

Dr. Laurie S. Kaguni (Michigan State)

Building 45: Natcher Conference Center, NIH Campus

(talks in red are unavailable in the video archive at videocast.nih.gov until June 2008).

7:00 AM Wednesday January 9, 2008: Poster set up, posters remain throughout meeting.

8:15 AM Meeting Chair- Douglas C. Wallace (UC-Irvine): Introductions and Meeting Kickoff

8:30 AM – 10:15 AM Session 1: Dynamics of Mitochondrial Proteomes in Cardiovascular Diseases

**8:30 AM Chair - Peipei Ping (UCLA): Dynamics of Mitochondrial Proteomes in
Cardiovascular Diseases**

8:45 AM Robert Balaban (NHLBI): The Systems Biology of Mitochondria

9:00 AM Jan Schnitzer (Kimmel Cancer Center/UCSD): Proteomic Approaches to
Organelles in the CV System

9:15 AM Jenny Van Eyk (Johns Hopkins): The Phosphor Proteome of Cardiac Mitochondria
in Heart Failure

9:30 AM Christopher Baines: (Children's HMC, Cincinnati): The MPT Pore in Cardiac
Diseases

9:45 AM Peer Review of Research Grant Applications at NIH

Cathie Cooper (CSR): The Center for Scientific Review Perspective

Gerald McLaughlin (NIDA): The NIH Institute/Center Locus of Review Perspective

10:15 AM Mitochondria Refueling Break

10:30 AM – 12:15 PM Session 2: Mitochondrial Proteomics

10:30 AM Chair - Rod Capaldi (Oregon): Mitochondrial Proteomics by antibody arraying of
functional complexes

10:45 AM David Ferrick (Seahorse Bioscience): Cellular Bioenergetics Assays

11:00 AM Ronald Bartek (Friedreich's Ataxia Research Alliance President): Multi-Disease
Collaboration in Mitochondrial Research

**11:15 AM Bennett Van Houten (NIEHS): Altered gene expression and oxidative DNA damage in
peripheral blood cells from Friedreich's ataxia patients**

11:30 AM Mukesh Verma (NCI Epidemiology and Genetics Research Program Director): Research
Opportunities at the National Cancer Institute: Using Mitochondrial Genomic and Proteomic
Information

Selected Abstract Platform Presentations

11:45 AM Chunag-Rung CHANG (NINDS): Effects of middle domain interactions and
postranslational modifications on Drp1 function and mitochondria morphology

**11:55 AM Tatiana Rostovtseva (NICHD): Cytoskeleton regulates mitochondria respiration through
the tubulin-VDAC direct interaction**

**12:05 PM Rajesh Kasiviswanathan (NIEHS): Biochemical characterization of Alpers mutants in
human DNA polymerase**

12:15 PM Lunch and Posters

1:15 – 2:15 PM: Session 3: NINR Session. Biomarkers in Fatigue and Mitochondrial Damage-Bench to Bedside and Back

Chair- Joachim Voss (Washington)

1:15 PM Judith Payne (Duke): Conceptual issues of biomarkers for fatigue

1:30 PM Lisa Wood (OSHU): Inflammatory responses in muscle during chemotherapy in a mouse
model

1:45 PM Donna McCarthy (Ohio State): Sarcopenia and proteolysis in muscle of a cancer mouse
model

2:00 PM Joachim Voss: Mitochondrial Damage and Fatigue in HIV

2:15 PM Posters and Migrate to Bldg 10/Masur Auditorium for Wednesday Afternoon Lecture

**3:00 PM Wednesday Afternoon Lecture: Laurie S. Kaguni (MSU)
Protein Dynamics at the Mitochondrial Replication Fork (Reception following)**

Thursday January 10, 2008

8:00 AM – 9:35 AM Session 4: Intergenomic Cross-Talk between the Mitochondria and the Nucleus

8:00 AM Chair- Keshav K. Singh (Roswell Park): InterGenomic Cross Talk between Mitochondria and the Nucleus and Its Role in Tumorigenesis

8:15 AM Carolyn Suzuki (UMDNJ): Multitasking in the mitochondrion by the Lon protease in protein and mtDNA quality control

8:30 AM Gerald S. Shadel (Yale): Regulation of Mitochondrial Homeostasis and Gene Expression by the ATM and TOR Signaling Pathways

8:45 AM Paul Wagner (NCI): Mitochondrial DNA Mutations as Biomarkers for Early Cancer Detection

Selected Abstract Platform Presentations

8:55 AM Juan D. Alfonzo (Ohio State): Innate ability of mammalian mitochondria to import tRNAs by a mechanism distinct from protein import

