



NIH Research Festival

The NIH at 125: Today's Discoveries, Tomorrow's Cures

October 9–12, 2012

Building 10 &
Natcher Conference Center

our research changes lives

irp.nih.gov



Intramural
Research
Program

NIH Research Festival

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If you require reasonable accommodations to participate in this activity, please contact researchfest@mail.nih.gov or Jacqueline Roberts at jacqueline.roberts@nih.gov, or the Federal Relay Service at 1-800-877-8339.

List of Abbreviations

CC	NIH Clinical Center
CIT	Center for Information Technology
CSR	Center for Scientific Review
FIC	John E. Fogarty International Center
HHS	U.S. Department of Health and Human Services
NCATS	National Center for Advancing Translational Sciences
NCBI	National Center for Biotechnology Information, National Library of Medicine
NCCAM	National Center for Complementary and Alternative Medicine
NCGC	NIH Chemical Genomics Center
NCI	National Cancer Institute
NEI	National Eye Institute
NHGRI	National Human Genome Research Institute
NHLBI	National Heart, Lung, and Blood Institute
NIA	National Institute on Aging
NIAAA	National Institute on Alcohol Abuse and Alcoholism
NIAID	National Institute of Allergy and Infectious Diseases
NIAMS	National Institute of Arthritis and Musculoskeletal and Skin Diseases
NIBIB	National Institute of Biomedical Imaging and Bioengineering
NICHD	Eunice Kenney Shriver National Institute of Child Health and Human Development
NIDA	National Institute on Drug Abuse
NIDCD	National Institute on Deafness and Other Communication Disorders
NIDCR	National Institute of Dental and Craniofacial Research
NIDDK	National Institute of Diabetes and Digestive and Kidney Diseases
NIEHS	National Institute of Environmental Health Sciences
NIGMS	National Institute of General Medical Sciences
NIMH	National Institute of Mental Health
NIMHD	National Institute on Minority Health and Health Disparities
NINDS	National Institute of Neurological Disorders and Stroke
NINR	National Institute of Nursing Research
NLM	National Library of Medicine
OCPL	Office of Communications and Public Liaison
OD	Office of the Director
OITE	Office of Intramural Training and Education
OIR	Office of Intramural Research
ORF	Office of Research Facilities and Development and Operations
ORS	Office of Research Services
ORWH	Office of Research on Women's Health
USUHS	Uniformed Services University of Health Sciences

General Schedule of Events

Tuesday, October 9, 2012

10:00 a.m.–12:15 p.m. Masur Auditorium, Building 10
Opening Plenary Session
The NIH at 125: Today's discoveries, tomorrow's cures

Move to...Natcher Conference Center, Building 45

1:00 p.m.–3:00 p.m. Natcher Conference Center
Poster Session I
Aging; Apoptosis; Biochemistry; Bioinformatics and High Throughput Data Analysis; Biophysics; Infectious Disease; Virology
NGSRC posters
Special Exhibits on Resources for NIH Intramural Research

12:30 p.m.–2:00 p.m. Natcher Conference Center
Congressional Event (tentative)

3:00 p.m.–5:00 p.m. Natcher Conference Center
Concurrent Symposia Session I
CHI Symposium: The Human Immune System after Perturbation and in Disease
Ruth L. Kirschstein Auditorium
Beyond the Fig Leaf: The Science of Sex and Gender Differences
Conference Room E1/E2
Disease in a Dish – Modeling Human Diseases Using Induced Pluripotent Stem Cells
Balcony A
Gene and Neuronal Networks Implicated in Behavioral and Cognitive Deficits Associated with Neuropsychiatric Disorders
Balcony B
Development of Neuroimaging-Based Biomarkers
Balcony C
Quantitative Biology at the Single-Cell Level
Conference Room D
Here, There, Everywhere: The Journey of Nuclear Receptors
Conference Room F

NIH Research Festival

Wednesday, October 10, 2012

- 10:00 a.m.–Noon** Natcher Conference Center
Concurrent Symposia Session II
Translational Research of Aging
Ruth L. Kirschstein Auditorium
Translational Research in Addiction, Stress, and Anxiety
Conference Room E1/E2
Mapping Neural Circuits and Functions
Balcony A
Protective Roles of Omega-3 Fatty Acids in Injury and Diseases of Brain and Retina: Translation from Mechanisms to Treatment Potential
Balcony B
Molecular Tools: Using Chemistry to See, Wrestle, Unravel, and Trap Biology
Balcony C
How to Put the Translational into Your Research
Conference Room D
Health Disparities: Advances in Translational, Clinical, and Population Sciences
Conference Room F
- Noon–2:00 p.m.** Natcher Conference Center
Poster Session II
Cancer; Cell Biology; Chemistry; Clinical and Translational Research; Cultural/Social Sciences and History of Medicine; Development; Molecular Biology; Signaling; Structural Biology
Special Exhibits on Resources for NIH Intramural Research
- 2:00 p.m.–4:00 p.m.** Natcher Conference Center
Concurrent Symposia Session III
Stem Cells in Development and Diseases
Ruth L. Kirschstein Auditorium
Imaging Traumatic Brain Injury: Challenges and Solutions
Conference Room E1/E2
Rare Disease Research in the Bedside to Bench Program: Intramural-Extramural
Balcony A
Mitosis: From Molecular Detail to Human Disease
Balcony B
Microbiome Research at the NIH: From Disease to Therapeutics
Balcony C
Matrix Biology and Matrix Remodeling
Conference Room D
- 4:15 p.m.–6:00 p.m.** Natcher Conference Center
FARE Awards Ceremony and Reception

Thursday, October 11, 2012

- 9:30 a.m.–3:30 p.m. Building 10, Parking Lot 10H
Technical Sales Association Research Festival Exhibit Tent Show
- 10:00 a.m.–Noon Natcher Conference Center
Poster Session III
Disease Prevention; Endocrine/Diabetes/Metabolism; Epidemiology; Epigenetics/Transcription/Chromatin; Genetics/Genomics; Host Defense; Imaging; Technology
Special Exhibits on Resources for NIH Intramural Research
- 10:00 a.m.–Noon South Lobby of Building 10
NIH Core Poster Session
- Noon–2:00 p.m. Natcher Conference Center
Concurrent Symposia Session IV
Obesity – New Insights on Epidemiology, Investigational Models, and Therapeutic Targets
Ruth L. Kirschstein Auditorium
Common Molecular Mechanisms Underlying Pathogenesis and Treatment of Human Diseases
Conference Room E1/E2
Commercial Development of My Own Research Discoveries: The Personal Stories of Former NIH Scientists
Balcony A
Linking Genotypes to Phenotypes: Recent Advances and Insights for Future Research
Balcony B
Epigenetic Variation and Disease Susceptibility
Balcony C
Increasing Awareness of NIH Clinical Research to Improve Participation in Trials: Extending New Collaborations
Conference Room D
- 2:00 p.m.–4:00 p.m. Natcher Conference Center
Poster Session IV
Immunology/Inflammation; Microbiology; Neurobiology and Behavior; Oxidative Stress; Pharmacology; Proteomics; Research Support Services; Sensory Systems; Small RNAs; Stem Cells; Translational
Special Exhibits on Resources for Intramural Research

Friday, October 12, 2012

- 9:30 a.m.–2:30 p.m. Building 10, Parking Lot 10H
Technical Sales Association Research Festival Exhibit Tent Show

Opening Plenary Session

Masur Auditorium, Building 10

Tuesday, October 9, 2012

10:00 a.m.–12:15 p.m.

The NIH at 125: Today's Discoveries, Tomorrow's Cures

Co-chairs: Antonello Bonci, NIDA and
Constantine Stratakis, NICHD

Cholera, plague, smallpox and yellow fever. These were the four epidemic diseases subject to quarantine that most concerned Joseph James Kinyoun, the founder and, for several years, sole employee of the Laboratory of Hygiene in the U.S. Marine Hospital Service. The NIH traces its roots to Kinyoun's one-room laboratory established in August 1887. At the 2012 NIH Research Festival we celebrate our quasiquicentennial by honoring Kinyoun's legacy, reflecting on NIH successes, and contemplating at the potential of the NIH Intramural Research Program (IRP) in the years to come.

Where have we been, and where are we going? Smallpox has been eradicated, but much difficult work lies before us. Our 2012 Festival artwork, in fact, depicts MRSA bacteria, an emerging threat. This year's plenary session opens with three "big vision" talks about possible futures for the NIH. Then, if travel permits, we will hear a lecture from the late Joseph Kinyoun himself, who surely will have much to say, having died 93 years ago. Kinyoun's talk is followed by a panel discussion with NIH luminaries offering a personal and historical perspective of the IRP. The opening plenary can be viewed via videocast at <http://videocast.nih.gov>.

Program

The Social Significance of Science: A Systems Approach to Health Inequities
NHLBI Director Gary Gibbons

*Navigating the Cellular Landscape with New Optical Probes, Imaging Strategies
and Technical Innovations*
Jennifer Lippincott-Schwartz, NICHD

Fantastic Voyage Rebooted: A Visual Journey into the Dynamic Life of the Immune System
Ron Germain, NIAID

Uneasy Death: Three Things That Haunt Me 93 Years After My Passing
Joseph Kinyoun, Founder, Laboratory of Hygiene

Office of History, NIH Panel Discussion
NCI Director Harold Varmus, William Paul (NIAID), and Judy Rapoport (NIMH)

AGING:

Aging

- AGING-1** **A Brioschi Guevara, KM Knutson, S Pulaski, E Wassermann, J Grafman, F Krueger (NINDS)**
Theory of mind in behavioral variant frontotemporal dementia (bv-FTD): anatomical correlation
- AGING-2** **R Cooper, TB Harris, J Guralnik, R Hardy, D Kuh (NIA)**
Patterns of leisure-time physical activity in a British birth cohort at early old age
- AGING-3** **JD Delaney, CE Coletta, DM Eckley, N Orlov, IG Goldberg (NIA)**
Identifying early morphological transitions after osteogenic and adipogenic induction of murine embryonic stem cells
- AGING-4** **HR Lucas, JM Rifkind (NIA)**
Inhibition of copper-amyloid induced erythrocyte oxidative stress by polyphenols
- AGING-5** **S Mishra, KM Peterson, AE Berger, GJ Wistow (NEI)**
Gene expression profile of Retinal Pigment Epithelium derived ARPE-19 cells under serum starvation
- AGING-6** **RA Murphy, KV Patel, SB Kritchevsky, DK Houston, E Simonsick, AB Newman, F Tylavsky, P Cawthon, TB Harris (NIA)**
Association of Changes in Weight with Body Composition and Mortality in Older Adults: Health ABC
- AGING-7** **E Pelosi, S Omari, M Michel, A Forabosco, C Ottolenghi, D Schlessinger (NIA)**
Prolongation of Ovarian Follicle Levels by Over-expression of Foxl2 or Foxo3
- AGING-8** **H Sakai, CE Redon, K Ishida, WM Bonner, E Appella, S Mazur (NCI)**
Wild-type p53-induced phosphatase 1 (Wip1) regulates cellular senescence in Mouse Embryonic Fibroblasts through p53-dependent and -independent pathways
- AGING-9** **Y Sun, X Sun, T Alberico, A Wang, R de Cabo, S Zou (NIA)***
Cytochrome b5 reductase overexpression increases lifespan and oxidative stress resistance in fruit fly

APO:
Apoptosis

- APO-1** **T Duncan, W Samuel, RK Kutty, TM Redmond (NEI)**
Alteration of sphingolipid metabolism during 4-HPR induced cell death
in the ARPE-19 human retinal pigment epithelial cell line
- APO-2** **W Samuel, RK Kutty, T Duncan, TM Redmond (NEI)**
Endoplasmic reticulum stress induces the degradation of SCD protein via
ubiquitin-proteasome pathway

BIOCHEM:
Biochemistry

- BIOCHEM-1** **S Dadhich, MH Park (NIDCR)**
SSAT1 over-expression suppresses translation in mammalian cells through depletion of cellular polyamines: Important role of polyamines in regulation of translation.
- BIOCHEM-2** **RS De Silva, L Wong, YX Fan, GR Johnson (FDA/CBER)**
Allosteric Activation of ErbB2 by ErbB3 via Tethering of the Kinase Domains
- BIOCHEM-3** **S Jang, Y Gao, MA Abdelmegeed, A Banerjee, LL Yu, BJ Song (NIAAA)***
Role of JNK-Mediated Phosphorylation in Mitochondrial Dysfunction and Liver Injury
- BIOCHEM-4** **JD Kenealey, D Hoover, SP Becerra (NEI)**
Identifying the PEDF-receptor binding site on PEDF
- BIOCHEM-5** **HY Kim (NIAAA)**
N-docosahexaenoyl ethanolamide is an endogenous PKA-dependent mediator promoting neuronal differentiation of neural stem cells
- BIOCHEM-6** **A Kimura, B Huang, HY Kim (NIAAA)**
Probing conformation of integral membrane protein phosphatidyserine synthase 2 by chemical crosslinking and mass spectrometry
- BIOCHEM-7** **JH Kurasawa, SA Shestopal, E Karnaukhova, EB Struble, TK Lee, AG Sarafanov (FDA/CBER)**
Conserved Tryptophan residues in the Low-density lipoprotein receptor are essential for interactions with blood Coagulation factor VIII
- BIOCHEM-8** **S Lahiri, JT Chao, S Tavasoli, BP Young, CJ Loewen, WA Prinz (NIDDK)***
A conserved ER-membrane protein complex facilitates phospholipid exchange between the ER and mitochondria.
- BIOCHEM-9** **SC Locatelli-Hoops, I Gorshkova, K Gawrisch, AA Yeliseev (NIAAA)**
Interaction of Peripheral Cannabinoid Receptor CB2 with Antibodies Studied by Surface Plasmon Resonance (SPR)
- BIOCHEM-10** **M Lyanguzova, I Gorshkova, A Arnaoutov, M Dasso (NICHD)**
Reading SUMO Chains: SUMO binding properties of Daxx.
- BIOCHEM-11** **JH Park, XH Liang, MH Park (NIDCR)**
Post-translational modifications of eIF5A and its bacterial ortholog EF-P: Structural and functional analogy
- BIOCHEM-12** **RJ Tamargo, W Westbroek, E Goldin, J Xiao, JJ Marugan, E Sidransky (NHGRI)**
High throughput screening and cell-based translocation evaluation for small molecular therapy of Pompe disease

BIOCHEM:
Biochemistry

- BIOCHEM-13** **K Tanoue, SR Durell, WK Gillette, LM Jenkins, E Appella, SJ Mazur (NCI)**
Characterization of a Third Metal Binding Site in the Human PP2C-Family
Phosphatases, PP2C-alpha and Wip1
- BIOCHEM-14** **R Wickner, A Kelly, F Shewmaker, D Kryndushkin, R McGlinchey (NIDDK)**
Yeast Prion Diseases
- BIOCHEM-15** **SA Woodle, AM Shibeko, MV Ovanesov (FDA/CBER)**
Pharmacological dose of recombinant FVIIa acts via Tissue Factor
mechanism in vitro

BIOINFO:

Bioinformatics and High Throughput Data Analysis

- BIOINFO-1** **E Asaki, Y He, K Meyers, W Xiao, J Powell (CIT)**
mAdb—microArray Database System: bioinformatics for analyzing and managing microarray data
- BIOINFO-2** **FM Callaghan, MT Jackson, D Demner-Fushman, S Abhyankar, CJ McDonald (NLM)**
NLP-derived information improves the estimates for disease risk compared to estimates based on manually extracted data alone.
- BIOINFO-3** **A Cardone, S Hassan, M Brady, R Sriram, H Pant (NINDS)**
Monte Carlo and dynamics simulations of cdk5 Kinase inhibitor peptides p5 in aqueous solution
- BIOINFO-4** **O Celiku, K Camphausen, U Shankavaram (NCI)**
A Glioblastoma TCGA Data Visualizer
- BIOINFO-5** **MK Derbyshire, S Lu, F Chitsaz, LY Geer, RC Geer, NR Gonzales, M Gwadz, DI Hurwitz, CJ Lanczycki, F Lu, GH Marchler, JS Song, N Thanki, RA Yamashita, D Zhang, C Zheng, SH Bryant, A Marchler-Bauer (NLM)**
Conserved Domain Database (CDD): Bringing structural biology closer to the biologist
- BIOINFO-6** **X Du, D Wojtowicz, AA Bowers, CJ Benham, DL Levens, TM Przytycka (NLM)***
Genome-wide distribution of non-B DNA motifs is shaped by operon structure and suggests transcriptional importance of non-B DNA structures in Escherichia coli
- BIOINFO-7** **RM Henderson, DE Hurt, V Nagarajan, M Quiñones, J Lawson, B Peck, R Singh, J Hunsberger, F Chibane, A Elkahloun, F McMahon, P Munson, Y Demirkale, M Alda, D Chuang, M Hultner, Y Huyen (NIAID)**
An agent-based software simulation suite for modeling gene regulatory networks
- BIOINFO-8** **M Holko, C Evangelista, I Kim, P Ledoux, H Lee, K Marshall, K Phillippy, N Serova, PM Sherman, A Soboleva, M Tomashevsky, SE Wilhite, A Yefanov, N Zhang, T Barrett (NLM)**
GEO2R: a new interactive web-tool for analyzing GEO data
- BIOINFO-9** **S Johnson, B Issac, S Zhao, M Bisht, O Celiku, P Tofilon, K Camphausen, U Shankavaram (NCI)**
StRAP — Stress Response Array Profiler for integrated analysis of cancer genomic data

BIOINFO:

Bioinformatics and High Throughput Data Analysis

- BIOINFO-10** **PP Khil, FO Smagulova, K Brick, RD Camerini-Otero, GV Petukhova (NIDDK)**
Meiotic recombination & repeats: is the observed association between hotspots and MaLR repeats just a coincidence?
- BIOINFO-11** **L Li, J Freudenberg, K Cui, SH Song, A Dean, K Zhao, R Jothi, PE Love (NICHD)**
Ldb1 complexes globally regulate Gata-1 dependent erythroid gene expression
- BIOINFO-12** **TL Madden, GM Boratyn, C Camacho, PS Cooper, G Coulouris, A Fong, N Ma, WT Matten, SD McGinnis, Y Merezuk, Y Raytseis, EW Sayers, T Tao, J Ye, I Zaretskaya (NLM)**
Improvements to the NCBI BLAST site for Discovery
- BIOINFO-13** **AJ Oler, V Gopalan, M Narayanan, DE Hurt, Y Huyen (NIAID)**
A configurable pipeline for RNA-seq data analysis
- BIOINFO-14** **H Parikh, J Jia, W Xiao, I Collins, J Hoskins, J Powell, S Thorgeirsson, J Shi, G Petersen, L Amundadottir (NCI)**
Analysis of quantitative trait loci (eQTLs) in pancreatic cancer by RNA-sequencing
- BIOINFO-15** **P Puigbo, S Mekhedov, YI Wolf, EV Koonin (NLM)***
A comprehensive census of horizontal gene transfers from prokaryotes to unikonts
- BIOINFO-16** **B Rance, O Bodenreider (NLM)**
A multi-factor approach to identifying missed synonymy in the UMLS
- BIOINFO-17** **TD Schneider, V Jejjala (NCI)**
Why Do Restriction Enzymes Prefer 4 and 6 Base DNA Sequences?
- BIOINFO-18** **JR Skinner, QQ Li, DT Liou, JE Bennett, Y Huyen (NIAID)**
Identifying stable reference genes for RT qPCR with hkgFinder
- BIOINFO-19** **S Szymczak, H Ling, MM Parker, Q Li, CD Cropp, TH Beaty, AF Scott, JE Bailey-Wilson (NHGRI)**
Quality Control of Variants identified in Exome Sequencing Data in a Study of oral Clefts
- BIOINFO-20** **Q Tan, TR Ramalingam, Y Guo, Y Huyen (NIAID)**
SAGE: A browser based software for rapidly analyzing and archiving qPCR data
- BIOINFO-21** **R Winnenburg, O Bodenreider (NLM)**
Issues in Creating and Maintaining Value Sets for Clinical Quality Measures

BIOPHY:
Biophysics

- BIOPHY-1** **Y Chen, H Zhao, P Schuck, G Wistow (NEI)**
Structural Properties of High-methionine Content Fish γ -crystallins
- BIOPHY-2** **I Gorshkova (NIBIB)**
Surface plasmon resonance (SPR) biosensor study of biomolecular interactions
- BIOPHY-3** **J Ha, R Bertram, A Sherman (NIDDK)**
Driving Exocytosis with the Dual Oscillator Model
- BIOPHY-4** **RM Harrison, SK Sarkar, AN Kapanidis, KC Neuman (NHLBI)**
Unraveling RecQ helicase dynamics one molecule at a time
- BIOPHY-5** **TR Litwin, IJ Holt, KC Neuman (NHLBI)**
Single molecule measurements of mitochondrial protein-DNA interactions
- BIOPHY-6** **AL Popescu (Hategan), EK Dimitriadis (NIBIB)**
AFM/TIRFM study of individual fibrin fibers
- BIOPHY-7** **P Schuck, S Keller, C Vargas, H Zhao, G Piszczek,
CA Brautigam (NIBIB)**
High-Precision Isothermal Titration Calorimetry with Automated Peak
Shape Analysis
- BIOPHY-8** **H Zhao, NP Coussens, P Schuck (NIBIB)**
Strategies for assessing proton linkage to bimolecular interactions
by global analysis of isothermal titration calorimetry data

INFECTDIS:
Infectious Disease

- INFECTDIS-1** **J Herz, D McGavern (NINDS)***
Memory T cells clear a persistent CNS infection in the absence of severe tissue injury
- INFECTDIS-2** **KL McDowell, N Nag, J Beren, DM Asher, L Gregori (FDA/CBER)**
Development of vCJD-Infected Blood Reference Materials
- INFECTDIS-3** **S Park, H Park, W Pan, B Rehmann (NIDDK)**
Development of genetically engineered TCR-transduced T cells for immunotherapy of chronic HBV and HCV infections
- INFECTDIS-4** **GE Price, CY Lo, JA Mispion, SL Epstein (FDA/CBER)**
Mucosal immunization with a candidate universal influenza vaccine reduces transmission to unvaccinated contacts in a mouse model
- INFECTDIS-5** **JM Sa, SR Kaslow, J Mu, E Kessler, RE Salzman, V Melendez-Muniz, MJ Lope-Barragan, S Velmurugan, YF Abebe, ER James, A Richman, S Chakravarty, BKL Sim, SL Hoffman, RW Gwadz, TE Wellems (NIAID)**
A Plasmodium vivax genetic cross to investigate molecular determinants of chloroquine response
- INFECTDIS-6** **ES Snitkin, AM Zelazny, PJ Thomas, F Stock, DK Henderson, TN Palmore, JA Segre (NIGMS)***
Whole genome sequencing to track a hospital outbreak of carbapenem-resistant Klebsiella pneumoniae

VIROL:

Virology

- VIROL-1** **M Ajiro, R Jia, L Zhang, X Liu, ZM Zheng (NCI)**
Characterization of HPV16 E6E7 intron 1 identifies two novel 5' splice sites and a branch point adenosine at nt 385 for E6*1 RNA splicing
- VIROL-2** **CA Balinsky, H Schmeisser, KC Zoon (NIAID)***
Dengue virus core protein affects induction of interferon beta in HEK293 cells
- VIROL-3** **CJ De Feo, W Wang, M Zhuang, R Vassell, C.D. Weiss (FDA/CBER)**
Escape pathways of HIV-1 viruses that are resistance to peptides corresponding to the N-heptad repeat region (HR1) of gp41
- VIROL-4** **SJ Dollery, S Moir, EA Berger (NIAID)***
A model system for studying Kaposi's sarcoma-associated herpesvirus (HHV-8) infection of B cells.
- VIROL-5** **MW Ferenczy, LJ Marshall, EO Major (NINDS)**
Quiescent JC virus in human neural progenitor cells is activated during lineage differentiation to astrocytes
- VIROL-6** **L García-Villada, JW Drake (NIEHS)**
The three faces of riboviral spontaneous mutation: spectrum, mode of genome replication, and mutation rate
- VIROL-7** **JP Kononchik, PD Sun (NIAID)**
Inhibition of HIV-1 infection on CD4+ T cells by blocking adhesion molecule mediated virus adsorption
- VIROL-8** **DM Kristensen, AR Mushegian, EV Koonin (NLM)**
A resource to study virus genes (in the Human intestinal tract, and everywhere else)
- VIROL-9** **JP Laliberte, B Moss (NIAID)***
Poxvirus superinfection is halted at the stage of virus-cell membrane fusion independently of primary virus gene expression
- VIROL-10** **SW Liu, B Moss (NIAID)**
The role of poxvirus decapping enzymes
- VIROL-11** **V Majerciak, T Ni, B Meng, J Zhu, ZM Zheng (NCI)**
Genome-wide analysis of viral RNA polyadenylation in Kaposi sarcoma-associated herpesvirus infection

Poster Session I

Natcher Conference Center

Tuesday, October 9, 2012

1:00 p.m.–3:00 p.m.

