonization," May 2023. Employer: Fermi Laboratories.
- Isaac Barnett, "The effects of processing environment on the additive manufacturing of 316L stainless steel," August 2023. Employer: Beyond Gravity
- Tommy Davenport, MS MTS Program, Non-thesis, Dec. 2023.
- Gabrielle Andrew, MS MTS Program, Non-thesis, Dec. 2023.
- Walker, Elaina, "EVALUATING THE EFFECTS OF L-PBF PRINTING PARAMETERS ON THE MICROSTRUCTURE AND MECHANICAL PROPERTIES OF GRCOP-42," May 2024, Employer: Dynetics.

- G. Joey Scott, MTS ME Program, “Influence of Low carbon content in Inconel 718,” August 2024, Employer: US Army.
- Zack Perrin, ME MS Thesis, “Tooling for friction stir welding of steels,” December 2024, Employer: US Army.
- Madelyn Rushing, MS MTS Thesis, “Characterization of thin-walled W-24Re structures fabricated using laser-powder bed fusion,” December 2024, Employer: Quadrus Corp.
- Peyton Hall, MS MAE Thesis, “Mechanical properties of lattice structures,” December 2024, Employer: Teledyne Brown.
- Daniel Aiken, “Temperature profiles in friction stir welding,” planned Dec. 2025.
- Corbin Dunn, MS MTS Program, Non-thesis, planned May 2025.
- James Wagnon, MS ME Program, “Additive manufacturing of metals,” planned fall 2026.
- Katelyn Million, MS MTS Program, Non-thesis.
- Tucker Elsea, MS MTS Program, Non-thesis, part-time
- Allison Fox, MS MTS Program, Non-thesis, part-time
- Cadis Ammons, MS ME Program, “Design of Lunar Landing Pads,” planned fall 2027.
- Brody Montgomery, MS MTS Program, Non-thesis, part-time
- Joshua Rozmarynowski, MS MTS Program, Non-thesis, part-time
- Asher Podsednik, MS MTS Program, Non-thesis, part-time
- Kevin Krupnick, MS MTS Program, Non-thesis, part-time
- Corbin Dunn, MS MTS Program, Non-thesis, part-time, May 2025.

UAH MS Committee Member (<u>6 MS complete, 0 MS current</u>):

- Ben Beeker, MAE MS, Mechanical and Aerospace Engineering, “Computational modeling of fragmentation of bimetallic shells,” May 2016.
- Robert Hicks, MAE MS, Mechanical and Aerospace Engineering, “Manufacturing Effects on Water Cavitation in Sharp Edged Orifices,” May 2019.
- An Nguyen, MAE MS, “A CRYSTAL PLASTICITY STUDY OF GRAIN SIZE EFFECT AND LATTICE STRAIN DISTRIBUTIONS IN ADDITIVELY MANUFACTURED INCONEL 718,” December 2021.
- Joshua Buettner, MAE MS Mechanical and Aerospace Engineering, “EVALUATING THE TRADE-OFFS OF USING ADDITIVE MANUFACTURING FOR LIQUID ROCKET ENGINES, December 2023.
- T. Elias Marler, MAE MS, ‘Quasi-Static and Dynamic Tension Testing of As-Built and Heat-Treated Additively Manufactured 316L Stainless Steel, May 2024.
- Abigail Schauer, “EXPERIMENTAL AND NUMERICAL INVESTIGATION OF COMBINED MECHANICAL, ELECTRICAL, AND THERMAL RESPONSE OF LR61 ALKALINE BATTERIES AT VARIOUS LOADING RATES,” May 2025.

<u>UNDERGRADUATE RESEARCH ASSISTANTS</u>

MSU (56 UG complete, 0 UG current)

- Gerald Emerson and Wesley James, "Material selection for residential ovens," 2002.
- Justin Gilman and Remy Kenny, "Threshold Fatigue Properties of Aluminum Alloys," 2002.
- Johnny Sanders, "Microstructure of Friction Stir Welds," 2003.
- Marvin Hayes, "Characterization of ring patterns in Friction Stir Welds," 2004.
- Jeb Taylor, "Design, analysis, and fabrication of a 4 pt. bend test fixture," 2002.
- Grant Harlow, "Investigation of springback in aluminum sheet metal," 2002-2003.
- Jay Welborn, "Investigation of mechanical properties of friction stir welds," 2002.

- Brent Buckner, "Design, analysis and fabrication of a fiber tow test fixture," 2004-2005.
- Justin Jackson, Aubrey Gill, Daniel Komm, and Kirk Hoffman, "Automation of a tensile tester," 2003.
- Dustin Sartin, Sean Taylor, Derek Strong, Jeremy Smitherman, "Design and fabrication of a heat flux measuring device," 2004.
- Seth Bagwell, Stephanie Barnes, Chad Hastings, Ryan Wade, "Mechanical properties of carbon fiber reinforced polymers," 2004.
- Ben Dyer, "Volume fraction of carbon fiber reinforced polymers," 2004.
- Jeff Ellis, "Tensile testing of polymer resins at cryogenic temperatures," 2004-2005
- HeeJim Cho, Steve Tolleson, Lindsay Assumption, Arney Tawde, "Emissivity measurements of metal sheets," 2005.
- Alex Howard, Matt Jones, Joel Pastorek, Freddy Cork, "Emissivity measurements of metal sheets," 2005.
- Marvin Haynes, "Validation of a force measuring table for the friction stir welding process," 2004-2005.
- Scott Linder "Tensile testing of polymer resins at cryogenic temperatures," 2005.
- Blake Reese, "Tensile testing of polymer resins at cryogenic temperatures," 2005-2006.
- Mark Dyess, "Tensile testing of irradiated single fibers at cryogenic temperatures," 2006.
- Kell Bruner, "Testing and Characterization of composites," 2006.
- Matt Merrill, "Metallographic specimen preparation," 2006-2007.
- Seth Cannon, "Dynamic impact testing of materials," 2006-2008.
- Jonathon Rudd, "Investigation of FSW process parameters," 2007.
- Adam Mayatt, "Investigation of polymer properties at cryogenic conditions," 2007-2008.
- Daniel Magee, "Cryogenic material evaluation," 2007-2008.
- Darryl Murray, "OIM characterization of friction stir welds," 2008.
- Jason Camp, "Evaluation of Ti 6/4 friction stir welds," 2009.
- Sylvester Stafford, "Mechanical Testing/characterization", 2009-2013.
- Taylor Murphy, "Mechanical Testing/characterization", 2009-2012.
- Orlandis Smith, "Mechanical Testing/characterization", 2010-2011.
- Walter A. Contreras Jr., "Mechanical Testing/characterization", 2012.
- Bryan Patton, "Mechanical Testing/characterization", 2011-2013.
- Clay Varner, "Mechanical Testing/characterization", 2013-2014.
- Jarrett Hawkins, "Mechanical Testing/characterization", 2014.
- Taylor Waters, "Mechanical Testing/characterization", 2011-2015.
- Cody Toms, "Mechanical Testing/characterization," 2014-2015.
- Chandler Thurlow, "Mechanical Testing/characterization," 2015.
- Ryan Anderson, "Impact of environment on plastics," 2014.
- Seth Roye, "Impact of environment on plastics," 2015.

UAH (33 UG complete, 4 UG current)

- Chris Hill, "Ultrasonic assisted friction stir welding," 2015.
- Matt Ursprung, "Metallurgical specimen preparation and mechanical testing," 2015.
- Luke Ray, "Metallurgical specimen preparation and mechanical testing," 2016.
- Nick Peterson, Daniel Sorrells, Logan Bryant, Shane Charnock, T. Coats, James Block, and Nathan Marchman, "Design of a wire fed, metallic, 3D printer," 2016-2017.
- Myles Fullen, "Metallurgical specimen preparation and mechanical testing," 2016-2018.
- William Robinson, "Wire fed additive manufacturing," 2018-2020.
- Zack Perrin, "Friction Stir Welding," 2018-2020.

- An Nguyen, “Characterization of AM processing,” 2018-2020.
- Noah Naden, “Characterization of AM processing,” 2018-2020.
- Giancarlo Puerto, “Characterization of AM processing,” 2019-2020.
- Oakley Copeland, Delphine Le Brun, Aaron Hunt, Zack Perrin, An Nguyen, McKynzie Perry, Lewis Purdue, “Project MIGaMILL – conversion kit for additive/subtractive manufacturing,” 2019-2020.
- Japheth Hayman, “Characterization of AM processing,” 2019-2021.
- Dana VanAntwerp, “Characterization of AM processing,” 2020-2021.
- James Wagnon, “Characterization of AM processing,” 2021-2022.
- Elaina Walker, “Characterization of AM processing,” 2021-2022.
- Robert Henley, ““Characterization of AM processing,” 2022-2022.
- Brody Montgomery, “Characterization of AM processing,” 2021-2023.
- Sebastian Rivera, “AW-DED processing,” 2021-2023.
- Cadis Ammons, “Characterization of AM processing,” 2023-2024.
- Swinson Terry, “Wire fed additive manufacturing,” 2018-present.
- Lawson King, “Characterization of AM processing,” 2024-present.
- Matthew Allmon, “Lunar landing pad prototypes,” 2025-present.
- Isaac Menzel, “Lunar landing pad prototypes,” 2025-present.

EXTRAMURAL SUPPORT

Principal Investigator

UAH Research Grants (54 awards, $4.0M), 3 pending

IUCRC Planning Grant University of Alabama in Huntsville: Center for Smart Manufacturing using AI-based Revolutionary Technologies (SMART), PIs: Schneider, Chen, Menon, Loyd, Wooley, NSF Award Number (FAIN): 2435441, POP: 3/1/25-2/28/26.

Titomic, “Development of a High-Speed Cold Spray Gun Prototype,” PIs: Rani (72%), Schneider (28%), $63,796, POP: 5/1/25-8/31/25.

NASA Phase I STTR with Intra-Space, LLC, “3D Printable Ultra-High Temperature (3700 K) Novel Refractory Alloy for Reusable Thermal Protection Systems (TPS),” **Pending**, PI: Schneider, $51,794, POP: 9/1/25-8/31/26.

Phase II NASA STTR with Linc research, “Advance Construction Techniques for lunar landing pads,” Grant No: 80NSSC25CA028, PI: Schneider, POP: 1/3/25-1/2/27, $250K.

Navy STTR Phase I with Oasys Inc., “Digital Twin Toolbox for Mass adoption,” Grant No – **Pending**, PI: Wooley, coPI Schneider, POP: 8/2024-8/2025, $ 487,398.

NSF IUCRC Planning Grant University of Alabama: Center for Smart Manufacturing using AI-based Revolutionary Technologies (SMART), PI team: Schneider, Wooley, Chen, Loyd, Menon, Grant No.: **Pending**, POP: 8/2024-8/2025, $20,000.

Phase I NASA STTR with Linc research, “Advance Construction Techniques for lunar landing pads,” Grant No.: 80NSSC23PB468/UAHT12, PI: Schneider, POP: 8/3/2023 - 9/2/2024, $54,357.

NASA EPSCoR R3, “Study of Krypton Ion Erosion of Satellite Relevant Materials,” Grant No.: TBD, PI: Ginga, Xu, Schneider, POP: 1 year, $100,000.

NASA Characterization of advanced manufacturing processes,” Sponsors: Paul Gradl, $9,999, PI: 100%, POP: 4/18/2023-4/18/2024.

Phase II MDA SBIR with Quadrus, “Development of W-24Re lattice components”, Grant No.: QAM-7606/ HQ8060-23-C-7606, PI: Schneider, POP: 3/15/2023-8/1/2026, $565,232.

NASA CAN, “Computational modeling to isolate process parameters controlling the reliability and robustness of bi-metallic directed energy deposition,” Grant # 80NSSC22M0226, $114,029.00, PI: Schneider, POP: 9/15/2022-9/14/2024.

