



NIH, NIGMS Fifth Biennial National IDeA Symposium of
Biomedical Research Excellence (NISBRE)

The Omni Shoreham Hotel
Washington, DC
June 16 – 18, 2014

Monday, June 16, 2014

- 4:30 - 6:00PM Opening Reception and Student Poster Session
- 5:30 - 6:00PM Presentation of Student Travel Awards
Hosted By: Sidney A. McNairy, Jr., PhD, DSc and Steven Fiering, PhD, Geisel School of Medicine at Dartmouth

Tuesday, June 17, 2014

- 7:00 - 8:00AM The Doctor Is In: One on One Mentoring for Students – Session I

General Session

- 8:30 - 8:45AM Welcome and Introduction from NISBRE PI: Charles Irvin, PhD, University of Vermont
Welcome and Remarks: Senator Patrick Leahy, Senior Senator Democrat, Vermont
- 8:45 - 9:15AM Jon R. Lorsch, PhD, Director
National Institute of General Medical Sciences, National Institutes of Health
- 9:15 - 9:45AM W. Fred Taylor, PhD, Director, IDeA Program, NIGMS, NIH
Perspective on the IDeA Program
- 9:45 - 10:15AM Coffee Break
- 10:15 - 10:20AM Introduction: James Turpen, University of Nebraska
- 10:20 - 10:50AM *The McNairy Lecture – INBRE*
Kelly L. Drew, PhD, University of Alaska, Fairbanks
- 10:50 - 10:55AM Introduction: James Turpen, University of Nebraska
- 10:55 - 11:25AM *The Maciag Lecture – COBRE*
Matthew S. Gentry, PhD, University of Kentucky
- 11:25 - 1:00PM Boxed Luncheons
- 12:15 - 1:00PM Early Afternoon Talk Show with Charlie Irvin: COBRE Best Practices
COBRE PI Celebrities: Ralph Budd, University of Vermont
W. Steven Ward, University of Hawaii
Prescott Deininger, Tulane University

1:20 - 3:30PM [Start of the NIGMS Program](#) (Please refer to the separate NIGMS agenda)

1:30 - 3:30PM **Basic NIH Grantsmanship**

- 1:30 – 2:00PM *Fundamentals of the NIH Grants Process & IDEa Program Overview*
Christy Leake, Grants Management Specialist
- 2:00 – 2:45PM *NIH Peer Review Process & Discussion*
Dana Plude, PhD, Chief, Biobehavioral and Behavioral Processes,
Integrated Review Group
George Spirou, PhD, Director, Center for Neuroscience, West Virginia University
School of Medicine
- 2:45 – 3:15PM *Grant Writing for Success*
Rosemarie Hunziker, PhD, Tissue Engineering and Regenerative Medicine
Program Director
- 3:15 – 3:30PM *Navigating NIH Electronic Resources*
Rosemarie Hunziker, PhD, Tissue Engineering and Regenerative Medicine
Program Director

1:30 – 3:30 PM NISBRE Workshop Session I

Scientific Skills

MicroRNA

Wei Yan, MD, PhD, University of Nevada School of Medicine

Images for Publication

Doug Taatjes, PhD, University of Vermont

TALEN vs CRISPR

Eric Kmiec, PhD, Delaware State University, HF Graham Cancer Center / Research Institute
Pawel Bialk, BS, Delaware State University, HF Graham Cancer Center / Research Institute
Bryan Strouse, Delaware State University, HF Graham Cancer Center / Research Institute

Career Skills

Mentoring

John Estrada, MD, Louisiana State University

Research Integrity

Ranjini Ambalavanar, BVSc, PhD, Office of Research Integrity

Interview Skills

Donna Atwater, Vermont

Individual Career Planning

Philip Clifford, PhD, Medical College of Wisconsin

SBIR/Tech Transfer/Spark^{VT}

Facilitator: Krishan Arora, PhD, NIGMS, NIH
Robert Vinson, NIH SBIR/STTR Program Office
Scott Somers, PhD, NIGMS SBIR/STTR Program Coordinator
Mercedes Rincon, PhD, University of Vermont
Jake Reder, PhD, Celdara Medical, New Hampshire