VIROL:

Virology

- VIROL-12** **IP O'Carroll, RM Crist, J Mirro, D Harvin, F Soheilian, A Kamata, K Nagashima, A Rein (NCI)***
Functional redundancy in HIV-1 particle assembly
- VIROL-13** **KM Ogden, HN Ramanathan, JT Patton (NIAID)***
Mutational analysis of the rotavirus RNA-dependent RNA polymerase active site
- VIROL-14** **C Sandoval-Jaime, A Afiadata, GI Parra, EJ Abente, K Bok, R Dexter, KY Green, SV Sosnovtsev (NIAID)**
Identification of host-cellular proteins binding to the 3'-end of murine norovirus RNA genome negative strand
- VIROL-15** **P Sette, V Dussupt, F Bouamr (NIAID)***
Identification of the HIV-1 NC binding interface in Alix Bro1 reveals a role for RNA
- VIROL-16** **PR Tedbury, N Kuruppu, EO Freed (NCI)**
ADP-ribosylation factor 1 in HIV-1 assembly and release
- VIROL-17** **K Virnik, Y Ni, M Hockenbury, I Berkower (FDA/CBER)**
Live attenuated rubella vectors express SIV and HIV vaccine antigens, incorporate them into virions, infect rhesus macaques, and elicit high titer antibodies to the insert

Concurrent Symposia Session I

Natcher Conference Center
Ruth L. Kirschstein Auditorium

Tuesday, October 9, 2012
3:00 p.m.–5:00 p.m.

CHI symposium: The human immune system after perturbation and in disease

Chair: Neal Young, NHLBI

The speakers at the CHI symposium will report on detailed characterization of the normal human immune system before and after perturbation with vaccine, characterization of the immune system following reconstitution for treatment of severe anemias, a memory population with stem cell-like properties, and abnormalities caused by *PLCG2* deletions.

John Tsang, NIAID

Global dissection of human immune responses by utilizing natural human variations and vaccination

John Tisdale, NHLBI

Phenotypic analyses of immune reconstitution during engraftment or rejection following reduced-intensity conditioning and HLA-matched sibling BMT to treat severe congenital anemias

Kazuya Sato, NHLBI

PPAR-gamma in adipocytes plays a negative regulatory role in immune-mediated bone marrow failure

FARE Award Winner

Luca Gattinoni and Enrico Lugli, NIAID

A human memory T Cell subset with stem cell-like properties

Michael Ombrello, NHGRI

*Cold urticaria, immunodeficiency and autoimmunity related to *PLCG2* deletions*

Concurrent Symposia Session I

Natcher Conference Center
Conf. Room E1/E2

Tuesday, October 9, 2012

3:00 p.m.–5:00 p.m.

Beyond the fig leaf: The science of sex and gender differences

Chair: Janine Clayton, OD

Personalized medicine provides the promise of improved healthcare informed by research on the factors that makes each human unique. Sex and gender are basic variables used to categorize differences and similarities; these variables influence health, including the experience, treatment, and outcomes of disease. The integration of sex and gender in the design and analysis of basic and clinical research studies can enhance the rigor of investigative approaches, improve the quality of the science, and expand the applicability of the results, supporting a personalized medicine approach that can transform public health. This session will cover aspects of sex and gender factors in health and disease, from the development of biomedical devices and therapeutics to the personalization of treatment of cardiovascular disease. Discussion of the latest scientific advances in sex differences research and enhancements in study design to detect sex and gender differences will engage and inform the NIH scientific community.

Nakela Cook, NHLBI

Sex and gender differences in cardiovascular disease and healthcare delivery

Belinda Seto, NIBIB

Sex and gender considerations in devices and therapeutics

Susan Taymans, NICHD

Gender in genetic and genomic research

Cora Lee Wetherington, NIDA

Sex and gender differences in pain

Laura Johnson, NCCAM

A few tricks and traps when designing studies and evaluating sex and gender differences

Cher Dallal, NCI

Obesity-related hormones and endometrial cancer risk among post-menopausal women:

The BFIT cohort

FARE Award Winner

Stem Cell Interest Group
Disease in a dish—modeling human diseases
using induced pluripotent stem cells

Co-Chairs: Manfred Boehm, NHLBI; and Kapil Bharti, NINDS

Our current understanding of human genetic disease pathogenesis is limited by the failure of animal models to completely recapitulate all the features of human genetic disease. Our ability to reprogram somatic cells into induced pluripotent stem cells (iPSCs) provides unique opportunities for studying the molecular and cellular mechanisms underlying the initiation and progression of human diseases. Patient cells can be reprogrammed into iPSCs, which, in turn, can be differentiated into the relevant cell type(s) specific to that disease. In addition to serving as models for the identification of novel disease mechanisms, these lineage-differentiated iPSC-derived cells can be used for high throughput screening of small molecule for the development new treatment strategies and for environmental toxin screening to investigate cell type-specific impact of toxins on cellular homeostasis. With this proposal, we would like to provide an overview of the new and exciting developments within the NIH campus utilizing iPSC-technology for investigating disease mechanisms, therapeutic compound screening, and preclinical treatment strategies.

Avindra Nath, NINDS

Modeling of neuroinflammatory diseases using an autologous system

Harry Malech, NIAID

Efficient production of iPSCs from patients with Chronic Granulomatous Disease and genetic correction of the oxidase defect in neutrophils differentiated from these iPSCs

John Park, NINDS

Microglia: Friend and foe of neurologic diseases

Kirsten Verhein, NIEHS

Differential susceptibility to ozone-induced lung inflammation maps to mouse chromosome 17: role of Notch receptors

FARE Award Winner

Thomas Winkler, NHLBI

Bone marrow failure, telomeres and iPSC – Syndrome, cause and model

Marc Ferrer, NHGRI

Drug screening using stem cell derived cellular disease models

Gene and neuronal networks implicated in behavioral and cognitive deficits associated with neuropsychiatric disorders

Co-Chairs: Andres Buonanno, NICHD; and Zheng Li, NIMH

Cognitive dysfunction and altered behavioral traits are common features of numerous neuropsychiatric disorders and Williams Syndrome; however, little is known about how the development and function of the underlying neuronal networks affected. The purpose of this symposium is to emphasize how the convergence of basic, translational and clinical research, encompassing studies from rodents to humans, has begun to identify how the genetic underpinnings manifest as an early developmental profile of transcriptomes in schizophrenia, how genes identified as risk factors for neuropsychiatric disorders can regulate the development and function of neuronal networks and behaviors associated with these illnesses, and how functional MRI and PET are beginning to uncover the association of genes with cognition. The potential identification of critical gene nodes (comprised of numerous psychiatric “at risk” genes) that converge to influence the activity and interconnectivity of neuronal circuits may uncover novel circuit-based targets for treatment of psychiatric illness.

Joel Kleinman, NIMH

Human brain development and risk for schizophrenia

David Chen, NIMH

Whole exome sequencing in the first degree cousin pairs with early age-at-onset bipolar disorder

FARE Award Winner

Zheng Li, NIMH

A new look at dopamine D2 receptors in schizophrenia

Andres Buonanno, NICHD

Neuregulin regulates neuronal network activity and behaviors associated with psychiatric disorders

Kuan Hong Wang, NIMH

Mechanisms of experience-dependent regulation of prefrontal circuitry

Karen Berman, NIMH

Neurogenetic mechanisms in Williams syndrome: from genes to neural circuits to behavior and back again

Development of neuroimaging based biomarkers

Co-Chairs: Bary Horwitz, NIDCD; and Richard Coppola, NIMH

The three fundamental steps necessary for the clinical management of a brain disorder are (1) detection and diagnosis, (2) treatment, and (3) assessment of treatment response. Biomarkers are important for the first and third of these, and may provide targets for treatment. Importantly, a biomarker refers to the underlying disease state, not to the symptoms of a disorder per se. In this symposium, the focus will be on attempts to develop neuroimaging biomarkers for detection, diagnosis and treatment assessment. In particular, neuroimaging can potentially provide both structural and functional brain biomarkers. Recently, advances in neuroimaging have shifted attention from examining individual brain regions to focusing on brain networks, and neuroimaging biomarker development has followed this shift. Speakers will discuss various uses of neuroimaging biomarkers, as well as some specific applications to neurologic and psychiatric disorders.

Barry Horwitz, NIDCD

What can brain based biomarkers be used for?

James Blair, NIMH

fMRI biomarkers for differentiating forms of Conduct Disorder

Brian Cornwell, NIMH

Markers of cortical plasticity in antidepressant action

Silvina Horovitz, NINDS

State-dependent and disease related variations in functional networks

Richard Coppola, NIMH

Tracking brain network changes during training and cognitive remediation

Samuel Hasson, NINDS

Next-generation therapeutic avenues for neurodegenerative disease: Targeting Pink1 and Parkin to modulate mitochondrial quality control

FARE Award Winner

Concurrent Symposia Session I

Natcher Conference Center
Conference Room D

Tuesday, October 9, 2012

3:00 p.m.–5:00 p.m.

Quantitative biology at the single-cell level

Co-Chairs: Eric Batchelor, NCI; and Myong-Hee Sung, NCI

Advances in numerous areas of the biological and medical sciences will continue to require a quantitative understanding of the complex network of biochemical interactions underlying biological phenomena. Accurate analysis of such a network often requires probing interactions at the level of individual cells. Emerging single-cell technologies and methodologies are providing unprecedented opportunities to better understand a wide variety of biological processes. Such insight is important not only for a basic understanding of cell biology, but also for providing new therapeutic avenues for treating a wide range of diseases, including cancer, immune disorders, and neurological diseases. This symposium will highlight the research of experts from the intramural program who develop and use various cutting-edge single-cell technologies including super-resolution microscopy, high-content imaging, and dynamical network analysis. Their research illustrates how these new quantitative approaches are being used to tackle a diverse range of biomedical questions.

Iain Fraser, NIAID

High-content imaging analysis of pathogen-sensing systems

Hari Shroff, NIBIB

Sharper and faster: new imaging technologies for cells and embryos

Myong-Hee Sung, NCI

NF-kappaB dynamics on multiple timescales by live cell imaging

Sohyoung Kim, NCI

Testing in silico predictions of p53 dynamics by direct measurements of transcription kinetics

Dylan Burnette, NIGMS

A role for actin arcs in the advance of migrating cells

Natalie Porat Shilom, NIDCR

Coordination of mitochondrial activity across the rat salivary glands epithelium imaged by intravital two-photon microscopy

FARE Award Winner

Concurrent Symposia Session I

Natcher Conference Center
Conference Room F

Tuesday, October 9, 2012

3:00 p.m.–5:00 p.m.

Here, there, everywhere: The journey of nuclear receptors

Co-Chairs: Gordon Hager, NCI; and Kenneth Korach, NIEHS

From the isolation of steroid hormones decades ago, to the profiling of global interactions of nuclear receptors using next generation technologies, nuclear receptor mediated response has served as a critical focus that has greatly advanced understanding of molecular events underlying biological processes. Many of the critical advances have been within NIH intramural laboratories. This symposium will highlight recent research that has revealed interactions between chromatin and nuclear receptors at a molecular level in cells and tissues, which promises to pave the way to future advances in our understanding of these essential processes and dysfunctions leading to disease.

Kai Ge, NIDDK

Histone modification in nuclear receptor transactivation: cause or consequence?

Sylvia Hewitt, NIEHS

Whole-Genome estrogen receptor binding in mouse uterine tissue revealed by ChIP-Seq

Lars Grontved, NCI

Mechanisms regulating genome wide recruitment of GR to chromatin in liver tissue

Harriet Kinyamu, NIEHS

Proteasome activity and glucocorticoid receptor transcriptional mechanisms in breast cancer cells

Diana Stavreva, NCI

Dynamic chromatin transitions with complex lifetimes induced by glucocorticoid receptor

Keytam Awad, CC

Peroxisome proliferator-activated receptor (PPAR) gamma and G-protein coupled receptor 40 (GPCR40) function as an integrated two-receptor signaling pathway

FARE Award Winner

NIH Research Festival

Geroscience Interest Group (GSIG)

Translational research of aging

Co-chairs: Francesca Macchiarini, NIAID; and
Ron Johnson, NCI

Over the past 25 years, researchers have made impressive progress in understanding the genetics, biology and physiology of aging. The elderly comprise the fastest growing segment of our population, and aging itself is the largest single risk factor for most chronic diseases. As a result, a large proportion of health resources are used to treat the elderly, who are often affected by multiple diseases / conditions. This session will cover high impact research focusing on basic and translational studies to prevent or treat diseases of aging, particularly neurodegeneration.

Pal Pacher, NIAAA

The effect of chronic moderate and heavy alcohol consumption on cardiovascular aging

Honglei Chen, NIEHS

"Premotor" research on Parkinson's disease

Sarah Rothman, NIA

Neuronal expression of the A53T α -synuclein mutation causes clinically-relevant metabolic dysfunction in a mouse model of Parkinson's disease

FARE Award Winner

Henriette van Praag, NIA

Regulation and function of adult hippocampal neurogenesis: the role of exercise

Catherine Cukras, NEI

The aging retina and age-related macular degeneration

Translational research in addiction, stress, and anxiety

Co-chairs: Yavin Shaham, NIDA; and Andrew Holmes, NIAAA

We will present translation research performed at NIAAA, NIDA, and NIMH. Holmes (NIAAA) will present mouse and human studies showing that pharmacological inhibition and genetic variation in an enzyme degrading the endocannabinoid anandamide promotes trauma recovery and predicts stress coping. Cameron (NIMH) will present rodent studies showing that inhibiting adult neurogenesis prolongs stress response and increases anxiety/depressive-like behavior. She will also show that ketamine, a rapidly-acting antidepressant, could act via new neurons. Grillon (NIMH) will present rat and human studies on functional dissociation between fear and anxiety. He will then discuss the implications of this dissociation for clinical anxiety research. Shaham (NIDA) will present rat studies using the reinstatement model that have inspired human studies on the effect of pharmacological and learning manipulations on drug craving. Heilig (NIAAA) will present mouse, rat, monkey, and human studies supporting a 'kindling' process, controlled in part by genetic susceptibility, which promotes alcoholism. The implications of these studies to personalized alcoholism treatment are discussed.

Michelle Jobes, NIAAA

Development and field demonstration of software for delivery of contingency management - an empirically supported behavioral treatment for addiction
FARE Award Winner

Andrew Holmes, NIAAA

Convergent translational support for the role of endocannabinoids in processing fear and stress

Heather Cameron, NIMH

New neurons in the adult dentate gyrus buffer stress response and anxiety/depression-like behavior

Christian Grillon, NIMH

Distinguishing anxiety from fear: from basic science to clinical studies

Yavin Shaham, NIDA

Translational research based on the reinstatement model of drug relapse: recent progress

Markus Heilig, NIAAA

Pharmacogenetics and the role of stress for excessive alcohol intake

Drosophila Neurobiology Interest Group
Mapping neural circuits and functions

Co-Chairs: Chi-Hon Lee, NICHD; and Wei Li, NEI

Systems neuroscience traditionally concentrates on the computational/algorithmic level of the nervous system, as David Marr advocated over three decades ago. How the brain implements these neural computations, especially in neuronal connections, is largely unknown. Even less is known about how mis-wiring of the brain during development contributes to neurological disorders, such as schizophrenia and autism. Recent technical advancements provide new venues to tackle the implementation problem directly. Microscopic reconstruction maps detailed neuronal connections at the synaptic level. Genetic methods enable activity manipulation of highly selected neurons and the identification of key circuit elements for specific functions.

Kevin Briggman, NINDS

Modern 3D electron microscopy for mapping neuronal circuit connectivity

Harold Burgess, NICHD

A circuit breaking screen identifies gsx1 expressing neurons as modulators of the startle response

Benjamin White, NIMH

Mapping an elementary decision network in Drosophila

Mihaela Serpe, NICHD

Drosophila Neto controls the assembly and maintenance of glutamatergic synapses at the neuromuscular junction

Wei Li, NEI

A color coding amacrine cell may provide a “Blue-Off” signal in a mammalian retina

Fujun Luo, NINDS

Syntaxin 1 modulates activity-dependent inhibition of voltage-gated calcium channels at a central synapse

FARE Award Winner

Protective roles of omega-3 fatty acids in injury and diseases of brain and retina: translation from mechanisms to treatment potential

Chair: Hee-Yong Kim, NIAAA

It is now understood that the balance of omega-3 and omega-6 fatty acids in food greatly influences lipid composition in the human body with far reaching health consequences. An important target of such dietary influence is the nervous system that is exceptionally enriched with docosahexaenoic acid (DHA), an omega-3 fatty acid with 22 carbons and six double bonds. Here we focus on the molecular, cellular and functional consequences of DHA modulation in the brain and retina in the context of the disease and injury outcome. DHA alters properties of cell membranes and may influence cell signaling via lipid-protein interaction. More recently, signaling by ligands that are derived from omega-3 and omega-6 fatty acids has received particular attention. Clinical studies show that omega-3 fat deficiencies in the diet are correlated with neurodevelopmental and psychiatric risks.

Hee-Yong Kim, NIAAA

Molecular mechanisms for DHA-induced neuroprotection: implications for treatment and prevention in traumatic brain injury (TBI)

Stanley Rapoport, NIA

Imaging DHA incorporation into brain as a biomarker of in vivo metabolism and neurotransmission: implications for healthy aging

S. Patricia Becerra, NEI

Fatty acids as mediators for the PEDF activities in the retina

John-Paul SanGiovanni, NEI

Omega-3 fatty acids as protective agent against age-related macular degeneration (AMD): promising translational research

Joseph Hibbeln, NIAAA

Deficiencies in long-chain omega-3 fats and neurodevelopmental and psychiatric risks: applications for the US military

Giorgi Kharebava, NIAAA

Regulation of axonal morphogenesis by docosahexaenoic acid and its ethanolamide derivative, Synaptamide

FARE Award Winner

Molecular tools: using chemistry to see, wrestle, unravel, and trap biology

Co-Chairs: Amy Newman, NIDA; and Dan Appella, NIDDK

Using chemistry to discover biology in action that purveys across disciplines at the NIH. Amy Newman has developed fluorescent ligands to visualize the dopamine transporter in dopaminergic neurons and watch trafficking into the cell to see biology associated with addiction. Jay Schneekloth is studying the small ubiquitin-like modifier, Sumo, whose aberrant regulation is linked with carcinogenesis. Small molecules that inhibit sumoylation enzymes will aid in the understanding of sumo conjugation. Hans Luecke designed a chemical genetic strategy to interrogate lysine acetylation events mediated by specific cellular Histone Acetyltransferase (HAT) enzymes. This strategy has been used with small molecule activity-based HAT modulators to unravel genomic targets of eukaryotic HAT domains. Finally, the HIV envelope is a dynamic target that undergoes sequential conformational changes that support membrane fusion and infection. Carole Bewley will describe chemical tools to study the HIV entry process that can inform the design of inhibitors acting on novel targets during the entry process.

Amy Newman, NIDA

Fluorescent tropane-based tools to see monoamine transporters in action

Jay Schneekloth, NCI

Wrestling with protein sumoylation using small molecule probes

Hans Luecke, NIDDK

Unraveling Epigenetics: Chemical Probes of Lysine Acetylation Networks

Carole Bewley, NIDDK

Using chemistry to trap anti-infective targets

Dan Appella, NIDDK

Discussant

Preethi Chandran, NICHD

Virus-mimic DNA nanoparticles have hollow shell architecture

FARE Award Winner

Technology Development & Transfer Committee How to put the “Translational” into your research

Chair: Anna Amar, NIDDK

The times – they are a changing. Have you noticed NIH’s new logo: “NIH... Turning Discovery into Health”? There’s now an institute that focuses on translational research (NCATS). A recent Presidential Memo mandates that NIH accelerate the pace at which scientific breakthroughs are transferred from the lab to the commercial marketplace. This talk is applicable to everyone involved with discovery, from fellow to PI, at every IC. Hear scientists and others from across NIH talk about how/when to:

- Contact someone if you feel you have an innovation, and who
 - Protect and promote an invention
 - Consider patenting before publishing
 - Tap into your technology transfer office to help you translate a discovery to the market
 - Collaborate with/obtain materials from industry
 - Find enabling resources
 - Generate data to make your technology more attractive to a company
- Learn how to turn your discovery into health.

Anna Amar, NIDDK

Introduction to symposium

John Schiller, NCI

The invention of the Gardasil technologies

Eugene Major, NINDS

How to translate your research tools into the marketplace

Nicole Gormley, NHLBI

Clinical collaborations

Jason Dahlman, NCI

The role of fellows and young scientists in translational science

Evan Snitkin, NIGMS

*Whole genome sequencing to track a hospital outbreak of carbapenem-resistant *Klebsiella pneumoniae**

FARE Award Winner

**NIH Translational Research Interest Group
Health disparities: Advances in translational,
clinical, and population sciences**

Co-Chairs: Anil Wali, NCI; and Jeffrey Kopp, NIDDK

Health Disparities are differences in health outcomes among population groups that reflect socio-economical, geographical and racial/ethnic inequalities. Biological, environmental and behavioral factors can lead to unequal disease burden in prevalence, incidence and mortality rates seen among medically underserved and vulnerable populations. This symposium is timely to take stock of implications of these factors on various disease manifestations and outcomes, and provide insights on the latest advances in combating them with high-throughput medical technologies. The symposium topic is of broad interest to NIH intramural investigators who are engaged in various aspects of trans-disciplinary efforts to understand the molecular basis of linkages between obesity, metabolomics, epigenetics in population based studies. This symposium will serve as a scientific platform to exchange state-of-the-art information on racial/ethnic differences encountered in the translational setup from bench to bedside, and how these experimental approaches could improve the early detection, prevention and therapeutic strategies applicable to the communities.

