



**2008 BIOINSPIRED DESIGN CONFERENCE**  
**MISSISSIPPI STATE UNIVERSITY**  
**HUNTER HENRY CENTER**  
**AUGUST 19-22**

**Tuesday August 19<sup>th</sup>**

Vendor Set Up (*Parker Ballroom N*)

- 5:00-7:00 PM** Registration (*Lobby*)  
Poster Set Up (*Parker Ballroom N*)
- 5:30-7:00 PM** Open House / Reception (*Lobby*)

**Wednesday August 20<sup>th</sup>**

**STRUCTURAL/FUNCTIONAL BIOMIMETICS I** (*Parker Ballroom S*)

**Introduction of Keynote and Session Chair: Dr. Jerry Gilbert**, Associate Provost and Professor  
Agricultural and Biological Engineering

**8:30-9:30 Keynote Speaker: Dr. Robert Nerem**, *Fostering Interdisciplinary Research in the BioInspired Century*

**Oral Presentations**

**9:30-9:50 Zhang S**, Crow JA, Cooper RC, McLaughlin RM, Mullins K, Yang X, Borazjani A, Liao J. *The Correlation of 3D DT-MRI Myocardial Fiber Architecture with Local Myocardial Infarction*

**9:50-10:10 Wang B**, Borazjani A, Guan J, Elder S, Liao J. *Fabrication of Cardiac Patch with Decellularized Myocardial Scaffold and Mesenchymal Stem Cells*

**10:10-10:30 Break**

**10:30-10:50 Begonia M**, Prabhu R, Liao J, Horstemeyer M, Marin E, Williams L. *Structure-Property Relationships of Porcine Brain Tissue in Compression*

**10:50-11:10 Yorston J**. *Imaging and Understanding Nature's Structures with EVP SEM*

**11:10-11:30 Kirk I**. *Spinning Disc Technology and Applications*

**11:30-11:50 Batchelor, M**, Rehfeld C. *Extended Depth of Field Imaging for Biological and Material Specimens*

**12:00-1:30 Lunch**

## **PATTERNS IN NATURE and BIOMIMICRY IN TECHNOLOGY DEVELOPMENT I**

**Introduction of Keynote and Session Chair: Dr. Peter Ryan**, Co-Director Facility for Organismal and Cellular Imaging and Associate Professor Animal and Dairy Sciences

**1:30-2:30 Keynote Speaker: Dr. Christopher Contag**, *Incorporating reporter enzymes into mammalian systems for revealing biological changes*

### **Oral Presentations**

**2:30-2:50 Ryan P**, Willard ST, Moulton K, Chromiak AB. *Application of Biophotonics and Bioluminescence-Modified Organisms to Study Pathogenic Microorganisms in Agriculturally Important Species*

**2:50-3:10 Kirkland B**, Lynch FL, Folk RL, Lawrence AM, Corley ME, Puckett MK, McNeal KS. *Nanobacteria, Organic Matter, and Precipitation in Hot Springs, Reefs, and Tidal Flats: Serendipitous Science and Real Implications*

**3:10-3:40 Goodacre A**. *New Tools for Imaging Live Cells*

**3:40-4:00 Break**

**4:00-4:30 Introduction to Forum**

Dr. Jonathan Pote, Associate Director Research Planning MAFES

Dr. Gary Butler, Assistant Vice President Research and Economic Development

**Dr. Robert Nerem**, Director Parker H. Petit Institute for Bioengineering and Bioscience and Emory Center for the Engineering of Living Tissues, Georgia Institute of Technology

**4:30-5:30 Forum Discussion**

*Strategies to Foster Interdisciplinary Research Across Diverse Fields of Engineering and Life Sciences, Resulting in Long-term Success and Sustainability*

**5:30-7:00 Poster Presentations and Vendor Reception** (Parker Ballroom N)

**Featuring Albert Einstein**

**Thursday August 21<sup>st</sup>**

**STRUCTURAL/FUNCTIONAL BIOMIMETICS II** (Parker Ballroom S)

**Introduction of Keynote and Session Chair: Dr. Rand German**, Professor Mechanical Engineering and Endowed Chair Center for Advanced Vehicular Systems