NASA CAN, “Electro-magnetically propelled powders (EMPP) for Metal Additive Manufacturing (AM) Processing,” Grant # 80NSSC22M0079-P0001, $44,946, PI: Schneider, POP: 2/15/2022-2/14/2023.

NASA CAN, “Increasing the robustness and reliability of bi-metallic additive manufactured components,” Grant # 80NSSC21M0252, $ 63,154, PI: Schneider, 8/23/21-8/22/22.

Alabama Research and Development Enhancement fund (ADECA), “Versatile training to provide an agile advanced manufacturing workforce in Alabama,” $603,000, Grant: ARDEF 22 05, PI: Schneider, POP: 12/31/2021-1/1/2025.

NASA CAN, “Support Testing of Planetary 3D Printed Concrete Structures For Subscale Landing Pad Fabrication,” $99,986, Grant” 80NSSC21M0035, PIs (50/50): Schneider and Salman, POP: 11/2/2020-11/01/2022.

NASA CAN, “Realizing spatially resolved, real time temperature measurements in friction stir welding (FSW) using ultrasonic thermometry,” $70,356, Grant # 80NSSC21M0064, PI: 100%, POP: 12/18/2020-12/17/2024.

AF Phase I SBIR with REM Surface Engineering, “Internal/external surface finishing of additively manufactured Aluminum Components,” Grant #FA864920P0930, $4,638, PI: 100%, POP: 5/25/2020-8/11/2020.

NASA and the Navajo Technical University, M-STAR: Micro-Gravity Additive Manufacturing of Metals, Grant #80NSSC20K1863, $9,994, PI: Schneider (100%), POP: 8/15/2020-1/31/2021.

NASA Characterization of advanced manufacturing processes,” Sponsors: Paul Gradl, $9,999, PI: 100%, POP: 8/13/2020-8/12/2021.

NASA-MSFC Cooperative Agreement for Dual Use Technology Development, “Interface mixing mechanisms in the additive manufacturing of Copper and Nickel based alloys and their influence on repeatability and reliability,” Grant #80NSSC20M0171, $35,415, PI: 100%, 5/12/2020-12/10/2021.

2018 EPSCoR Rapid Response Research (R3) Cooperative Agreement Notice, “Alabama NASA EPSCoR Rapid Response: Characterization of Bi-Metallic Joints Formed by Different Processes”, Grant No. 880NSSC20M0136, $80,000, PI: 100%, POP: 07/15/2020-07/14/2022.

UAH REU Summer Research, for Japheth Hayman, “3D printing,” $ 3,750, Summer 2020.

MDA SBIR Phase II with Plasma Processes, “Characterization of plasma sprayed W-Re-Hf,” Grant #PO 2003-031-JK-102919, $21,662, PI: 100%, POP: 10/1/2019-6/30/2021.

NASA and the Navajo Technical University, “Increasing NTU Institutional Capacity: Additive Manufacturing and Materials Research and Education for NASA Applications,” NASA MIRO Grant 80NSSC19M0227, NTU 42550-01, NP-996790, $152,285, PI: 100%, POP: 12/1/2019-11/31/2023.

NASA Characterization of advanced manufacturing processes,” Sponsors: Robert Hickman, $9,999, PI: 100%, POP: 9/1/2018-8/31/2020.

NASA STTR Phase II extension with Oregon State/Keystone Synergistic Enterprises, Inc., “Maturation of LRE Nozzle closeout and Liner AM Methods,” Grant #KSE 19048, $170,000, PI: 100%, POP: 10/10/2019-10/5/2021.

NASA Phase II SBIR with REM Surface Engineering, “Internal/external surface finishing of additively manufactured IN-625 Components,” Grant #80NSSC19C0211, $36,714, PI: 100%, POP: 1/2/2020-7/10/2021.

NASA-MSFC Cooperative Agreement for Dual Use Technology Development, “Advanced tooling demonstration for friction stir welding of heat resistant materials,” Grant #80MSFC20M0002, $45,874, PI: 100%, 11/1/2019-09/30/2023.

NSF ADVANCE Grant, “The Alabama ADVANCE Partnership for achieving Gender Equity in STEM,” Grant#: NSF-HRD-1933739, $188,887, PI: 50%, 10/1/2019-9/30/2023.

Auburn/NASA, “Teaching the teacher”, Grant #80MSFC19C0010, $20,719, PI: 100%, POP: 1/1/2020-12/31/2020.

UAH RCEU Summer Research, for An Nguyen, "Characterization of Ni-Based Superalloys in Additively Manufactured Components," Summer 2019, $ 3,750.

NASA-MSFC Cooperative Agreement for Dual Use Technology Development, "Evaluation of Alternative Nickel Based Superalloys for Additive Manufacturing of Liquid Rocket Components," Grant # 80MSFC19M0017, $66,761, PI: 100%, POP: 5/13/2019-7/13/2021.

NASA-MSFC, "Direct Metal Deposition Additive Manufacturing Development Task for the NASA MSFC" Grant # PC 117217140, PI: 100%, $9,999, POP: 4/1/2019-3/31/2020.

2018 EPSCoR Rapid Response Research (R3) Cooperative Agreement Notice, "Alabama NASA EPSCoR Rapid Response: Characterization of Bi-Metallic Joints Formed by Different Processes", Grant No. 80NSSC19M0077, $80,000, PI: 100%, POP: 11/19/2018-11/18/2020.

NASA-MSFC Cooperative Agreement for Dual Use Technology Development, "Engineering robust Friction Stir Welds by using Digital Manufacturing Technologies," Grant # 80MSFC19M0015, $45,874, PI: 100%, 1/14/2019-1/13/2021.

NASA-MSFC, "Support of Additive Manufacturing Development Activities at the NASA MSFC" Grant # PC 11666785, PI: 100%, $9,999, POP: 8/1/2018-8/31/2019.

NSF EAGER, "An Innovative Modelling Approach to Predict Non-Equilibrium Phases Produced in Metal Additive Manufacture Processes," CMMI Grant 1841220, $208,742, PI team: Judy Schneider and Eunseok Lee, POP: August 15, 2018 – Jan. 31, 2020.

NASA SBIR Phase I with Industrial Measurement Systems, Inc., In-process Temperature Measurements for Feedback Control of Solid State Joining, Contract# 80NSSC18P2189, $37,500, PI: 100%, POP: July 25, 2018 – January 25, 2019.

NASA-MSFC Cooperative Agreement for Dual Use Technology Development, "Quantifying bimetallic joints formed using direct metal deposition processes to improve the reliability and increase the technical readiness level for an additive manufactured rocket engine component," Grant #80MSFC18M0032, $41,861, PI: 100%, POP: 6/13/2018-6/12/2020.

Navy STTR Phase II with Oregon State/Keystone Synergistic Enterprises, Inc., "Real-Time AM Process Models Applied to Wire Fed Robotic Pulsed-Arc Processed 4340 Steel," Contract #KSE17035-OIT, PI-100%, $59,999, POP: 8/1/2017-7/31/2019.

DOD/ARMY/SMDC/0014/CE/Missile Warhead Additive Manufacturing Material Research Study, $23,161, Contract #W9113M-12-C-0031, PI: 100%, POP: 5/3/2017 - 9/24/2018.

NASA-MSFC Cooperative Agreement for Dual Use Technology Development, "Advanced Processing Techniques to Produce Materials for High Temperature Applications," Grant No. 80MSFC17M0008, $30,643, PI-100%, 8/15/17-8/15/18.

NASA-MSFC Cooperative Agreement Notice, "Advancing the ultrasonic stir weld (USW) process," PI-Schneider, $30,643, Grant # NNM16AA02A, POP: 4/25/2016-10/24/2017.

MJLM/STTR/MDA Phase I/A Low-Cost, Laboratory-Scale Method to Identify Regions of Microstructural Changes in Response to Dynamic Loading Conditions, $50,000, PI: 100%, POP: 5/1/2017- 11/1/2017.

Cimarron Composites, LLC/SBIR/Advanced Concepts for Reduced Weight and Cost in the Fabrication of Composite Cryotanks, DARPA SBIR Phase I Grant #: W911NF-17-P-0012, $33,000, PI: 100%, POP: 5/8/2017 - 11/8/2017.

Arctic Slope Technical Services, Inc., "Materials characterization and testing of SLM components," $77,000, PI-100%, 1/20/17-5/15/18.

Jacobs ESSSA Subcontract, "Evaluation of additive manufacturing processes for the production of large, regeneratively cooled, liquid rocket engine components," NASA Grant NNM17AA02A, $19,917, PI-100%, POP: 2/3/17-12/31/17.

NASA-MSFC Cooperative Agreement for Dual Use Technology Development, "Fatigue Behavior of Free Form, Additively Manufactured Inconel 718," Grant No. NNM17AA02A, $30,540, PI-100%, POP: 3/1/17-2/28/18.

NASA STTR Phase II with Keystone Synergistic Enterprises, Inc., "Advancing Metal Direct Digital Manufacturing (MDDM) Processes for Reduced Cost Fabrication of Cooled Rocket

Engines," Grant NNX15CM68P, Contract #KSE16096, $193,133, PI-100%, POP: 2/7/17-11/20/18.

NASA STTR Phase I with Industrial Measurement Systems, Inc., "Real-time Thermal Stir Weld Temperature Monitor," NASA Grant # NNX16CM20P, PI: 100%, $40,372, POP: 6/10/16 - 12/9/16.

NASA STTR Phase I with Keystone Synergistic Enterprises, Inc., "Advancing Metal Direct Digital Manufacturing (MDDM) Processes for Reduced Cost Fabrication of Bi-Metallic Cooled Rocket Engines," Grant No. NNX16CM41P, PI: 100%, $46,500, POP: 8/1/16 -6/9/17.

NASA-MSFC Cooperative Agreement for Dual Use Technology Development, "Advancing the ultrasonic stir weld (USW) process," Grant No: NNM16AA02A, PI: 100%, $31,357, POP: 4/25/2016 - 4/24/2017.

Aetos Systems, "Additive/subtractive manufacturing of combustion devices," $85,847, Grant No. Contract NNM14AA15C / Subcontract No. 2019.A52, PI-100%, POP: 8/4/2015-5/31/2016.

NASA SBIR Phase I with Keystone Synergistic Enterprises, Inc., "Advanced solid state joining processes for high melting temperature, superalloys," Grant No. NNX15CM53P, $19,059, PI-100%, POP: 5/15/15 to 12/14/15.

NASA STTR Phase I with Keystone Synergistic Enterprises, Inc., "Advancing Metal Direct Digital Manufacturing (MDDM) Processes for Reduced Cost Fabrication of Cooled Rocket Engines," $49,500, NNX15CM68P, PI-100%, POP: 5/15/15 to 6/17/16.

MSU Research Grants (36 awards, $4.0 M):

Steel Dynamics Inc., "Microstructural documentation of DSI provided specimens," PI: 100%, POP: 2/15/15-8/15/15, $37,912.

NSF-I/UCRC "Planning Grant: I/UCRC for Advanced Composites in Transportation Vehicles," PI: R. Jha, co-PI: J.A. Schneider, T.L. Lacy, S. Kundu, M. Rais-Rohani, (co-PI: 10% each), POP: 04/01/14 - 03/31/16, $15,423.

Tronox, "Investigating the life and failure modes of PVC," PI:100%, POP: 9/15/14-5/15/15, $25,941.

Severstal-Columbus, "Microstructural documentation of Severstal provided specimens," PI: 100%, POP: 8/15/14-10/15/14, $16,249.

NASA-MSFC Cooperative Agreement for Dual Use Technology Development, "Improving the interlaminar shear strength of out-of-autoclave composites," NNM14AA06A, PI: 100%, $54,374 (cost share $27,187), POP: 7/1/14 – 8/10/15.

NASA-MSFC Cooperative Agreement for Dual Use Technology Development, "Printing outside the box – additive manufacturing processes for fabrication of large aerospace structures," NNM14AA04A, PI: 100%, $54,374 (cost share $27,187), POP: 7/1/14 – 8/10/15.