Cheryl Winkler, NCI

Identification of APOL1 genetic variation explains much of the increased chronic kidney disease characteristic of African Americans

Stefan Ambs, NCI

A prognostic metabolome signature in breast tumors is linked to a distinct DNA methylation pattern in African-American and European-American patients

Kevin Gardner, NCI

Molecular Linkages between race, obesity and triple-negative breast cancer

Charles Rotimi, NHGRI

Ethnic differences in lipid distribution: Implications for disease risk and response to treatment

Cristina Rabadan-Diehl, NHLBI

Health disparities in cardiovascular disease: A global health perspective

CANCER:

Cancer

- CANCER-1** **M Bodogai, C Lee Chang, K Wejksza, J Lai, M Merino, AC Chan, A Biragyn (NIA)**
Failure of Rituximab in solid tumors: the tBreg connection
- CANCER-2** **HE Boudreau, BW Casterline, B Rada, A Korzeniowska, TL Leto (NIAID)**
Nox4 involvement in TGF-beta and SMAD3-driven induction of the epithelial-to-mesenchymal transition and migration of breast epithelial cells
- CANCER-3** **RS Broughton, JG Auvil, S Behrman, M Ferguson, EJ Gillespie, JC Zenklusen, DS Gerhard (OD)**
The Office of Cancer Genomics – Promoting pathways to progress
- CANCER-4** **EK Cahoon, DC Wheeler, MG Kimlin, RK Kwok, BH Alexander, MP Little, MS Linet, DM Freedman (NCI)**
Individual, environmental, and climatic predictors of daily personal ultraviolet radiation exposure measurements in a United States study
- CANCER-5** **MI Davis, D Wei, M Shen, D Auld, M Boxer, XZ Zhou, KP Lu, A Simeonov (NCATS)**
A miniaturized screening assay to discover Pin1 inhibitors as probes of phosphorylation signaling
- CANCER-6** **M Dokmanovic, DS Hirsch, MK ElZarrad, Y Shen, WJ Wu (FDA/CBER)**
Trastuzumab-induced phosphorylation of pY 1248-ErbB2 site is associated with suppression in Akt signaling
- CANCER-7** **AM Dworkin, M Lee, J Lichtenberg, SJ Patel, D Gildea, A Sakthianadeswaren, S Foote, TG Wolfsberg, DM Bodine, NPS Crawford (NHGRI)***
The metastasis suppressor RRP1B interacts with TRIM28 and HP1 alpha at the c-MYC locus to induce heterochromatinization and silencing of c-MYC expression
- CANCER-8** **L Fozzatti, JW Park, MC Willingham, SY Cheng (NCI)**
The Nuclear Receptor Corepressor (NCOR1) is a Tumor Promoter in a Mouse Model of Thyroid Cancer
- CANCER-9** **VE Gallardo, G Varshney, ML Allende, SM Burgess (NHGRI)***
Migration of the zebrafish lateral line as a model for metastasis
- CANCER-10** **JP Gillet, W Vieira, L Tessarollo, MM Gottesman (NCI)**
Functional studies on the multidrug transporter ABCB5: a pleiotropic phenotype in knock-out mice
- CANCER-11** **Y Gonzalez-Berrios, L Chehab, E Rosen, J Dickey, E Herman, A Rao (FDA/CBER)**
Relationship between gender and cardiotoxicity from doxorubicin in spontaneously hypertensive rats

CANCER:

Cancer

- CANCER-12** **M Haznadar, E Mathe, AD Patterson, S Manna, ED Bowman, KW Krausz, JR Idle, FJ Gonzalez, CC Harris (NCI)***
Untargeted Metabolomics Profiling Identifies Putative Biomarkers for Early Detection of Lung Cancer
- CANCER-13** **CP Hsiao, D Wang, A Kaushal, L Saligan (NINR)**
Genes related to mitochondrial biogenesis and bioenergetics are associated with fatigue in men with prostate cancer receiving external beam radiation therapy
- CANCER-14** **GN Jones, JC Van-Schaick, S Kim, T Huynh, U Shankavaram, K Pacak, KW Broman, KM Reilly (NCI)***
Susceptibility to NF1-associated pheochromocytoma is modified in females by Pheom1 on mouse chromosome 16
- CANCER-15** **RE Jones, CZ Chen, AD Schimmer, J McKew, W Zheng (NCATS)**
High throughput screen to identify small molecule modulators in a cell-based model of AML
- CANCER-16** **J Kato, D Vekhter, J Heath, J Zhu, M Mashimo, JT Barbieri, J Moss (NHLBI)**
Tumors derived from ARH1+/- mice and ARH1+/- cells grown in nude mice have mutations in the functional ARH1 allele that affect ARH1 catalytic activity, anti-tumorigenic action, and reversal of toxin-catalyzed ADP-ribosylation
- CANCER-17** **S Kim, HR Ali, S Sharan, C Caldas, E Sterneck (NCI)**
C/EBP δ promotes nuclear localization of p21CIP1 and cytotoxicity of tamoxifen in ER(+) breast tumor cells
- CANCER-18** **ADT Kwit, MD Hall, KR Brimacombe, M Shen, MB Boxer, MM Gottesman (NCI)**
Screen for FDA-approved compounds that induce collateral sensitivity in multidrug resistant cancer
- CANCER-19** **M Lee, AM Dworkin, D Gildea, NS Trivedi, TG Wolfsberg, NP Crawford (NHGRI)***
RRP1B, a novel metastasis suppressor, regulates alternative mRNA splicing
- CANCER-20** **MH Lee, JC Amlin-Van Schaick, KW Broman, KM Reilly (NCI)**
The potential male-specific oncogenic function of Cdca71 in astrocytoma

CANCER:

Cancer

- CANCER-21** **SS Liu, C Petrovas, S Spath, E Saloustros, E Makareeva, M Nesterova, M De La Luz Sierra, CA Stratakis (NICHD)**
Investigation of multipotent cells in bone lesions of mice with PKA defects
- CANCER-22** **TK Maity, A Venugopalan, A Ginnakov, I Linnoila, J Webster, W Lockwood, R Biswas, C Cultraro, R Nemati, HE Varnus, U Guha (NCI)**
Loss of Mig6 potentiates lung tumorigenesis by mutant EGFRs in vivo
- CANCER-23** **Y Nagano, MP Lee, LM Wakefield (NCI)**
Roles of miRNAs in the switch of TGF-beta from tumor suppressor to pro-oncogenic factor in cancer progression
- CANCER-24** **LM Nogueira, N Freedman, E Engels, F Castro, J Koshiol (NCI)**
Gallstones and Cancer Risk
- CANCER-25** **S Patnaik, K Frankowski, F Schoenen, S Huang, J Norton, C Wang, S Titus, M Ferrer, W Zheng, N Southall, VW Day, J Aube, JJ Marugan (NCATS)**
Discovery and Development of Small Molecules That Reduce PNC Prevalence
- CANCER-26** **A Qu, X Xiang, M Taylor, E Anderson, YM Shah, FJ Gonzalez (NCI)***
Activation of hypoxia-inducible factor 2alpha promotes colorectal carcinogenesis
- CANCER-27** **E Saloustros, M Nesterova, O Gavrilova, A Moraitis, S Liu, M Hussain, C Stratakis (NICHD)**
A murine model supports the role of PRKAR1A as a tumor suppressor gene in the pancreas.
- CANCER-28** **T Sullivan, Y Song, N O'Sullivan, X Lu, T Van Dyke (NCI)***
Dedifferentiation of mature astrocytes by abrogation of Rb tumor suppression leads to Astrocytoma initiation in GEMs
- CANCER-29** **LA Wylie, K Cheng, CJ Thiele, A Philpott (NCI)**
Phosphorylation status of Ascl1 regulates neuroblast self-renewal and differentiation
- CANCER-30** **HH Yan, Y Pang, L Yang (NCI)**
CCL9 Mediates TGF- β Regulation of Tumor Cell Survival and Lung Metastasis
- CANCER-31** **G Zhang, PJ He, J Gaedcke, BM Ghadimi, T Ried, HG Yfantis, DH Lee, N Hanna, HR Alexander, SP Hussain (NCI)**
FOX L1, a Novel Candidate Tumor Suppressor, Inhibits Tumor Aggressiveness and Predicts Outcome in Human Pancreatic Cancer

CELLBIOL:
Cell Biology

- CELLBIO-1** **R Chia, A Beilina, A Kaganovich, MR Cookson (NIA)**
Deciphering the effect of LRRK2 constitutive phosphorylation and binding to 14-3-3 on protein function
- CELLBIO-2** **J Huang, Y Wang, S Liu, MM Seidman (NIA)***
Single Molecular Analysis of the Encounter of Replication Forks with DNA Interstrand Crosslinks
- CELLBIO-3** **S Hussain, AB Rice, JD Marshburn, NJ Walker, S Garantziotis (NIEHS)**
Cytotoxic effects of Cerium Dioxide nanoparticles in primary human cells are mediated through apoptosis and autophagy
- CELLBIO-4** **M Jovic, M Kean, AC Gingras, J Brill, T Balla (NICHD)**
PI4KIIa and VAMP3 as Coordinate Regulators of Endocytic Transport
- CELLBIO-5** **K Kapoor, K Katayama, S Ohnuma, SV Ambudkar (NCI)**
Cell surface P-glycoprotein (ABCB1) is degraded by lysosomal/autophagic pathway
- CELLBIO-6** **D Kong, J Loncarek (NCI)**
Mechanisms of centrosome reduplication during interphase arrest
- CELLBIO-7** **ML Kutys, KM Yamada (NIDCR)***
Selective activation of the Rac1/Cdc42 regulator beta-Pix governs cell migration in 3D collagen microenvironments
- CELLBIO-8** **WW Lau, SB Lioi, CA Johnson, JA Mindell (CIT)**
Detection and Characterization of Lysosomes in Fluorescence Microscopic Images
- CELLBIO-9** **K Le, G Pacheco-Rodriguez, J Moss, M Vaughan (NHLBI)**
Tripartite motif protein 23 (TRIM23) regulates degradation of epidermal growth factor receptor (EGFR)
- CELLBIO-10** **E Leo, G Zoppoli, M Regairaz, W Reinhold, Y Pommier (NCI)***
Analysis of the sensitization of cancer cells to DNA damaging agents by SLFN11.
- CELLBIO-11** **M Mineo, S Taverna, A Flugy, G DeLeo, R Alessandro, EC Kohn (NCI)***
Chronic myeloid leukemia (CML) exosomes promote angiogenesis in a Src-dependent fashion in vitro and in vivo
- CELLBIO-12** **CL Nezich, DJ Ives, RJ Youle, IJ Holt (NINDS)**
An emerging profile: elevated autophagy and mitochondrial biogenesis may protect against mutant mitochondrial DNA

CELLBIOL:
Cell Biology

- CELLBIO-13** **V Roukos, T Voss, T Misteli (NCI)**
Visualization of formation of chromosome translocations in living cells
- CELLBIO-14** **X Shen, C Li, A Aponte, R Shen, EM Billings, J Moss,
M Vaughan (NHLBI)**
Brefeldin A-inhibited guanine nucleotide-exchange protein (BIG)
2 regulates cell migration via effects on integrin β 1 cycling and
actin cytoskeleton remodeling
- CELLBIO-15** **CH Stuelten, L Liu, MC Weigert, CA Parent (NCI)**
Random and Directed Cell Migration During Breast Cancer Progression
- CELLBIO-16** **T Wang, KL Gorelick, GG Germino (NIDDK)**
Interaction of ADP Ribosylation Factor Like Proteins with Polycystin-1

CHEM:
Chemistry

- CHEM-1** **SH Chen, ZH Wang, P Huang, XY Chen (NIBIB)**
Self-assembly of gold nanoparticles to silver microspheres as highly efficient 3D SERS substrates
- CHEM-2** **EA Englund, MI Onyshchenko, CM Micklitsch, RD Neumann, IG Panyutin, DH Appella (NIDDK)**
Targeting DNA G-quadruplex structures with pyrazolo[3,4-d]pyrimidine guanine PNA oligomers
- CHEM-3** **P Gupta, DH Appella (NIDDK)**
Synthesis of Pyrrole Derivatives for Selective Inhibition of Wip-1 Phosphatase
- CHEM-4** **SK Himes, KB Scheidweiler, K Tassiopoulos, D Kacanek, R Hazra, K Rich, MA Huestis (NIDA)**
Development and validation of the first liquid chromatography-tandem mass spectrometry assay for antiretrovirals in meconium
- CHEM-5** **RJ Holland, AE Maciag, V Kumar, JE Saavedra, RK Prud'homme, H Chakrapani, LK Keefer (NCI)***
Crosslinking Glutathionylation Mediated by O²-Arylated (Bis) diazeniumdiolate "Double JS-K"
- CHEM-6** **M Jia, E Belyavskaya, P Deuster, EM Sternberg (NIMH)**
Development of a sensitive microarray immunoassay for the quantitative analysis of Neuropeptide Y
- CHEM-7** **L Lang, Y Ma, DO Kiesewetter, X Chen (NIBIB)**
Stability analysis of glutamic acid linked dimeric RGD peptides
- CHEM-8** **D Love, J Hanover (NIDDK)**
O-GlcNAcase cycling: Synthesis and Applications of a novel Halotag bioprobe
- CHEM-9** **DK Luci, W Lea, M Shen, A Rodriguez, A Jadhav, A Simeonov, DJ Maloney (NCATS)**
Discovery of Novel Benzimidazole containing small molecules for the potential treatment of Chagas Disease
- CHEM-10** **KLT Nguyen, EH Kerns, X Xin, JC Mckew (NCATS)**
ADME Assays in Drug Discovery and Preclinical Drug Development Research at TRND/NCATS/NIH

CHEM:
Chemistry

- CHEM-11** **R Pragani, M Davis, J Popovici-Muller, S Gross, N Thorne, F Salituro, V Fantin, K Straley, M Su, L Dang, A Simeonov, M Shen, MB Boxer (NCATS)**
Discovery of a potent, small molecule inhibitor of R132H mutant isocitrate dehydrogenase 1.
- CHEM-12** **G Rai, W Bu, W A Lea, D Liang, B Weiser, V Setola, CP Austin, A Simeonov, A Jadhav, R Eckenhoff, DJ Maloney (NCATS)**
Discovery of Novel General Anesthetics Using Apoferritin as a Surrogate System
- CHEM-13** **AS Rosenthal, TS Dexheimer, G Nguyen, O Gileadi, I Hickson, A Simeonov, A Jadhav, DJ Maloney (NCATS)**
Structure-Activity Relationships of a Novel Inhibitor of BLM Helicase
- CHEM-14** **AA Sousa, JT Morgan, PH Brown, MJ Kruhlak, RD Leapman (NIBIB)**
Cellular uptake of ultrasmall and uniform glutathione-coated gold nanoparticles
- CHEM-15** **MK Taylor, W Westbroek, WA Lea, AM Gustafson, A Velayati, W Zheng, N Southall, A Simeonov, E Goldin, E Sidransky, JJ Marugan, J Xiao (NCATS)**
Identification and characterization of small-molecule chaperones of acid alpha glucosidase for potential treatment of Pompe disease
- CHEM-16** **ZH Wang, SH Chen, XY Chen (NIBIB)**
Ultrasensitive electrochemical detection for matrix metalloproteinase-14 activity using gold nanoparticles amplification
- CHEM-17** **EL Whitson, H Sun, CL Thomas, CJ Henrich, TJ Sayers, JB McMahon, KR Gustafson, C Griesinger, TC McKee (NCI)***
Synergistic TRAIL sensitizers from *Barleria alluaudii* and *Diospyros maritima*

CLIN/TRANS:

Clinical and Translational Research

- CLIN/TRANS-1** **G Abbineni, K Bisht, H Roth, P Hergenrothe, K Haglund (NCI)***
S-PAC-1, a small molecule activator of procaspase 3, sensitizes human breast cancer and other cell lines to ionizing radiation.
- CLIN/TRANS-2** **A Adams, B Baseler, L Giebeig, J Pierson, S Simpson, S Vogel (NIAID)**
Factors that influence the development and execution of risk based monitoring plans
- CLIN/TRANS-3** **E Aflaki, BK Stubblefield, G Lopez, E Maniwang, N Tayebi, J Marugan, E Sidransky (NHGRI)***
The development of a macrophage model of Gaucher disease for testing new small molecular therapies
- CLIN/TRANS-4** **MP Allen, R Padberg, JA Bartholomew, MC Alvarez (NCI)**
Increasing Awareness of NIH Clinical Research to Improve Participation in Trials
- CLIN/TRANS-5** **JN Beeler, LM Harmon, KM Watkins, J Pierson, SE Vogel, B Baseler, SM Simpson (NIAID)**
Jumping over Clinical Research Hurdles Abroad: Strategies for Overcoming Challenges
- CLIN/TRANS-6** **W Bu, DO Schmeling, PD Burbelo, HH Balfour, JI Cohen (NIAID)**
Neutralizing Antibody Titers Increase over Many Months to Years after Epstein-Barr Virus Infectious Mononucleosis
- CLIN/TRANS-7** **P Chen, B Liu, L Wei, H N Sen, Z Li, S Hirani, S Jawad, I Thompson, D Ling, RB Nussenblatt (NEI)**
Enhanced antigen uptake but impaired cytokine production by monocyte-derived dendritic cells in uveitis patients
- CLIN/TRANS-8** **NA Desrosiers, D Lee, KB Scheidweiler, DM Schwope, DA Gorelick, MA Huestis (NIDA)**
In vitro free and glucuronidated cannabinoid stability in authentic urine following controlled smoked cannabis
- CLIN/TRANS-9** **S Hastak, W Ver Hoef, J Evans, R Angeles, L Mckenzie, C Mead, J Speakman, D Patton (NCI)**
BRIDG Model – A semantic foundation for supporting interoperability in Protocol-driven Research
- CLIN/TRANS-10** **WA Henderson, RM Peace, N Fourie, AC Martino, AY Del Valle-Pinero, BL Majors, D Wang, S Reddy (NINR)**
Circulating miRNAs and interleukin-10 levels in patients with and without chronic abdominal pain.

CLIN/TRANS:

Clinical and Translational Research

- CLIN/TRANS-11** **KE Hinton, LA Thomas, P Kim, BL Bones, HS Milch, K Lindstrom, RC Reynolds, N Adelman, AA Marsh, RJR Blair, DS Pine, E Leibenluft (NIMH)**
Elevated amygdala response to emotional faces in youths with chronic irritability or bipolar disorder
- CLIN/TRANS-12** **R Humeniuk, M Rosu-Myles, J Fares, J Bies, L Wolff (NCI)***
Tumor suppressor p15Ink4b determines cell fate of hematopoietic progenitors: implications for development of human blood disorders
- CLIN/TRANS-13** **V Huser, JJ Cimino (CC)**
Clinical implementation of pharmacogenomics dosing guidelines using whole genome sequencing as input data
- CLIN/TRANS-14** **AK Ikeda, TC Anaebere, N Malik, MD Antalek, ML Seidel, C Seamon, GJ Kato, AM Gorbach, HC Ackerman (NIAID)**
Laser speckle contrast imaging characterizes delayed reperfusion after transient brachial artery occlusion in patients with sickle cell disease
- CLIN/TRANS-15** **D Lee, G Milman, DM Schwoppe, AJ Barnes, DA Gorelick, MA Huestis (NIDA)**
Cannabinoid stability in authentic oral fluid collected by expectoration and with the Quantisal™ device after controlled cannabis smoking
- CLIN/TRANS-16** **BM Leon, S Jenkins, K Pepin, H Chaudry, KP Smith, GG Zalos, MA Waclawiw, BV Miller, AE Sumner, KY Chen, RO Cannon (NHLBI)**
Insulin and extremity lean mass in overweight or obese Women
- CLIN/TRANS-17** **G Levy, N Avila, AY Armstrong, L Nieman (NICHD)**
Does the Selective Progesterone Receptor Modulator Ulipristal Normalize The Uterine Cavity in Women with Leiomyoma?
- CLIN/TRANS-18** **R Longchamps, S Abey, AC Martino, RM Peace, S Reddy, WA Henderson (NINR)**
miR-142-3p expression: a genetic link between fatty liver and hepatocellular carcinoma
- CLIN/TRANS-19** **C Peng, NJ Ames, A Callahan, J Powers, NK Leidy, C Miller-Davis, A Rosenberg, M VanRaden, G Wallen (CC)**
Beyond Intuition: Understanding Patient Experiences of Fever
- CLIN/TRANS-20** **SB Ravindran, NS Patel, AC Martino, RM Peace, LB Afrin, WA Henderson (NINR)**
Gene expression of stress and toxicity markers in a rare case of mast cell activation syndrome.