Careers in Biotech

Magdalene Moran, Hydra Biosciences, Cambridge, MA

4:00 - 5:30PM Unopposed Viewing of Posters – General Session

5:30 - 7:00PM Presentation of the Young Investigator Travel Awards
Hosted by: W. Fred Taylor, PhD, NIGMS, NIH and Charles Irvin, PhD, University of Vermont

Presentation of Core Travel Awards
Katia Sol-Church, Nemours A.I. duPont Hospital for Children

6:00 - 7:30PM Reception

5:30 - 6:30PM NAIPI General Meeting: All IDeA (COBRE, INBRE, and CTR) PIs, PCs, COBRE Project Leaders, and INBRE Project Investigators Chaired by: Carolyn Hovde Bohach, University of Idaho

8:30PM Red Carpet Arrivals

9:00PM Science IDOL Show

Master of Ceremonies: Charles Irvin, University of Vermont

Distinguished Judging Panel

George Spirou, West Virginia University

Lucia Pirisi-Creek, University of South Carolina School of Medicine

Charles Wood, University of Nebraska – Lincoln

Contestants

Victoria Belancio, Tulane

Casey Cole, South Carolina

Pakieli Kaufusi, University of Hawaii at Manoa

Jill Maples, Western Kentucky University

David Mullins, Dartmouth

Sergei Nechaev, University of North Dakota

Steven Papas, Mississippi College

Jessica Warns, University of North Dakota

Oliwia Zuerk, Montana State University

Wednesday, June 18, 2014

7:00 – 8:00AM The Doctor Is In: One on One Mentoring for Young Investigators – Session II

8:00 - 9:50AM **NISBRE Scientific Session I**

A. Cancer

Moderator: John Estrada, Louisiana State University Health Sciences Center

Speaker: Kenneth Tew, PhD, DSc, Medical University of South Carolina

Highlighted Posters

Pradip Biswas, Tougaloo College

Identifying Alternate Targets for Breast and Prostate Cancer Drug Designing

Jennifer Cameron, LSU Health Sciences Center

Epstein-Barr Virus Augments HPV-Mediated Abnormal Anal Cytology

Brock Christensen, Geisel School of Medicine at Dartmouth

DNA Methylation in Ductal Carcinoma in situ and Breast Cancer Progression

Marie Hanigan, University of Oklahoma Health Sciences Center

Structural Approach to the Development of Novel Drugs for Sensitizing Tumors to Therapy

Daniel Leal, University of Puerto Rico Bayamon Campus

Effects of Reishi on Inflammatory Breast Cancer

David Mullins, Geisel School of Medicine at Dartmouth

Vemurafenib-mediated Modification of T cell Chemotaxis to the Melanoma Microenvironment

Sergei Nechaev, University of North Dakota School of Medicine

RNA Polymerase II Pausing is Retained During Gene Activation

Igor Prudovsky, Maine Medical Center Research Institute

FGF Memory: A Novel Cell Growth Regulation Mechanism Dependent on inflammatory Signaling

Katherine Robbins, Nemours Al duPont Hospital for Children

Embryonal Rhabdomyosarcoma in Costello Syndrome and Sporadic Cases

Paulo Rodriguez, Louisiana State University-Health Sciences Center

Rescue of Notch 1 in CD8+ T cells Overcomes Tumor-induced T Cell Anergy and Enhances Cancer Immunotherapy

Linh Vu, University of Charleston

The Natural Product Resveratrol Attenuates Doxorubicin Cytotoxicity in Human Kidney (HK-2) Cells

B. Immunology

Moderator: Steven Fiering, Geisel School of Medicine at Dartmouth

Speaker: Prakash Nagakartti, PhD, University of South Carolina

Highlighted Posters

Tesfaye Belay, Bluefield State College

Cold-induced Stress Alters Immune Response and Increases the Intensity of Chlamydia trachomatis Genital Infection in Mice