Southern Innovations & Technology (SIT), "Development of new and innovative base metal for SIT", PI: 100%, $30,480, POP 3/1/14 – 1/15/15.

MS Space Grant Consortium-Research Infrastructure, "Printing outside the box – Additive Manufacturing Processes for Fabrication of Large Aerospace Structures," $50,000 (50% cost share), $50,000, PI: 100%, POP: 3/15/2014 – 8/1/16.

Keystone Synergistic Enterprises, Inc., "Extension of Physics Based Laser MDDM Process Mapping," $50,000, PI 100%, POP: 9/1/13 - 8/31/14.

STTR Phase II with Keystone Synergistic Enterprises, Inc., "Closed loop control of the TSW process to enable rapid process/part quantification," $225,000, PI-100%, POP: 7/22/13 to 7/21/15.

Raspet Internal Grant, "Improving the interlaminar shear strength of out-of-autoclave composites," $25,000, PI-100%, POP: 3/1/13 - 2/28/14.

EPSCoR/NASA/MS Space Grant Consortium-research infrastructure, "Effect of core shell rubber toughenners on the quasi-static properties of fiber reinforced polymeric structures," $50,000 (50% cost share), PI: 100%, POP: 4/1/12-5/31/13.

STTR Phase I with Keystone Synergistic Enterprises, Inc., "Closed loop control of the TSW process to enable rapid process/part quantification," $20,000, PI-100%, POP: 5/15/12-5/14/13. Grant No. Grant No. NNX12CG36P.

Severstal MS, "Response of DP600 products to dynamic impact loads," $60,930, PI: 100%, POP: 3/15/2011-8/14/2012.

EPSCoR/NASA/MS Space Grant Consortium-research infrastructure, "Evaluation of out-of-autoclave polymeric resins for high pressure, cryogenic pressure vessel applications," $50,000 (50% cost share), PI: 100%, POP: 1/01/2011 to 4/30/2012.

EPSCoR/NASA/MS Space Grant Consortium, Quality Control of FSWs by Data Monitoring and Analysis Techniques", $162,498 (50% cost share), PI: 100%, POP: 1/15/2011 - 6/31/2013.

STTR Phase II with Keystone Synergistic Enterprises, Inc., "Solid state joining of high, strength and high temperature alloys for aerospace applications," $180,000, PI-100% POP: 8/2010-8/2013. Grant No. NNX10CB70C.

Federal Initiative, "Advancing Disruptive Manufacturing Research," $625,000, POP: 10/01/2009 - 03/31/2011.

AFOSR Grant #FA9550-07-1-0282 Metallic Materials, "Identifying grain refinement mechanisms accommodating high strain rate deformation of Ti 6Al-4V," Grant # FA9550-07-1-0282, $52,261, PI: 100%, POP 07/01/2010 - 06/30/2011.

NASA GSRP, "Investigation of the dynamics of friction stir welding and its relation to defect formation to facilitate optimization of process parameters and tool design," Grant# NNX10AT55H, $270,000, PI: 100%, POP: 8/15/10-8/23/14.

EPSCoR/NASA/MS Space Grant Consortium, "Optimizing friction stir welding process parameters to eliminate defect formation", $50,000 (50% cost share), PI: 100%, POP: 1/1/2010-12/31/2010.

Jacobs ESTS, subcontract, "Weld Process Theoretician and Analyst," $70,000, PI: 100%, POP: 1/4/2010-6/18/2010.

Jacobs ESTS, consultant, "Weld Process Theoretician and Analyst," $8,558, PI: 100%, POP: 12/16/2009 -12/31/2009.

Lockheed Martin, "Modeling the FSW process for high melting temperature materials using metal cutting analogy," $44,323, PI: 100%, POP: 12/14/2009-12/31/2010.

STTR Phase I with Keystone Synergistic Enterprises, Inc., "Solid state joining of high strength and high temperature alloys for aerospace applications," $40,600, Grant#NNX09CF78P, PI-100% POP: 2/15/2009-3/31/2010.

NASA-MSFC IPA, "Weld Process Theoretician and Analyst," PI-100%, $228,045, POP: 2/19/2008-10/13/2009.

EPSCoR/NASA/MS Space Grant Consortium, "Optimizing Friction Stir Weld Tools for Joining of Higher Temperature Melting Materials," PI-100%, $50,000 (50% cost share), POP: 01/01/2009 - 04/30/2010.

EPSCoR/NASA/MS Space Grant Consortium, "Evaluation of the cryogenic fracture toughness of polymeric composites for pressure vessel applications," PI-100%, $50,000 (50% cost share), POP: 2/1/2008-4/30/2009.

AFOSR, "The use of modeling based, physical simulation to reveal the relationship between process parameters and microstructural evolution in thermal stir processed (TSP) Ti-6Al-4V," $206,958, PI-100%, POP: 4/1/2007-12/31/2009.

ASEE/NASA, "Quantifying the FSW process parameters by correlation of microstructures obtained in corresponding model experiments," $25,000, PI-100%, POP: 1/1/2006-12/31/2006.

EPSCoR/NASA/MS Space Grant Consortium, "Evaluating Mechanical Properties of the FSW Nugget," PI-100%, $40,000, POP: 10/1/2006-7/31/2007.

STTR Phase II, "Cryo/radiation material system evaluation," $200,000, PI-100%, POP: 4/1/2006-3/31/2008.

STTR Phase I, "Cryo/radiation material system evaluation," $39,759, PI-100% POP: 4/8/2005-1/14/2006.

UNO/NCAM-LP, "Investigation of material properties and fabrication techniques for aerospace grade, cryogenic fuel storage tanks," Grant #58404-511, $637,834, PI-75%, POP: 7/1/2002-3/31/2007.
NASA-MSFC Cooperative Agreement, "Incorporation of microstructure and texture into modeling of the friction stir weld (FSW) process," $105,979, PI-100%, POP: 4/24/2004-12/31/2005).
Viking Range, "Oven Bottom Materials," $96,749, PI-100%, POP: 7/1/2002-8/15/2004.

UAH Equipment Grants (2 awards):

ORNL, CNMS Program, "Formation of oxides in the interior of friction stir welds," CNMS Proposal ID: CNMS2016-365, PI: 100%, POP: 8/1/16-7/31/17.
ORNL, CNMS Program, "Characterization of non-equilibrium phase formation," CNMS Proposal ID: CNMS2018-152, Equipment use only, PI: 100%, POP: 1/1/18-1/31/20.

MSU Equipment Grants (13 awards, $1.8M):

ORNL, CNMS Program, "Texture of Friction Stir Welded CuNB Nanolamellar Composites," PI: 100%, Contact: Donovan Leonard, POP: 2/1/15-1/31/16.
ORNL, CNMS Program, "Microstructure of shear bands in Ti-6Al-4V machine chips," PI: 100%, POP: 6/30/14-7/31/16.
ORNL, SHaRE Program, "Validating a Metal Cutting Analogy for the Friction Stir Welding Process in Aluminum alloys," PI: 100%, POP: 7/16/2013-9/30/2014.
NSF-MRI, "Acquisition of a multi-user, analytical transmission electron microscope (TEM) for multi-disciplinary research and training," $659,981, PI: 80%, 9/1/11-8/31/15.
ORNL, SHaRE Program, "Validating a Metal Cutting Analogy for the Friction Stir Welding Process," PI: 100%, POP: 5/24/2011-5/25/2013.
ORNL, SHaRE Program, "Transmission Electron Microscopy (TEM) Study of Shear Bands in Metal Cut Chips of Ti-6Al-4V," PI: 100%, POP: 5/23/2009-5/22/2011.
NIST Center for Neutron Research (NCNR), "Investigation of size and volume fraction of precipitates in AA 2195 T81 subjected to high strain rate processing," 1 day beam time on SANS-7, PI: 100%, 6/15/2009.
NSF-MRI, "Acquisition of a Multi User, High Resolution, Research Grade X-ray Diffractometer,"$403,185, PI-80%, POP: 9/1/2006-8/31/2009.
MSU BCoE & ME Department, "Instrumented Drop Tower for Education and Research," $73,000, PI-100%, POP:5/5/2006-8/28/2006.
ORNL, SHaRE Program, "Adhesion of Chitosan Films," PI: 100%, POP: 1/1/2005-10/31/2006.
NSF-IMR, "Acquisition of a Multi User Analytical FE-SEM for Education and Research," $571,280, PI-80%, POP: 9/1/2002-8/31/2005.
MSU ME Department, "Instrumented Load Frame," $38,000, PI-100%, POP: 2/19/2003-8/15/2003.
ORNL, SHaRE Program, "Microstructural influences on the development and growth of small fatigue cracks in the near threshold regime," PI: 100%, POP: 11/1/2002-10/31/2003.

TEACHING EXPERIENCE

MSU:

- Materials for ME Design (revised)
- Experimental Methods in Materials Research (revised)
- Experimental Techniques 2 (revised)
- Solid Mechanics Laboratory (developed)
- Experimental Measurements and Techniques (developed)
- Mechanical Metallurgy (developed)
- Transmission Electron Microscopy Laboratory (revised).
- Mechanical Systems Design (revised)

UAH:

- Mechanics of Materials (MAE 370)
- Mechanical Metallurgy (MAE 675)
- Experimental Methods in Materials Research (MAE 770)
- Materials for Extreme Environments (developed as MAE 695)

AFFILIATIONS

- Materials, Minerals, & Metallurgy Society (TMS).
- American Metals Society (ASM).
- American Society of Engineering Educators (ASEE).

PUBLICATIONS:

Book Chapters (3 total):

Schneider, J.A., et al., Chapter 4: Metal AM Materials Microstructure and Properties in *Metal Additive Manufacturing for Propulsion Applications*, ed. P. Gradl, C. Protz, O.R. Mireles, C. Garcia, in Progress in Astronautics and Aeronautics, pub. AIAA, July 11, 2022. ISBN (print): 978-1-62410-626-2eISBN: 978-1-62410-627-9.

Schneider, J.A., Volume 4, Materials Technology, Chapter 4.1.2 b) "Aluminum and its Alloys/Fabrication Technologies," in *Encyclopedia of Aerospace Engineering* John Wiley & Sons Limited Publisher, R. Blockley, W. Shyy (editors), October 22, 2010.

Schneider, J.A., "Chapter 3: Temperature Distribution and Resulting Metal Flow," in *Friction Stir Welding and Processing*, ASM Publisher, R.S. Mishra, M W. Mahoney (editors), 2007.

Peer Reviewed Journal Manuscripts (52 published, 2 pending):

Santangelo, M., Spulak, N., Schneider, J.A., "Effects of geometrical specimen scaling on mechanical properties," *J. Testing & Evaluation*, **submitted 6/20/25**

Spulak, N., T.E., Marler, King, L., Schneider, J.A., "Comparison of strain rate sensitivity between as-built and heat-treated additively manufactured 316L stainless steel," *J. Mater. Eng. & Perf.*, **submitted 1/13/25.**

Serrano-Munoz, I., Agudo Jácome, L., Thompson, S., Schneider, J.A., "Directed energy deposition processing of IN718", *Advanced Manufacturing Technology*, 2025, https://doi.org/10.1007/s00170-025-15386-1.

Schneider, J.A., Puerto, G., Walker, E., Montgomery, B.T., Gradl, P., Walker, B., Santangelo, M., "Wire based directed energy deposition of JBK-75," *MMTA*, vol. 55, pp. 1098-1110, 2024. https://doi/10.1007/s11661-024-07306-x.

Schneider, J.A., Gradl, P., "Directed Energy Deposition moves outside the box," *AM&P*, Jul/Aug 2022.

Schneider, J., Farris, L., Nolze, G., Reinsch, S., Cios, G., Tokarski, T., Thompson, S., "Microstructure Evolution in Inconel 718 Produced by Powder Bed Fusion Additive Manufacturing," *JMMP*, vol. 6, no. 1, pp 20, January 2022, https://www.mdpi.com/2504-4494/6/1/20. **[Nominated for 2022 Best Paper award, 8/22/23]**

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Schneider, J.A., "Orbital Transfer Vehicle Engine Technology, Baffled Injector Design, Fabrication, and Verification," Final Report NASA-CR-4387, November 1991.