CLIN/TRANS:

Clinical and Translational Research

- CLIN/TRANS-21** **E Saloustros, E Mertz, M Nesterova, M Keil, SM De la Luz, N Kiran, A Horvath, S Leikin, C Stratakis (NICHD)**
COX-2 inhibition reduces bone tumor growth in animal models:
A role for celecoxib treatment in cAMP/protein kinase A-induced tumors.
- CLIN/TRANS-22** **BL Stangl, ML Schwandt, MR Zametkin, VA Ramchandani (NIAAA)**
Adverse childhood experiences predict heavier drinking and greater alcohol intake during intravenous (IV) alcohol self-administration in non-dependent drinkers
- CLIN/TRANS-23** **TA Waldmann, JE Janik, JC Morris, D O'Mahony, S Pittaluga, ES Jaffe, MW Brechbiel, CH Paik, M Whatley, JD White, DM Stewart, S Fioravanti, CC Lee, CK Goldman, BR Bryant, JA Carrasquillo (NCI)**
Yttrium-90 Radiolabeled Daclizumab, an Anti-CD25 Monoclonal Antibody Provides Effective Therapy for Refractory and Relapsed Hodgkin's Lymphoma
- CLIN/TRANS-24** **Y Wang, D Shen, J Tuo, P Subramanian, SP Becerra, CC Chan (NEI)**
Pigment Epithelium-derived Factor Inhibits Neuroretinal Apoptosis in a Murine Model of Focal Retinal Degeneration
- CLIN/TRANS-25** **S Weiss, L McNay (NIAID)**
Development of Performance Measures in NIAD's Division of Clinical Research
- CLIN/TRANS-26** **RP Weitzel, A Biancotto, MM Hsieh, JF Tisdale (NHLBI)**
Characterization of early lymphocyte recovery after reduced-intensity conditioning and matched-sibling hematopoietic stem cell transplant for sickle cell disease
- CLIN/TRANS-27** **JM Werner, A Abdalla, N Gara, M Ghany, B Rehermann (NIDDK)**
Longevity of Humoral and Cellular Immune Responses to Hepatitis B Vaccination
- CLIN/TRANS-28** **Z Xie, CC Ghosh, R Patel, S Iwaki, D Gaskins, C Nelson, N Jones, PR Greipp, SM Parikh, KM Druey (NIAID)**
Mechanisms of vascular permeability in the Systemic Capillary Leak Syndrome (Clarkson disease)
- CLIN/TRANS-29** **F Xu, J Vostal (FDA/CBER)**
Vitamin K3 is a potential ultraviolet photosensitizer for pathogen reduction in human platelets

CULT/SOC SCI:

Cultural/Social Sciences and History of Medicine

- CULT/SOC SCI-1** **B Belcher, R Moser, K Dodd, A Atienza, R Ballard-Barbash, D Berrigan (NCI)***
Self-reported versus accelerometer measured physical activity & cardiometabolic biomarkers among youth in NHANES
- CULT/SOC SCI-2** **WN Elwood, CA Johnson, SH Jonas, RM Kaplan, KM Kulinowski, WW Lau, EL Stover (OD)**
Richer, deeper, stronger: New analytical approaches for enhanced analyses of the NIH behavioral and social sciences research portfolio
- CULT/SOC SCI-3** **A Prestin, R Nabi (NCI)**
The design and evaluation of an online media-based stress reduction intervention for college students

DEV:
Development

- DEV-1** **MA Avella, B Baibakov, J Dean (NIDDK)***
Gamete recognition requires ZP2 for sperm binding to the zona pellucida in mice and humans
- DEV-2** **W Cai, M Lilly (NICHD)**
CG7609, a conserved SEA-complex component, is required for early oogenesis in Drosophila
- DEV-3** **TM Coate, MW Kelley (NIDCD)***
Guidance of Spiral Ganglion Neuron Peripheral Axons by Secreted Semaphorins
- DEV-4** **DE Dalle Nogare, KMT Somers, AB Chitnis (NICHD)**
In silico reconstruction of Zebrafish lateral line morphogenesis at single-cell resolution
- DEV-5** **JS Harunaga, AD Doyle, MA Conti, RS Adelstein, KM Yamada (NIDCR)***
Rapid Expansion of Embryonic Epithelia Requires Extensive Basement Membrane Perforation
- DEV-6** **EP Horn, C Padilla, N Manian, DL Putnick, MH Bornstein (NICHD)**
The Effects of Maternal Depression on Children's Language Development
- DEV-7** **S Ji, E Tian, KG Ten Hagen (NIDCR)**
Characterization of a novel UDP-GalNAc:polypeptide N-acetyl galactosaminyl transferase that is essential for viability in Drosophila
- DEV-8** **MK Kaltcheva, SP Underwood, BD Harfe, MB Lewandoski (NCI)***
Interdigit Bone Morphogenetic Protein signaling is essential for Programmed Cell Death and is implicated in digit formation
- DEV-9** **WM Knosp, SM Knox, GR Martin, MP Hoffman (NIDCR)**
FGFR2b regulation of Wnt signaling controls parasympathetic innervation during submandibular gland development.
- DEV-10** **KF Monzo, BM Weinstein (NICHD)**
Vascular-specific translational profiling in zebrafish
- DEV-11** **CM Padilla, EP Horn, DL Putnick, N Manian, MH Bornstein (NICHD)**
Gender differences and comorbidity of child behavioral adjustment in families with and without depressed mothers

DEV:
Development

- DEV-12** **JC Reich, Y Wei, W Laursen, ML Lilly (NICHD)**
Missing oocyte: connecting meiotic progression and metabolism
in early oogenesis
- DEV-13** **N Sharma, R Ajima, TP Yamaguchi, AO Perantoni (NCI)**
Wnt5a regulates intermediate mesoderm extension and
kidney morphogenesis
- DEV-14** **AN Stratman, BM Weinstein (NICHD)**
Developmental origins of vascular smooth muscle cells
- DEV-15** **E Tian, MP Hoffman, KG Ten Hagen (NIDCR)**
O-glycosylation modulates integrin and FGF signaling by influencing
the secretion of basement membrane components
- DEV-16** **Y Wei, M Lilly (NICHD)**
The function of NPR2 and NPR3, components of the SEA complex,
during *Drosophila melanogaster* oogenesis

MOLBIO:
Molecular Biology

- MOLBIO-1** **SL Baker, JR Hogg (NHLBI)**
Inhibition of nonsense-mediated mRNA decay by translational readthrough
- MOLBIO-2** **CY Chuang, SY Tsai, T Hayashi, JJ Hung, WC Chang, TP Su (NIDA)***
Cocaine hijacks sigma-1 receptors from the ER to the nuclear membrane to interact with Nesprins/Sun2/lamina complex: Effect on MeCP2 gene expression
- MOLBIO-3** **S Cureoglu, N De Lay, S Gottesman (NCI)***
The Role of sRNAs in Biofilm Formation
- MOLBIO-4** **Z Ge, JR Hogg (NHLBI)**
Evasion of nonsense-mediated mRNA decay by the Rous sarcoma virus RNA stability element
- MOLBIO-5** **HC Hsiao, DJ Cantanese, K Gonzalez, KS Matthews, SE Bondos (OD)**
Ultrabithorax, an intrinsically disordered protein, use topology to select protein interactions
- MOLBIO-6** **PL Hyland, N Hu, M Rotunno, H Su, C Wang, L Wang, RM Pfeiffer, B Gherman, C Giffen, C Dykes, SM Dawsey, CC Abnet, P Young, RD Acosta, BD Cash, PR Taylor (NCI)**
Global Changes in Gene Expression of Barrett's Esophagus Compared to Normal Squamous Esophagus and Gastric Cardia Tissues
- MOLBIO-7** **XL Li, P Francis, M Pineda, S Bilke, M Subramanian, T Hara, PS Meltzer, A Lal (NCI)**
The Cell Cycle Inhibitor p21 Regulates microRNAs and Controls Epithelial-Mesenchymal Transition
- MOLBIO-8** **K Rijal, RJ Maraia (NICHD)***
RNA polymerase III mutants in the TFIIFa-like Rpc37p subunit impair transcription termination and RNA 3' end cleavage
- MOLBIO-9** **SK Singh, W Yang, M Gellert (NIDDK)**
Mechanism and regulation of V(D)J recombination mediated by Recombination Activation Genes RAG1 and RAG2

SIG:
Signaling

- SIG-1** **M Akbar, HY Kim (NIAAA)**
Role of Docosahexaenoic Acid in Mu Opioid Receptor Phosphorylation and Desensitization
- SIG-2** **CN Keembiyehetty, M Comly, DC Love, JA Hanover (NIDDK)**
Microarray studies on O-GlcNAcase knock out mouse embryonic fibroblast (MEF) cells show effects on metabolism and cell proliferation pathways
- SIG-3** **FA Khan, J Krall, J Moss, M Vaughan, M Movsesian, VC Manganiello (NHLBI)**
Phosphorylation-dependent PDE3A and BIG1 interactions may be important in regulation of BIG1 function in cytosolic fractions of human myocardium
- SIG-4** **DK Rhee, JC Lim, SC Hockman, F Ahmad, VC Manganiello (NHLBI)**
Heterologous expression of human phosphodiesterase 3A enhances oxidative stress resistance in yeast
- SIG-5** **M Shatz, D Menendez, MA Resnick (NIEHS)***
p53 cooperates with MAP kinase and NFkB signal transduction pathways to potentiate human immune/inflammatory response
- SIG-6** **CP Xavier, M Melikova, S Saffo, JS Rubin (NCI)**
sFRP1 Potentiation vs. Inhibition of Wnt3a/ β -catenin Signaling: Mechanistic and Structure-Function Analysis
- SIG-7** **Z Yang, PR Cooper, G Damera, R Edwards, CE Brightling, RA Panettieri, KM Druey (NIAID)***
The role of regulators of G-protein signaling 5 in the pathophysiology of asthma

STRUCTBIO:
Structural Biology

- STRUCTBIO-1** **M Akbar, HY Kim (NIAAA)**
Probing conformation of opioid receptor by in-cell chemical cross-linking and mass spectrometry
- STRUCTBIO-2** **GA Bermejo, GM Clore, CD Schwieters (CIT)**
Improved statistical torsion angle potential yields higher-quality NMR protein structures
- STRUCTBIO-3** **JL Lorieau, JM Louis, CD Schwieters, A Bax (NIDDK)**
Structure and Dynamics of Activated State Conformational Ensembles for the Influenza Hemagglutinin Fusion Peptide
- STRUCTBIO-4** **GT Lountos, JE Tropea, DS Waugh (NCI)**
Structure of the cytoplasmic domain of Yersinia pestis YscD, an essential component of the type III secretion system
- STRUCTBIO-5** **N Noinaj, P Lukacik, N Easley, H Chang, T Lithgow, SK Buchanan (NIDDK)***
The role of BamA in outer membrane protein biogenesis in Gram-negative bacteria
- STRUCTBIO-6** **CD Schwieters (CIT)**
Software Tools for Biomolecular NMR Structure Determination
- STRUCTBIO-7** **JR Stagno, B Ma, J Li, A Altieri, RA Byrd, X Ji (NCI)**
Crystal Structure of a Plectonemic RNA Supercoil
- STRUCTBIO-8** **JR Stagno, B Ma, J Li, AS Altieri, RA Byrd, X Ji (NCI)***
Crystal Structure of a Plectonemic Supercoil
- STRUCTBIO-9** **CH Tai, D Kc, BK Lee (NCI)**
Internally symmetric proteins with multiple axes
- STRUCTBIO-10** **RS Yedidi, K Maeda, DA Davis, D Das, JD Kaufman, SJ Stahl, P Wingfield, DW Smith, V Kalapala, AK Ghosh, H Mitsuya (NCI)**
Significant increase in the potency by bis-tetrahydrofuran (THF) and tris-THF moieties as P2 functional groups of HIV-1 protease inhibitors against a clinical isolate (A02) HIV-1 protease

Concurrent Symposia Session III

Natcher Conference Center
Ruth L. Kirschstein Auditorium

Wednesday, October 10, 2012

2:00 p.m.–4:00 p.m.

Stem cells in development and diseases

Chair: Steven Hou, NCI

Tissues and organs in animals are generated and maintained by stem cells, which possess the potential for unlimited self-renewal. Through asymmetric cell division, a stem cell in adult tissues can produce one daughter cell whose self-renewing progeny maintain the stem-cell population and a second daughter cell that will give rise to one or many differentiated and short-lived cell types that will replace damaged or dying cells. Similarly, tumors may originate from a few transformed cells with stem-cell characteristics, called cancer stem cells. Stem cells have immense potential for therapeutic use in regenerative medicine and as targets for anticancer therapies. To make use of this potential, we must first understand the molecular parameters that define a stem cell and the mechanisms that regulate stem-cell behavior. This symposium will bring together NIH experts working on basic stem cell biology and stem cell-related diseases.

Matthew Hoffman, NIDCR

Kit and Fgfr2b regulate progenitor cell expansion during organogenesis

Steven Hou, NCI

Stem cell regulation in drosophila intestine

Isaac Brownell, NCI

Microenvironment in the regulation of hair follicle stem cells

Ramiro Iglesias-Barthomew and Silvio Gutkind, NIDCR

mTor signaling and epithelial stem cell regulation

Paola Scaffidi and Tom Misteli, NCI

In vitro generation of human cells with cancer stem cell properties

Rita Humeniuk, NCI

Tumor suppressor p15Ink4b determines cell fate of hematopoietic progenitors: Implications for development of human blood disorders

FARE Award Winner

Imaging traumatic brain injury: Challenges and solutions

Co-chairs: Amir H. Gandjbakhche, NICHD; and
Paul Smith, NIBIB

Approximately 1.7 million people sustain a traumatic brain injury annually. 300,000 veterans in Iraq/Afghanistan wars experienced TBI, mostly mild. Injuries range from severe structural damages detected in (MRI/CT) imaging, to those injuries which exhibit normal structural imaging but manifest different levels of cognitive deficits such as memory problems, reduced attention, inability to concentrate on a single task. The poor quality of life associated with TBI, create severe morbidities in all aspects of patient life (family, work, and society), and cost billions of dollars. Accurate diagnosis and classification of TBI are becoming a critical need for personalized therapy. However, phenotyping TBI is still a huge challenge. Imaging methods, both structural and functional, could play an important role for phenotype classification. In this symposium we will address the role of imaging techniques for TBI diagnosis and therapy.

James Smirniotopoulos, USUHS

Imaging TBI: Known knowns and unknown unknowns

Ramon Diaz-Arrastia, USUHS

Endophenotypes of traumatic brain injury: Implications for the next generation of clinical trials

Lawrence Latour, NINDS

The CNRM traumatic head injury neuroimaging classification (THINC) study: Steps toward the objective diagnosis and classification of TBI

Amir Gandjbakhche, NICHD

Imaging cognitive function with near infrared spectroscopy for TBI diagnosis

Emily Wood, NINDS

Detecting axonal degeneration in multiple sclerosis with diffusion weighted spectroscopy
FARE Award Winner

Rare disease research in the Bedside to Bench Program: Intramural-Extramural partnerships advancing translational science at the NIH Clinical Center

Co-Chairs: PJ Brooks, NCATS; and Steve Groft, OD

The NIH Bedside-to-Bench (B2B) program funds research teams translating basic scientific findings into clinical studies or taking clinical observations to the laboratory and, with further investigation, back to the clinic. Projects have been funded across multiple research categories, with rare diseases being a primary component. The program expanded to include intramural and extramural investigators in 2006, and now provides extramural scientists access to the NIH Clinical Center, exemplifying the benefits of intramural – extramural collaborations. The Office of Rare Diseases Research (ORDR) is part of the new National Center for Advancing Translational Science (NCATS), which came into existence late last year, and there are plans for a new B2B partnership mechanism, making 2012 an opportune time to highlight some exciting and productive rare disease projects. The projects selected involve intramural investigators from 4 different ICs, studying multiple types of diseases, and should therefore be of broad interest.

Alexandra Freeman, NIAID

Role of Pathogen-specific IgE and histamine release in the Hyper-IgE syndrome

Phillip Pearl, Children's National Medical Center

GABAB receptor antagonist SGS-742 treatment in SSADH deficiency

Karen Berman, NIMH

Brain, genes, and behavior, in Williams syndrome

Craig Blackstone, NINDS

Common cellular themes for the hereditary spastic paraplegias

Douglas Stewart, NCI

The DICER1-related pleuropulmonary blastoma cancer predisposition syndromes for the hereditary spastic paraplegias

Cell Cycle Interest Group

Mitosis: From molecular detail to human disease

Co-Chairs: Mary Dasso, NICHD; and Ji Luo, NCI

Mitotic chromosome segregation is a fundamental process that assures genomic stability in all eukaryotes. Moreover, controlled cell division plays a key role in the specification of many cell fate choices and helps to govern the size, structure and shape of tissues. Mitotic defects cause human diseases, particularly cancers, and underlie some forms of infertility. This symposium will focus on the diverse range of novel approaches that are being developed throughout the NIH to understand this critical process, from mathematical modeling of regulatory circuits to the identification of therapeutic targets based upon mitotic deficiencies of cancer cells. (Four of these speakers are tenure-track investigators.)

Chairperson Information

Orna Cohen-Fix, NIDDK

Nuclear structure deformation during mitotic arrest in budding yeast

Petr Kalab, NCI

Mitotic RanGTP gradient promotes mitotic progression in normal and cancer cells and is amplified by chromosomal gain

Indu Kohaar, NCI

Allele-specific mRNA and protein expression on genetic variants of CCNE1 associated with risk of bladder cancer

FARE Award Winner

Jian Liu, NHLBI

Spatio-temporal regulation of checkpoints in mitosis

Ji Luo, NCI

The Ras synthetic lethal gene ERH controls chromosome congression and the splicing of the mitotic motor protein CENP-E

Nasser Rusan, NHLBI

Centrosome maturation in asymmetric divisions

Microbiome Working Group
Microbiome research at the NIH:
From disease to therapeutics

Co-Chairs: Rashmi Sinha, NCI; and Leigh Greathouse, NCI

Symposium on Microbiome Research at the NIH: From disease to therapeutics. This symposium will center on current work within the NIH intramural program, and will focus on characterization of the microbiome, etiologic investigations, and the possible use of microorganisms in therapy. The symposium will end with a discussion including the speakers, selected poster presenters, and a panel of experts, which will be lead by the session chairs. The purpose of this discussion will be to address the research needed to advance interdisciplinary work on the microbiome at the NIH so that both basic science and epidemiology are fully integrated.

Shruti Naik, NIAID

Compartmentalized control of skin immunity by resident commensals

Christian Abnet, NCI

Upper GI microbiome and mortality

Katia Garcia-Crespo, NIAID

Lactobacillus-mediated priming of the respiratory mucosa protects against lethal virus infection

Laurel Lagenaur, NCI

Live biotherapeutic approaches to HIV prevention

Noriho Iida, NCI

Gut commensal bacteria promote anti-tumor innate immune responses in distant tumors after immunotherapy and chemotherapy
FARE Award Winner

Poster Blitz: 1. Roberto Flores (NCI) Standardization of specimen collection and handling procedures for gut microbiome analyses; 2. John Grainger (NIAID) Inflammatory macrophages regulate pathologic responses to commensals during acute gastrointestinal infection; 3. Reiko Yamane (NEI) Commensal microbiota as a trigger for 'Spontaneous' Autoimmune Uveitis

Matrix biology and matrix remodeling

Chair: Keir Neuman, NHLBI

Extra-cellular matrices provide the structural underpinning of human form and function. Cells comprising human tissues are embedded in, and supported by, extracellular matrices composed of collagens, proteoglycans, and associated proteins. Mineralized matrices form the basis for the skeletal system, including cartilage and teeth. Matrix scaffolds are deposited and remodeled by resident cells providing an organized milieu that in turn exerts multiple effects on cell activity, including differentiation and migration. Physiological processes including development, morphogenesis, and wound healing are associated with matrix formation and remodeling. Pathologies including atherosclerosis, metastatic invasion and rheumatoid arthritis are associated with misregulation of remodeling, whereas bone and connective tissue disorders are associated with matrix protein mutations. This symposium will bring together NIH investigators from diverse research areas who share a common interest in the extra cellular matrix and how it is remodeled.

Kenneth Yamada, NIDCR

Matrix regulation of signaling, cell migration, and development

Rinki Ratna Priya, NEI

Exome sequencing and association analysis implicates extracellular matrix gene, FBN2 in early and late onset macular degenerations
FARE Award Winner

Sergey Leikin, NICHD

Procollagen folding and misfolding in the cell

Larry W. Fisher, NIDCR

Understanding the abnormal trafficking of mutant DSPP in dentin diseases suggests a new class of cargo receptor(s) for exiting the endoplasmic reticulum

Herbert Geller, NHLBI

The sour side of sugars: Overcoming chondroitin sulfate proteoglycans to promote axonal regeneration in the CNS

Keir C. Neuman, NHLBI

Single-molecule tracking of collagenase on native type I collagen fibrils reveals degradation mechanism

2013 FARE Program and Award Ceremony

The Fellows Award for Research Excellence (FARE) Program is in its 18th year of providing recognition for the outstanding scientific research performed by intramural fellows who have less than five years of research experience at NIH. Sponsored by the Felcom, the NIH Scientific Directors and the OITE, this annual competition selects the top 25 percent of abstracts from 53 different study sections to receive a \$1,000 travel award. Winners use the travel award to present their research at a scientific meeting during the subsequent fiscal year.

The FARE competition attracted more than 1,000 applicants, representing nearly a third of all eligible graduate students, postdocs and clinical fellows throughout the institutes and centers of the NIH. All submitted abstracts underwent anonymous peer-review and were scored by a panel of judges from the applicant's chosen study section. This year 224 winners were selected to receive travel awards. FARE competition winners will present posters (marked by a blue ribbon) on their research during the NIH Research Festival. The FARE Subcommittee of FelCom thanks all participants and congratulates the winners of FARE 2013.

We encourage all eligible intramural postdoctoral and clinical fellows to apply to the next FARE competition in Spring 2013.

Poster Session III

Natcher Conference Center

Thursday, October 11, 2012

10:00 a.m.–Noon

DISPREV:

Disease Prevention

DISPREV-1

JY Chou, J Amaral, I R Rodriguez (NEI)

Sterculic Acid inhibits 7-ketocholesterol-mediated Angiogenesis in a rat model

DISPREV-2

XN Zhao, K Usdin (NIDDK)

Target gene identification by microarray analysis of ovaries from Fragile X-associated primary ovarian insufficiency (FXPOI) mice

ENDOC:

Endocrine/Diabetes/Metabolism

- ENDOC-1** **KS Awad, S Wang, RL Danner (CC)***
Peroxisome Proliferator-activated Receptor (PPAR) gamma and G-protein Coupled Receptor 40 (GPCR40) Function as an Integrated Two-receptor Signaling Pathway
- ENDOC-2** **SA Beall, K Moon, E Widra, A DeCherney, F Chang (NICHD)**
Matched samples comparison of in vitro fertilization (IVF) clinical outcomes associated with Leuprolide Acetate (LA) versus human Chorionic Gonadotropin (hCG) trigger for oocyte maturation
- ENDOC-3** **T Cai, H Hirai, A Notkins (NIDCR)**
Elucidation of the Transcriptional Regulation of the Dense Core Vesicle Protein IA-2: CREB and CREB-Related Binding Sites
- ENDOC-4** **CS Cheung, JC Lui, J Baron (NIDCD)***
Identification of peptides that bind growth plate chondrocytes by phage display: a first step toward targeted therapy.
- ENDOC-5** **KM Devine, AY Armstrong, JH Segars, M Merino, M Linehan, A Venkatesan (NICHD)**
T2-weighted Signal Intensity Correlates with Histology in Patients with Hereditary Leiomyomatosis and Renal Cell Cancer Syndrome
- ENDOC-6** **AE Hanish, JA Butman, AE Huey, MD Lee, E Yin, LA Hunter, MD Hicks, T Singh, M Tsang, JC Han (NICHD)**
Pineal hypoplasia and decreased melatonin in patients with PAX6 haploinsufficiency due to WAGR syndrome or PAX6 mutations
- ENDOC-7** **MJ Hill, KS Richter, G Levy, AH DeCherney, ED Levens, G Suthar, E Widra, MJ Levy (NICHD)**
Elevated progesterone on the day of hCG administration negatively affects clinical pregnancy in both cleavage and blastocyst embryo transfers.
- ENDOC-8** **S Jain, IR Azua, M White, JM Guettier, J Wess (NIDDK)***
Selective activation of Gq signaling in pancreatic beta cells in vivo improves beta cell function and whole body glucose homeostasis
- ENDOC-9** **T Jourdan, G Godlewski, R Cinar, J Tam, G Szanda, A Bertola, J Liu, T Han, B Mukhopadhyay, C Ju, G Kunos (NIAAA)***
Peripheral cannabinoid CB1 receptor (CB1R) blockade reverses β -cell loss, hyperglycemia by reversing macrophage-induced activation of the NLRP3 inflammasome in a rat model of type 2 diabetes (T2DM).