David Chapman, Vermont Lung Center, University of Vermont

Increased Expression of Duffy Antigen Receptor for Chemokines in a Mouse Model of Allergic Airways Disease is Associated with Persistence of Airway Hyperresponsiveness

Timothy Foster, LSU Health Sciences Center

Targeting Host Metabolic Pathways for Therapeutic Resolution of Virus- and Inflammation-Mediated Ocular Diseases

Jennifer Franko, Bethany College

The Role of XX vs. XY Sex Chromosome Complement in Regulation of Innate Immunity

Andreas Koenig, University of Vermont

Mitochondrial Reactive Oxygen Species Regulate MAVS Dimerization

Zhengyu Ma, Nemours-A.I. duPont Hospital for Children

TCR Triggering by Ligands Tethered on Surfaces via Poly(ethylene glycol) Depends on Polymer Length

Bashir Rezk, Southern University at New Orleans

Roles of poly(ADP-ribose) polymerase-1 (PARP-1) in the Pathogenesis of Asthma

Carlos Rivera, University of Puerto Rico – Rio Piedras

Adjuvant Effect of Toll-like Receptors Agonists in Genetic Immunization with pA27L Against Smallpox

Luis Vazquez, University of Puerto Rico – Rio Piedras

Characterization of the Immune Response of Balb/c Mice after Immunization with L3L Gene from Vaccinia Virus

Shaofeng Wang, Oklahoma Medical Research Foundation

TALENs-mediated Enhancer Knockout Influences TNFAIP3 Gene Expression and Mimics a Functional Phenotype Associated with Systemic Lupus Erythematosus

c. Neuroscience

Moderator: Ian Meng, University of New England

Speaker: Erik Lundquist, PhD, University of Kansas

Highlighted Posters

Drew Breedlove, Northeastern State University

Recombinant Plasminogen Activator from Transgenic Plant for Stroke Treatment

Matthew Butchbach, Nemours Alfred I duPont Hospital for Children

Butyrate-based Neuroprotection in a Mouse Model for Pediatric Motor Neuron Disease

Ruben Dagda, University of Nevada School of Medicine

PTEN-induced kinase 1 (PINK1) and Protein Kinase A (PKA) Form a New Neuroprotective Signaling Axis

Dexter Dean, University of Southern Mississippi

Prion-like Self-propagating A β Oligomers in Alzheimer's Disease

Manuel Diaz-Rios, Institute of Neurobiology

Caffeine Stimulates Locomotor Behavior in the Mammalian Spinal Cord

Thomas Kidd, University of Nevada, Reno

The Down Syndrome Cell Adhesion Molecule Switches The Output Of Robo Signaling

Angela Odle, University of Arkansas for Medical Sciences

The Pituitary as a Regulator of the Postnatal Leptin Surge and Somatotrope Development

Mariana Pehar, Medical University of South Carolina
Regulation of Neurotrophin Signaling by Post-Translational Oxidative Modifications

Hisham Qosa, University of Louisiana at Monroe
Mixed Oligomers and Monomeric Amyloid- β Disrupts Blood-brain Barrier Integrity and Reduces Monomeric Amyloid- β Clearance

Craig Stockmeier, Univ. Mississippi Medical Center
Applied Neurotechnologies for Discovery-Based Research in Depression

Joachim Uys, Medical University of South Carolina
Redox Regulation of Dendritic Spine Formation and Actin Cycling in the Nucleus Accumbens of Cocaine Sensitized GSTP Knockout Mice

Huijing Xia, LSU Health Sciences Center
Brain ACE2 Overexpression Promotes Food Intake and Glucose Intolerance in Mice

D. Health Behaviors and Behavioral Sciences

Moderator: Vallabh Shah, PhD, FASN

Speaker: Stephen Higgins, PhD, University of Vermont

Highlighted Posters

Jason Burkhead, University of Alaska Anchorage
Dietary copper and sucrose: independent and synergistic drivers of non-alcoholic fatty-liver disease

Kristen Clements-Nolle, University of Nevada, Reno
Adapting an Adverse Childhood Experiences (ACE) Scale for Adolescents Involved with the Juvenile Justice System