Schneider, J.A., "Orbital Transfer Vehicle, 3000 lbf Thrust Chamber Assembly, Hot Fire Test Program," Interim Report, NASA-CR-182145, September 1988.

Press Releases or Application Notes (2 total):

"Fatigue and Fracture Testing at Mississippi State University," Instron Corp. Press Release, June 13, 2003, http://www.instron.com/e-newsletter/jun03/ff_msu.asp.

Stromberg, R., Schneider, J.A., "Characterization of Friction Stir Welding (FSW) Microstructure using Nanoscale Mechanical and Electrical Measurements", Hysitron Incorp., Application Note MET05ANr1.f, 10/2010.

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Santangelo, M., Schneider, J.A., "Evaluation of bimetallic interfaces created by directed energy deposition metal additive manufacturing," TMS Annual Meeting, Las Vegas, March 24-27, 2205.

Schneider, J.A., "Additive Manufacturing to support extraterrestrial development and habitation," Graduate seminar speaker for Mechanical Engineering Department at University of Alabama, October 2, 2024**. [invited speaker]**

Schneider, J.A., "Space Exploration Concerns Regarding Structural Health Monitoring," Panel discussion in support of the MUREP INCLUDES Colloquium held at Drake State Community and Technical College, August 22, 2024. **[invited Panelist]**

Schneider, J.A., "Overview of my life as an Engineer," Presentation to the Summer Bridge Camp for high school students held at Drake State Community and Technical College, June 4, 2024. **[invited speaker]**

Walker, E., Schneider, J.A., "Effects of L-PBF Processing Parameters on the Resulting GRCop-42 Specimens," oral presentation at the TMS Intl Annual Meeting, Orlando, Fl, 3/7/24.

Walker, E., Schneider, J.A., "Analyzing the effects of powder based manufacturing methods on the resulting microstructure and mechanical properties of GRCop-42," oral presentation at the Tri-Campus Student Symp. Materials Science, Huntsville, Al, 1/26/24.

Hall, P., Schneider, J.A., "Mechanical properties of metal lattice structures," oral presentation at the Tri-Campus Student Symp. Materials Science, Huntsville, Al, 1/26/24.

Santangelo, M., Schneider, J.A., "CALPHAD methodology for rapid screening of bi metallic materials selection," oral presentation at the Tri-Campus Student Symp. Materials Science, Huntsville, Al, 1/26/24. **[award for best presentation]**

Gaddes, J., Schneider, J.A., "Thermal Processing of Al-Zn-Cu-Mg-Zr Laser Bed Fusion (LPBF) Material for Increased Ductility," oral presentation at the Tri-Campus Student Symp. Materials Science, Huntsville, Al, 1/26/24.

Beeker, B., Schneider, J.A., "Microstructure Control Through the Use of Tungsten Inert Gas Based Additive Manufacturing," JANNAF Conf. ADDITIVE MANUFACTURING FOR PROPULSION APPLICATIONS TECHNICAL INTERCHANGE MEETING (TIM), September 28-29, 2022, Huntsville, Al.

Gaddes, J., Schneider, J.A., "Improved properties of Aluminum alloy 7A77 fabricated using L-PBF," JANNAF Conf. ADDITIVE MANUFACTURING FOR PROPULSION APPLICATIONS TECHNICAL INTERCHANGE MEETING (TIM), September 28-29, 2022, Huntsville, Al.

Hayman, J., Schneider, J.A., "Lunar Infrastructure Development Techniques Using Additive Manufacturing," JANNAF Conf. ADDITIVE MANUFACTURING FOR PROPULSION APPLICATIONS TECHNICAL INTERCHANGE MEETING (TIM), September 28-29, 2022, Huntsville, Al.

Schneider, J.A., "Insight into hot working conditions encountered in the FSW process," IMAT-ASM, September 12-14, 2022, New Orleans, LA [**Invited Keynote talk]**.

Schneider, J.A., "Advanced Materials and Manufacturing Research," MELD User Group, August 8, 2022, Huntsville, Al **[invited talk].**

Schneider, J.A., "Friction Stir Welding: A Disruptive Manufacturing Process," presentation to SMDC at the Redstone Arsenal, 8/10/22, Huntsville Al. **[Invited talk]**

Schneider, J.A., "Introduction to Friction Stir Welding," Presented to DuraAuto in Florence, Al., August 2-4, 2021. **[Invited talk]**

Schneider, J.A., "Introduction to Aluminum Alloys and Processing," Presented to DuraAuto in Florence, Al., August 16-18, 2021. **[Invited talk]**
Santangelo, M, St. Pierre, G., Schneider, J.A., "Post-processing heat treatments of directed energy deposition, additive manufacturing of NASA-HR-1," Presentation at ASTM ICAM Conference on Additive Manufacturing, November 1-5, 2021, Anaheim, CA.

Naden, N., Schneider, J.A., "Investigation into Interfacial Mixing Behavior of Blown Powder Deposited Inconel 625- Copper Alloy Bimetallics for Improvement of Bimetallic Joint Strength," Presentation at ASTM ICAM Conference on Additive Manufacturing, November 1-5, 2021, Anaheim, CA.

Puerto, G. Schneider, J.A., "Arc Wire - Directed Energy Deposition of JBK-75," Presentation at ASTM ICAM Conference on Additive Manufacturing, November 1-5, 2021, Anaheim, CA.

A. Salman, I. Ugwu, B. Salarieh, E. Merschman, S. Puchner, Schneider, J.A, Hayman, J., "Validation of additive construction properties for design of structures for planetary applications," Presentation at ASTM ICAM Conference on Additive Manufacturing, November 1-5, 2021, Anaheim, CA.

Schneider, J.A., "Transferability of terrestrial development of metal additive to extraterrestrial applications," MS&T 2021, Columbus Ohio, October 18-21, 2021.

Schneider, J.A., "My life as an Engineer," Invited Presentation to UAH SWE, Sept. 23, 2021.

Schneider, J., Leonhardt, T., "Advanced tooling demonstration for friction stir welding (FSW) of heat resistant materials," Intl Matls Apps & Tech Conf and Expo – IMAT, Sept. 13 - 16, 2021, St. Louis, MO.

Hayman, J., Schneider, J.A., Marone, M., "Processing of Feedstock for Extraterrestrial Additive Manufacturing," JANNAF Conf. ADDITIVE MANUFACTURING FOR PROPULSION APPLICATIONS TECHNICAL INTERCHANGE MEETING (TIM), September 14-17, 2020, Location: Virtual.

Puerto, G.J., Schneider, J.A, Hill, C., "Microstructural Evolution in an Additively Manufactured Turbopump Inducer Following Heat Treatments," JANNAF Conf ADDITIVE MANUFACTURING FOR PROPULSION APPLICATIONS TECHNICAL INTERCHANGE MEETING (TIM), September 14-17, 2020, Location: Virtual.

Naden, N.R., Schneider, J.A., Osborne, R.J., "Investigation into Interfacial Mixing Behavior of Blown Powder Deposited Inconel 625- Copper Alloy Bimetallic for Improved Bimetallic Joint Strength for Application in Liquid Rocket Engines," JANNAF Conf ADDITIVE MANUFACTURING FOR PROPULSION APPLICATIONS TECHNICAL INTERCHANGE MEETING (TIM), September 14-17, 2020, Location: Virtual.

Nguyen, A., Schneider, J.A., 'Metallurgical Considerations for Blown Powder Deposition Inconel 625," Tri-Campus Student Symp. Materials Science, Birmingham, Al, 1/17/20.

Farris, L., Schneider, J.A., "Detectability Limitations for Various Microscopic Characterization Techniques," Tri-Campus Student Symp. Materials Science, Birmingham, Al, 1/17/20.

Stone, J., Schneider, J.A., "Predicting Temperature Gradients for an As-Built Additively Manufactured Part," Tri-Campus Student Symp. Materials Science, Birmingham, Al, 1/17/20.

Fullen, M., Schneider, J.A., "Phase evolution in Inconel 625 after various heat treatments and its effect on mechanical properties," Tri-Campus Student Symp. Materials Science, Birmingham, Al, 1/17/20.

Lund, B., Schneider, J.A., "Development of a Metal Cutting Apparatus to Investigate Microstructural Evolution in Friction Stir Welding," MS&T 2019, Portland, Oregon, Sept. 29-Oct. 3, 2019.

Schneider, J.A., "Achieving quality control of metal additive manufactured parts through Improved understanding of the underlying microstructure, SMNZI Workshop, New Zealand **[invited talk]** July 10, 2019.

Schneider, J.A., "Advancing Manufacturing Processes," 2nd Asia-Pacific Intl. Conf. on AM (APICAM), Melbourne, AU **[invited Keynote]** 6/30 to 7/3, 2019

Schneider, J.A., "An innovative modelling approach to predict non-equilibrium phases produced in metal additive manufacture processes," BAM, Berlin, DE **[invited talk]** 05/21/19.

Diaz, A., Michaud, J., Schneider, J., Gradl, P., "Surface Finishing of Additive Manufactured Nickel-based Superalloys Liquid Rocket Channel Nozzles," RAPID + TCT Conference, April 20-23, 2019, Anaheim Convention Center, Anaheim, CA.

Stockman, T. Horan, C., Knapp, C., Carpenter, J., Schneider, J., "Differentiating Defect Types in LENS Metal AM via In Situ Pyrometer Process Monitoring," TMS Annual Meeting, San Antonio, March 12, 2019.

Terrell, J., Schneider, J.A., "Quantifying a bimetallic joint formed using direct metal deposition processes," TMS Annual Meeting Presentation, March 12, 2019, San Antonio, TX.

Fullen, M., Schneider, J.A., "Microstructural Response to Heat Treatment of Blown Powder Inconel 625," TMS Annual Meeting Presentation, March 12, 2019, San Antonio, TX.

Fullen, M., Schneider, J.A., "Exploring variability in the microstructural response and mechanical properties of heat treated blown powder Inconel 625," Tri-Campus Student Symp. Materials Science, Tuscaloosa, Al, 1/24/19.

Terrell, J., Schneider, J.A., "Quantifying bimetallic joints formed using direct metal deposition processes for an additive manufactured rocket engine component," Tri-Campus Student Symp. Materials Science, Tuscaloosa, Al, 1/24/19.

Stone, J., Stockman, T., Schneider, J.A., "A Transient Thermal Model for Predicting Thermal Gradients in Additive Manufacturing Using the Finite Difference Method," Tri-Campus Materials Science Student Symp., Tuscaloosa, Al, 1/24/19.

Lund, B., Schneider, J.A., “Evaluation of the Orthogonal Metal Cutting Process for Characterizing the Microstructural Evolution in Friction Stir Welding,” Tri-Campus Student Symp. Materials Science, Tuscaloosa, Al, 1/24/19.

Schneider, J.A., “Disruptive Manufacturing friction stir welding after 27 years,” UA Department of Metallurgical and Materials Engineering, Tuscaloosa, AL, Jan. 10, 2019 **[invited talk].**

Schneider, J.A., “Explaining random anomalies within friction stir welding - Are random anomalies really random?” OSU Welding Department Seminar, Columbus, OH, Dec. 3, 2018 **[invited talk]**.

Stockman, T., Hollis, K.; Carpenter, J.; Schneider, J.A., “A Custom Built Framework for Thermal Modeling of Plasma Spray,” MS&T 2018, Surface Protection & Spray Technology for Enhanced Matls Perf. Symp., Oct. 14-18, 2018, Columbus, OH.

Anderson, R., Schneider, J.A., Cooke, S., Sims, J., “Investigation into the Microstructural and Tensile Behavior Effects of Selective Laser Melting (SLM) Start-Stop Build Lines in GRCop-84,” MS&T 2018, Additive Manufacturing Symp., Oct. 14-18, 2018, Columbus, OH.