ENDOC:
Endocrine/Diabetes/Metabolism

- ENDOC-10** **DM Lateef, C Xiao, O Cheng, ML Reitman (NIDDK)**
Mechanism of action of BRS-3 in temperature regulation
- ENDOC-11** **JE Lee, YW Cho, K Ge (NIDDK)**
PTIP-associated protein PA1 controls induction of early adipogenic transcription factors
- ENDOC-12** **G Lefevre, M Miller (NIDDK)**
An algorithm for planning lifestyle interventions to achieve and maintain realistic weight loss goals: translational strategies for an atypical biomedical invention.
- ENDOC-13** **TT Nguyen, VK Jayadeva, RJ Brown, R Nandagopal, LM Rodriguez, KI Rother (NIDDK)**
Strategies for the Recruitment and Retention of Youth with Type 2 Diabetes into Clinical Studies
- ENDOC-14** **SJ Park, F Ahmad, A Philp, K Baar, T Williams, H Luo, H Ke, H Rehman, R Taussig, AL Brown, MK Kim, MA Beaven, AB Burgin, V Mangainello, JH Chung (NHLBI)**
Resveratrol Ameliorates Aging-Related Metabolic Phenotypes by Inhibiting cAMP Phosphodiesterases
- ENDOC-15** **E Szarek, MF Starost, M Abu Asab, L Dye, ER Ball, A Horvath, M Nesterova, CA Stratakis (NICHD)**
Heterozygous deletion in Foxd3, in mice, alters morphology of interstitial cells of the cajal in the gastrointestinal tract and causes megaesophagus
- ENDOC-16** **M Watts, B Fendler, R Bertram, A Sherman (NIDDK)**
Two types of metabolic oscillations in pancreatic islets
- ENDOC-17** **P Xekouki, AS Mastroyiannis, D Avgeropoulos, ML Sierra, V Martucci, K Pacak, CA Stratakis (NICHD)**
A new syndromic association: pituitary adenomas, paragangliomas and pheochromocytomas

EPID:
Epidemiology

- EPID-1** **S Abhyankar, D Demner-Fushman, F Callaghan, K Leishear, CJ McDonald (NLM)**
MIMIC-II: a database of 30,000+ patients for ICU research
- EPID-2** **E Albanese, B Davis, P Johnsson, M Chang, T Aspelund, T Harris, V Gudnason, L Launer (NIA)**
Mid- to Late-life body mass index trajectories, dementia and brain damage – the AGES-Reykjavik cohort study
- EPID-3** **H Arem, ST Mayne, J Sampson, H Risch, R Stolzenberg-Solomon (NCI)**
Dietary fat intake and risk of pancreatic cancer in the Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Screening Trial
- EPID-4** **W Bao, K Bowers, DK Tobias, FB Hu, C Zhang (NICHD)**
Pregnancy dietary protein intakes, major dietary protein sources and risk of gestational diabetes mellitus: a prospective cohort study
- EPID-5** **S Butcher, MC Friesen, WW Lau, CA Johnson (CIT)**
An algorithm to map free-text job descriptions in epidemiological surveys to standard occupational codes
- EPID-6** **MC Camargo, WH Kim, AM Chiaravalli, KM Kim, AH Corvalan, K Matsuo, J Yu, JYJ Sung, R Herrera-Goepfert, F Meneses-Gonzalez, Y Kijima, S Natsugoe, WH Chow, J Lissowska, S Kim, C Koriyama, S Akiba, CA Gonzalez, PR Taylor, CS Rab (NCI)***
Epstein-Barr virus positivity as a prognostic indicator in gastric cancer: An international pooled analysis
- EPID-7** **MS Castaneto, AJ Barnes, KB Scheidweiler, M Schaeffer, KK Rogers, D Stewart, MA Huestis (NIDA)**
What is the best biological matrix for identifying methamphetamine environmental exposure in endangered children?
- EPID-8** **NC Deziel, MH Ward, EM Bell, T Whitehead, RB Gunier, MC Friesen, JR Nuckols (NCI)***
Temporal variability of pesticide concentrations in homes and implications for exposure misclassification in cancer epidemiology
- EPID-9** **SM George, D Albanes, SC Moore, MH Gail, MM Gaudet, LA Brinton, M Garcia-Closas, S Berndt (NCI)**
The role of genome-wide association study confirmed obesity-related single nucleotide polymorphisms in the etiology of postmenopausal breast cancer
- EPID-10** **RL Hartman, MA Huestis (NIDA)**
The Effects of Cannabis on Driving Skills

EPID:
Epidemiology

- EPID-11** **S Karami, G Andreotti, S Koutros, KH Barry, S Han, LE Moore, A Blair, JA Hoppin, DP Sandler, JH Lubin, LA Burdette, J Yuenger, M Yeager, LE Beane Freeman, MCR Alavanja (NCI)**
Prostate cancer in relation to pesticide use and inherited variants in vitamin D pathway genes
- EPID-12** **C Kim, N Rothman, Q Lan (NCI)**
Indoor air pollution and lung cancer risk in prospective study of non-smoking Chinese women
- EPID-13** **GY Lai, SJ Weinstein, D Albanes, J Virtamo, KA McGlynn, R Sinha, ND Freedman (NCI)***
The association of coffee intake on liver cancer incidence and liver disease mortality in male smokers
- EPID-14** **S Lamart, AA Romanyukha, LM Morton, RE Curtis, SL Simon, C Lee (NCI)**
Location and shape of the esophagus depending on body characteristics for retrospective radiation dose estimation
- EPID-15** **SW Lin, CC Abnet, W Wicker, JL Warren, R Parsons, EA Engels, ND Freedman (NCI)**
Risk of digestive tract cancer in patients with peptic ulcers
- EPID-16** **JM McNeely, SR Waldstein, MF Kuczmarski, MK Evans, AB Zonderman (NIA)**
Diabetes mellitus moderates the influence of dietary sodium on resting hemodynamics in African Americans but not Whites in the Healthy Aging in Neighborhoods of Diversity Across the Life Span (HANDLS) Study
- EPID-17** **KA Moy, L Jiao, ND Freedman, SJ Weinstein, R Sinha, J Virtamo, D Albanes, RZ Stolzenberg-Solomon (NCI)**
Advanced glycation end products, soluble receptor for advanced glycation end products and risk of liver cancer
- EPID-18** **G Neta, P Rajaraman, A Berrington de Gonzalez, MM Doody, BH Alexander, D Preston, SL Simon, D Melo, J Miller, DM Freedman, MS Linet, AJ Sigurdson (NCI)***
A prospective study of medical diagnostic x-rays and risk of thyroid cancer
- EPID-19** **SJ Nyante, GL Gierach, CM Dallal, Y Park, AR Hollenbeck, LA Brinton (NCI)**
Cigarette smoking and postmenopausal breast cancer risk: results from the NIH-AARP Diet and Health Study

EPID:
Epidemiology

- EPID-20** **C Pelsler, AR Hollenbeck, Y Park (NCI)***
Pre-diagnosis lifestyle factors and colorectal cancer survival in the NIH-AARP diet and health study
- EPID-21** **EC Persson, L Schwartz, Y Park, AR Hollenbeck, BI Graubard, ND Freedman, KA McGlynn (NCI)***
The relationship of folate and alcohol to hepatocellular carcinoma incidence and liver disease mortality
- EPID-22** **F Tekola Ayele, E Hailu, C Finan, A Aseffa, G Davey, MJ Newport, CN Rotimi, A Adeyemo (NHGRI)**
Accurate and Reliable Prediction of HLA Class II Alleles Using SNPs in an African Population
- EPID-23** **ME Thoma, AC McLain, JF Louis, RB King, AC Trumble, R Sundaram, GM Buck Louis (NICHD)**
The prevalence of infertility in the United States as estimated by the current duration approach and a traditional construct approach

EPIGEN/TRANS/CHROM:

Epigenetics/Transcription/Chromatin

**EPIGEN/TRANS/
CHROM-1**

MD Hicks, JD Marshall, P Maffei, AE Hanish, LA Hunter, SM Brady, NM Sedaka, R Sherafat Kazemzadeh, JW Tsao, G Milan, J Naggert, JA Yanovski, JC Han (NICHD)

Hyperphagia, leptin, and brain-derived neurotrophic factor in subjects with Alström syndrome and BMI-Z matched controls

**EPIGEN/TRANS/
CHROM-2**

TB Miranda, TC Voss, M Hawkins, RL Schiltz, GL Hager (NIGMS)

Identification of Chromatin Modifiers Involved in the Recruitment of the Glucocorticoid Receptor to Response Elements by a High-throughput Fluorescence-based Screen

**EPIGEN/TRANS/
CHROM-3**

JH Oum, I Som, S Eszterhas, J Little, Q Gong, S Fiering, A Dean (NIDDK)*

Developmental regulation of the murine beta-globin locus

**EPIGEN/TRANS/
CHROM-4**

AL Pang, A Title, OM Rennert (NICHD)

Expression of mouse Lin28 gene is epigenetically regulated by histone modification

**EPIGEN/TRANS/
CHROM-5**

JL Platt, AJ Harwood, AR Kimmel (NIDDK)

A CHD ATP-dependent Chromatin Remodeler Regulates Nucleosome Repeat-Length Phasing in the Mid-coding Sequence of a Limited Gene Set

**EPIGEN/TRANS/
CHROM-6**

L Wang, K Ge (NIDDK)

H3K9 Methyltransferase G9a Represses PPARgamma Expression and Adipogenesis

GEN/GENOM:
Genetics/Genomics

- GEN/GENOM-1** **MA Bellani, IV Gregoretto, F Pratto, RD Camerini-Otero (NIDDK)**
The Roles of Spo11 and Sun1 in Novel Pre - DNA Double Strand Break
Genome-wide Homology Search in Mammalian Meiosis
- GEN/GENOM-2** **K Brick, F Smagulova, P Khil, G Petukhova, RD Camerini-Otero (NIDDK)***
PRDM9 directs genetic recombination away from functional
genomic elements
- GEN/GENOM-3** **DTW Chen, N Akula, L Hou, CJM Steele, L Kassem, BiGS Consortium,
FJ McMahon (NIMH)***
Whole Exome Sequencing in First Degree Cousin Pairs with Early
Age-at-Onset Bipolar Disorder
- GEN/GENOM-4** **E Clough, C Whitworth, E Jimenez, H Pavlou, L Hempel, M Neville,
S Goodwin, M Van Doren, B Oliver (NIDDK)***
Identifying direct targets of the DMRT transcription factor Doublesex
- GEN/GENOM-5** **CD Cropp, CL Simpson, T Wahlfors, A George, MS Jones,
U Harper, D Ponciano-Jackson, T Tammela, J Schleutker,
JE Bailey-Wilson (NHGRI)**
Unraveling Phenotype Heterogeneity in Prostate Cancer Susceptibility
in Finland Utilizing Covariate-Based Analysis
- GEN/GENOM-6** **A Dean (NIDDK)***
Homodimerization of Ldb1 forms the basis for long-range enhancer
looping of the beta-globin LCR in vivo
- GEN/GENOM-7** **X Ding, S Philip, SK Sharan (NCI)***
Identification of genetic interactors of BRCA2 in ES cell-based model
- GEN/GENOM-8** **LB Hurd, JF Shern, AS Brohl, YK Song, X Wen, H Liao, JS Wei,
J Khan (NCI)**
Rapid identification of druggable mutations for patients with pediatric
cancers using semiconductor sequencing.
- GEN/GENOM-9** **NH Katagiri, R Salari, VL Simhadri, SC Tseng, E Needlman,
NC Edwards, N Nelson, M Katz, J Lee, ZE Sauna, V Grigoryan,
AA Komar, TM Przytycka, C Kimchi-Sarfaty (FDA/CBER)**
Comprehensive analyses of point mutations in coagulation factors:
correlation to severity of hemophilia diseases
- GEN/GENOM-10** **SG Khan, D Tamura, T Rao, W Zein, B Brooks, J Boyle, T Ueda,
JJ DiGiovanna, KH Kraemer (NCI)**
XP/TTD patients with XPD gene defects have clinical features of
Xeroderma Pigmentosum and Trichothiodystrophy

GEN/GENOM: Genetics/Genomics

- GEN/GENOM-11** **I Kohaar, YP Fu, W Tang, M Tarway, B Muchmore, P Porter-Gill, L Prokunina-Olsson (NCI)***
Allele-specific mRNA and protein expression on genetic variants of CCNE1 associated with risk of bladder cancer
- GEN/GENOM-12** **MC LaFave, GK Varshney, SM Burgess (NHGRI)**
Investigation of retroviral integration preference via high-throughput sequencing
- GEN/GENOM-13** **Q Li, S Szymczak, J Bailey-Wilson (NHGRI)**
Test for two-SNP interaction adjusting for long range linkage disequilibrium
- GEN/GENOM-14** **W Li, N Hu, Z Wang, K Yu, PL Hyland, Y Gao, JX Shi, SJ Chanock, L Burdette, T Ding, Y Qiao, J Fan, W Wheeler, X Xiong, MA Tucker, SM Dawsey, ND Freedman, CC Abnet, AM Goldstein, PR Taylor (NCI)**
Genetic variants in DNA repair pathway genes and risk of esophageal squamous cell carcinoma and gastric adenocarcinoma
- GEN/GENOM-15** **N Lukkahatai, B Walitt, B Majors, G Alves, L Saligan (NINR)**
Genetic categories and clinical outcomes and behavioral responses in Fibromyalgia women
- GEN/GENOM-16** **ED Maniwang, N Tayebi, E Sidransky (NHGRI)**
Lack of evidence that SCARB2 is associated with Parkinson disease
- GEN/GENOM-17** **RJ Morell, S Naz, JE Bird, S Shah, T Conrad, TB Friedman (NIDCD)**
A frameshift mutation of Grhl2 alters susceptibility to noise induced hearing loss: A mouse model for DFNA28 deafness
- GEN/GENOM-18** **RR O'Neill, P de Jong, KC Lloyd (OD)**
Knockouts for half of all mammalian genes are available from the KOMP repository: <http://www.komp.org/>
- GEN/GENOM-19** **S Parpart, S Roessler, F Dong, V Rao, C Loffredo, XW Wang (NCI)***
A functional interaction between alpha-fetoprotein and miRNA-29 modulates the HCC epigenome
- GEN/GENOM-20** **F Pratto, K Brick, P Khil, F Smagulova, G Petukhova, RD Camerini-Otero (NIDDK)**
A genome-wide map of double-strand breaks in human
- GEN/GENOM-21** **R Ratnapriya, X Zhan, RN Fariss, CF Chakarova, KE Branham, MM Campos, JS Friedman, M Brooks, HK Rajasimha, MA Morrison, SG Jacobson, ML Klein, EY Chew, D Stambolian, MM DeAngelis, SS Bhattacharya, JR Heckenlively, GR Abecas (NEI)***
Exome sequencing and association analysis implicates extracellular matrix gene, FBN2 in early and late onset macular degenerations

GEN/GENOM:
Genetics/Genomics

- GEN/GENOM-22** **CL Simpson, T Green, B Doan, CI Amos, SM Pinney, EY Kupert, M de Andrade, P Yang, AG Schwartz, PR Fain, A Gazdar, J Minna, JS Wiest, H Rothschild, D Mandal, M You, TA Coons, C Gaba, MW Anderson, JE Bailey-Wilson (NHGRI)**
Fine-Mapping in a Covariate-based Genomewide Linkage Scan of Lung Cancer Susceptibility.
- GEN/GENOM-23** **DR Soppet, CC Stewart, JW Mitchell, JL Troyer, TR Hartley, MR Spencer, KM Pike, TM Plona, V Grinberg, NL Shraeder, MW Smith (NCI)**
Identifying Cell line mutations with the Ion Torrent Ampliseq cancer panel
- GEN/GENOM-24** **MC Tseng, WT Hsieh, L Feigenbaum (NCI)**
Speed Congenics Services at Frederick National Laboratory for Cancer Reserach
- GEN/GENOM-25** **J Tuo, D Ardeljan, C Meyerle, E Agron, JJ Wang, P Mitchell, EY Chew, J Zhao, A Maminishkis, SS Miller, CC Chan (NEI)**
Influence of TIMP3/SYN3 polymorphisms on the phenotypic presentation of Age-Related Macular Degeneration
- GEN/GENOM-26** **GK Varshney, J Lu, D Gildea, H Hunag, W Pei, Z Yang, S Huang, D Schoenfeld, NH Pho, D Casero, T Hirase, D Mosbrook-Davis, S Zhang, L Jao, B Zhang, T Wolfsberg, M Pellegrini, S Lin, SM Burgess (NHGRI)***
A large-scale zebrafish gene knockout resource for the genome-wide study of gene function

HOST DEF:
Host Defense

HOST DEF-1

J Chu, HH Song, KA Zaremba, JI Gallin (NIAID)

Monocytes and macrophages require NADPH oxidase activity for killing of the bacterial pathogen *Granulibacter betshesdensis*

IMAG:
Imaging

- IMAG-1** **M Aronova, A Sousa, H Bryant, J Morgan, A Bhirde, G Zhang, J Frank, X Chen, R Leapman (NIBIB)**
Quantitative characterization of theranostic nanoparticles by electron microscopy
- IMAG-2** **AV Avram, E Ozarslan, JE Sarlls, ME Komlosh, PJ Bassar (NICHD)***
In vivo measurement of inter-hemispheric axon diameters on a clinical scanner using multiple pulsed-field gradient (mPFG) diffusion MRI
- IMAG-3** **E Borovikov, P Ghosh, S Vajda, G Thoma, S Antani, M Gill (NLM)**
FaceMatch: visual search for pictures of missing and found persons during a disaster event
- IMAG-4** **M Choi, MS Hughes, L Folio, N Schaub, SA Rosenberg, AM Venkatesan (CC)**
Volumetric Tumor Segmentation for Disease Progression Analysis in Metastatic Melanoma
- IMAG-5** **A Chopra, L Shan, K Leung, WC Eckelman, AE Menkens (NLM)**
Molecular imaging and contrast agents database: current status
- IMAG-6** **VM Derderian, EC Jones, MS Merchant, BC Widemann, AJ Dwyer, AM Venkatesan, SM Steinberg, LR Folio (CC)**
Metastatic Sarcoma Assessment using CT Volumetric Density
- IMAG-7** **J Fazio, R Maass-Moreno (CC)**
Individualized Radiation Dose Calculation for PET and Current-Modulated CT
- IMAG-8** **N Gai, E Turkbey, D Bluemke (CC)**
Ex-vivo study of the human heart with diffusion tensor imaging: sensitivity to cardiovascular risk factors
- IMAG-9** **H Gao, L Lang, N Guo, Q Quan, KO Kiesewetter, G Niu, X Chen (NIBIB)**
PET imaging of angiogenesis after myocardial infarction/reperfusion using a one-step labeled integrin targeted tracer 18F-AIF-NOTA-PRGD2
- IMAG-10** **N Guo, L Lang, G Niu, DO Kiesewetter, Q Xie, X Chen (NIBIB)**
Quantitative analysis and parametric mapping of [18F]AIF-NOTA-PRGD2, [18F]FPPRGD2 and [68Ga]Ga-NOTA-PRGD2 using graphical method
- IMAG-11** **X Huang, F Zhang, H Wang, G Niu, X Chen (NIBIB)**
Multifunctional nanoplatform for mesenchymal stem cells-mediated tumoritropic delivery

IMAG:
Imaging

- IMAG-12** **S Jaeger, A Karargyris, S Antani, G Thoma (NLM)**
Automatic Screening for Lung Diseases in Chest Radiographs:
A Global Health Initiative
- IMAG-13** **SA Jansen, Y Song, L Ileva, L Lu, M Anver, P Martin, T Van Dyke (NCI)**
Mouse models of human cancer: Noninvasive phenotyping with MRI
- IMAG-14** **NK Jha, AM Shibeko, MV Ovanesov (FDA/CBER)**
Insights into the thrombogenicity of Factor IXa: trace amounts of Factor IXa
promote growth of clot size
- IMAG-15** **CZ Leyson, J Seidel, RE Maass-Moreno, RC Reba (NIAID)**
Performance Comparison of an Ultra Ultra High Resolution to a Low Energy
High Resolution SPECT Collimator in Biosafety Level-4 Containment
- IMAG-16** **JF Liu, SJ Wang, MG Linguraru, RM Summers (CC)**
Tumor Sensitive Matching Flow: An Approach for Ovarian Cancer
Metastasis Detection and Segmentation
- IMAG-17** **P Liu, S Wang, B Turkbey, P Pinto, P Choyke, R Summers (CC)**
A Computer-Aided Detection System for Prostate Cancer using Multimodal
MR Imaging
- IMAG-18** **S Liu, MS Nacif, CT Sibley, E Yang, J Han, DA Bluemke (CC)**
Detection of Diffuse Myocardial Fibrosis in Patients with Nonischemic
Cardiomyopathy: Cardiac MR Evaluation
- IMAG-19** **Y Liu, A Weisbrod, E Kebebew, R Summers, J Yao (CC)**
Image-driven Proliferation and Infiltration Rates Estimate of Pancreas
Neuroendocrine Tumor
- IMAG-20** **P Modi, M Irfanoglu, E Buch, V Buch, M Tobita, C Pierpaoli (NICHD)**
A machine learning algorithm using diffusion tensor data for automated
mapping of Wallerian degeneration in chronic stroke
- IMAG-21** **P Mongkolwat, D Rubin, V Kleper, S Talbot, J Chen, N Knight,
E Siegel (NCI)**
The caBIG® Annotation and Image Markup (AIM) Version 4.0 and AIM
Template Enterprise Service (ATES) for Annotating Images
- IMAG-22** **K Narayan, GE Murphy, TP Do, L Hartnell, B Lowekamp,
S Subramaniam (NCI)***
Nanoscale imaging of host-pathogen interactions
- IMAG-23** **D Papoti, CC Yen, J Mackel, H Merkle, AC Silva (NINDS)**
An embedded 4-channel receive-only array for fMRI of the somatosensory
pathway in conscious awake marmosets at 7T.

