

BRINA J. BLINZLER

Ph.D.

Assistant Professor

Division of Material and Computational Mechanics

Department of Industrial and Materials Science

Chalmers University of Technology

412 96 Göteborg, Sweden

brina.blinzler@chalmers.se

Academic Experience:

Ph. D. Civil Engineering, The University of Akron (2012)

Dissertation: Systematic Approach to Simulating Impact for Triaxially Braided Composites

Advisor: Dr. Wieslaw K. Binienda

B.S. Civil Engineering, Missouri University of Science & Technology (2008)

Research & Professional Experience:

- **Assistant Professor** (2017 – present)
Chalmers University of Technology – Göteborg, Sweden
- **Design Engineer** (2016 – 2017)
Scaled Composites – Mojave, California
- **Adjunct Professor** (2014 – 2016)
CSULB, Antelope Valley Campus – Lancaster, California
- **R&D Engineer - Composites** (2014 – 2016)
Easton Baseball/Softball – Van Nuys, California
- **FEA Consultant** (2012 – 2014)
Analysis & Design – Palmdale, California
- **Structural Engineer** (2011 – 2012)
Babcock & Wilcox – Barberton, Ohio
- **Graduate Researcher** (2008 – 2012)
University of Akron, Civil Engineering Dept. – Akron, Ohio
- **Graduate Student Researchers Program** (2009 – 2011)
National Aeronautics and Space Administration – Cleveland, Ohio
- **Civil Engineering Intern** (2006 – 2008)
HNTB Corporation – Overland Park, Kansas
- **Teaching Assistant** (2006)
University of Missouri – Rolla, Civil Engineering Dept. – Rolla, Missouri
- **Chemical Engineering Intern** (2006)
The Doe Run Company, Resource Recycling Division – Boss, Missouri
- **Engineering Assistant** (2005)
Elgin Surveying and Engineering – Rolla, Missouri
- **Undergraduate Researcher** (2005)
University of Missouri – Rolla, Environmental Eng. Dept. – Rolla, Missouri

Patents:

Blinzler, B.J. Ball bat including a slatted barrel US20160279492 A1 March 23, 2015

Publications & Presentations:

- Blinzler, B.J.; and Binienda, W.K.: Macro-mechanical Approach to Modeling Barely Visible Damage in Braided Composites, *Journal of Aerospace Engineering*. *Journal of Aerospace Engineering* Vol. 27, No. 3, 2014
- Blinzler, B.J.: Investigation of Structural Connections for Windstorm Hazard Mitigation During Low Wind-speed Conditions, Simulia West Regional Users Meeting, Santa Clara, CA, Oct. 16-17, 2013.
- Blinzler, B.J.; Goldberg, R.K.; and Binienda, W.K.: Macro Scale Independently Homogenized Subcells for Modeling Braided Composites, *AIAA Journal* Vol. 50, No. 9, 2012.
- Blinzler, B.J.; Goldberg, R.K.; and Binienda, W.K.: Macro Scale Independently Homogenized Subcells for Modeling Braided Composites, NASA TM-2012-217621, 2012.
- Goldberg, R.K.; Blinzler, B.J.; and Binienda, W.K.: Modification of a Macromechanical FiniteElement Based Model for Impact Analysis of Triaxially Braided Composites, *Journal of Aerospace Engineering* Vol. 25, No. 3, 2012.
- Blinzler, B.J.: Systematic Approach to Simulating Impact for Triaxially Braided Composites, Ph.D Dissertation, University of Akron, Akron, OH, 2012.
- Blinzler, B.J.; and Binienda, W.K.: Macro-mechanical Approach to Modeling Barely Visible Damage in Braided Composites, Earth and Space Conference, Pasadena, CA, Apr. 15-18, 2012.
- Goldberg, R.K.; Roberts, G.D.; Blinzler, B.J.; Kohlman, L.W.; and Binienda, W.K.: Characterization and Analysis of Triaxially Braided Polymer Composites Under Static and Impact Loads, Earth and Space Conference, Pasadena, CA, Apr. 15-18, 2012.
- Blinzler, B.J.; Goldberg, R.K.; and Binienda, W.K.: Macro Scale Independently Homogenized Subcells for Modeling Braided Composites, AIAA/ASME/ASCE/AHS/ASC 51st Structures, Structural Dynamics & Materials Conference, Denver, CO, April 4-7, 2011.
- Goldberg, R.K.; Blinzler, B.J.; and Binienda, W.K.: Investigation of a Macromechanical Approach to Analyzing Triaxially-Braided Polymer Composites *AIAA Journal* Vol. 49, No. 1, 2011.
- Goldberg, R.K.; Blinzler, B.J.; and Binienda, W.K.: Modification of a Macromechanical FiniteElement Based Model for Impact Analysis of Triaxially Braided Composites, NASA TM-2010-216922, 2010.
- Goldberg, R.K.; Blinzler, B.J.; and Binienda, W.K.: Modification of a Macromechanical FiniteElement Based Model for Impact Analysis of Triaxially Braided Composites, Proceedings of the American Society for Composites Twenty-Fifth Technical Conference, Dayton, OH, Sept. 20-22, 2010, J.B. Lantz, N. Takeda, B.M. Doudican, G.A. Shoepner, and S.L. Donaldson, editors, DEStech Publications, Inc., 2010.
- Blinzler, B.J.; Goldberg, R.K.; and Binienda, W.K.: Investigation of *MAT_58 for Modeling Braided Composites, 11th Int'l LS-DYNA User's Conference, Dearborn, MI, June 6-8, 2010.
- Goldberg, R.K.; Blinzler, B.J.; and Binienda, W.K.: Investigation of a Macromechanical Approach to Analyzing Triaxially-Braided Polymer Composites. NASA TM-2010-216371, 2010.
- Goldberg, R.K.; Blinzler, B.J.; Binienda, W.K.: Characterization of a Macromechanical FiniteElement Based Model for Impact Analysis of Triaxially Braided Composites, 2010 Aircraft Airworthiness and Sustainment Conference, Austin, TX, May 10-12, 2010.
- Goldberg, R.K.; Blinzler, B.J.; Binienda, W.K.: Investigation of a Macromechanical Approach to Analyzing Triaxially Braided Polymer Composites, AIAA/ASME/ASCE/AHS/ASC 51st Structures, Structural Dynamics & Materials Conference, Orlando, FL, April 12-15, 2010.