Schneider, J.A., “Twenty seven years of stirring it up, metallically speaking,” MS&T 2018, JASM Symp., Oct. 14-18, 2018, Columbus, OH **[Invited Keynote talk].**

Schneider, J.A., “Advancing Manufacturing Processes in the Digital Era,” Southeast Symposium on Contemporary Engineering Topics (SSCET) Conference, Huntsville, Al, August 3, 2018 **[invited talk]**.

Terrell, J., Schneider, J., “Quantifying bimetallic joints formed using direct metal deposition processes to improve the reliability and increase the technical readiness level for an additive manufactured rocket engine components,” JANNAF Additive Manufacturing for Propulsion Applications Technical Interchange Meeting on AM, Huntsville, Al, August 27-28, 2018.

Stone, J., Terry, S., Robinson, W., Schneider, J., “Low-cost, Open Source 3D Metal Wire-Fed Printing,” JANNAF Additive Manufacturing for Propulsion Applications Technical Interchange Meeting on AM, Huntsville, Al, August 27-28, 2018.

Fullen, M., Schneider, J., “Effects of Varying Heat Treatments on the Microstructure and Mechanical Properties of Blown Powder Inconel 625,” JANNAF Additive Manufacturing for Propulsion Applications Technical Interchange Meeting on AM, Huntsville, Al, August 27-28, 2018.

Osborne, R., Sporie, S., Schneider, J., Baker, K., “Review of liquid rocket engine torch igniters fabricated with powder bed fusion and hybrid manufacturing, JANNAF Additive Manufacturing for Propulsion Applications Technical Interchange Meeting on AM, Huntsville, Al, August 27-28, 2018.

Gradl, P., Brandsmeier, W., Greene, S., Schneider, J., “Channel Wall Nozzle and Chamber Development and Hot-fire Testing using Large Scale Additive Manufacturing Techniques,” JANNAF Additive Manufacturing for Propulsion Applications Technical Interchange Meeting on AM, Huntsville, Al, August 27-28, 2018.

Stockman, T.,Hollis, K., Carpenter, J., Schneider, J., “A Custom Built Framework for Thermal Modeling of Plasma Spray" Surface Protection and Spray Technology for Enhanced Materials Performance: Science, Technology, and Application in MS&T 2018, Columbus, OH, October 14-18, 2018.

Schneider, J.A., "Metal Additive Manufacturing – Vision to Structural Part," ASME Huntsville Chapter Meeting, **[invited talk]** April 4, 2018.

Schneider, J.A., "Additive manufacturing – Art to Part," ASME Student Chapter Meeting, **[invited talk]** March 8, 2018.

Sporie, S., Schneider, J.A., Osborne, R., Babai, M., "Using Additive/Subtractive Processing in the Freeform Fabrication of Bi-metallic Components," TMS Annual Meeting, Phoenix, AZ, March 11-15, 2018.

Schneider, J.A., "Material selection for cryogenic applications and implications for in-situ strain monitoring," SAMPE Carolina Chapter Meeting, Huntsville, Al, **(invited)** February 22, 2018.

Schneider, J.A., "Blown powder formation of bi-metallic structures," presented to DM3D in Detroit, MI, December 13, 2017.

Schneider, J.A., "Mechanical properties of blown powder Inconel 718," presented to DMG-Mori in Chicago, Il, December 14, 2017.

Farrington, P., Messimer, S., Schneider, J., Overfelt, T., Payton, L., Gaddes, J., "Overview of a Collaborative Research Project on Additive Manufacturing," IMAPS Workshop on Additive Manufacturing, Huntsville, AL, Sept. 13-14, 2017.

Stockman, T., Schneider, J., Knapp, C., Carpenter, J., "Defect Detection in LENS AM Using In Situ Thermal Camera Process Monitoring," TMS 2018 Annual Meeting, Mar. 11-15, Phoenix, Az.

Anderson, R., Hill, T.C., Schneider, J., "Multi-material Additive Manufacturing: Processing and Materials Design," TMS 2018 Annual Meeting, Mar. 11-15, Phoenix, Az.

Schneider, J.A., "Optimizing heat treatments for Inconel 718," BAM, Berlin, DE **[invited talk]** 07/27/17.

Schneider, J.A., "An overview of AM and optimizing schemes," Erich Schmid Institute, Austrian Academy of Sciences, Leoben, AT **(invited)** 6/23/17.

Schneider, J.A., "Overview of FSW Research," Siemens Energy, Inc., Ft. Payne, AL, **[invited talk]** 5/10/17.

Schneider, "Additive Manufacturing Research Overview at UAH," Additive Manufacturing Team, NASA-MSFC, EM 40, **[invited talk]** May 3, 2017.

Schneider, "Additive Manufacturing Research at UAH," Team Redstone IPT, Huntsville, Al **[invited talk]** April 13, 2017.

Schneider, J.A., "Ultrasonic Stir Welding and Real Time Temperature Control," NASA-MSFC Seminar for ESAB (Peter Kjallstron and Jorgen Sall), Huntsville, Al **[invited talk]** March 14, 2017.

Stockman, T.J., Schneider, J.A., "Macro Scale Thermal Modeling in Additive Manufacturing," Additive Manufacturing Symposium, MS&T 2016 Conference, Salt Lake City, UT, Oct. 23-27, 2016.

Schneider, J.A., “Mechanisms of oxide formation in the interior of friction stir welds,” JASM Symposium, MS&T 2016 Conference, Salt Lake City, UT, Oct. 23-27, 2016.

Schneider, J.A., Cobb, J.B., “Interpretation of FSW flow paths,” JASM Symposium, MS&T 2016 Conference, Salt Lake City, UT, Oct. 23-27, 2016.

Cordner, S., Prater, T., Schneider, J.A., “Density Based Screening of Additively Manufactured Parts,” JANNAF TIM, Huntsville, Al. August 23-25, 2016.

Hill, T.C., Schneider, J.A., Sporie, S., “Blown powder laser deposition Study,” JANNAF TIM, Huntsville, Al. August 23-25, 2016.

Stockman, T., Schneider, J.A., Walker, B., “Managing thermal history in free form additive manufacturing,” JANNAF TIM, Huntsville, Al. August 23-25, 2016.

Schneider, J.A., Nunes, Jr., A.C., “Origins of line defects in self-reacting friction stir welds and their impact on weld quality,” Final Presentation, NASA MSFC Summer Faculty Program, 2016.

Schneider, J.A., Hyatt, G., Babai, M., “Blown powder laser deposition additive/subtractive processing,” AMMO DOD presentation, August 3, 2016.

Schneider, J.A., “Exploring the Structure of Friction Stir Welds,” FSW 102 Seminar, NASA MSFC, July 8, 2016. [**Invited**]

Cobb, J.B., Schneider, J.A., Vacchani, S., Carpenter, J.S., Lovato, M., Dickerson, R.M., "Maintaining nanolamellar structure of accumulative roll bonded plates (ARB) during friction stir welding (FSW)," MST Annual Meeting, 2015, Columbus Ohio, Oct. 4-8, 2015.

Carpenter, J.S. Cobb, J.B., Vacchani, S., Gravener, S.G., McCabe, R.J., Dickerson, P.O., Dickerson, R.M., Beyerlein, I.J. Schneider, J.A., Mara, N.A., "Effect of Joining on Texture Evolution and Interface Character in Bulk Cu-Nb Multilayer Nanocomposites," TMS Annual Meeting, 2015, Orlando Fl., March 15-19, 2015.

Cobb, J.B., Vacchani, S., Schneider, J.A., Carpenter, J.S., "Microstructural refinement in FSW Joining of Cu-Nb Multi Nano Scale Layer Accumulative Roll Bonded panels," TMS Annual Conference, San Diego, CA, February 16-20, 2014.

Carpenter, J.S., Cobb, J.B., Vacchani, S., Gravener, S.G., McCabe1, R.J. , Dickerson, P.O., Dickerson, R.M., Beyerlein, I.J., Schneider, J.A., Mara, N.A. , "Effect of Joining on Texture Evolution and Interface Character in Bulk Cu-Nb Multilayer Nanocomposites," TMS Annual Conference, San Diego, CA, February 16-20, 2014.

Schneider, J.A., "Overview of the Mechanical Engineering Department at MSU," presented to American Eurocopter, Raspet Flight Laboratory, Starkville, MS, 1/30/14 **[invited talk]**.

Murphy, T.L., Schneider, J.A., Hamann, H., Loewe, P., Portella, P., Lippold, J., "Characteristics of High Strain Rate Behavior in AA 2219-T87 and AA 2195-T87," TMS Annual Conference, San Diego, CA, February 16-20, 2014.

Schneider, J.A., Doude, H.A.R., Patton, B.J., “Anomalies in Friction Stir Welding (FSWing),” Failure Analysis and Prevention Symposium, 2013 MS&T Conf., Oct. 27-31, 2013, Montreal Canada **[Invited Keynote talk**].

Schneider, J.A., Doude, H.A.R., "Production of robust friction stir welds," JASM XV, 2013 MS&T Conf., Oct. 27-31, 2013, Montreal Canada.

Cobb, J.B., Vachinni, S., Carpenter, J., Schneider, J.A., "FSW Joining of Accumulative Roll Bonded Multi Nano Scale Layer Thickness Cu-Nb Panels," JASM XV, Oct. 27-31, 2013, 2013 MS&T Conf., Montreal Canada.

Schneider, J.A., "Characterizing polymeric composites," Composites-In-Transportation Symposium, March 14-15, 2013, Mississippi State University.

Schneider, J.A., Clark, D.D., "Response of DP600 products to dynamic impact loads," MS&T Conference Presentation, October 7-11, 2012, Pittsburgh, PA.

Williston, D.H., Schneider, J.A., Walker, B., "Metallography of Haynes 230 Nickel Based Alloy Weld Joints," MS&T Conference Presentation, October 7-11, 2012, Pittsburgh, PA.

Schneider, J.A., "Characteristics of robust high strength FSWs ," Dynetics **[Invited Talk]**, Huntsville, Al, September 21, 2012

Schneider, J.A., Myers, O.J., "Composites overview at MSU," NASA-MSFC, **[Invited Talk]**, Huntsville, Al, April 20, 2012.

Schneider, J.A., "Approaches to verifying a material independent, kinematic model for optimizing FSWing," Bernard Ames Seminar Series, Department of Metallurgical & Materials Engineering, **[Invited Talk]**, University of Alabama, Tuscaloosa, March 8, 2012.

Schneider, J.A., "COPV material selection for high pressure cryogenic fuel storage," *Theta Tau Professional Engineering Fraternity Presentation* **[Invited Talk]**, MSU, January 24, 2012.

Schneider, J.A., "Friction Stir Welding Activities at Mississippi State University," MTI **[Invited Talk]**, South Bend, IN, January 4, 2012.

Schneider, J.A.," A kinematic approach to modeling friction stir welding for process optimization," German Aerospace Center, Institute of Materials Research, Koeln, Germany **[Invited Talk]**, August 2, 2011.

Schneider, J.A., "Quantifying hot working conditions to optimize the friction stir welding process," Bundesanstalt für Materialforschung und -prüfung (BAM) Seminar, **[Invited Talk]** June 29, 2011.

Schneider, J.A., "Verifying and validating a kinematic modeling approach to optimizing FSWing process parameters and tooling," Alcoa Technical Center, March 17, 2011, Pittsburg, PA **[Invited Talk].**

Querin, J.A., Schneider, J.A., "Developing an Alternative Heat Indexing Equation for FSW," *FSW&P V*I, TMS Annual Meeting, Febr. 27-March 3, 2011, San Diego, CA.

Doude, H.A.R., Schneider, J.A., Nunes, Jr., A.C., "Approaches to in-situ data monitoring of FSW quality," *FSW&P VI*, TMS Annual Meeting, Febr. 27-March 3, 2011, San Diego, CA.