Stephanie Johnson, Montana State University
Exploring Food Security at MSU through Food Group Choices

Nichole Pearson, Turtle Mountain Community College
Educational Achievement of Student Research Assistants Participating in Biomedical Research at a Tribal College

Julie Phillips, University of Vermont
An Intervention to Decrease Gestational Weight Gain

Vallabh Shah, University of New Mexico (2)
Health Disparity in Zuni Indians Evaluated Using Focus Group Conducted by Community Health Workers

Arnold Zea, LSUHSC / Stanley S. Scott Cancer Center
cAMP-induced Arginase in Mycobacterium Tuberculosis (Mtb) Growth: Emerging New Adjunctive Therapies

E. Cardiovascular

Moderator: Phillip Ades, University of Vermont

Speaker: John Hall, PhD, University of Mississippi Medical Center

Highlighted Posters

Jason Aliotta, Rhode Island Hospital/Alpert Medical School of Brown University
Bone Marrow Progenitor Cells from Mice with Monocrotaline-induced Pulmonary Hypertension Induce Right Ventricular Hypertrophy and Pulmonary Vascular Remodeling in Healthy Mice

Jussara do Carmo, University of Mississippi Medical Center

Melanocortin-4 Receptors in the PVN and RVLM are Important in Mediating Cardiovascular Responses to Acute Stress

Dewan Majid, Tulane University Health Sciences Center
Hypertensive and Renal Injury Responses to Angiotensin II and High Salt Intake in Interleukin-10 Gene Knockout Mice

Laura McCallum, Clemson University
Tissue Engineering Models for Diabetic Cardiomyopathy

Chip Norris, Medical University of South Carolina
From Genetic Discoveries To Therapeutic Potential In Patients With Mitral Valve Prolapse

Nasim Nosoudi, Clemson University
Local Inhibition of MMPs in Abdominal Aortic Aneurysm Rat Model using Anti-elastin Decorated Nanoparticles Loaded with Batimastat

Nalini Santanam, Joan C Edwards School of Medicine, Marshall University
Expression Profiling of miRNA and its Targets in Epicardial Fat from Patients with Coronary Artery Disease

Zhiyong Yin, University of Wyoming
Role of Rbm20 in Cardiac Dysfunction induced by Low Thyroid Function

Tiantian Zheng, University of Wyoming
Role of Endurance Exercise in VSMC KATP Channel and Ischemia Reperfusion Injury

Chaoqun Zhu, University of Wyoming
T3-Regulated Titin Isoform Transition Is Rbm20-Dependent

10:10 - 12:00PM **NISBRE Scientific Session II**

A. *Integrative Medicine*

Moderator: Lisa Cassis, University of Kentucky

Speaker: Helene Langevin, MD, Osher Center for Integrative Medicine/Harvard Medical School

Highlighted Posters

Sarah Buddenborg, University of New Mexico

RNA-Seq of Schistosoma-transmitting African Snails: Searching for New Ways to Eliminate Human Schistosomiasis

Yi Chen, Alderson Broaddus University

Chaetoglobosin K Induces Apoptosis in Cisplatin-resistant Ovarian Cancer Cells through p53 Activation

Luke Huggins, West Virginia Wesleyan College

Tyrol Knapweed Antibacterial Phytoalexins

Keara Johnson, Jackson State University

Preliminary Studies of Cytotoxic Efficacy of Garlic Extract to Human Leukemia (HL-60) Cells

Clement Yedjou, Jackson State University

Environmental Health and Technology-Enhanced Learning

B. Omics

Moderator: Abraham M. Lenhoff, University of Delaware

Speaker: Barrie Robison, PhD, University of Idaho

Highlighted Posters

Mikhail Dozmorov, Oklahoma Medical Research Foundation

GenomeRunner: Finding Common Regulators Associated with the Disease-associated SNPs by Searching Thousands of Genome Annotations

David Fardo, University of Kentucky

ABCC9 Gene Polymorphism is Associated with HS-Aging Pathology

Jiang Gui, Dartmouth College

Using Expert Biological Knowledge as Weight to Test Multiple Hypotheses Simultaneously

