

## 2009-2017 John S. Dunn Collaborative Research Award Program Recipients

### 2009

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#### ***T-cell Mediated Delivery of Gold Nanoparticles for Externally Triggered Photothermal Cancer Therapy***

Rebekah Drezek, Rice University  
Aaron Foster, Baylor College of Medicine

#### ***Synthetic Tuning of a Breast Cancer-controlling Network***

Oleg Igoshin, Rice University  
Michael Mancini, Baylor College of Medicine  
Gabor Balazsi, UT M. D. Anderson Cancer Center

#### ***Development of High Resolution Endoscopes for In Vivo Imaging of the Inner Ear***

Tomasz Tkaczyk, Rice University  
John Oghalai, Baylor College of Medicine

#### **Event**

#### ***Early Disease Detection: Biomarker Discovery to Clinical Application***

John McDevitt, Rice University  
Christie Ballantyne, Baylor College of Medicine  
David Gorenstein, UT Health Science Center at Houston

### 2011

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#### ***Developing Split Protein Biocatalysts and Reporters for Translational Systems and Synthetic Biology***

Jonathan Silberg, Rice University  
Lynn Zechiedrich, Baylor College of Medicine  
Anthony Maresso, Baylor College of Medicine

#### ***A Bio-Nano-Chip for Salivary Anticonvulsant Drug Assay in Epilepsy Patients***

Giridhar Kalamangalam, UT Health Science Center at Houston  
John McDevitt, Rice University

#### ***Engineered, Affordable Glycans as New Antimicrobials***

George Bennett, Rice University  
Mary Estes, Baylor College of Medicine

#### **Event**

#### ***Multicellular Self-Organization Meeting***

Amina Qutub, Rice University  
Oleg Igoshin, Rice University  
Gábor Balazsi, MD Anderson Cancer Center  
Waleed Gaber, Texas Children's Hospital

### 2010

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#### ***Single cell dynamics of the white/opaque epigenetic switch in *Candida albicans****

Matthew Bennett, Rice University  
Kresimir Josic, University of Houston  
Michael Gustin, Rice University

#### ***Molecular Activated Stealth Chemotherapy (MASC) Nanoparticles for Cancer Treatment***

Rebekah Drezek, Rice University  
Liz Bikram, University of Houston

#### ***Structure determination of novel targets identified from a multi-drug resistant pathogen***

Yousif Shamoo, Rice University  
Cesar Arias, University of Texas Health Science Center at Houston

#### **Event**

#### ***Planning a Center for NeuroEngineering***

Peter Saggau, Baylor College of Medicine  
Steven Cox, Rice University  
Richard Baraniuk, Rice University  
Nitin Tandon, University of Texas Health Science Center at Houston  
Robert Raphael, Rice University

### 2012

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#### ***New Antimicrobials Through MEP Pathway Inhibition***

Janet Braam, Rice University  
Heidi Kaplan, University of Texas Medical School

#### ***Multi-layered Cardiac Patches from Dynamic Surfaces***

Jeffrey Jacot, Rice University  
Rafael Verduzco, Rice University  
Iki Adachi, Baylor College of Medicine/Texas Children's Hospital

#### ***Metabolic Signatures of Cancer Stem Cells***

Ching Lau, Baylor College of Medicine  
Ka-Yiu San, Rice University

#### **Event**

#### ***Telehealth Research Institute: Mission, Strategy, and Structure***

Robert Satcher, University of Texas MD Anderson Cancer Center  
Jan Odegard, Rice University  
Michael Twa, University of Houston  
Cindy Farach-Carson, Rice University

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### 2013

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#### ***Enhanced Cancer Detection through Development of Novel Immunoprobes***

Kathleen Beckingham, Rice University  
Robert Bast, University of Texas MD Anderson Cancer Center

#### ***Non-invasive MR Colonoscopy and Early Detection of Colon Cancer by Targeted Hyperpolarized Silicon Nanoparticles***

Pratip Bhattacharya, University of Texas MD Anderson Cancer Center  
Daniel Carson, Rice University

#### ***High-content Quantitative Imaging and Flow-based Remodeling of in vitro Vascularized Engineered Tissues***

Jordan Miller, Rice University  
Mary Dickinson, Baylor College of Medicine

#### ***Imaging the delivery and therapeutic response of protease-activated virus nanotherapeutics***

Junghae Suh, Rice University  
Eva Sevick, University of Texas Health Science Center-Houston

#### ***Rapid fungemia and bacteremia screening via ultraspecific detection of nucleic acid biomarkers***

David Zhang, Rice University  
John Holcomb, University of Texas Health Science Center at Houston