Schneider, J.A., Querin, J.A., "Advancing Disruptive Manufacturing by Advancing Materials and Processing in Engineering Design," *Theta Tau Professional Engineering Fraternity Presentation* (**Invited** Talk), MSU, November 11, 2010.

Schneider, J.A., "Friction Stir Weld Tool Form and Welding Parameters Influence on Weld Structure and Properties," *91st FABTECH International and AWS Welding Show Professional Program*, Atlanta, GA, November 3, 2010.

Stromberg, R., Nay, R., Schirer, J., Schneider, J.A., "Nanoscale Electrical and Mechanical Characterization of Friction Stir Welding (FSW) Microstructure," *Joining of Advanced and Specialty Materials (JASM) XII*, 2010 MS&T Conf., Houston TX.

Ma, B., Du, Q., Schneider, J.A., "Multi-dimensional Data Analysis for Quality Control of Friction Stir Welds," *Joining of Advanced and Specialty Materials (JASM) XII*, 2010 MS&T Conf., Houston TX.

Schneider, J.A., "Friction Stir Welding, Modeling and Monitoring," Manufacturing Technology, Inc. (MTI), South Bend, IN, (**Invited** Talk), September 9, 2010.

Schneider, J.A., "Advancing Disruptive Manufacturing by Advancing Materials and Processing in Engineering Design," UAH- Propulsion research Center, Huntsville, AL, (**Invited** Talk) August 10, 2010.

Schneider, J.A., Venable, R., "Advancing Disruptive Manufacturing Research Project," NASA-Marshall Space Flight Center, Huntsville, AL, (**Invited** Talk) July 30, 2010.

Schneider, J.A., "Verifying a kinematic modeling approach to optimizing friction stir welding," Bundesanstalt für Materialforschung und -prüfung (BAM) Seminar, (**Invited** Talk) June 1, 2010

Schneider, J.A., "Using a metal cutting analogy to model the friction stir welding process," Institut fuer Werkstoffe, Technische Universität Braunschweig, Seminar, (**Invited** Talk) May 17, 2010

Schneider, J.A., "AGG in AA2195, comparison of C-FSW to SR-FSW," Technical Interchange Meeting with NASA MSFC, NASA-LaRC, and Lockheed Martin, Huntsville, AL (**Invited** Talk), March 29, 2010.

Dong, L, Schneider, J.A., "Microstructural characterization of Ti-6Al-4V metal chips by focused ion beam and transmission electron microscopy," 2010 TMS Annual Mtg. Seattle, WA.

Schneider, J.A., "High strain rate behavior of Ti-6Al-4-V", AFOSR Program Review, Arlington VA, (**Invited** Talk) February 1-5, 2010.

Schneider, J.A., Nunes, A.C., Jr., "Welding on the Moon," LEDWG Meeting, Huntsville, Al, (**Invited** Talk) December 10, 2009.

Schneider, J.A., "FSW Marker and Offset Study," NASA Marshall Space Flight Center, Welding Engineers in Materials Processing Laboratory, (**Invited** Talk), December 10, 2009.

Schneider, J.A., "Living in a material world," Physics Seminar, Mercer University, Macon, GA, (**Invited** Talk), November 9, 2009.

Schneider, J.A., "Verifying and validating proposed models for FSW process optimization," Presentation to local chapters of AWS, and ASME, Mississippi State University, (**Invited** Talk) October 2009.

Querin, J.A., Schneider, J.A., "Evolution of microstructural damage in AA6022 under monotonic loading," *MS&T 2009*, Structural Transitions and Local Deformation Processes At and Near Grain Boundaries Symposium, Pittsburg, PA, (**Invited** Talk) October 2009.

Schneider, JA., Nunes, A.C., Jr., "Quality control of FSWs using data monitoring," *MS&T 2009*, Joining of Advanced and Specialty Materials (JASM XI) Symposium, Pittsburg, PA, October 2009.

Schneider, JA., Querin, J.A., Brendel, M., Nunes, A.C, Jr., "Metal flow and defects in friction stir welding," *MS&T 2009*, Joining of Advanced and Specialty Materials (JASM XI) Symposium, Pittsburg, PA, October 2009.

Schneider, J.A., "Inside Friction Stir Welding," NASA Marshall Space Flight Center, NDE Department, (**Invited** Talk), September 14. 2009.

Schneider, J.A., "Determining Grain Refinement Mechanisms in Friction Stir Welding," Oak Ridge National Laboratory, (**Invited** Talk), May 20, 2009.

Schneider, J.A., "Determining Grain Refinement Mechanisms in Friction Stir Welding," Hysitron Seminar, Eden Prairie, MN, (**Invited** Talk), April 10, 2009.

Querin, J.A. Schneider, J.A., "Pin Tool Geometry Effects in Friction Stir Welding," *TMS Annual Mtg*, San Francisco, CA., 2009.

Schneider, J.A., "Ares I DUST FSW Tool Tracer Studies," Orion / Ares I Upper Stage Technical Interchange Meeting On Metallic Materials Characterization, (**Invited** Talk), Michoud Facility, New Orleans, LA., December 10, 2008.

Schneider, J.A., "COPV Material Selection for High Pressure Cryogenic Fuel Storage," Presentation to Toray Carbon Fibers, Decatur, AL, (**Invited** Talk), November 21, 2008.

Schneider, J.A., "Verifying and validating proposed models for FSW process optimization," University of Alabama, Huntsville, ME Department Seminar, (**Invited** Talk), October 31, 2008.

Schneider, J.A., "COPV Material Selection for High Pressure, Cryogenic Fuel Storage," *MS&T,* Pittsburgh, PA (**Invited** Talk), October 2008.

Schneider, J.A., Bjorkman, G., Nunes, Jr., A.C., "Tracing the Flow Pattern in Friction Stir Welds **,"** Friction Stir Welded ET 139 Technical Interchange Meeting, NASA-Marshall Space Flight Center, Al., (**Invited** Talk), May 2008.

Schneider, J.A., "Overview of Materials Science at Mississippi State University," Presentation to SeverCorr, Columbus, MS, (**Invited** Talk) March 2007.

Schneider, J.A., "Deconvoluting the friction stir weld process for optimizing welds," Washington State University, Mechanical and Materials Science Engineering Seminar, (**Invited** Talk), November 2007.

Schneider, J.A., "Exploring the Structure of Friction Stir Welds," NASA Marshall Space Flight Center, FSW Seminar Series, (**Invited** Talk), July 2007.

Schneider, J.A., "Development of Cryogenic Composite Over-Wrapped Pressure Vessels*", 2007 National Space & Missile Materials Symposium,* Keystone, CO., (**Invited** Talk), June 2007.

Schneider, J.A., "Friction Stir Welding," Japanese Space Agency (JAXA), Japan, (**Invited** Talk), March 2007.

Schneider, J.A., Patterson, J., DeLay, T.K., "Cryogenic COPV Material Development," NanoComposites-Their Science, Technology, and Applications, *MS&T 06,* Cincinnati, OH., October 2006.

Carter, R.W., Romine, P., Venable, R., Schneider, J.A., Nunes, Jr., A.C., "Stick-Slip Conditions in the Friction Stir Welding Process," Joining of Advanced and Specialty Materials Including Affordable Joining of Titanium and Joining Technologies for MMCs, *MS&T 06,* Cincinnati, OH., October 2006.

Howard, A.M., Davis, A.M., Schneider, J.A., "Friction Stir Weld Process Optimization by Means of Tension Testing of Small Volumes of Material," Joining of Advanced and Specialty Materials Including Affordable Joining of Titanium and Joining Technologies for MMCs, *MS&T 06,* Cincinnati, OH., October 2006.

Nunes, Jr., A.C. and Schneider, J.A., "Introduction to Friction Stir Welding," NSSTC Summer Seminar, UAH Campus, **[invited talk]**, Huntsville, AL, July 2006.

Schneider, J.A., Nunes, Jr., A.C., "Characterization of the metal flow path in the friction stir welding process by use of microstructure and texture," *TMS Annual Meeting*, San Antonio, TX., March 2006.

Schneider, J.A., "Unraveling the processing parameters in friction stir welding," South West Research Institute Seminar, San Antonio, TX, **[invited talk]** March 2006.

Schneider, J.A., "Do you have what it takes to be an engineer?" Engineering Week (**Invited** Talk), University of Texas, Tyler, February 2006

Schneider, J.A., "Metal Flow Paths in Friction Stir Welding," University of Missouri Rolla, Metallurgical Engineering Department Seminar, **[invited talk]** January 2006.

Schneider, J.A., "Unraveling the processing parameters in friction stir welding," Ohio State University, Materials Science and Engineering Department, **[invited talk]**, January 2006.

Schneider, J.A., "Engineering of Composites for Cryogenic Fuel Tanks," Presentation to ATK, Iuka MS, July 2005.

Schneider, J.A., "Unraveling the processing parameters in friction stir welding," MPI/PML Seminar, Stutgart, GE, **[invited talk]**, June 2005.

Schneider, J.A., Jones, E., "Specialty Design Solutions from the Department of Mechanical Engineering at Mississippi State University," Economic Development Seminar, MSU, April 2005.

Schneider, J.A., "Unraveling the processing parameters in friction stir welding," Southern Illinois University MEEP/CAFS Seminar, Carbondale, IL, **[invited talk]**, February 2005.

Schneider, J.A., "Unraveling the processing parameters in friction stir welding," Sandia National Laboratories Seminar, Livermore, CA., **[invited talk]**, February 2005.

Schneider, J.A., Nunes, Jr., A.C., "Unraveling the microstructural flow path variations in friction stir welding," *TMS Annual Meeting*, San Francisco, CA., February 2005.

Schneider, J.A., Sanders, J., "Incorporation of microstructure and texture into modeling of the friction stir weld process," NASA Final Presentation, Cooperative Agreement #NNM04AA14A, (**Invited** Talk) January 2005.

Schneider, J.A., Beshears, R., Nunes, Jr., A.C., "Computer tomography 3-D imaging of the metal deformation flow path in friction stir welding", *Material Science & Technology* (*MS&T)/TMS*, New Orleans, LA., Sept. 26-29, 2004.

Schneider, J.A., "Friction Stir Welding," Presentation to local chapters of AWS, SME, and ASME, Mississippi State University, **[invited talk]**, March 2003, March 2005, March 2007.

Schneider, J.A., "Thermo-Mechanical processing in Friction Stir Welding (FSW), Presentation to local AWS Chapter, Mississippi State University, **[invited talk]**, September 30, 2002.

Schneider, J.A., Biswas, K., Rixecker, G., Aldinger, F., "Grain boundary phase evolution in LPS-SiC during creep testing," Sandia National Laboratories Seminar, Livermore, CA., **[invited talk]**, May 2001.

Posters (39 total with 16 led by undergraduates) – students are highlighted in bold:

King, L., Schneider, J.A., "Influence of purge gases on L-PBF 316L Stainless Steel printed using L-PBF," poster presented at COE Horizon Days, March 3-5, 2025, UAH.

Ammons, C., Schneider, J.A., "Lunar Landing Pads," poster presented at the Tri-Campus Student Symp. Materials Science, Huntsville, Al, 1/26/24.

Rushing, M., Schneider, J.A., "Rhenium Influence on Tungsten Alloys: Dislocation Disruption and Solid Solution Softening for Enhanced Manufacturability," poster presented at the Tri-Campus Student Symp. Materials Science, Huntsville, Al, 1/26/24.

Bello, O., Schneider, J.A., "Phases in Inconel 718 fabricated by laser-powder bed fusion," poster presented at the Tri-Campus Student Symp. Materials Science, Huntsville, Al, 1/26/24.

Scott, G., Schneider, J.A., "Influence of Carbon Content on Properties of Inconel 718," poster presentation at the 100th Annual Mtg, Alabama Academy of Science, Samford Campus, Birmingham, Al, 3/9/23.

Santangelo. M, Schneider, J.A., "Development of metal additive manufacturing processes for bi-metallic components," poster presentation at the 100th Annual Mtg, Alabama Academy of Science, Samford Campus, Birmingham, Al, 3/9/23.