Rochelle Johnson, Montana State University – Billings

*Identification of Ubiquitin Ligase Substrates in *Candida albicans**

Benjamin King, Mount Desert Island Biological Laboratory

MicroRNA Control of Appendage Regeneration

Samuel McFarland, University of Southern Maine

GenomeScan: A Computational Tool for Locating Candidate Transcription Factor Binding Sites Throughout the Human Genome

J. Ignacio Moreno, Alcorn State University

*A Novel Molecular System to Study Mitochondrial Biogenesis in *Saccharomyces cerevisiae**

Brigit Noon, Montana State University

Development of Microfluidic Technologies for “Real-time” Metabolomics

Erika Peters, Kansas State University

Interactors of the START Domain in Homeodomain Transcription Factors

Jennifer Shelton, Kansas State University

Improving Whole Genome Shotgun Assemblies with Physical Maps Based on Imaging Ultra-Long Single DNA Molecules

Stephen Smith, Delaware Technical Community College

*Annotation of the White Nose Syndrome Associated Isolate *Pseudomonas fluorescens* BW6L Genome*

Christopher von Bartheld, University of Nevada School of Medicine

Signaling Molecules with Altered Expression in Strabismic Extraocular Muscles

C. Bioengineering, Technology and Imaging

Moderator: Roger Markwald, Medical University of South Carolina

Speaker: Naren Vyavahara, PhD, Clemson Bioengineering

Highlighted Posters

Anna Lu Carter, Clemson University

Adipose Tissue Derived Stem Cells and Polyphenols Reduce Diabetes Related Inflammation and Calcification in Tissue Engineered Vascular Constructs

Sarah Harcum, Clemson University

Bioreactor Control Implications for Expansion of Mesenchymal Stem Cells in Atmospheric Carbon Dioxide

Jia Jia, Clemson University
Development of Alginate-based Hydrogels for 3D Bioprinting

Jeoung Soo Lee, Clemson University
Heparin-immobilized Electrospun Nanofibers for Vascular Sutures

Siyu Ma, Clemson University
Optical Coherence Microscopy: Application on Imaging Endothelial to Mesenchymal Transition in Embryonic Chick Heart in vivo

Srikanth Sivaraman, Clemson University
Characterization of Elastomeric Scaffolds for Bladder Tissue Engineering

Tobin Driscoll, University of Delaware
Data Driven Mathematical Modeling of the Single Ventricle Anatomy and Physiology

Yupeng Chen, Brown University
Biomimetic Self-assembled Matrilin-3 Hybrid Nanotubes for Growth Plate Cartilage Repair in vivo

D. *Infectious Diseases / Pathogenic Bacteriology*

Moderator: Charles Wood, The University of Nebraska - Lincoln

Speaker: Denny L. Stevens, MD, PhD, Boise VA Medical Center

Highlighted Posters

Alexandra Gurary, University of Hawaii
Long-term Maintenance of Dengue virus-specific Cell-mediated Immune Responses

Ahmed Alzuway, University of Southern Mississippi
Role of msaA in the Regulation of Expression of the msaABCR operon in Staphylococcus aureus
Eric Bortz, University of Alaska Anchorage
Regulators of Innate Immune Responses to Viral RNA

Jason Botten, University of Vermont
The Intracellular Cargo Receptor ERGIC-53 is Required for the Production of Infectious Arenavirus, Coronavirus, and Filovirus Particles

Iwona Buskiewicz, University of Vermont
Cellular FLIP-short Supports Coxsackievirus B3 induced viremia by Promoting Autophagy Induction

Antonieta Guerrero-Plata, Louisiana State University
Impact and Regulation of Lambda Interferon Response in Respiratory Paramyxovirus Infection

Joseph Horzempa, West Liberty University
The Mechanism of Erythrocyte Invasion by Francisella tularensis

Pakieli Kaufusi, University of Hawaii
WNV Infection Initiates Disassembly of Golgi Apparatus