Goldberg, R.K.; Bednarczyk, B.A.; Blinzler, B.J.; Li, X.; Binienda, W.K.; Liu, K.C.; and Chattopadhyay, A.: Multiscale Modeling of Triaxial Braided Composites, NASA Aviation Safety Conference, Mclean, VA, Nov. 17-19, 2009.

Goldberg, R.K.; Roberts, G.D.; Blinzler, B.J.; Binienda, W.K.; and Littell, J.D.: Development of a Macroscopic, Non-homogeneous, Finite Element Based Approach to Analyze the Impact Response of Triaxially Braided Polymer Composites, American Helicopter Society National Technical Specialists' Meeting on Rotorcraft Structures and Survivability, Williamsburg, VA, Oct. 27-29, 2009.

Honors & Awards:

- Harry H. Hilton award for best student paper in structures at the 52nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference 2011
- Award for PHD study from NASA Graduate Student Researchers Program 2009, 2010 and 2011
- Women in Higher Education – Outstanding Student in Engineering 2009
- University of Akron Graduate Assistantship 2008
- University of Missouri – Rolla Trustees Scholarship 2007, 2006, and 2005
- Missouri Society of Professional Engineers Scholarship 2004
- Missouri Academy of Science Mathematics and Computing Full Tuition Scholarship 2003

Activity in Research:

- Composite Processing Modeling
- Sustainable Composite Material Characterization
- Multifunctional Material Analysis and Design
- Analysis and Design of Additively Manufactured Structures
- Characterization of Aging and Fatigue in Advanced Materials
- High Velocity Impact on Composite Structures
- Natural Hazard Mitigation
- Electro-mechanical, Thermo-mechanical Analysis
- Advanced Self-Healing Material Mechanics

Teaching Experience:

California State University Long Beach

- Finite Element Methods, FS 2014 & 2015

The University of Akron

- Sub: Advanced Mechanics, Plasticity, SS 2011
- TA: Solid Mechanics, SS 2009
- TA: Construction Material, FS 2008

Missouri University of Science & Technology

- TA: Leadership in the Miner Way, FS 2006-2007
- TA: Introduction to Civil Engineering, FS 2006

Teaching Education

- Presentation Skills – Captivating Listeners, 2012
- Future Faculty Seminar Series, University of Akron, 2010

Journal Reviewer:

- American Institute of Aeronautics & Astronautics (AIAA) Journal
- Journal of Composite Part A
- Journal of Aerospace Engineering

Professional Organizations & Service Activities:

- United Nations Sustainable Development Goals Volunteer (since 2014)
- Member, Engineers Without Borders (EWB) (since 2005)
Advisor (2008-2012) Fundraising Chair & Programming Chair (2007-2008)
- Society of Women Engineers (SWE) (Member since 2011)
AV Section Treasurer (2013-2015)
- Associate Member, American Society of Civil Engineers (ASCE) (since 2005)
- Member, American Institute of Aeronautics and Astronautics (AIAA) (since 2009)
- Member, Women in High Education (WIHE) (since 2008)
Programming Chair (2010-2012) Website Chair (2009-2010)
- United Nations Millennium Development Goals Volunteer (2008-2011)
- Member, Chi Epsilon (since 2006)
National Scholarship Committee Chair (2008)
- Member, Kappa Delta Sorority (since 2005)
Web & Technology Chair (2007-2008) Panhellenic Delegate (2005-2006)
- Member, Panhellenic Council (2005-2007)
Service & Programming Chair (2006-2007)
- Picture Yourself as an Engineer – Engineering Career Day for Young Women
(2009 - 2011)
- Girls Take Flight – STEM outreach event (2011)

Professional Development:

- Composites and Advanced Materials Expo 2016
- SAMPE (Materials & Process Engineering) Conference 2016
- UN Sustainable Energy for All Forum 2015
- American Society of Composites Conference 2015
- Proposal Writing and Budgeting Seminar 2013
- Earth and Space Conference 2012
- 52st AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference (SDM) 2011
- NSF Workshop on the Emerging Applications & Future Directions - BEM 2010
- 11th Int'l LS-DYNA Users Conference 2010
- 51st AIAA Structures, Structural Dynamics, & Materials Conference (SDM) 2010