Barnett, I., Walker, E., Montgomery, B., Schneider, J., **Heichelbech, B., Smith. C., Smigel, W.,** Rhone, L., Bullock, N., "Metal Additive Manufacturing Workforce Development in Alabama," 1st Annual Colloquium, MUREP, Drake State, 8/3/22.

Walker, E., Schneider, J., "The Behavior of Dispersions in GRCop-42 due to different Additive Processes," 1st Annual Colloquium, MUREP, Drake State, 8/3/22.

Hayman, J., Schneider, J., Salman, A., "Evaluation of additive construction structural properties to support lunar applications," 1st Annual Colloquium, MUREP, Drake State, 8/3/22.

Puerto, G., Schneider, J., "Microstructural Evolution in an Additively Manufactured Inconel 718 Turbopump Inducer," 1st Annual Colloquium, MUREP, Drake State, 8/3/22.

Santangelo, M., Naden, N., Schneider, J., "Development of metal additive manufacturing processes for bi-metallic components," 1st Annual Colloquium, MUREP, Drake State, 8/3/22.

Naden, N.R., Schneider, J.A., Osborne, R.J., Gradl, P., "Investigation into Interfacial Mixing Behavior of Blown Powder Deposited Inconel 625- Copper Alloy Bimetallic for Improvement of Bimetallic Joint Strength," TMS Annual Intl Conf., March 15-18, 2021, Location: Virtual

Puerto, G.J., Schneider, J.A, Hill, C., "A Comparison of the Microstructure in Blown Powder Deposition Inconel 718 for Various Heat Treatments," TMS Annual Intl Conf., March 15-18, 2021, Location: Virtual

Attig, D., Schneider, J.A., Marone, M., "Processing of lunar regolith for in-space 3-D metal printing," Tri-Campus Student Symp. Materials Science, Tuscaloosa, Al, 1/24/19.

Farris, L., Lee, E, Schneider, J.A., "Microstructure Evolution of Additively Manufactured Inconel 718," Tri-Campus Student Symp. Materials Science, Tuscaloosa, Al, 1/24/19.

Swinson, T., Robinson, W., Stone, J., Schneider, J.A., Sigma Forge: A low-cost, open source prototyping and research platform," Tri-Campus Student Symp. Materials Science, Tuscaloosa, Al, 1/24/19.

Naden, N., Nguyen, A., "Effect of Low Temperature Heat Treatments on the Resulting Void Analysis of Blown Powder Deposition Inconel 625 Specimens," Tri-Campus Student Symp. Materials Science, Tuscaloosa, Al, 1/24/19.

Terrell, J., Schneider, J.A., "Quantifying Bimetallic Joints Formed Using Direct Energy Deposition," JANNAF Technical Interchange Meeting, August 27-28, 2018, Huntsville Al.

Stone, J., Terry, S., Robinson, W., Stockman, T., Schneider, J.A., "Low-cost, Open Source 3D Metal Wire-Fed Printing," JANNAF Technical Interchange Meeting, August 27-28, 2018, Huntsville Al.

Peterson, N., Marchman, N., Block, J., Bryant, L., Coats, T., Charnock, S., Sorrells, D., Schneider, J.A., "Direct Metal Deposition Additive Manufacturing," Student Symposium on Materials Research, UAH, November 17, 2017, Huntsville, Al.

Anderson, R., Hill, T.C., Schneider, J.A., "Bimetallic Bonding via Two Methods of Direct Metal Deposition Additive Manufacturing," Student Symposium on Materials Research, UAH, November 17, 2017, Huntsville, Al.

Anderson, R., Hill, T.C., Schneider, J.A., "Material property gradients in Additive Manufacturing of multifunctional structures," Advanced Technical Workshop on Additive Manufacturing/IMAPS, September 13-14, 2017, Huntsville, Al.

Stockman, T., Schneider, J.A., "Modeling of the global thermal temperature in free form 3D printing," Advanced Technical Workshop on Additive Manufacturing/IMAPS, September 13-14, 2017, Huntsville, Al.

Alexander, J., Schneider, J.A., Myers, Z.,"Embedded Electronics in 3D printing of nanocomposite polymers," Advanced Technical Workshop on Additive Manufacturing/IMAPS, September 13-14, 2017, Huntsville, Al.

Peguesa, J., Shamsaei, N., Schneider, J., Roach, M., "Martensite Phase Transformation for Type304L Stainless Steel Under Cyclic Loading," TMS Annual Meeting, Febr. 14 – 18, Nashville, TN, 2016.

Waters, T.B., Stockman, T.J., Schneider, J.A., "Additive Manufacturing of Inconel 718," TMS 2015 Annual Meeting Poster Competition, Orlando, FL, March 15-19, 2015.

Waters, T.B., Stockman, T.J., Schneider, J.A., "Out-of-the-Box Printing of Large Metal Parts," MS&T 2014 Annual Meeting Poster Competition, Pittsburg, PA, October 12-16, 2014.

Mujahid, S., Lacy, T., Toghiani, H., Schneider, J.A., "Improving Impact Behavior of Composites, Use of Lantor Soric with Carbon Nano-fibers," Undergraduate Student Research Poster Symposium, Mississippi State University, April 23, 2014

Warner, B., Schneider, J.A., "Effects of Layer Orientation in 3D Printing," Undergraduate Student Research Poster Symposium, Mississippi State University, April 23, 2014

Hawkins, J., Schneider, J.A., " Friction Stir Weld Tool Design," BCoE College - Undergraduate Student Research Poster Symposium, Mississippi State University, April 23, 2014

Varner, C., Schneider, J.A., "Solid state joining of Haynes 230," BCoE College - Undergraduate Student Research Poster Symposium, Mississippi State University, April 23, 2014.

Patton, B., Stafford, S., Varner, C., Crownover, R., Schneider, J., "Design of a portable Friction Stir Welding (FSWing) system and the development of active feedback controls," AWS International Conference and FabTech, Chicago, IL, November 17, 2013 **[Honorable Mention].**

Patton, B., Stafford, S., Varner, C., Crownover, R., Schneider, J., "Design of a portable Friction Stir Welding (FSWing) system and the development of active feedback controls," MSU Undergraduate Research Symposium, August 1, 2013 **[First place award].**

Oyeka, O., Patnaik, S., Grewal, H. Asafa, O., Schneider, J., Liao, J., Williams, L.N., "Role of bone mineral in physical and microstructural characteristics of cortical bone," Biomedical Engineering Society Conference, Atlanta, GA, October 28-30, 2012.

Waters, T., Patton, B., Murphy, T., Schneider, J.A., "Effect of FSWing process on natural aging of aluminum alloys," Honors Conference, Mississippi State, MS, July 26, 2012

Waters, T., Patton, B., Stafford, S., Murphy, T., Doude, H.A.R., Schneider, J.A., "Studies in Friction Stir Welding," ASEE SE Conference, Mississippi State, MS, April 1-3, 2012

Cannon, S., Schneider, J., "Evaluating Fracture Toughness of Polymers," *ASEE-SE Regional Conference,* Louisville, KY*,* April 1-3, 2007.

DeLay, T.K, Patterson, J., Schneider, J.A., **Jackson, J.R., Allison, P.G.,** "COPV Development for the Aerospace Industry," *2006 National Space & Missile Materials Symposium & the 2006 MISSE Post-Retrieval Conference*, Orlando, FL., June 26-30, 2006.

Schneider, J.A., Nunes, Jr., A.C., "Quantifying the material processing conditions for an optimized FSW process," SR-FSW Demo Day at the NASA-MSFC, August 4, 2005.

Symposium Organization (24 total: organizer -5, co-organizer - 19):

"Mechanical Behavior of Thin Solid Films"

- **Sponsored by**: TMS/SMD-Mechanical Behavior and MPMD-NanoMechanical Materials Behavior Committees.
- **Organizers**: X Zhang, B.L. Boyce, E. Ma, A. Minor, C.L. Muhlstein, J.A. Schneider
- *TMS* 2005, San Francisco, CA.
- **Proceeding publication**: *Solid Thin Films, Vol. 515, 2007*.

"Amiya Mukherjee Symposium on Processing and Mechanical Response of Engineering Materials: Nano-Behavior of Materials"

- **Sponsored by**: TMS/SMD – Mechanical Behavior, MPMD - Shaping and Forming Committee.
- **Organizers**: J.A. Schneider, R.S. Mishra, Y.T. Zhu, K.B. Morsi, V.L. Acoff, E.M. Taleff, T.R. Bieler.
- *TMS* 2006, San Antonio, TX.
- **Proceeding publication**: *Materials Science & Engineering A*.

"NanoComposites-Their Science, Technology, and Applications"

- **Sponsored by**: TMS/SMD-Mechanical Behavior and and Composites Committees.
- Organizers: J.A. Schneider, K. Simmons, F. Marquis, L.S. Schadler
- *MS&T* 2006, Cincinnati, OH
- **Proceeding publication**: *MS&T 06 Conference Proceedings.*
- Selected articles published: JOM, March 2007.

"Joining of Advanced and Specialty Materials (JASM) XI"

- **Sponsored by**: ASM-Joining Critical Technologies Sector.
- **Organizers**: V.L. Acoff, P. Hoch, T. Lienert, J.A. Schneider
- *MS&T* 2007, Detroit, MI.

"Dislocations: 75 Years of Deformation Mechanisms"

- **Sponsored by:** TMS/SMD-Mechanical Behavior Committee
- **Organizers:** D. Bahr, N. Moody, E. Lilleodden, J. Schneider
- *TMS 2009,* San Francisco, CA

- Selected articles published: JOM, Febr. 2009.

"Nanocomposite Materials"
- **Sponsored by:** TMS/SMD Composites Committee
- **Organizers:** J. Spoward, J. Schneider, B. Majumdar, B. Maruyama
- *TMS 2009,* San Francisco, CA

"General Abstracts: Structural Materials Division"
- **Sponsored by:** TMS, Structural Materials Committee
- **Organizers:** E. Ott; R. Hanrahan; J. Schneider
- *TMS 2010,* Seattle, WA

"Advanced Metallic Materials: Technological Exploitation of Mechanical Properties"
- **Sponsored by:** TMS/SMD-Mechanical Behavior Committee
- **Organizers:** A. Sergueeva N. Mara, J. Schneider
- *MS&T 2010,* Houston, TX

"Joining of Advanced and Specialty Materials (JASM) XII"
- **Sponsored by**: ASM-Joining Critical Technologies Sector.
- **Organizers**: J.A. Schneider, N. Zhou, L. Li, M. Brochu, B. Alexandrov, M. Halbig, A. Hirose
- *MS&T 2010,* Houston, TX

"Laser Applications in Materials Processing"
- **Sponsored by**: ASM International's Emerging Technologies Awareness Committee (ETAC) and ASM-Joining Critical Technologies Sector..
- **Organizers**: S. Copley, A. Black, J.A. Schneider
- *MS&T 2010,* Houston, TX

"General Abstracts: Structural Materials Division"
- **Sponsored by:** TMS, Structural Materials Committee
- **Organizers:** E. Ott; R. Hanrahan; J. Schneider
- *TMS 2011,* San Diego, CA

"Joining of Advanced and Specialty Materials (JASM) XIII"
- **Sponsored by**: ASM-Joining Critical Technologies Sector.
- **Organizers**: J.A. Schneider, N. Zhou, L. Li, M. Brochu, B. Alexandrov, M. Halbig, A. Hirose
- *MS&T 2011,* Columbus, OH

"Laser Applications in Materials Processing"
- **Sponsored by**: ASM International's Emerging Technologies Awareness Committee (ETAC) and ASM-Joining Critical Technologies Sector.
- **Organizers**: S. Copley, A. Black, J.A. Schneider
- *MS&T 2011,* Columbus, OH

"Joining and Sustaining of Superalloys"
- **Sponsored by**: TMS High Temperature Alloys Committee (HTAC) and ASM-Joining Critical Technologies Sector.
- **Organizers**: Sammy Tin; Jeffrey Evans; Jon Groh; Judith Schneider; Ji-Cheng Zhao
- *MS&T 2011,* Columbus, OH

"Test Methods I and Testing, Test Methods II" Sessions

- **Sponsored by**: SAMPE
- **Organizers**: J. Lusk, J.A. Schneider
- No. Sessions: 2
- No. Speakers: 10 per session
- *SAMPE* 2012, Baltimore, MD

"Joining of Advanced and Specialty Materials (JASM) XIV"

- **Sponsored by**: ASM-Joining Critical Technologies Sector.
- **Organizers**: N. Zhou, L. Li, M. Brochu, B. Alexandrov, J.A. Schneider, M. Halbig, A. Hirose
- *MS&T 2012,* Pittsburg, PA

"Joining dissimilar materials for transportation light-weighting and energy savings"

- Sponsored by ASM Emerging Technology Awareness Committee
- with Co-Sponsorship by :
  AIST Committee
  ASM/AWS Joining Critical Technologies Committee
  TMS LMD (Al Committee & Mg Committee)
  NACE
- **Organizers**: Ron Radzilowski, Judy Schneider, Jorge F. dos Santos, Israel Stol, Gerald Cole, Manish Mehta, Subi Dinda, Jerry Gould, Kester Clark
- *MS&T* 2015, Columbus, OH.

