

*Please check back often for updates.*

**1<sup>st</sup> Annual National Biomimicry Summit and Education Forum (BSEF) for Aerospace  
- in collaboration with NASA**

**(August 2-4, 2016)**

**Agenda and Schedule**

**Tuesday, August 2**

- 730-845 Registration and Light Breakfast  
845-900 Welcome; Introductory Remarks; Meeting Logistics

**Biomimicry: An Evolving Discipline**

- 900-930 “ABCs: Aerospace Biomimicry & Other Cool Things” – Vik Shyam, NASA GRC  
930-1000 “Biomimicry Fundamentals” – Ashok Goel, Georgia Tech  
1000-1030 “Application of Biomimicry to NASA Problems” – Craig E. Kundrot, NASA HQ

*1030-1045 Break*

**Space Exploration**

- 1045-1115 “Planetary Exploration Using Bio-inspired Technologies” – Y. Bar-Cohen, JPL  
1115-1145 “Life-Science and Astrobiology Nano Satellite Missions” – A. Ricco, NASA ARC  
1145-1215 “Synthetic biology as an enabling technology for space exploration” – Lynn Rothschild, NASA ARC

*1215-1330 Lunch (Speaker - Thomas Tyrrell, Great Lakes Biomimicry)*

**Robotics**

- 1330-1400 “Biomimetic Robot Inspired by Cyanea Capillata for Underwater Surveillance” – Shashank Priya, VPI&SU  
1400-1430 “Material-Integrated Intelligence for Robot Autonomy” – Nikolaus Correll, University of Colorado Boulder  
1430-1500 “Animals as models for robot mobility and autonomy: Crawling, walking, running, climbing, and flying” – Roger Quinn, CWRU

*1500-1515 Break*

**Propulsion and Power**

- 1530-1545 “Aerodynamic Role and Low Dimensional Analysis of Wing Surface Morphology in Bio-inspired Flapping Flights” – Haibo Dong, University of Virginia  
1545-1615 “Light-trapping in Polymer Solar Cells by Processing with Nanostructured Diatomaceous Earth” – Lyndsey McMillon-Brown, Yale/NASA GRC  
1615-1645 “How Seal Whiskers Suppress Vortex Structures: Effects of Phase Shift Angle” Wei Zhang, Cleveland State University  
1645-1700 Logistics for Evening Session

*1700-1730 Networking Opportunity*

**Evening Session**      1815-2030      Cleveland Metroparks Zoo, Cleveland, OH

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**Agenda and Schedule**

**Wednesday, August 3**

800-830 Registration & Light Breakfast

**Artificial Intelligence and Swarms**

830-900 “Particle Swarm Optimization” – Russ Eberhart, IUPUI

900-930 “Evolutionary Computation for Real-World Optimization Problems” – Amir Gandomi, BEACON Center, Michigan State University

930-1000 “An Artificial Brain Mechanism to Develop a Learning Paradigm for Robots”  
Rashmi Jha, University of Cincinnati

1000-1030 “A Stochastic, Swarm-Based Control Law for Emergent-System-Level Area  
Coverage by Robots” – Bryan Trease, University of Toledo

*1030-1045 Break*

**Materials and Structures**

1045-1115 “Materials Alchemy” – Kenneth Sandhage, Purdue University

1115-1145 “Creating Functional Biomimetic Materials” – Rajesh Naik, USAFRL-WPAFB

1145-1215 “Length Scale Dependent Deformation in Polymers and Corresponding Effects in  
Cellular Materials” – Chung-Souk Han, University of Wyoming

*1215-1330 Lunch (Speaker - Harvey Webster, CMNH)*

**Life in Hostile Environments**

1330-1400 “Physiomimetics, Adaptation and Persistence of Life in Novel Environments”  
Scott Turner, SUNY College of Environmental Science & Forestry

1400-1430 “From Geochemistry to Biogeochemistry: The Origins of Life” N. Sahai, UAkron

1430-1500 “Responses of Microbial Communities in ‘Non-Extreme’ Settings to Imposition of  
Physicochemically ‘Extreme’ Conditions” John Senko, University of Akron

*1500-1515 Break*

**Architecture, Art, and Design**

1530-1545 “Biomimetic Principles Utilized in Product Design” – John Nottingham,  
Nottingham Spirk, Cleveland, OH

1545-1615 “Collaboration, Biomimicry and Success Stories” – Bill Sullivan, FLEXcon

1615-1645 “Biomimicry: A Multidisciplinary Design Process” – Doug Paige, Cleve. Inst. Art

1645-1715 “A Biomimetic Approach to Architecture and Design” – Petra Gruber, UAkron

1715-1730 Logistics for Evening Session

**Evening Session** 1830-2030 Cleveland Museum of Natural History, Cleveland, OH

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**Thursday, August 4**

800-830 Registration & Light Breakfast

**Educational Aspects of Biomimicry**

830-900 “Green Harbors Program and Biomimicry” - Anamarija Frankić, UMASS Boston

900-930 “Zygote Quarterly: An Open-Source Bio-Inspired Design Journal” – Marjan Eggermont, University of Calgary

930-1000 “Biomimicry at UA BRIC” – Peter Niewiarowski, University of Akron

1000-1030 “Sweet are the uses of adversity: Insights into adaptation and speciation using experimental evolution” – Frank Rosenzweig, Georgia Institute of Technology

*1030-1045 Break*

**Other Cool Things**

1030-1111 ESA Perspective – Katharina Brinkert, European Space Agency

11-1130 “Bio-Inspired RF Steganography via Linear Chirp Radar Signals” – Zhiqiang Wu, Wright State University

1130-1200 “Perceptualization of Particle Swarm Optimization” – Marc Kirschenbaum, JCU

*1215-1330 Lunch*

*(Speaker: Mark Avsec, Benesch, Friedlander, Coplan & Aronoff, LLP)*

**Networking and Follow-on Activities**

1330-1430 **Student Poster Session (OAI Atrium)<sup>1</sup>**

1430-1730 Collaborating with NASA - Biomimicry Workshop @ OAI (NASA, GLBio)

1345-1545 Optional Tour(s) of NASA GRC: Schedule TBD

1730-1745 Logistics for Evening Session

**Evening Session** 1800-2030 Summit Closing Social and Mixer at OAI

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<sup>1</sup> Student posters displayed all 3 days. Students present on August 4 at 1330.