IMAG:
Imaging

- IMAG-24** **N Porat-Shliom, A Masedunskas, R Weigert (NIDCR)***
Coordination of mitochondrial activity across the rat salivary glands epithelium imaged by intravital two-photon microscopy
- IMAG-25** **NM Preuss, DN Kennedy, R Buccigrossi, C Haselgrove (NIBIB)**
NITRC: Neuroimaging Informatics Tools and Resources Clearinghouse, a knowledge environment with MR, EEG/MEG, SPECT/PET, CT, optical imaging analysis software, and an Image Repository with community data sets such as 1000 Connectomes and ADHD-200.
- IMAG-26** **G Saar, N Cheng, AP Koretsky, L Belluscio (NINDS)***
Manganese Enhanced MRI of APP-induced neurodegeneration and recovery in an olfactory-based AD model
- IMAG-27** **J Senseney, B Tyrie, A Bokinsky, J McEntee, N Pandya, D Pham, M McAuliffe (CIT)**
Diffusion tensor imaging analysis using the medical image processing, analysis, and visualization (MIPAV) application
- IMAG-28** **CT Sibley, RA Noureldin, N Gai, MS Nacif, S Liu, EB Turkbey, JO Mudd, RJ van der Geest, JAC Lima, MK Halushka, DA Bluemke (CC)**
T1 mapping in cardiomyopathy by cardiac magnetic resonance: Comparison to endomyocardial biopsy
- IMAG-29** **M Swierczewska, KY Choi, E Mertz, X Huang, F Zhang, L Zhu, HY Youn, JH Park, A Bhirde, S Lee, X Chen (NIBIB)**
Cancer Targeted Carbon Nanotubes for Imaging, Sensing and Therapy
- IMAG-30** **D Thomasson, J Senseney, R Somer, J Jagannathan, K Zukotynski, M Schieke (CIT)**
Tumor treatment response identification using combination post-treatment mapping simulation to quantify voxel-wise multiparameter MRI biomarker changes
- IMAG-31** **AA Willette, D Reiner, M Mattson, D Kapogiannis (NIA)**
Differential Regulation of Glucose Concentrations in the Precuneus by Glutamate and γ -Aminobutyric Acid
- IMAG-32** **F Zhang, L Zhu, X Huang, G Lu, G Niu, X Chen (NIBIB)**
Differentiation between Reactive and Metastatic Lymph Nodes with Diffusion-weighted and SPIO Enhanced MRI

TECH:
Technology

- TECH-1** **L Bindu, K Worthy, Y Kim, S Colantonio, O Chertov, A Stephen (NCI)**
The Protein Chemistry Laboratory at Frederick National Laboratory for
Cancer Research
- TECH-2** **M Chandrangu, PD Burbelo, PD Smith, NY Morgan (NIBIB)**
Development of microLIPS: a microfluidic assay for rapid serum
antibody detection
- TECH-3** **HS Eden, PH Brown, EK Dimitriadis, AM Gorbach, HR Kalish,
NY Morgan, GF Zhang (NIBIB)**
Biomedical Engineering and Physical Science
- TECH-4** **CA Fisher, D Demner-Fushman, C Seckman (CC)**
EBP InfoBot: Evaluation of an evidence- based practice system
- TECH-5** **K Gupta, A Yavlovich, J Sine, M Viard, R Blumenthal, A Puri (NCI)**
Lipid-based Phototriggerable Platforms for Improved Delivery of
Anticancer Drugs
- TECH-6** **J Huang, DA Bluemke, X Zhang, RM Summers, LR Folio, J Yao (CC)**
A Cumulative Reporting System for Tumor Measurements and
Integration with PACS and RIS
- TECH-7** **Y Liang, SA Woodle, E Struble, TK Lee, D Scott, M Ovanesov (USUHS)**
Micro-volume thrombin generation test in plasma from animal species
for studies of FXIa thrombogenicity
- TECH-8** **J Liu, C Feng, J Hua, J Yao, J White, R Summers (CC)**
Automatic Detection And Segmentation Of Abdominopelvic Lymph
Nodes On Computed Tomography Scans
- TECH-9** **HE Muñoz, J Yao, JE Burns, RM Summers (CC)**
Detection of vertebral body fractures based on cortical shell unwrapping
- TECH-10** **L Schick, S DeCoronado, R Freimuth, M Heiskanen, J Hernandez,
J McCusker, M Sharma, G Stafford, B Suzek, J Klemm (NCI)**
Life Sciences Domain Analysis Model (LS DAM): A foundational analysis
model to support effective information exchange in Life Sciences
- TECH-11** **JL Sine, A Yavlovich, K Gupta, M Viard, R Blumenthal, A Puri (NCI)**
Studies with light-triggerable liposomes for the delivery of anti-cancer agents
- TECH-12** **J Yoon, M Chandrangu, K Mora, NY Morgan (NIBIB)**
Microfabricated structures for biology
- TECH-13** **C Zhao, CM Micklitsch, BY Oquare, DH Appella (NIDDK)**
Rational Design of Functional Peptide Nucleic Acids for the Direct and
Ultra-High Sensitive Detection of HIV-1 DNA and RNA with a Sandwich-
Hybridization Assay

Concurrent Symposia Session IV

Natcher Conference Center
Ruth L. Kirschstein Auditorium

Thursday, October 11, 2012
Noon–2:00 p.m.

Obesity—New insights on epidemiology, investigational models, and therapeutic targets

Chair: Joan Han, NICHD

Obesity has become one of the greatest public health problems worldwide. This symposium highlights current research examining the influence of race and sex on obesity, the dynamics of human body weight change, approaches to studying metabolic pathophysiology through rare human disease models, and novel therapeutic targets for the treatment of obesity and obesity-related complications.

Anne E. Sumner, NIDDK

The influence of race, ethnicity and sex on obesity

Kevin D. Hall, NIDDK

The calculus of calories: Quantitative physiology of body weight change

Rebecca J. Brown, NIDDK

Lipodystrophy as a model for the pathophysiology of the metabolic syndrome

Joan C. Han, NICHD

Brain-derived neurotrophic factor in obesity: From rare disease models to common BDNF variants

Britni Belcher, NCI

Estimated associations of biomarkers and physical activity in youth vary by measurement modality

FARE Award Winner

George Kunos, NIAAA

The peripheral endocannabinoid/CB1 receptor system: A novel therapeutic target for Obesity/Diabetes/NAFLD

**Translational Research Interest Group (TRIG)
Common molecular mechanisms underlying
pathogenesis and treatment of human diseases**

Co-Chairs: Minkyung (Min) Song, NCI; and Joel Moss, NHLBI

Common pathogenic mechanisms of diverse diseases and similar clinical effects of their treatment with therapeutic interventions have been identified. It is timely to discuss this symposium topic as it addresses leveraging previous development of agents by exploring additional therapeutic indications to those agents that perturb common targets/pathways in multiple diseases. This topic is of broad interest to the NIH scientists as it facilitates discovery and development of therapeutic candidates that may benefit patients with diseases that share common pathogenic pathways. During this symposium, speakers will discuss: Role of the mammalian target of rapamycin pathway and targeting this pathway in diverse diseases; Clinical evaluation of an antibody against a common therapeutic target in several cancers; Exploring additional use of an anti-cancer drug in targeting a downstream pathway of hemolytic disorders; and Treatment approaches using molecular insights into pathogenesis of diseases and known mechanisms of action of several approved drugs.

Joel Moss, NHLBI

Mammalian target of rapamycin (mTOR) as a target for therapeutic intervention in diverse diseases

Ludmila Prokunina-Olsson, NCI

From cancer genetics to translational genomics: Genetic and functional association of Prostate Stem Cell Antigen (PSCA) gene with several cancers

Gregory Kato, NHLBI

Pleiotropic effects of intravascular hemolysis upon vascular homeostasis

Emily Chew, NEI

Treatment for age-related macular degeneration by targeting diverse pathogenic pathways

David Goldstein, NINDS

Willie Sutton's getaway car and the pathogenesis of Lewy body diseases

**Patent & Technology Transfer Interest Group;
Biomedical Business Interest Group
Commercial development of my own research
discoveries: The personal stories of former
NIH scientists**

Co-Chairs: Steven Ferguson, OD; and Todd Chappell, OD

Long before NCATS, CTSA's and similar programs supporting translational science came to NIH, intramural investigators often fulfilled their vision of achieving the translational product goals for their research by leaving NIH to start or co-found their own companies. By practicing translational science of the "DIY (do-it-yourself) variety" these investigators were able to achieve major personal, scientific and professional goals -- and have both important clinical and economic impacts for their science. In Maryland alone over 50 of the founders of Maryland bioscience/biomedical companies spent some time as intramural investigators. Without this talent from the NIH intramural program, Maryland would not have one of the top concentrations of bioscience/biomedical companies in the country. This mini-symposium will feature presentations from a variety of distinguished former NIH intramural scientists who became company founders and will share the story of their science and passion for bringing it forward for development.

Todd Chappell, OD

NIH Entrepreneur-in-Residence: Helping scientists determine if their bench discoveries truly do have commercial applications

Frank Robey, Ariavax

Vaccine immunogens that are small molecules that are covalently conjugated to nanoparticles

Martha Knight, CC Biotech

Using novel counter-current chromatography approaches to purify bio-active synthetic peptides

Sheri Bale, GeneDX

Making clinical testing available to people with rare genetic conditions and their families

Lawrence Tamarkin, Cytimmune

Colloidal gold-based drug compounds which harness the therapeutic potential of potent anti-cancer agents

Linking genotypes to phenotypes: Recent advances and insights for future research

Chair: Brid Ryan, NCI

In recent years, the biological implications of many genetic discoveries have been translated such that their extension into policy and public health practice is now upon us. This session will delve into the three main steps in the translation of genomics to public health; discovery, deciphering biological consequence and integration into medicine and public health. Key and innovative NIH-led projects such as ENCODE and dbGAP will be highlighted, as will examples of their utility in on-going research. Examples of research linking genotypes to phenotypes in cancer and addiction will also be presented. Finally, the session will culminate with an insightful discussion of the third and perhaps most challenging step, i.e, the integration of genomics research into medicine and policy. This proposed session on the linkage of genotypes to phenotypes unites a multitude of related research areas. It will take the audience on an educational, research motivated and perceptive tour of this emerging field.

Sujoy Lahiri, NIDDK

Role of an endoplasmic reticular membrane protein complex (EMC) in non-vesicular lipid trafficking

FARE Award Winner

Steve Sherry, NLM

An overview of dbGaP: Innovative features supporting translational research

Michael Pazin, NHGRI

Using the Encyclopedia of DNA Elements (ENCODE) resource to understand the genotype-phenotype connection

Brid Ryan, NCI

Linking genotypes to phenotypes in lung cancer: The relationship between the microRNA network with lung cancer risk and survival

Mary-Anne Enoch, NIAAA

Discovery and phenotypic linkage of genetic variants in addiction and human behavior

Colleen McBride, NHGRI

Can genomics bring innovation to behavior change interventions?

Epigenetic variation and disease susceptibility

Chair: Xiaohong Yang, NCI

It has been increasingly recognized that disease susceptibility is determined not only by DNA sequence variations but also by complex regulations of gene expression that are primarily controlled by epigenetic mechanisms. Although most epigenetic changes are tissue-specific, constitutional epigenetic changes including global hypomethylation and gene-specific promoter hypermethylation in blood or non-disease involving tissues have been associated with disease susceptibility, such as methylations of BRCA1 and ATM in breast cancer. The most striking example is the identification of germline epimutations in tumor suppressor genes MLH1 and MSH2 as a major susceptibility mechanism in families with hereditary nonpolyposis colorectal cancer. Identifying these epigenetic modifications and integrating them with genetic variations will enhance our understanding of disease etiology and may ultimately improve risk prediction. This session will examine the current state of constitutional epigenetic variation in relation to disease risk and the challenges and opportunities to conduct epigenetic epidemiology studies.

Xiaohong Rose Yang, NCI

Introduction: Epigenetic variation and disease susceptibility

Paula Hyland, NCI

Genome-wide DNA methylation in blood and susceptibility to familial melanoma

Lee Moore, NCI

Epigenetic variation and susceptibility to urological cancers

Maxwell Lee, NCI

Interweaving genetic and epigenetic information with inheritance, plasticity, and cancer

Gordon Hager, NCI

Profiling the chromatin landscape in disease

Minnkyong Lee, NHGRI

RRP1B is a Metastasis modifier that regulates mRNA splicing FARE Award Winner

Concurrent Symposia Session IV

Natcher Conference Center
Conference Room D

Thursday, October 11, 2012
Noon–2:00 p.m.

NIH Clinical Research Awareness Workgroup Increasing awareness of NIH clinical research to improve participation in trials: Extending new collaborations

Chair: Marin Allen, OD

The challenge of recruiting research participants has serious implications for the success of research and the reputation of the NIH. NIH data indicate that 85 percent of trials do not finish on time due to low patient participation, and 30 percent of trial sites fail to enroll a single patient. This presentation will describe recent results from formative research done on current public and physician attitudes and an environmental scan of current practices, including issues regarding the responsible implementation of new and social media. A centerpiece for the discussion is the new collaborative, public website; the growing relationship with the American Medical Association, ClinicalTrials.gov and ResearchMatch; and strategies for public engagement. Panel members will discuss the overall project, the research results, the key collaborations, the Clinical Center staff efforts and engage the audience in a discussion of the needs of the intramural community in recruitment strategies.

Marin Allen, OD

*Deputy Associate Director for Communications and Public Liaison and
Director of Public Information NIH*

Barbara I. Karp, OD

Chair, Combined NeuroScience IRB NIH

Dinora Dominguez, CC

Chief, Patient Recruitment and Public Liaison Section NIH Clinical Center

Kelli Carrington, CC

*Lead, Public Affairs Office of Communications, Patient Recruitment
and Public Liaison, NIH Clinical Center*

Melanie Modlin, NLM

*Deputy Director Office of Communications & Public Liaison
National Library of Medicine, National Institutes of Health*

IMMUNO:
Immunology

- IMMUNO-1** **K Abdi, N Singh, P Matzinger (NIAID)**
T-cell education of dendritic cell responsiveness
- IMMUNO-2** **MS Abu-Asab, Y Wang, W Li, CC Chan (NEI)**
Ultrastructural characterization and histopathology of melanoma associated autoimmune retinopathy
- IMMUNO-3** **MC Anderson, E Marszal, B Abraham, DE Scott (FDA/CBER)**
Development of a Monocyte Activation Test (MAT) to Study Cytokines Induction by IGIV
- IMMUNO-4** **K Balamurugan, KD Klarmann, Y Zhang, V Coppola, GH Summers, T Roger, JR Keller, S Sharan, E Sterneck (NCI)**
FBXW7 α attenuates inflammatory signaling by suppressing expression of Cebp δ and its target gene Tlr4
- IMMUNO-5** **JS Barber, L Yokomizo, JD Milner (NIAID)**
A novel approach to priming and assessing the diversity of T-cell receptors using randomized peptide pools
- IMMUNO-6** **T Barker, G Liang, Z Xie, N Charles, J Rivera, KM Druey (NIAID)**
Naïve T cells sense the cysteine protease allergen papain through the protease activated receptor 2 (PAR2) and propel TH2 immunity
- IMMUNO-7** **G Chen, NP Weng (NIA)**
Analysis of CD8 T cell response to cytomegalovirus (CMV) or influenza virus (Flu) in healthy human adults
- IMMUNO-8** **MY Gerner, RN Germain (NIAID)***
Multiplex Static and Dynamic Imaging Reveals the Role of Lymphatic Sinus-Associated Dendritic Cells in Inducing Immunity to Particulate Antigens
- IMMUNO-9** **M Gupta, DM Shin, L Ramakrishna, HC Morse, K Ozato (NICHD)**
Interferon Regulatory Factor 8 (IRF8) is a master regulator of Autophagy in bone marrow derived macrophage & promotes the clearance of self and viral proteins
- IMMUNO-10** **Q Jin, C Wang, L Yu, D Brian, Z Wang, S Grullon, Z Zhang, K Zhao, W Peng, SY Dent, K Ge (NIDDK)**
GCN5 Negatively Regulates Innate Immune Signaling by Targeting TBK1 Kinase
- IMMUNO-11** **JS Joo, C Yu, M Yan, W Chen, Y Sun, F Chen, S Datta, A Yang, WG Coleman (NIDDK)**
H. pylori Infection induces a Vitamin D (Vit. D) Immune Response

IMMUNO:
Immunology

- IMMUNO-12** **KN Kindrachuk, TR Ramalingam, MM Mentink-Kane, L Barron, KM Vannella, J Kindrachuk, S White, C DeClercq, C Williams, C Hubeau, A Cheever, CM Evans, TA Wynn (NIAID)***
Muc5ac is required for IL-4 and IL-13-mediated signaling through the type II IL-4 receptor complex
- IMMUNO-13** **C Lee-Chang, K Wejksza, M Bodogai, J Bonzo, FJ Gonzalez, A Martin-Montalvo Sanchez, R de Cabo, A Biragyn (NIA)**
Importance of PPAR α in tumor-evoked Breg generation
- IMMUNO-14** **MA Luckey, JH Park (NCI)***
A novel mechanism of regulating common gamma chain (γ_c) cytokine signaling by a soluble form of γ_c
- IMMUNO-15** **M Mendonca, H Kalish (NIBIB)**
Application of nanotechnology to the analysis of inflammatory biomarkers.
- IMMUNO-16** **IA Myles, N Fontecilla, B Janelsins, P Vithayathil, M Lu, SK Datta (NIAID)**
The Lard Legacy: Pre and Perinatal Dietary Fat Exposure Alters Offspring Immunity
- IMMUNO-17** **AL Notkins, T Wild, Y Xiong, P Sylvers, Y Zhang, L Zhang, L Wahl, SM Wahl, S Kozlowski, Z Zhou (NIDCR)**
Polyreactive Antibodies Bind to HIV-Induced Apoptotic Cells and Enhance Complement-Mediated Phagocytosis by Macrophages
- IMMUNO-18** **K Sato, X Feng, J Chen, MJ Desierto, K Keyvanfar, D Maride, S Kajigaya, NS Young (NHLBI)***
Adipocytes and aplastic anemia: Peroxisome proliferator-activated receptor-g (PPAR-g) inhibitors attenuate bone marrow failure in an aplastic anemia mouse model but not in radiation marrow destruction
- IMMUNO-19** **A Sharma, Q Chen, T Nguyen, Q Yu, JM Sen (NIA)**
T Cell Factor-1 and beta-catenin regulate the development of memory-like CD8 thymocytes
- IMMUNO-20** **AM Siegel, KD Stone, MG Lawrence, M Jung, J Barber, AF Freeman, SM Holland, M O'Brien, N Jones, L Wisch, A Desai, A Gilfillan, JD Milner (NIAID)**
Diminished allergic disease in patients with STAT3 mutations points to role for STAT3 signaling in mast cell degranulation
- IMMUNO-21** **LM Thomas, EO Long (NIAID)**
Education/Licensing Imparts Differences in the Adhesive Interaction of NK Cells with Target Cells

IMMUNO:
Immunology

- IMMUNO-22** **BP Vistica, V Montalvo-Reddin, G Shi, L Nugent, L Quigley, DW McVicar, I Gery (NEI)**
DAP-12, a Major Immunomediator, Either Promotes or Suppresses Experimental Autoimmune Uveitis (EAU) Development
- IMMUNO-23** **E Voynova, S Bolland (NIAID)***
TLR7 induces an IL15-dependent killer dendritic cell population with multiple functionalities affecting the onset and severity of autoimmune disease
- IMMUNO-24** **JH Yoon, J Feng, HC Morse III (NIAID)**
IRF8 Interacts with the BCL6 Co-repressor, BCOR

INFLAM:
Inflammation

- INFLAM-1** **RJ Heitmann, KJ Tobler, L Gillette, J Tercero, JH Segars, RO Burney (NICHD)**
Dexamethasone attenuates the embryotoxic effect of peritoneal fluid from infertile women with endometriosis in a murine model
- INFLAM-2** **Q Jiang, Z Xiao, J Willette-Brown, T Back, F Zhu, M Datla, RH Wiltrout, Y Hu (NCI)***
IKK α links inflammation and tumorigenesis in lung squamous cell carcinoma
- INFLAM-3** **EC Leibovitch, P Maggi, SM Cummings Macri, G Brunetto, KM Motanic, JE Wohler, S Westmoreland, A Silva, DS Reich, S Jacobson (NINDS)**
HHV-6 infection accelerates EAE in the common marmoset
- INFLAM-4** **K Balamurugan (NIDDK)***
Erythropoietin signaling: A novel regulator of white adipose tissue inflammation during diet-induced obesity

Poster Session IV

Natcher Conference Center

Thursday, October 11, 2012

2:00 p.m.–4:00 p.m.

MICROBIO:

Microbiology

MICROBIO-1

D Zhang, R de Souza, V Anantharaman, LM Iyer, L Aravind (NLM)

Polymorphic toxin systems: comprehensive characterization of trafficking modes, processing, mechanisms, immunity and ecology using comparative genomics

MICROBIO-2

AM Hollander (FDA/CBER)

Development of an Intrinsic Killing Assay for Identifying Susceptible Individuals to *Neisseria meningitidis* serogroup B strains

NEURO/BEHAV/SENSYS:

Neurobiology and Behavior

- NEURO/BEHAV/SENSYS-1** **KM Anderson, KA Barnes, A Martin (NIMH)**
Individual differences in pre-task functional connectivity predict subsequent decision-making.
- NEURO/BEHAV/SENSYS-2** **SA Bergeron, K Fero, T Yokogawa, M Hannan, H Codore, HA Burgess (NICHD)***
A circuit breaking screen identifies gsx1 expressing neurons as required for prepulse inhibition in larval zebrafish
- NEURO/BEHAV/SENSYS-3** **JP Britt, F Benaliouad, RA McDevitt, GD Stuber, RA Wise, A Bonci (NIDA)***
Hippocampal input to the nucleus accumbens reinforces behavior and drives cocaine-induced locomotion
- NEURO/BEHAV/SENSYS-4** **A Desai, Z Qiang, K Kevala, HY Kim (NIAAA)**
The impact of dietary omega-3 fatty acid deficiency on the outcome of traumatic brain injury
- NEURO/BEHAV/SENSYS-5** **NM Gervasi, SN Vohra, MA MacGibeny, AN Kar, AE Gioio, AJ Makusky, RL Olano, SP Markey, BB Kaplan (NIMH)***
Are the enzymes of the catecholamine biosynthetic pathway locally synthesized in the axon?
- NEURO/BEHAV/SENSYS-6** **LR Glover, HA Cameron, DM Bannerman (NIMH)**
A role for adult neurogenesis in response to ambiguous cues of threat
- NEURO/BEHAV/SENSYS-7** **O Gunduz-Cinar, KP MacPherson, R Cinar, J Gamble-George, K Sugden, B Williams, G Godlewski, TS Ramikie, AX Gorka, SO Alapafuja, SP Nikas, A Makriyannis, R Poulton, S Patel, AR Hariri, A Caspi, TE Moffitt, G Kunos, A Holmes (NIAAA)***
A translational study for the role of anandamide and FAAH in fear extinction, threat processing and stress-reactivity
- NEURO/BEHAV/SENSYS-8** **KB Holroyd, RL Fuino, R Bock, AR Kaplan, EP Bello, M Rubinstein, VA Alvarez (NIAAA)**
Reward and motor learning in mice lacking D2 receptors in dopaminergic neurons
- NEURO/BEHAV/SENSYS-9** **L Hui, X Chen, B Singh, JD Geiger (NCRF)**
Acidic store-operated calcium entry in primary cultured neurons
- NEURO/BEHAV/SENSYS-10** **H Jingqiong, S Ralls, T Kitamura, YP Loh, Y Mukouyama, S Ahn (NICHD)**
The Molecular Profiles of Neural Stem Cell Niche in the Adult Subventricular Zone

NEURO/BEHAV/SENSYS:

Neurobiology and Behavior

**NEURO/BEHAV/
SENSYS-11**

**KB Jones, F Hadj-Bouziane, JN Turchi, RBH Tootell,
LG Ungerleider (NIMH)***

Hierarchical organization of face-selective regions in macaque cortex as revealed by fMRI and pharmacological deactivation

**NEURO/BEHAV/
SENSYS-12**

**AR Kaplan, T Doyle, E Casey, RB Free, DR Sibley, M Rubenstein,
VA Alvarez (NIAAA)**

Distinct roles of dopamine D2 receptors in dorsal and ventral striatum on motor and drug-related behaviors

**NEURO/BEHAV/
SENSYS-13**

T Karuppururai, CY Ting, CH Lee (NICHD)

Single-cell transcript profiling: Towards functional connectomics of Drosophila visual system

**NEURO/BEHAV/
SENSYS-14**

**TM Keck, MF Zou, P Zhang, RP Rutledge, R Srivastava,
GH Bi, HJ Yang, EL Gardner, ZX Xi, AH Newman (NIDA)***

New allosteric modulators of mGluR5 receptors display therapeutic effects in rodent models of anxiety and drug addiction

**NEURO/BEHAV/
SENSYS-15**

HY Kim (NIAAA)*

Axonal morphogenesis affected by docosahexaenoic acid and its ethanolamide derivative, Synaptamide.

**NEURO/BEHAV/
SENSYS-16**

E Lee, M Seo, BB Averbeck (NIMH)

How are the frontal-striatal circuits involved in trade-off between attention demanding and automatic processes?