"Additive Forming of Components - Tailoring Specific Material Properties in Low Volume Production"

- Sponsored jointly by TMS MPMD/SMD committees
- **Organizers**: Judy Schneider, Mark Stoudt, Kester Clark, Lee Semiatin, Mohsen Asle Zaeem
- *TMS* 2016, Nashville, TN.

"Additive Manufacturing of Metals: Establishing Location-Specific Processing-Microstructure-Property Relationships,"

- Sponsored by TMS: Additive Manufacturing Bridge Committee
- **Organizers:** Eric Lass, Judy Schneider, Mark Stoudt, Lee Semiatin, Kinga Unocic, Joseph Licavoli, Behrang Poorganji,
- TMS 2017, 2/24-3/2/2017, San Diego, CA

"Additive Manufacturing of Metals: Establishing Location-Specific Processing-Microstructure-Property Relationships-II"

- Sponsored by TMS: Additive Manufacturing Bridge Committee
- **Organizers:** Eric Lass, Mark Stoudt, Judith Schneider, Lee Semiatin, US Air Force Research Laboratory; Behrang Poorganji,Clay Houser,
- TMS 2018, 3/11-3/1-2018, Phoenix AZ

"Additive manufacturing: additive shaping 3D structures"

- Sponsored by TMS: Additive Manufacturing Bridge Committee
- **Organizers:** Eric Lass, Mark Stoudt, Judy Schneider, Lee Semiatin, Behrang Poorganji, Chantal Sudbrack, Kester Clark, Dan Coughlin

- TMS Symp., March 10-14, 2019, San Antonio, TX

"Additive Manufacturing: Advanced Characterization with Synchrotron, Neutron, and in situ Laboratory-scale Techniques"
  - **Organizer**: Fan Zhang, Tom Stockman, Tao Sun, Donald Brown, Yan Gao, Amit Pandey, Joy Gockel, Tim Horn, Sneha Narra, Judy Schneider
  - TMS Symp., Febr. 23-27, 2020, San Diego, CA

"Manufacturing Changes and Challenges Associated with Electric Vehicles,"
- Sponsored by TMS: Shaping and Forming Committee
- **Organizer**: Judy Schneider, Aashish Rohatgi, Katherine Rader, Mageshwari Komarasamy, Matthew Steiner, Danny Nikolai.
- MST Symp., Oct. 8-10, 2024

"Opportunities and Applications of Solid-State Additive Manufacturing Processes — Additive Friction Stir Deposition and Cold Spray"
- Sponsored by TMS: Additive Manufacturing Bridge Committee
- **Organizer:** Hang Yu, Isabella Van Rooyen, Priyanshi, Bharat Gwalani, Bin Li, Leon Liao, Judy Schneider, Iris Rivero, Paul Prichard
- MST Symp., Oct. 8-10, 2024

Session Chair: TMS 05, 06, 09, 10, 11, 13 15, 16, 17, 18, 22; MS&T 06, 08, 09; 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22, 24; SAMPE 07, 08, 09, 12.

PROFESSIONAL SERVICE

1) Materials Research Society (MRS), **Member**, 1996 to 2008.
   - ***Membership Committee*****:**
     Member: 2000 to 2005.

2) American Metals Society (ASM), **Member**, 1995 to present.
   - ***Joining Critical Technologies Sector***
     Member: 2004 to present.
     Secretary: 2005 to 2007.
     2nd Vice Chair, 2007 to 2008
     1st Vice Chair, 2008 to 2009**.**
     Chair, 2009 to 2011**.**
     Past Chair, 2011 to 2013
   - ***Programming Committee***
     Vice Chair: 2013 to 2015.
     Chair: 2015 to 2017.
     Appointed Member: 2021-2023.
   - ***ASM Emerging Technologies Committee***
     Appointed Member: 2013 to 2021.
     Vice-Chair: 2021-2023.
   - ***Woman In Materials Engineering Committee***
     Appointed Member: 2015-2020.

3) Materials, Minerals, & Metallurgy Society (TMS), **Member**: 2003 to present.
   - ***William Hunt Eisenman Selection Committee***
     Member: 2024-present (3 year appointment)
   - ***Additive Manufacturing Bridge Committee:***

Member: 2016-present
JOM Advisor: 2016-2020

- ***Technical Standards Subcommittee:***
  Member: 2025-present
- ***Composites Committee (SMD)*:**
  Member 2003 to present.
  JOM Advisor: 2006
- ***NanoMechanical Materials Behavior Committee (MPMD)***:
  Member: 2004-present.
- ***Mechanical Behavior of Materials Committee (SMD)*:**
  Member: 2003 to present.
  Secretary: 2004 to 2006.
  Chair: 2006 to 2008.
  Past Chair/JOM Advisor: 2008 to 2010
  Awards Committee Member: 2010 to 2012
- ***Programming Committee***:
  SMD Program Repr: 2010 to 2012
  TMS Grid Chair: 2012
  TMS Program Repr.: 2012 to 2013
  MS&T Program Repr.: 2013 to 2015
  Program Chair: 2014 to 2016
- ***Content Development and Dissemination Committee (2016-2024)***
  TMS Board Member*, 2019-2021*
  Director/Chair*, 2019-2021*
  Vice Chair, 2016-2018
  Member at large: 2011 – 2017
- T***MS Leadership Development Initiative***
  Senior Advisor: 2022

4) American Ceramic Society (ACerS), **Member**, 1995 to 2008.
5) American Association of University Women (AAUW), **Member**: 1996 to 2008.
6) American Society of Engineering Educators (ASEE), **Member**: 2000 to present.
7) Society of Manufacturing Engineers (SME), **Member**: 2006-2008.
8) Society of Advanced Mfgt & Process Engineering (SAMPE), **Member**: 2008- present.
9) External Reviewer for the Mechanical Engineering Department at Marshall University, Nov. 17-20, 2025.

UAH UNIVERSITY SERVICE

Chair Materials Working Group,	2017-2018
Director, Tri-Campus, Materials Science Program	2018-present

UAH COLLEGE SERVICE

P&T Committee	2017-2018
P&T Committee, Alternative	2023-2024
Eminent Scholar Review Committee (Lagrani), Chair	2019

UAH DEPARTMENT SERVICE

1) Search committee for Machine Shop Supervisor, **Member**, 2019
2) Search committee for MAE faculty position, **Chair**, 2016, 2017, 2018.
3) Search committee for MAE faculty position, **Member**, 2021.

4) Search committee for ChE faculty position, **Member**, 2015, 2023.
5) Search committee for ChE Chair position, **Member**, 2018.

P&T Committee member for MAE Department
Organizer, Solid Mechanics Faculty

MSU UNIVERSITY SERVICE

1) MSU-Meridian Manufacturing Technology Program – Ad Hoc committee – 2001.
2) Women in Engineering & Science (WISE), **Member**: 2003-2015.
3) Electron Microscopy Center (EMC) Committee, **Member:** 2000-2015.
4) Electron Microscopy Center (EMC) Steering Committee, **Member:** 2005 - 2011.
5) Faculty Research Advisory Committee (FRAC), **Member**, 2003- 2006.
6) Ethics Review Committee, **Chair**, 2012.
7) Electron Microscopy Center (EMC) Search Committee, **Member**, 2012.
8) Graduate Council, **Appointed Member**, 2013-2016.

MSU COLLEGE SERVICE

1) Materials Working Group, **Member**, 2000-present, **Secretary:** 2000-2003, 2015-2016, **Chair**, 2003- 2007, 2010-2012.
2) College of Engineering Women Faculty Group, **Member**, 2002-2015.
3) Materials Testing and Characterization in Engineering at MSU, **Chair**, 2002-2003.
4) Solid Mechanics Committee, **Member**, 2003-2015.
5) MSU sponsored panel on NSF CAREER Proposals, **panel member**, April 2004.
6) MSU Career Development Workshop – **attendee** – Spring 2002.
7) MSU SWE Retreat, **panel member**, Spring 2002.
8) MSU MWG Certificate Program **Presentation** to Freshman Classes in ABE and ME, Fall 2003.
9) MSU MWG Certificate Program **Presentation** to Chemistry Department Retreat, Fall 2004.
10) AFS Student Chapter, **co-Advisor**, 1999 to 2000.
11) SPE Student Chapter, **co-Advisor**, 2001 to 2003.
12) SME Student Chapter, **co-Advisor**, 2005-2007.
13) Engineering Research Advisory Committee (ERAC), **Member**, 2008-2012.
14) College Dean Search Committee, **Member,** 2008-2009.
15) Promotion and Tenure Committee ChE, **Member**, 2012.
16) SACS accreditation for the Materials Certificate, **Coordinator**, 2012, 2013.

MSU DEPARTMENT SERVICE

1) ME Departmental Undergraduate Committee, **Member**, 2000-2015.
2) ME Departmental Laboratory Users Group, **Chair**, 2002-2015.
3) ME Departmental Materials ABET Committee, **Chair**, 2009-2012.
4) ME Departmental Materials ABET Committee, **Member**, 2012-2015.
5) ME Departmental Laboratory ABET Committee, **Chair**, 2002-2015.
6) ME Departmental PhD Qualification Exam, Materials, **Chair**, 2005-2012.
7) Evaluation committee for the stem ME program courses, **Member**, 2003 to 2008.
8) Committee to revise the ME graphics class curriculum, **Member**, 2001 to 2003.
9) Committee to revise the graphics class software, **Member**, 2001 to 2003.
10) Search committee for ME faculty position, **Member**, 2001, 2002, 2003, 2004, 2011, **Chair**, 2012.
11) Committee to review engineering design courses at MSU, **Member**, 2005-2008.
12) Committee to draft metrics for faculty performance, **Chair**, 2006.
13) ME Department Head Search, **Member**, 2010-2011.
14) Promotion and Tenure ME Committee, **Member**, 2006, 2012.

15) Faculty Search Committee, **Chair**, 2012.

OUTREACH SERVICE

The following is a listing of companies who have utilized our laboratory for mechanical testing services.

Northrup Grummon, Long Beach, CA.
Viking Range Corporation,
Greenwood, MS
United Chair, MS
Rolls Royce Naval and Marine,
Pascagoula, MS
L&M Composites, MS
Bryon Foods, MS
Conforma Clad Inc., IN
Uniroyal, CT
HyperComp, UT
REMChem Surface Engineering, TX
DM3D, MI
Lockheed Martin Corporation, LA
Keystone Engineering, FL
AZZ Corporation, MS
SpaceX, CA
Severstal (Steel Dynamics Inc.), MS
Eurocopter, MS
Cimarron Composites, Al
Blue Origin, WA & FL
Titomic, Huntsville, Al
DMG-Mori, IL