#### **Event**

#### ***Plasmon-hybrid Superstructures for Functionally Biomimetic Light-Driven Processes***

Christy Landes, Rice University  
Stephan Link, Rice University  
Neal Waxham, University of Texas Medical School-Houston  
Richard Willson, University of Houston

### 2014

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#### ***Local Dual Delivery of Antifungals and Growth Factors for Treatment of Necrotizing Invasive Mold Infections***

Antonios Mikos, Rice University  
Dimitrios Kontoyiannis, University of Texas MD Anderson Cancer Center

#### ***Nanoparticle prophylaxis protection from chemotherapy ototoxicity and hearing loss***

Fred Pereira, Baylor College of Medicine  
James Tour, Rice University

#### ***Identifying the molecular basis of CO<sub>2</sub> chemosensitivity via microfluidic characterization and cell sorting***

Jacob Robinson, Rice University  
Russell Ray, Baylor College of Medicine

#### ***Maximizing therapeutic gain from metallic nanoparticle-radiation interaction via rational design***

Eugene Zubarev, Rice University  
Sunil Krishnan, University of Texas MD Anderson Cancer Center

#### **Event**

#### ***TMC-GCC Collaborative Workshop: Regenerative Medicine in Neuroscience and Neuroengineering***

Charles S. Cox, Jr., University of Texas Health Science Center at Houston  
Jane Grande-Allen, Rice University  
Behnaam Aazhang, Rice University  
Benjamin Deneen, Baylor College of Medicine

**2009-2017 John S. Dunn Collaborative Research Award Program Recipients**

**2015**

***Engineering E. coli for Temperature Independent and Light-activated Secretion of Colanic Acid to Enable Fundamental and Translational Studies of a Novel Gut Microbiota-mediated Longevity Pathway***

Jeffrey Tabor, Rice University  
Meng Wang, Baylor College of Medicine

***Mini Mechanobiology: Mechanical Testing and Organ Culture of Rodent Heart Valves***

Jane Grande-Allen, Rice University  
Dianna Milewicz, University of Texas Health Science Center  
Houston

***Linking Transcriptional Regulation of Signaling Pathway Components to Embryonic Patterning***

Aryeh Warmflash, Rice University  
Ido Golding, Baylor College of Medicine

***Genes in Context: Using Genome Editing to Reveal how Molecular, Neural, and Social Factors Orchestrate Variation in Drosophila Aggressive Behavior***

Julia Saltz, Rice University  
Herman Dierick, Baylor College of Medicine

**Event**

***Symposium on Membrane Biophysics***

Michael Zhu, University of Texas Health Science Center  
Houston  
James McNew, Rice University  
Ted Wensel, Baylor College of Medicine  
Jim Briggs, University of Houston

**2016**

***Quantitative Assessment of Liver-Directed In Vivo Genome Editing with CRISPR/Cas9***

Gang Bao, Rice University  
William Lagor, Baylor College of Medicine

***Monitoring intracellular temperature in cancer cells using metal complexes***

Angel A. Marti-Arbona, Rice University  
Steven Curley, Baylor College of Medicine

***Decoding the gene regulatory mechanism underlying fate determination of hematopoietic stem progenitor cells***

José Onuchic, Rice University  
Yun (Nancy) Huang, Institute for Biosciences and Technology,  
Texas A&M-HSC

***Cellular level, functional brain imaging using multi-probe, snapshot image spectroscopy***

Tomasz Tkaczyk, Rice University  
Kimberley Tolias, Baylor College of Medicine

**Event**

***TMC-GCC Collaborative Symposium: Metabolism in Cancer***

Pratip Bhattacharya, MD Anderson  
Dan Carson, Rice University  
Arun Sreekumar, Baylor College of Medicine  
Daniel Frigo, University of Houston

2017

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***Development of High-Throughput Genetic Strategies to Dissect Microbiome Mmpact on Host Physiology***

Buck Samuel, Baylor College of Medicine

Joff Silberg, Rice University

Grant Hughes, University of Texas Medical Branch

***Developing and Deploying Genetically Encoded Indicators for Imaging Voltage Dynamics in the Mammalian Auditory System***

Robert Raphael, Rice University

Francois St-Pierre, Baylor College of Medicine

***Host Targeted Therapeutics to Combat Drug-Resistant Pathogens***

Ashok Chopra, University of Texas Medical Branch

Tor Savidge, Baylor College of Medicine/Texas Children's Hospital

**Event**

***Texas Medical Center Hematopoiesis and Inflammation Symposium***

Emily Mace, Baylor College of Medicine

Stephanie Watowich, MD Anderson

Pamela Wenzel, University of Texas Health Science Center, Houston