

Amanda W. Bridges, Ph.D.
Senior Associate

Professional Profile

Dr. Amanda Bridges is a Senior Associate in Exponent's Biomechanics practice. She focuses on issues involving biomechanics of human injury, occupant kinematics, and occupant restraints related to automobile collisions and all-terrain vehicle accidents. Dr. Bridges has seven years of combined experience in biomedical research and medical devices. She has technical experience designing and evaluating surgical instrumentation for ligation and minimally invasive laparoscopic procedures.

Dr. Bridges also has expertise in biomaterials, with an emphasis on inflammatory responses to implanted materials. Her previous research focused on developing micro-scale hydrogel-based coatings to enhance biocompatibility of implantable materials and devices. She has extensive experience with *in vivo* implantation procedures, cell-based assays, histology, surface analysis, and microscopy techniques. Dr. Bridges has presented research at both national and international conferences.

Prior to joining Exponent, Dr. Bridges was a National Science Foundation Graduate Research Fellow in the Cellular and Biosurface Engineering Laboratory at Georgia Institute of Technology.

Academic Credentials and Professional Honors

Ph.D., Biomedical Engineering, Georgia Institute of Technology & Emory University, 2008
B.S., Biomedical Engineering, North Carolina State University (*summa cum laude*), 2004

National Science Foundation Graduate Research Fellow, 2005–2008; Biological and Agricultural Engineering Scholarship, 2003–2004; Biomedical Engineering Student Leadership Award, 2004; Academic Dean's List, North Carolina State University, 2000–2004; Summers of Discovery internship program, NIEHS, 2000 and 2001

Tau Beta Pi Engineering Honor Society; Golden Key International Honour Society; Alpha Epsilon Biological and Agricultural Engineering Honor Society

Licenses and Certifications

Engineer-in-Training, North Carolina
Northwestern University Traffic Institute, Traffic Accident Reconstruction, September 2008

Publications

Bridges AW, Whitmire RE, Singh N, Templeman KL, Babensee JE, Lyon LA, García. Chronic inflammatory responses to microgel-based implant coatings. *J Biomed Mater Res A* 2010, in press.

Welch T, Bridges A, Gates D, Heller M, Stillman D, Raasch C, Carhart M. An evaluation of the BioRID II and Hybrid III during low- and moderate-speed rear impact. SAE World Congress, 2010-01-1031, and Transactions Journal of Passenger Cars, Society of Automotive Engineers, Warrendale, PA, 2010.

Gates DH, Bridges A, Welch TDJ, Lam T, Scher I, Yamaguchi GT. Lumber loads in low to moderate speed rear impacts. SAE World Congress, 2010-01-0141, and Transactions Journal of Passenger Cars, Society of Automotive Engineers, Warrendale, PA, 2010.

Bridges AW, García AJ. Anti-inflammatory polymeric coatings for implantable biomaterials and devices. *J Diabetes Sci Technol* 2008; 2:984–994.

Bridges AW, Singh N, Burns KL, Babensee JE, Lyon LA, García AJ. Reduced acute inflammatory responses to microgel conformal coatings. *Biomater* 2008; 29:4605–4615.

Singh N, Bridges AW, García AJ, Lyon LA. Covalent tethering of functional microgel films onto poly(ethylene terephthalate) surfaces. *Biomacromolecules* 2007; 8(10):3271–3275.

Keselowsky BG, Bridges AW, Burns KL, Tate CC, Babensee JE, LaPlaca MC, García AJ. Role of plasma fibronectin in the foreign body response to biomaterials. *Biomater* 2007; 28:3626–3631.

Denslow SA, Walls AA, Daub ME. Regulation of biosynthetic genes and antioxidant properties of vitamin B₆ vitamers during plant defense responses. *Phys and Molec Plant Pathol* 2005; 66:244–255.

Presentations

Bridges AW, Singh N, Burns KL, Babensee JE, Lyon LA, García AJ. Non-fouling microgel coatings reduce inflammatory responses to implanted biomaterials. Oral presentation, World Biomaterials Congress, Amsterdam, The Netherlands, 2008.

Bridges AW, Singh N, Burns KL, Babensee JE, Lyon LA, García AJ. Poly(ethylene glycol) cross-linked microgel coatings reduce leukocyte adhesion *in vivo*. Poster presentation, Georgia Life Sciences Summit, Atlanta, GA, 2007.

Bridges AW, Singh N, Burns KL, Babensee JE, Lyon LA, García AJ. Polyethylene glycol cross-linked microgel coatings reduce leukocyte adhesion *in vivo*. Poster presentation, Gordon Research Conference on Biomaterials, Plymouth, NH, 2007.

Bridges AW, Singh N, Burns KL, Babensee JE, Lyon LA, García AJ. Polyethylene glycol-based microgel coatings reduce leukocyte adhesion *in vivo*. Oral presentation, Society for Biomaterials, Chicago, IL, 2007.

Bridges AW, Singh N, Burns KL, Babensee JE, Lyon LA, García AJ. PEG-crosslinked microgel coatings reduce macrophage adhesion to biomaterials. Oral presentation, Industrial Partners Symposium at Georgia Institute of Technology, Atlanta, GA, 2006.

Walls AA, Singh N, Burns KL, Babensee JE, Lyon LA, García AJ. Poly(ethylene glycol) crosslinked microgel coatings reduce macrophage adhesion to biomaterials. Oral presentation, Society for Biomaterials, Pittsburgh, PA, 2006.

Walls AA, Singh N, Burns KL, Babensee JE, Lyon LA, García AJ. Poly(ethylene glycol)-crosslinked microgel coatings reduce macrophage adhesion to biomaterials. Poster presentation, Georgia Institute of Technology and Emory University Center for the Engineering of Living Tissues (GTEC) and National Science Foundation site visit, Atlanta, GA, 2006.

Walls AA, Singh N, Burns KL, Babensee JE, Lyon LA, García AJ. PEG-crosslinked microgel coatings modulate inflammatory responses to biomaterials. Poster presentation, Educational Partners Symposium at Georgia Institute of Technology, Atlanta, GA, 2005.

Prior Experience

Graduate Research Fellow, Georgia Institute of Technology, 2004–2008
Junior Engineer, Weck Closure Systems/Teleflex Medical, 2002–2003

Professional Affiliations

- American Society of Mechanical Engineers
- Society of Automotive Engineers
- Society for Biomaterials
- Alpha Omega Epsilon Engineering Sorority