**NEURO/BEHAV/
SENSYS-17**

JW Lee, G Kharebava, HY Kim (NIAAA)

Synaptamide, an endogenous structural analogue of anandamide, is a GPCR-dependent novel mediator for neuritogenesis and synaptogenesis

**NEURO/BEHAV/
SENSYS-18**

A Paukner, EA Simpson, PF Ferrari, SJ Suomi (NICHD)

Does Visual Attention at Eyes and Mouth Correlate with Performance in a Neonatal Imitation Task? A Preliminary Analysis.

**NEURO/BEHAV/
SENSYS-19**

N Pavletic, N Patel, T Daniele, J Jarcho, D Pine, M Ernst (NIMH)

Social context and risk-taking behavior in anxious youths

**NEURO/BEHAV/
SENSYS-20**

**G Salem, J Dennis, J Krynsky, JP Gillet, T Furusawa, M Bustin,
MM Gottesman, JB Mitchell, S Pajevic, J Malley, TJ Pohida (CIT)**

Automated Video-Based Assessment of Behavior for Solitary Housed Mice in a Home-Cage Environment

**NEURO/BEHAV/
SENSYS-21**

**S Shrestha, JS Liow, R Gladding, VW Pike, PL Noble, JT Winslow,
P Svenningsson, SJ Suomi, EE Nelson, DS Pine, RB Innis (NIMH)***

PET imaging of serotonergic transmission in monkeys: effects of maternal separation, and chronic fluoxetine treatment during adolescence

Poster Session IV

Natcher Conference Center

Thursday, October 11, 2012

2:00 p.m.–4:00 p.m.

NEURO/BEHAV/SENSYS:

Neurobiology and Behavior

NEURO/BEHAV/
SENSYS-22

H Stepp, AM Belcher, EA Stein (NIDA)

Baseline reversal performance prior to cocaine administration in marmoset monkeys

NEURO/BEHAV/
SENSYS-23

MH Tessler, WD Stevens, A Martin (NIMH)

Topographically organized category dissociations in human ventral temporal cortex are associated with differential patterns of intrinsic functional connectivity

NEURO/BEHAV/
SENSYS-24

V Vatsalya, MA Coe, DW Hommer, SE Barlett, M Heilig, VA Ramchandani (NIAAA)

Role of Smoking Measures Outcomes on Intravenous (IV) Alcohol Self-Administration in heavy Drinkers

NEURO/BEHAV/
SENSYS-25

KE Vytal, C Overstreet, OJ Robinson, C Grillon (NIMH)*

Exploring the Anxious Brain at Rest: Increased Subcortico-Frontal Coupling Associated with an Anxious State

NEURO/BEHAV/
SENSYS-26

P Wang, B Lazarus, M Forsythe, M Comly, D Love, M Krause, J Hanover (NIDDK)

O-GlcNAc modification regulates neurodegenerative proteotoxicity and brain development in *C. elegans* and mouse models

NEURO/BEHAV/
SENSYS-27

H Zhang, R Nolan, C Chu, S Japee, LG Ungerleider (NIMH)

Face-responsive regions differ in their ability to discriminate facial expressions

NEURO/BEHAV/
SENSYS-28

S Zhang, X Li, H Wang, J Qi, JP Britt, A Bonci, M Morales (NIDA)

Ultrastructural and optogenetic evidence for dual neuronal signaling by dopamine neurons of the ventral tegmental area (VTA)

NEURO/BEHAV/
SENSYS-29

Q Gu (NIMH)*

Function of microRNAs in long-term potentiation

OXIDSTRESS:

Oxidative Stress

- OXIDSTRESS-1** **MA Abdelmegeed, S Jang, A Banerjee, MD Akbar, BJ Song (NIAAA)**
Nitrate proteins are critical for acetaminophen-mediated mitochondrial dysfunction and acute liver injury
- OXIDSTRESS-2** **KD Jacob, N Noren Hooten, A Lohani, J Barnes, MK Evans (NIA)***
Alzheimer's Disease associated polymorphisms in human OGG1 alter catalytic activity and sensitize cells to DNA damage.
- OXIDSTRESS-3** **S Luo, H Uehara, E Shacter (FDA/CBER)**
Methionine oxidation by Taurine Chloramine Causes Loss of Function of Cofilin Protein
- OXIDSTRESS-4** **MH Schubert (NINDS)**
A potential new role for the transcriptional co-activator PGC-1 α during neurodegeneration: a protector turning foe?
- OXIDSTRESS-5** **SA Wang, SY Yi, TP Su (NIDA)**
The ER chaperone sigma-1 receptor stabilizes and increases the phosphorylation and translocation of Nrf2 to elicit cellular responses against ROS-induced neurodegeneration

PHARM/PHYS:

Pharmacology

- PHARM/PHYS-1** **R Cinar, G Godlewski, J Tam, J Liu, T Jourdan, B Mukhopadhyay, J Harvey-White, JF McElroy, R Chorvat, G Kunos (NIAAA)**
Peripheral cannabinoid-1 receptor (CB1R) antagonism improves insulin sensitivity in mice with diet-induced obesity (DIO) by reversing the increase in de novo ceramide synthesis in the liver.
- PHARM/PHYS-2** **O Dal Monte, P Noble, BB Averbeck (NIMH)**
Oxytocin enhances attention to salient facial features
- PHARM/PHYS-3** **AH Holmes, PA Forcelli, JT DesJardin, AL Decker, M Teferra, E West, L Malova, K Gale (NINDS)**
Superior colliculus mediates cervical dystonia evoked by inhibition of the substantia nigra pars reticulata
- PHARM/PHYS-4** **S Kim, EE Bolton, SH Bryant (NLM)**
Statistical meaning of 2-D and 3-D molecular similarity scores used in PubChem
- PHARM/PHYS-5** **K Nakajima, J Wess (NIDDK)**
Design and functional characterization of a novel, arrestin-biased designer G protein-coupled receptor
- PHARM/PHYS-6** **Z Wang, LK Tsai, J Munasinghe, Y Leng, EB Fessler, F Chibane, P Leeds, DM Chuang (NIMH)***
Chronic valproate treatment enhances post-ischemic angiogenesis and promotes functional recovery in a rat model of ischemic stroke
- PHARM/PHYS-7** **JS Yoon, D Tweedie, NH Greig, MP Mattson (NIA)**
3, 6-Dithiothalidomide protects the brain against ischemic stroke via an anti-inflammatory action

PROTEOM:

Proteomics

- PROTEOM-1** **T Andresson, S Das, A Bosley, GW Alvord, O Quinones, Z Xiao, X Ye, T Veenstra (NCI)**
Two new strategies to improve the ranking of proteins identified by affinity purification and mass spectrometry: a case study using for two zinc finger transcription factors, Snai1 and Pogz.
- PROTEOM-2** **NP Manes, E An, V Sjoelund, J Sun, M Ishii, M Meier-Schellersheim, RN Germain, A Nita-Lazar (NIAID)**
Sphingosine-1-phosphate mediated chemotaxis of osteoclast precursors investigated using targeted proteomics via mass spectrometry
- PROTEOM-3** **VK Sidhu, HY Kim (NIAAA)**
Effects of docosahexaenoic acid on age-related changes in the synaptic plasma membrane proteome
- PROTEOM-4** **MB Strader, WA Hicks, JS Olson, MJ Weiss, TL Mollan, A Alayash (FDA/CBER)**
Characterization of a Novel Post-translational Oxidative Modification in the Distal Pocket of a Fetal Hemoglobin (γ -V68M \rightarrow D) Associated with the Blue Baby Syndrome

RSCHSUPP: Research Support Services

- RSCHSUPP-1** **JJ Cimino (CC)**
Informatics Research to Support Clinical Research – the NIH Biomedical Translational Research Information System (BTRIS)
- RSCHSUPP-2** **B Egel, T Mainprize (NIAID)**
An assessment of Institutional Review Board (IRB) stipulations can be used to improve the quality of clinical research protocols Clinical Research Directorate/CMRP, SAIC-Frederick, Inc., NCI-Frederick, Frederick, MD 21702
- RSCHSUPP-3** **SM Ferguson (OD)**
Yes, there is life after bench science -- careers for scientists in technology transfer & business development
- RSCHSUPP-4** **LH Giambarresi, SC Garrand, MA Chakrabarti, VS Eccard, AL Gonzalez-Rodriguez, TB Harvey, JM Hertsch, LM Lacuesta, MJ Buehn (NIAID)**
The Electronic Common Technical Document: One Organization's Experience
- RSCHSUPP-5** **J Giri, CK Osborne, L Lambert, J Tierney, J Pierson, B Baseler (NIAID)**
Project Management in Clinical Research: How It Informs the Decision Making Process
- RSCHSUPP-6** **LM Gumapas, MJ Hickey, GD Simons, TI Pittas, TN Kastner, MJ Seltzer (OD)**
Ultra Low Temperature Freezers: A Case Study on Energy Consumption and Safe Practices at the National Institutes of Health
- RSCHSUPP-7** **BR Herpin, GG Kelly, M Michael (NIAID)**
Development of an electronic reliance (authorization) agreement toolkit
- RSCHSUPP-8** **M Holdsworth, K Newell, C Whalen, M Tartakovsky (NIAID)**
A model for managing research data in infrastructure challenged regions
- RSCHSUPP-9** **LS Knecht, JM Rozier, AM Ripple, JG Mork (NLM)**
Structured Abstracts in MEDLINE: Implementation Based on a Retrospective Cohort Study
- RSCHSUPP-10** **T Mainprize, S Simpson, D Moore, B Baseler (NIAID)**
Reviewing Institutional Review Board (IRB) stipulations can enhance the protocol review process/application. Clinical Research Directorate/CMRP, SAIC-Frederick, Inc., NCI-Frederick, Frederick, MD 21702

RSCHSUPP:
Research Support Services

- RSCHSUPP-11** **JM Michelotti, DL Freeburger, KH Lamberton, NM DeIulii, RD Adams, SA McDowell (NIAID)**
Use of Fully Automated Cell Culture and Imaging Systems to Increase the Capacity and Consistency of Downstream Virology Assays
- RSCHSUPP-12** **H Moore, SR Greytak, BP Bass, KB Engel, J Vaught (NCI)**
The Biospecimen Research Database (BRD): growing in content and design
- RSCHSUPP-13** **G Nelson, R Johnson, C McIntosh, J Lautenberger, H McMillen, M McNally, M Thompson, G Li, D Wells (NCI)**
The BSP CCR Genetics Core—A complete solution for CCR investigators' research needs
- RSCHSUPP-14** **CT Noguchi, C Farias, SM Ferguson, A Lyons (OD)**
Educational & training opportunities for scientists at the NIH Foundation for Advanced Education in the Sciences (FAES) Graduate School
- RSCHSUPP-15** **BA Osterink, JA Johnson (OD)**
Composting of Animal Bedding and Food Waste
- RSCHSUPP-16** **JL Peterson, DM Masselle, KL Holmes (OD)**
Managing the risk of occupational exposure to nanoparticles in the laboratory: a review of good work practices and the effectiveness of the biosafety cabinet as an engineering control
- RSCHSUPP-17** **TI Pittas, M Seltzer, MJ Hickey, T Kastner (OD)**
Centrifuge Safety: Mitigating Risk as Associated with Biological, Chemical and Physical Hazards through proper care, use and maintenance of centrifuges
- RSCHSUPP-18** **U Reichling, B Duane, V Horovitch-Kelley (NCI)**
NCI Policy and Compliance Programs in Support of Research: Records Management, Risk Management and PRA/OMB Clearance
- RSCHSUPP-19** **G Rigotti, C Osburn, B Grace, C Osborne, R Sardana, S Siddiqui, L McNay (NIAID)**
Power of the PMAP and Strategic Alignment: Facilitating Research Agendas
- RSCHSUPP-20** **A Schwartz, DM Osorio Sanchez (OD)**
Electronic Prioritization of the NIH Intramural Database to Facilitate Efficient 'Dual Use Research of Concern' Review at the National Institutes of Health.
- RSCHSUPP-21** **VS Sevastita, TJ Miller, DG Chaitt, SM Stallings, KG Young, SL Kopka, JF Pierson (NIAID)**
Customer Feedback Suggests Satisfaction With NIAID's New Protocol Development Program

RSCHSUPP:
Research Support Services

- RSCHSUPP-22** **SM Ward, DA Bennett, LR Long, GR Thoma (NLM)**
Usability analysis: Six quick and dirty user-focused design methods resulting in better user satisfaction and cost savings
- RSCHSUPP-23** **D Wilson, C Lee, T Carroll, R Weidner, D Mohammadi, J Prom, C Hernandez (OD)**
NIH Mercury & Toxic Chemical Reduction Campaign
- RSCHSUPP-24** **C Yu, J Barnett, Y Huyen, GS Shinko (NIAID)**
NIAID FreeStuff: A Web-based forum to promote resource sharing and reuse
- RSCHSUPP-25** **JA Zuckerman, KJ Cahill, BC van der Schalie, LA McNay (NIAID)**
Developing training for Data Safety Monitoring Board (DSMB) members: A National Institute of Allergy and Infectious Diseases (NIAID) case study
- RSCHSUPP-26** **J Hartman (NCI)**
Frederick National Laboratory for Cancer Research

SENSYS:
Sensory Systems

SENSYS-1 **P Orestes, SK Mishra, SM Tisel, MA Hoon (NIDCR)***
TRPA1 channels are signal amplifiers of itch responses

SENSYS-2 **LA Pogorzala, SK Mishra, MA Hoon (NIDCR)**
A balance of thermal inputs is required for temperature sensation.

sRNA:
Small RNAs

- sRNA-1** **KA Afonin, M Viard, AN Martins, SJ Lockett, AE Maciag, EO Freed, MA Dobrovolskaya, E Heldman, L Jaeger, R Blumenthal, BA Shapiro (NCI)***
Activation of different functionalities inside target cells through auto-recognizing therapeutic R/DNA chimeric hybrids: a novel approach in therapeutic RNA nanotechnology
- sRNA-2** **HC Bi, KW Krausz, F Li, CH Johnson, YZ Pan, AM Yu, FJ Gonzalez (NCI)**
Metabolomics defines the function of microRNA-1291 in pancreatic tumor cell metabolism and tumorigenesis
- sRNA-3** **CV Jain, P Jessmon, BA Kilburn, DR Armant (NICHD)**
Evidence for Regulation of HBEGF Biosynthesis by MicroRNA in Response to Hypoxia in the Human Trophoblast
- sRNA-4** **M Subramanian, P Francis, S Bilke, X Ling Li, T Hara, KH Vousden, PS Meltzer, A Lal (NCI)**
Mutant p53 down-regulates let-7 by inhibiting p63 and p73 to induce cell migration and invasion

STEMCELL:

StemCells

- STEMCELL-1** **R Iglesias-Bartolome, V Patel, A Cotrim, K Leelahavanichkul, AA Molinolo, JB Mitchell, JS Gutkind (NIDCR)**
mTOR inhibition prevents epithelial stem cell senescence and protects from radiation-induced mucositis
- STEMCELL-2** **RD Neumann (CC)**
Changes in global microRNAome responses to ionizing radiation in human embryonic stem cells implicate cell cycle and cell differentiation regulation
- STEMCELL-3** **W Ou, P Li, J Reiser (FDA/CBER)**
Mitigating the risk of tumor formation for human induced pluripotent stem cell-derived cellular products
- STEMCELL-4** **EA Remeeva, IV Panyutin, RD Neumann, IG Panyutin (NLM)**
The Effect of Ionizing Radiation on Differentiation of Human Embryonic Stem Cells.
- STEMCELL-5** **CL Sweeney, RK Merling, U Choi, H Wang, D Kuhns, SM Holland, HL Malech (NIAID)***
Instability in maintenance of X-chromosome inactivation in female human iPSCs: implications for treatment of X-CGD female carriers
- STEMCELL-6** **C Wang, JE Lee, YW Cho, Y Xiao, Q Jin, C Liu, K Ge (NIDDK)**
UTX regulates mesoderm differentiation of embryonic stem cells independent of H3K27 demethylase activity
- STEMCELL-7** **H Wang, AW Kane, E Karey, C Lee, Y Zhang, MJ Holtzman, S Ahn (NICHD)**
Negative regulators of Shh and Notch pathways interact to establish the neural stem cell niche
- STEMCELL-8** **PM Wang, WJ Martin II (NICHD)**
Evidence for proliferation and incorporation of airway-delivered donor type 2 cells in lungs of recipient mice following intratracheal bleomycin
- STEMCELL-9** **G Yourek, SE Perkins, MJ Mitchell, LM Alvarez (NCI)**
Assisted Bone Regrowth: Advanced Materials for Tissue Regeneration
- STEMCELL-10** **X Zheng, R Dumitru, B Lackford, J Freudenberg, A Singh, T Archer, R Jothi, G Hu (NIEHS)***
Identification of a novel component of the self-renewal circuitry conserved in mouse and human ESCs

TRANS:

Translational

- TRANS-1** **AS Denney, DR Gotte, JD Irvin, KM Scibelli, LL Lubkowska, JN Strathern (NCI)**
RNA polymerase II mutants of RPB1 and RPB2 isolated using a novel assay for transcription fidelity in *Saccharomyces cerevisiae*
- TRANS-2** **MC Patel, M Debrosse, M Smith, A Dey, W Huynh, Y Sarai, TD Heightman, T Tamura, K Ozato (NICHD)***
BRD4 orchestrates recruitment of pause-release factor P-TEFb and the pausing complex NELF/DSIF to coordinate transcription elongation of interferon stimulated genes

NIH Research Festival

Natcher Conference Center

Special Exhibits on Resources for Intramural Research

Applied Biomedical Supercomputing on the NIH Helix Systems, CIT

<http://helix.nih.gov>

The NIH Helix Systems (CIT) provides high-performance scientific computational resources, training, consulting, and collaboration for the intramural NIH community. Resources available to Helix users include:

- Biowulf Linux cluster with 15,000 processors, very large memory systems (72-512 GB)
- High-performance file systems
- Dedicated staff to provide technical support

Applications supported on Helix Systems include:

- Licensed products such as Matlab, Mathematica, and Gaussian
- Web applications such as Galaxy, an interface to the Biowulf cluster
- Computational chemistry* Molecular dynamics and structural biology
- Next-generation sequence analysis and assembly
- Linkage and phylogenetic analysis
- Mathematical and statistical analysis* Image processing, proteomics, and more

Bioviz in the Intramural Research Program and Beyond

<http://bvig.nichd.nih.gov>

This booth, in conjunction with a theater show in Natcher conference room G, highlights the broad range of biomedical visualizations, animations and interactivity projects produced in the Intramural Research Program and beyond, as well as resources that are available to the scientific community in the IRP. Talk to representatives from the Bioviz Interest Group (<http://bvig.nichd.nih.gov>) and the newly formed Games for Science Interest Group (<http://games4science.nichd.nih.gov>). Learn about a wide range of visualization and animation challenges; learn about new ways of publishing, and discover (yet another) community of geeks at the NIH, ready to push new boundaries.

Center for Information Technology

<http://cit.nih.gov>

The Center for Information Technology (CIT) supports NIH and other Federal research and management programs with efficient, cost-effective administrative and high-powered scientific computing. From supercomputing to management of an Image Processing Facility, CIT provides the NIH intramural community with bioinformatics support and scientific tools and resources to advance computational science. CIT can help your organization with computer training, technical support, application development, collaboration, hosting services, IT acquisition, networking, telecommunications, and IT security. For information about how we can help your organization, please contact us at NIHOCIO_CITCommoffice@mail.nih.gov or 301-496-6203 or visit the CIT Web site at <http://cit.nih.gov>.

CIVIL (NIH's Program to Prevent Workplace Violence)

<http://hr.od.nih.gov/hrguidance/civil/default.htm>

CIVIL is a team of NIH experts that can help prevent workplace violence through response to incidents of concern, assessment of potentially violent incidents, education and awareness, and policy development.

Conserved Domain Database (CDD)

<http://www.ncbi.nlm.nih.gov/Structure/cdd/cdd.shtml>

The Conserved Domain Database (CDD) is a collection of structure based multiple sequence alignments that represent ancient conserved domains. CDD provides annotation and tools for the rapid annotation of functional domains on protein and coding nucleotide sequences. We will demonstrate how the database and its curation tools, including CDTree and Cn3D, which are publicly available programs, can be used in the characterization of protein and domain families.

Foundation For Advanced Education in the Sciences (FAES) Graduate School at NIH

<http://www.faes.org>

The FAES Graduate School at NIH offers nearly 200 courses each year at both the graduate and undergraduate levels. FAES courses are certified by the Maryland Higher Education Committee and accepted for credit at most universities. The FAES Graduate School operates with the approval of the Maryland Higher Education Committee. Courses are open to members of the NIH community, other federal employees and the general public. Certificate programs are also now available in Technology Transfer as well as Public Health.

NIH Research Festival

Natcher Conference Center

Special Exhibits on Resources for Intramural Research

Frederick National Laboratory for Cancer Research

<http://www.ncifcrf.gov>

The Frederick National Laboratory for Cancer Research, part of the National Cancer Institute, is a federal laboratory that offers a unique array of advanced technologies to speed the translation of laboratory research into new diagnostic tests and treatments for cancer and AIDS. The Lab can provide highly specialized technical expertise, services, and facilities. Available technologies include those for genomics, proteomics, imaging, nanotechnology, mouse models, high-throughput screening, biospecimen repositories, high-performance computing and bioinformatics, and biopharmaceutical development and cGMP manufacturing.

NIAID OCICB Bioinformatics and Computational Biosciences Branch

<http://www.niaid.nih.gov/about/organization/odoffices/omo/ocicb/Pages/bcbb.aspx>

The Bioinformatics and Computational Biosciences Branch (BCBB) supports the NIAID research mission by leveraging the latest computational technologies to accelerate discovery and remain at the forefront of today's rapid scientific pace. The BCBB partners with clients in the research process by applying bioinformatics and computational biology methods to generate new hypotheses and data, analyze existing data, and ultimately elevate the use of these methods and resources throughout the NIH.

NIH Blood Bank

bloodbank@nih.gov

The NIH Blood Bank will provide attendees with information on whole blood, platelet, plasma, and research donations available at NIH. Appointments may be scheduled during the festival.

NIH Employee Assistance Program (EAP)

<http://dohs.ors.od.nih.gov/eap>

EAP provides personalized consultation, short-term support, referral and follow-up services to enhance personal and professional wellbeing. EAP is an ideal first stop for access to the vast resources of the NIH and the outside community. We also offer training and support to workgroups to address issues that impact the work environment. EAP services are free and strictly confidential.

National Institutes of Health Environmental Management System (NEMS)

<http://nems.nih.gov>

The NEMS Sustainable Laboratory Practices Working Group and NEMS IC Green Teams Council work jointly to “green” the laboratory and office environments at NIH. Many of the diseases that we research at NIH have been shown to have an environmental component. As a result, NIH has a unique responsibility to carefully consider the environmental impacts of our day-to-day activities. NIH is a leader in environmental stewardship, but we can do even better. Each of us can take simple actions to minimize our environmental impacts. The NIH Environmental Management System (NEMS) is a management tool that helps us identify our most pressing environmental issues, set goals to address those issues, and improve our environmental performance. NEMS challenges NIH employees and contractors to conduct their activities in a more environmentally sound manner. The IC Green Teams, set up by each institute, are working toward greening each institute in general, with special emphasis on office greening. The NEMS Sustainable Laboratory Practices Working Group is developing procedures and tools on how to green laboratory activities. The group has been focusing its efforts to promote the use of less-toxic chemicals, reduce the use of laboratory supplies that can potentially lead to an increase in the release of greenhouse gases into the atmosphere and endocrine system disrupting chemicals into our water, and promote energy use reduction activities in the laboratory. Each year the group holds Green Labs Fairs where researchers can share their success stories of using greener technologies.