**8:30-9:30 Keynote Speaker: Dr. Arun Gokhale**. *Quantitative Characterization and Simulations of Microstructures: Examples Taken from Biology*

### **Oral Presentations**

**9:30-9:50 Davis D**, Liao J, Elder S, Horstemeyer M, Williams L. *Strain Rate Effects on Structure-Property Relationships in Rabbit Patellar Tendon*

**9:50-10:10** Mainwaring P. *XuM; X-Ray Microtomography*

**10:10-10:30** Break

**10:30-10:50** Morrison R. *Mechanisms of Structural Color Change in the Iridophores of Lower Vertebrates*

**10:50-11:10** Zywno C, Terry A, Thibaudeau G. *Identifying and Predicting Structural Color*

**11:10-11:30** Terry A, Minerick A, Thibaudeau G, Walters K. *Structurally Responsive Materials Inspired by Nature*

**11:30-11:50** Adams J. *The Nano eNabler™ System: A Novel, Flexible Approach to Molecular Printing*

**12:00-1:30** Lunch

**PATTERNS IN NATURE and BIOMIMICRY IN TECHNOLOGY DEVELOPMENT II**  
(Brunson Seminar Rm)

**Introduction of Keynote and Session Chair: Dr. Scott Willard**, Co-Director Facility for Organismal and Cellular Imaging and Professor Biochemistry and Molecular Biology

**1:30-2:30** Keynote Speaker: **Tim McGee**. *Innovation Inspired by Nature*

**Oral Presentations**

**2:30-2:50** Baldwin B, Thibaudeau G, Arockiasamy A. *Bamboo as a BioInspired Engineered Material*

**2:50-3:10** Arockiasamy A, Suri P, Park SJ, Thibaudeau G, German R, Baldwin B, and Cho K. *Development of Novel Bioinspired Design Ferrous Components*

**3:10-3:30** Rhee HJ, Horstemeyer MF, Hwang Y, Lim H, El Kadiri H, Tucker M, Trim W. *A Study on the Structure and Mechanical Behavior of the Terrapene Carolina (Box Turtle) Shell: A Pathway to Design Bio-Inspired Synthetic Composites*

**3:30-4:30** Break at Vendor Demonstrations

**3:40-4:00** Monroe S. Nikon Instruments: *NeoScope*

**4:00-4:20** Boykin M. Hitachi: *Table top SEM*

**4:30-4:50** Kangasniemi K. *Introduction to Elionix 3D-SEM and SEMTech Solutions E-Beam Activities*

**4:50-5:10** Theberge C. *Elemental Analysis at the Nanoscale: Utilizing Wavelength Dispersive Spectroscopy (WDS) for Low KV/Light Elemental Analysis*

**5:10-5:30** Brown R, Lee S. *Sex Scales of Moths-Natural Wicks for Scent Dispersal*

**5:30-5:50** Mahler M. *Deconvolution Microscopy and the PSF*

**6:00-6:30** Reception (Parker Ballroom N)

**6:30-8:30** Banquet (Parker Ballroom S)

**Keynote Speaker: Dr. Gregory Ziegler** *Inspired by Chocolate*

**Post Meeting Workshops to be held at MSU's  
*Electron Microscope Center***

**Wednesday August 20 and Thursday August 21, 1:30 – 4:00 pm**

Zeiss SMT, EVO 50, Variable Pressure SEM Demonstrations

John Yorston of Carl Zeiss, SMT Inc.

Attendee Limit: 3-5

**Friday August 22, 8:30-5:00**

Live-Cell Confocal Imaging: Short course on fluorescent labeling of fresh tissue and CLSM Imaging on a Zeiss 510.

Scott Metzler, Instructor

Attendee Limit: 10

For more information or to sign up for these workshops

contact:

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