Juliette Madan, Dartmouth
Neonatal Microbiome, Exposures and Infection

Agnieszka Rynda-Apple, Montana State University
Recognition of Conserved Virus Capsule Structure Dictates Susceptibility to Secondary MRSA Pneumonia

E. *Epidemiology and Public Health*

Moderator: Judith James, Oklahoma Medical Research Foundation

Speaker: Margaret Karagas, PhD, Geisel School of Medicine at Dartmouth

Highlighted Posters

Lyle Best, Turtle Mountain Community College

Variants of the Mannose Binding Lectin Gene (MBL2) are Not Associated with Risk of Pre-Eclampsia

Michael Caposole, Christiana Care Health System

Addressing Early Lung Cancer Screening Disparities at a High Volume Community Cancer Center

Scott Garrett, University of North Dakota

Acute and Chronic Cadmium Exposure Induces Transcriptional Activation of BMP-2 Signaling Cascades in a Human Renal Epithelial Cell Culture Model

Anala Gossai, Dartmouth College

Association between Maternal Urinary Arsenic Species and Infant Cord Blood Leptin Levels in a New Hampshire Pregnancy Cohort

Sangkyu Kim, Tulane University

Elevation of Resting Metabolic Rate with Declining Health in the Oldest Old

Melinda Obritschkewitsch, Rocky Mountain College

Determining Coliform and E. coli Levels in Pryor Creek

Erin Peel, Kansas State University

The Extracellular Protease Network that Regulates Mosquito Melanization

Apichai Tuanyok, University of Hawaii

Ceftazidime Resistance Mechanisms in Burkholderia Pseudomallei, the Causative Agent of Melioidosis

Karri-Jo Walls, Wesley College

BMI Trends at Wesley College

12:00 - 1:00PM Boxed Lunches

12:15 - 1:15PM The Today Show with Carolyn Hovde Bochach: INBRE Best Practices
INBRE Celebrities

1:20 - 5:30PM **NICL Workshops**

1:30 - 3:30 PM **NISBRE Workshop Session II**

1:30 - 3:30PM **Scientific Skills**
Images for Publication
Doug Taatjes, PhD, University of Vermont

SBIR/Tech Transfer/Spark^{VT}
Facilitator: Krishan Arora, PhD, NIGMS, NIH
Robert Vinson, NIH SBIR/STTR Program Office
Scott Somers, PhD, NIGMS SBIR/STTR Program Coordinator
Mercedes Rincon, PhD, University of Vermont
Jake Reder, PhD, Celdara Medical, New Hampshire

Super Resolution Microscopy
Travis Gould, PhD, Bates College

Career Skills

Individual Career Planning
Philip Clifford, PhD, Medical College of Wisconsin

Careers in Biotech
Magdalene Moran, Hydra Biosciences

Presentation Skills
Thomas Beebe, Jr., PhD, University of Delaware

Research Integrity
Ranjini Ambalavanar, BVSc, PhD, Office of Research Integrity

NIH Mentored Research Proposal Success - They aren't R01s
Paula Gregory, PhD, LACaTS, LSUHSC - School of Medicine

3:15 - 4:00PM Break

1:30 - 3:30 PM NISBRE Workshop Session III

3:30 - 5:30PM **Scientific Skills**
MicroRNA
Wei Yan, MD, PhD, University of Nevada School of Medicine

TALEN vs CRISPR
Eric Kmiec, PhD, Delaware State University, HF Graham Cancer Center / Research Institute
Pawel Bialk, BS, Delaware State University, HF Graham Cancer Center / Research Institute
Bryan Strouse, Delaware State University, HF Graham Cancer Center / Research Institute

Super Resolution Microscopy
Travis Gould, PhD, Bates College

Career Skills

Mentoring
John Estrada, MD, Louisiana State University

Presentation Skills
Thomas Beebe, Jr., PhD, University of Delaware

NIH Mentored Research Proposal Success - They aren't R01s
Paula Gregory, PhD, LACaTS, LSUHSC - School of Medicine

Thursday, June 19, 2014

8:30 - 12:00PM COBRE PI Meeting with NIGMS Staff (COBRE PIs Only)
Yanping Liu, PhD, Presiding