NIH Intramural Research Program

<http://irp.nih.gov>

The Intramural Research Program (IRP) is the internal research program of the National Institutes of Health (NIH), known for its synergistic approach to biomedical science. A new IRP website and social media channels were launched in September 2011, bringing together information and online resources from 26 IRP programs within 23 NIH Institutes and Centers. One year later, the website is expanding to include profiles for the approximately 1,200 Principal Investigators in the IRP, each categorized by Scientific Focus Area to assist visitors in finding the info they need. A new IRP Accomplishments section is in the works, in addition to several new stories of IRP Research in Action.

NIH Research Festival

Natcher Conference Center

Special Exhibits on Resources for Intramural Research

NIH Office of Intramural Training & Education

www.training.nih.gov

The NIH Office of Intramural Training and Education (OITE) is a division of the Office of Intramural Research (OIR), Office of the Director (OD). Our mission is to enhance the training experience of students and fellows on all of the NIH campuses. We work closely with the training offices in the NIH institutes and centers to help trainees in the Intramural Research Program (IRP) develop scientific and professional skills that will enable them to become leaders in the biomedical research community. The Intramural Research Program is the sum of all the research projects carried out by NIH investigators and trainees in NIH facilities. We provide services to multiple groups: current trainees in programs in the NIH IRP; potential applicants to training programs at the NIH; investigators and staff at the NIH; trainees and investigators outside the NIH (in the extramural community).

NIH-NITAAC

www.nitaac.nih.gov

Drive efficiencies with faster, easier, cost-competitive IT acquisitions through NIH-NITAAC's CIO-SP3, CIO-SP3 Small Business, and ECS III OMB-Authorized Government-Wide Acquisition Contracts (GWACs). Long used by the DoD to procure IT products, services and solutions, NITAAC GWACs have been designated a Strategic Source by the Navy, and a preferred source for SmallBusiness set-asides by the DoD. The program is housed within HHS at the National Institutes of Health Information Technology Acquisition and Assessment Center (NITAAC).

NIH Transfer Agreement Dashboard (TAD)

<http://techtransferagreements.nih.gov>

A Material Transfer Agreement (MTA) is a contract that governs the transfer of tangible research materials between two organizations. The NIH Office of Intramural Research, in conjunction with the NIH Center for Information Technology (CIT) and the NIH technology transfer community, launched an enterprise-wide, Web-based MTA management system – the Transfer Agreement Dashboard (TAD) – that accomplishes the following: Improves the processing of MTAs through automation; Reduces the paperwork burden of Intramural and Extramural researchers; Allows the IC's Technology Development Coordinators to ensure that MTAs are being executed in accordance with internal NIH policy guidelines; Provides NIH leadership with key metrics concerning the use of NIH research materials by both Intramural and Extramural laboratories. TAD is available to all NIH ICs free of charge, and all NIH researchers and technology transfer staff are encouraged to take advantage of this Intramural Research Program resource to facilitate the MTA process. Visit this exhibit booth to see the TAD system in action, and feel free to contact the TAD Support Team at NIHTADSupport@mail.nih.gov with any questions.

NIH Training Center

<http://trainingcenter.nih.gov>

Marketing NIH-specific training, professional development programs and customized solutions.

Office of Research Services

<http://www.ors.od.nih.gov>

The Office of Research Services (ORS) provides a comprehensive portfolio of services to support the biomedical research mission of the NIH. Some examples of the diverse services ORS provides include: laboratory safety, security and emergency response, veterinary resources, the NIH Library, events management, travel and transportation, visual arts and multimedia, relevant services for foreign scientists, and many more programs and employee services to enrich and enhance the NIH worksite.

CORE:

Core

- CORE-1** **PH Brown, EK Dimitriadis, AM Gorbach, HR Kalish, NY Morgan, GF Zhang (NIBIB)**
Biomedical Engineering and Physical Science (BEPS) Shared Resource
- CORE-2** **JQ Chen, MA Herrmann (NCI)**
Capillary Immunoassays: New Promise for Proteomics Research in the Lab and in the Clinic
- CORE-3** **KD Hartman, PA Johnson, S Shema, S Thorgeirsson (NCI)**
The DNA Sequencing and Digital Gene Expression Core
- CORE-4** **LMM Jenkins (NCI)**
Mass spectrometry analyses within the CCR Collaborative Protein Technology Resource
- CORE-5** **S Lockett, P Gudla, K Nandy, T Turbyville, K Peifley, D Chen, A Brafman (NCI)**
Optical microscopy and analysis laboratory (OMAL)
- CORE-6** **SE Martin, E Buehler, Y Chen, R Guha, C Klumpp, P Tuzmen, NJ Caplen, CP Austin (NCATS)**
Genome-Wide RNAi screening at the NIH through the Trans-NIH RNAi Screening Facility
- CORE-7** **NY Morgan, J Yoon, M Chandrangu, K Mora (NIBIB)**
Microfabrication and Microfluidics Unit, BEPS/NIBIB
- CORE-8** **V Speransky (NIBIB)**
Trans-NIH Electron Microscopy Shared Facility
- CORE-9** **RS Villasmil, P Chen, CA Jeffries, B Liu, RB Nussenblatt (NEI)**
Flow Cytometry sorting of Dendritic Cells engaged in Endocytosis of Albumin labeled with Fluorescein

NIH National Graduate Student Research Conference

** The following 120 presenters are graduate students studying at U.S. universities, visiting the NIH for a two-day conference.*

Poster Session 1

1:00 p.m. – 2:00 p.m.

- 1.1 **Kathleen DelGiorno**, Tumor-associated Pancreatic Metaplasia assumes a Biliary Duct Gland Phenotype
- 1.2 **Jennifer Emond**, Changes in Carbohydrate Intake and Breast Cancer Recurrence: A Focus on Starch and IGF-1R Expression
- 1.3 **Colins Eno**, Distinct Roles of Mitochondria- and ER-localized Bcl-xL in Apoptosis Resistance and Ca²⁺ Homeostasis
- 1.4 **Devikala Gurusamy**, Myeloid-Specific Ron Receptor Expression Promotes Tumor Growth in a Murine Model of Prostate Cancer
- 1.5 **Jeong Yeon Kang**, Cardioprotective and Antitumor Effects of Novel Selenium-based Compounds Encapsulated in Liposomes
- 1.6 **Shelby Kenney**, Selective Inhibition of Rac1 and Cdc42 in Ovarian Cancer Using the R-enantiomer of Ketorolac
- 1.7 **Lela Lackey**, APOBEC3B is Nuclear and Capable of Genomic DNA Deamination
- 1.8 **Megha Rajaram**, Functional Genomic Identification of Multiple Targets for Inhibiting Tumor-promoting Fibroblasts
- 1.9 **Divya Sahu**, Secreted Heat Shock Protein-90 alpha in Wound Healing and Cancer
- 1.10 **Jeffrey Schmidt**, PI3-kinase/Akt1 Regulation by Stat5: Linking Mammary Gland Development to Cancer
- 1.11 **Avinash Srivatsan**, Development of theranostic agents for tumor imaging and photodynamic therapy (PDT)
- 1.12 **Molly Taylor**, TGF-beta-mediated upregulation of miR-181a promotes breast cancer metastasis
- 1.13 **Laura Tollini**, Mdm2 Mediated Degradation is Not Required for p53 Regulation Under Unstressed Conditions In Vivo
- 1.14 **Mark Zimmerman**, Targeted-deletion of mouse Ptp4a3 (PRL-3) impairs endothelial cell motility and VEGF signaling
- 1.15 **Mary Zimmerman**, Unphosphorylated STAT1 Suppresses Apoptosis to Promote Sarcoma Development

Poster Session 1

1:00 p.m. – 2:00 p.m.

- 1.16 **Tyler Beck**, FREM1 deficiency causes congenital diaphragmatic hernia in humans and mice
- 1.17 **Jeehae Han**, A Functional Genomics Approach to Elucidate the Role of Genome Maintenance in Human Longevity
- 1.18 **William Lai**, The Role of Chromatin in Regulating Genomic Functional Elements
- 1.19 **Bo Li**, Neural Tube Defects in vacuolated lens (vl) are regulated by Cdx1 and Retinoic Acid (RA) signaling
- 1.20 **Allyson Merrell**, Whole or Hole? Development of a Functional Diaphragm Muscle
- 1.21 **Jenna Oberstaller**, Applied Genomics: Species-specific Malaria Diagnostic Targets More Sensitive than the Molecular Gold Standard
- 1.22 **Vinay Patil**, Cardiolipin is required for mitochondrial iron-sulfur cluster (Fe-S) biogenesis
- 1.23 **Melvys Valledor**, Human Stem Cell Recombineering
- 1.24 **Dan Webster**, ANCR and BANCR: Discovery of lncRNAs mediating epidermal differentiation and melanoma migration
- 1.25 **Marsha Wheeler**, Transcriptomic Profiling of the Medial Neurosecretory Cells of the Honey Bee Brain
- 1.26 **Nirjal Bhattarai**, Mechanisms by which GB virus C modulates T cell activation in HIV-infected subjects
- 1.27 **Eric Refsland**, Defining the HIV-restrictive APOBEC3 repertoire in CD4+ T cells with gene targeting and knockdown
- 1.28 **Timothy Break**, The Impact of Extracellular Superoxide Dismutase on Immune Cell Function and Listeria Monocytogenes Infection
- 1.29 **Kwan Chow**, MK5, a MAPK-activated Protein Kinase, Regulates Foxo1-mediated Activation of Rag Transcription
- 1.30 **Fatema Chowdhury**, Role of IL-12 Induced MAP3K8 in Effector Function of CD8+ T Lymphocytes
- 1.31 **Xiaolin Hu**, Function of the Fas Receptor in Apoptosis and Cancer Immune Surveillance

Poster Session 1

1:00 p.m. – 2:00 p.m.

- 1.32 **Sema Kurtulus**, Bcl-2 Allows Effector and Memory CD8+ T Cells to Tolerate Higher Expression of Bim
- 1.33 **Chihwen Ouyang**, The Role of LAT in Granule-mediated Cytotoxicity and Immunological Memory Response of CD8 T cells
- 1.34 **Duy Pham**, Twist1 Impairs Inflammatory Cytokine Production in T Helper 17 Cells
- 1.35 **Han-Yu Shih**, T cell receptor alpha gene recombination is supported by a Tcr enhancer- and CTCF-dependent chromatin hub
- 1.36 **Margaret Walker**, Meningeal Mast Cells: Modulators of Effector T cell Function in a Murine Model of Multiple Sclerosis
- 1.37 **Kayla Weiss**, Differential Disease Severity and Immune Responses following Infection with Various Strains of RSV
- 1.38 **Britta Wood**, Investigating CD4+ T-cell Maintenance in Cats Co-infected with Feline Immunodeficiency Virus
- 1.39 **Chelsea Boyd**, Environmental Signals Converge on LapG, a Cysteine Protease, to Regulate LapA at the Cell Surface
- 1.40 **Sara Cassidy**, Membrane Damage By Pore-Forming Toxins Triggers a Caspase-7 Dependent Cytoprotective Response
- 1.41 **Kari Debbink**, GII.4 Norovirus Epitope Mapping and Vaccine Design
- 1.42 **Geoffrey Gonzalez**, Transcriptomics and Proteomics Unveil Inhibitors of Salmonella Biofilm Formation on Cholesterol Gallstones
- 1.43 **Kelly Miller**, Characterization of Type Three Secretion System-positive *V. cholerae* Induced Mammalian Cell Death
- 1.44 **Lauren Neighbours**, Myd88-dependent TLR7 signaling is required for protection from severe Ross River virus-induced disease
- 1.45 **Dionne Robinson**, Sex Steroid Hormones Modulate Influenza Pathogenesis in Female C57BL/6 Mice

Poster Session 1

1:00 p.m. – 2:00 p.m.

- 1.46 **Jonathan Snyder**, Functional Characterization of the Alphavirus TF Protein
- 1.47 **Robyn Kaake**, Mapping the Human Interactome: Defining Protein-protein Interactions by Crosslinking Mass Spectrometry
- 1.48 **Carlos Morales Betanzos**, Analysis of the Phosphorylation Sites of ShcC and their Implication in Neuroblastoma Tumorigenicity
- 1.49 **Duc Tran**, Development of Mass Spectrometry based Platforms for Thermodynamic Analysis of Protein interaction networks
- 1.50 **Michael Zorniak**, Membrane Proteomics of Human Glioblastoma Stem-Like Cancer Cells
- 1.51 **Manasi Mayekar**, Investigating the Mechanism of Recruitment of Paf1 complex to RNA polymerase II-transcribed Genes
- 1.52 **Angenee Milton**, The C. elegans T-box Gene, *tbx-2*, is Regulated by NF-Y and by TBX-2 Autoregulation
- 1.53 **Diana Monsivais**, ER β Regulates Genes with Kinase and GTPase Functions and Enhance Cell Survival in Endometriosis
- 1.54 **Yocheved Schindler**, Hand2 Plays an Instructive Role In Directing Cardiomyocyte Formation
- 1.55 **Erica Schoeller**, Insulin and Leptin Rescue Male Fertility in Type 1 Diabetic Mice
- 1.56 **Beth Zucconi**, Sequence Requirements for Functionally Significant AUF1-RNA Association
- 1.57 **Subhasree Basu**, Inactivation of JNK Signals Organelle Free Zone Formation in the Lens through an Autophagic Process
- 1.58 **Natalie Kofler**, Notch Signaling in Pericytes Regulates Endothelial Cell Function in Angiogenesis
- 1.59 **Priya Londhe**, Interferon Gamma Modulates Myogenesis and Resets Cell Fate through the Class II Transactivator, CIITA
- 1.60 **Cara Marie Manlandro**, High-Throughput Identification of Interaction Hotspots In Signaling Hub Proteins

Poster Session 2

2:00 p.m. – 3:00 p.m.

- 2.1 **Juanjuan Du**, Single Enzyme Nanocapsules for Pharmaceutical, Analytical and Catalytical Applications
- 2.2 **Nathalie Pinkerton**, Lung Targeting Microgel Particles with Embedded Nanoparticles for the Treatment of Non-Small Cell Lung Cancer
- 2.3 **Aniruddha Ray**, Fluorescent and Photoacoustic Nanoprobes towards structural and Functional Imaging in vivo
- 2.4 **Radames Cordero**, Structure and Dynamics of the Cryptococcus neoformans Polysaccharide Capsule
- 2.5 **LI-CHUN TU**, Efficient Transport of Large Cargos Requires Multiple Transport Receptors
- 2.6 **Catherine Volle**, The Trouble with Triples: Elucidating the Behavior of Trinucleotide Repeats in Chromatin
- 2.7 **Na An**, Single-molecule studies of human telomeric G quadruplexes and the effect of oxidative damage
- 2.8 **Katherine Belecki**, Investigation into the Early Steps of Calicheamicin Biosynthesis
- 2.9 **Jennifer Ahn-Jarvis**, A Phase II Evaluation of Isoflavone Bioavailability after Consumption of Soy Breads in Men with Prostate Cancer
- 2.10 **Qu Tian**, Free-Living Physical Activity is Associated with Brain Regions important for Memory in Older Adults
- 2.11 **Kristen Upson**, Endocrine Disrupting Chemicals and Endometriosis Risk in Reproductive Age Women
- 2.12 **Zheyu Wang**, Assessing Diagnostic Accuracy with Ordinal Disease Statuses in the absence of a Gold Standard
- 2.13 **Narjes Tavoosi**, Protein-Phospholipid Interactions in Blood Coagulation
- 2.14 **Ryan Janke**, Homologous Recombination Proteins Rad55-Rad57 Interact with Ptc3 Phosphatase.
- 2.15 **Lymor Ringer**, A Novel Cyclin-Dependent Kinase Inhibitor, VMY-1-103, Causes p53-mediated Apoptosis in Prostate Cancer Cells

Poster Session 2

2:00 p.m. – 3:00 p.m.

- 2.16 **Andrew Magis**, RNA Editing and MicroRNA Regulation in the U87MG Glioblastoma Cell Line
- 2.17 **Kendra Williams**, ERK1 Phosphorylates Histone Deacetylase 6 at Serine1035 in its C-Terminal Region
- 2.18 **Elise Cope**, Zinc and Traumatic Brain Injury: Effects on Neurogenesis and Behavioral Outcomes
- 2.19 **Iain DeWitt**, Parametric response to phonotactic regularity in auditory word-form recognition
- 2.20 **Angel Yuet Fong Kam**, Regulation of AMPA Receptor Trafficking by Morphine and its Role in Opiate Addiction
- 2.21 **Prescott Leach**, Thyroid Receptor β is Critically Involved in the Effects of Nicotine on Hippocampus-Dependent Memory
- 2.22 **Sharee Light**, The Cognitive and Facial Electromyographic Correlates of Empathy
- 2.23 **Ashley Martin**, High-Energy Diets Produce Hippocampal Inflammation and Hippocampal-Dependent Cognitive Impairments
- 2.24 **Monika Mellem**, Gamma- and Theta-band Synchronization Reflect Local and Long-range Lexical-semantic Networks
- 2.25 **Adam Smith**, Social buffering requires oxytocin action in the hypothalamic paraventricular nucleus in female prairie voles
- 2.26 **Vanessa Troiani**, Processing of Objects Prior to Awareness in Adolescents
- 2.27 **Shana Augustin**, Cyclic AMP Levels in MSN in the D2 Pathway Play a Key Role in the Directionality of Corticostriatal Plasticity
- 2.28 **Jessica Chancey**, GABAergic depolarization promotes excitatory synaptogenesis on adult-generated neurons
- 2.29 **Maria Costello**, Neural Correlates of Random and Informed Saccadic Choices in the Macaque Frontal Eye Fields and Central Thalam
- 2.30 **Brandon Martin**, Defective Tonic GABAergic Transmission and E/I Balance in the Amygdala in Fragile-X Syndrome

Poster Session 2

2:00 p.m. – 3:00 p.m.

- 2.31 **Justin Trotter**, Disabled-1 is a Critical Regulator of Adult Synaptic Plasticity and Cognitive Function
- 2.32 **Kari Johnson**, Positive Allosteric Modulators of Metabotropic Glutamate Receptor 5 Modulate Akt and GSK-3 β Signaling In Vivo
- 2.33 **Kevin Ogden**, Mechanism and Sites of Action of NMDA Receptor Positive Allosteric Modulators
- 2.34 **Lauren Orefice**, Somatically & Dendritically Translated BDNF Regulate Spine Morphogenesis via Distinct Pathways
- 2.35 **Nathan Smith**, Calcium Independent Astrocytic Lipid Release
- 2.36 **Simantini Ghosh**, Sustained IL-1 β Overexpression Regulates Amyloid and Tau Pathology Differentially in 3xTgAD Mice
- 2.37 **Mallory Hacker**, A Caspase Cascade Regulates Degeneration of GABA Neurons in a Model of Coenzyme Q Deficiency
- 2.38 **Esther Kim**, Persistent Molecular and Metabolic Effects of High Glucose in Schwann Cells
- 2.39 **John McMahon**, Impaired autophagy as a mechanism of epileptogenesis
- 2.40 **Haiyan Peng**, The Immunoregulatory and Neuroprotective effect of Dimethyl Fumarate in Multiple Sclerosis
- 2.41 **Dustin Shilling**, Decreasing InsP3R1 Expression Attenuates Exaggerated [Ca²⁺]_i Release and AD Phenotypes of 3xTg Mice
- 2.42 **Jill Bennett**, The Roles of GATA-4 and GATA-6 in Folliculogenesis, Fertility, Ovulation and Gene Regulation
- 2.43 **Surabhi Bhutani**, Alternate Day Fasting Combined with Exercise: An Effective Treatment for Weight loss and Cardio-protection
- 2.44 **Paulo Caceres**, Role of the SNARE Proteins VAMP2 and VAMP3 in regulation of trafficking of the renal cotransporter NKCC2
- 2.45 **Randy Crossland**, Cerebrovascular Consequences of Obstructive Sleep Apnea: Insights from a Novel Rat Model

Poster Session 2

2:00 p.m. – 3:00 p.m.

- 2.46 **Megan Greenwald-Yarnell**, Estrogen action on Arc KNDy neurons is required for normal feedback and controls the onset of puberty
- 2.47 **Teresa Ramirez**, Structural Correlates of PPAR Agonist Rescue of Experimental Chronic Alcohol Induced Steatohepatitis
- 2.48 **Athit Kao**, Mapping the Topology of the 19S Proteasome Using Cross-linking Mass Spectrometry and Modeling
- 2.49 **Tatiana Kazdoba**, Examination of the Role of Pten in Ionotropic Glutamate Receptor Expression
- 2.50 **Michelle McClure**, S-Palmitoylation Regulates Trafficking of CFTR from the Endoplasmic Reticulum to the Cell Surface
- 2.51 **Karen Ring**, Direct Reprogramming of Mouse and Human Fibroblasts into Multipotent Neural Stem Cells with a Single Factor
- 2.52 **Sonya Seif-Naraghi**, Injectable Extracellular Matrix Hydrogel Enhances Retention and Delivery of bFGF in Ischemic Myocardium
- 2.53 **Angela Henderson**, Selective Opioid Receptor Drug Effects on EtOH & Sucrose Reinforcement in Selected and Outbred Rats
- 2.54 **Alexandra Main**, The Role of Empathy in Conflict Resolution between Adolescents and their Mothers
- 2.55 **Meghan Miller**, Executive Functions in Females with and without ADHD: Longitudinal Development & Associations with Impairment
- 2.56 **Kathryn Blaschke**, Vitamin C Increases Hydroxymethylation in Embryonic Stem Cells Leading to Germ Cell Gene Expression
- 2.57 **Jennifer Brady**, Heterokaryon RNA Sequencing Identifies a Secreted Factor that Enhances Direct Reprogramming to iPS
- 2.58 **Rebecca Oot**, Crystal Structure of the heterotrimeric EGHead complex from Yeast Vacuolar ATPase
- 2.59 **Maha Farid**, Cigarette Smoke Extract (CSE) Stimulates VEGF by Lung Fibroblasts Through TFG-B1\Samd3 Pathway

NIH Research Festival

Parking Lot 10H

Technical Sales Association Exhibit Tent Show

Thursday, October 11, 2012

9:30 a.m.-3:30 p.m.

Friday, October 12, 2012

9:30 a.m.-2:30 p.m.

The Technical Sales Association (TSA) sponsors the popular Research Festival Exhibit Tent show. More than 400 exhibitors will display state-of-the-art equipment supplies and services by leading regional and national biomedical research suppliers. There is no cost to attend the exhibit, but it is recommended that you pre-register online to avoid the long on-site registration lines. To register, please visit: <http://www.gtpmgt.com>. To view a list of confirmed exhibit booths please visit: <http://www.gtpmgt.com/attendees.php?id=4>

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