

2009-2020 John S. Dunn Collaborative Research Award Program Recipients

2009

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

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

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

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

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 Seveck, 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

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 CO₂chemosensitivity 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

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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

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2017

Development of High-Throughput Genetic Strategies to Dissect Microbiome Impact 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

2018

Understanding Pathogenic Determinants in Enterococcus faecium

Natasha Kirienko, Rice University
Barbara Murray, UT Health Science Center at Houston

Unraveling How Gut Microbiota Influence Form and Function in the Developing Enteric Nervous System

Rosa Uribe, Rice University
Anne Marie Krachler, UT Health Science Center at Houston

Photo-induced Epigenetic Remodeling in Mammalian Cells

Yubin Zhou, Institute of Biosciences and Technology
Han Xiao, Rice University

An Auditory Virtual Reality to Illuminate Learning and Memory

Caleb Kemere, Rice University
Matthew McGinley, Baylor College of Medicine

Event

None

2019

Visualizing Cell and Molecular Transitions that Contribute to Abnormal Craniofacial Development

George Eisenhoffer, MD Anderson
Jacqueline Hecht, UT Health Science Center at Houston

DNA Hydroxymethylation Signatures in Neonatal Opioid Addiction

Jonathan Davies, Baylor College of Medicine
Deqiang Sun, Institute of Biosciences and Technology

Hormone Memory: Epigenomic Impacts of Estrogen Exposure on Later Life Metabolism

Wenbo Li, UT Health Science Center at Houston
Zheng Sun, Baylor College of Medicine

2020

An AI-Assisted Smart Wound Dressing for Expedited and Personalized Wound Healing

Taiyun Chi, Rice University
Swathi Balaji, Baylor College of Medicine

CRISPR/Cas9-based epigenome editing to dissect the mechanistic causality between DNA methylation and immune phenotype

Isaac Hilton, Rice University
Andrew Dinardo, Baylor College of Medicine

Region-specific and Brain-wide Gene Therapy for Neurodevelopmental Disorders

MingShan Xue, Baylor College of Medicine
Jerzy Szablowski, Rice University