9:05 AM Yutaka Suzuki (NICHD): Mitochondrial Localization of Mammalian Ribonuclease H1

9:15 AM Jamie J Arnold (Penn State): Biochemical characterization of the mitochondrial RNA polymerase

9:25 AM Matthew J. Longley (NIEHS): Pathogenic Mutations in PEO1 Cause Biochemical Defects in the Human Mitochondrial DNA Helicase

9:35 AM Mitochondria Refueling Break and Posters/Networking

10:15 AM – 11:25 AM Session 5: NIAAA Session

10:15 AM Chair- BJ Song (NIAAA): Alcohol-Mediated Mitochondrial Dysfunction, Apoptosis, and Therapeutic Interventions

10:30 AM Mariana Gerschenson (Hawaii): The Clinical Impact of Alcohol on HIV Mitochondrial Metabolism

10:45 AM Pal Pacher (NIAAA): Oxidative/nitrosative stress in various animal models of heart failure

11:00 AM György Hajnóczky (Thomas Jefferson): Mitochondrial Motility and Fusion-Fission Dynamics: a Potential Target of Ethanol

Selected Abstract Platform Presentations

11:15 AM Ioan Cucoranu (Emory): Oxidative Stress and Mitochondrial Toxicity Relate to the Development of Alcoholic Cardiomyopathy

11:25 PM Posters and Lunch

12:45 PM – 2:20 PM Session 6: Model Organisms of Mitochondrial Disease- Ron Butow Memorial Session

12:45 PM Chair- Xin Jie Chen (SUNY-Upstate): Yeast as a Model for Human Mitochondrial Disease- Tribute to Ron Butow

1:00 PM Dan Bogenhagen (SUNY-Stony Brook): The Layered Structure of mtDNA Nucleoids

1:15 PM Henry Rodriguez (NCI Clinical Proteomics Technologies Initiative Director): Proteomic Technologies for Cancer Research: Strategic Plan-Translating Discoveries to Clinic

Selected Abstract Platform Presentations

1:30 PM Kwan-Hoon Moon (NIAAA): Oxidative inactivation of key mitochondrial proteins leads to mitochondrial dysfunction and injury in hepatic ischemia reperfusion of mice

1:40 PM Wuhong Pei (NHGRI): Seeking the biochemical basis of Type III 3-methylglutaconic aciduria through zebrafish models

1:50 PM Seyed Hosseini (Emory): Decrease of mtDNA replication in Xenomitochondrial mouse model

2:00 PM Rachel T Cox (HHMI and Carnegie Institution): Mutations in the gene clueless cause mitochondrial mislocalization and Parkinson-like phenotypes in the Drosophila ovary and muscle

2:10 PM Bin Lu (UMDNJ-New Jersey Medical School): Modulating Stat1 Signaling by Mitochondrial Tid1- a human homolog of bacterial DnaJ and the Drosophila tumor suppressor Tid56

2:20 PM Mitochondria Refueling Break and Posters/Networking

2:40 PM – 6:00 PM Session 7: Acquired Mitochondrial Toxicities, Clinical and Societal Aspects of Mitochondrial Disease

2:40 PM Chair- Robert K. Naviaux (UCSD): Mitochondrial DNA Depletion Syndromes

2:55 PM Bill Copeland (NIEHS): Acquired and genetic diseases of the mitochondrial DNA polymerase

3:10 PM Steve Lipshultz (Miami): Frequent mitochondrial DNA mutations and polymorphisms in childhood cancer survivors following multi-agent chemotherapy

3:25 PM Vernon Walker (Lovelace Respiratory Research Institute): Frequent mitochondrial DNA mutations and polymorphisms in HIV-infected children receiving highly active antiretroviral therapy

3:40 PM Miriam Poirier (NCI): Fetal mitochondrial consequences of transplacental NRTI exposure

3:55 PM Bruce Cohen (Cleveland Clinic): Chemotherapy-Associated Mitochondrial Dysfunction

4:10 PM Mitochondria Refueling Break

4:25 PM Charles Mohan (Director, United Mitochondrial Disease Foundation): The Impact of Voluntary Health Organizations on Mitochondrial Research and Physician Outreach

4:40 PM Rashmi Gopal-Srivastava (Director, Office of Rare Diseases Extramural Research Program): The Rare Diseases Clinical Research Network (RDCRN)

4:55 PM Paul M. Coates (Director, Office of Dietary Supplements): Challenges in Dietary Supplement Research: Application to Mitochondrial Disease

Selected Abstract Platform Presentations

5:10 PM Salina Torres (Lovelace Respiratory Research Institute): In utero exposure of female CD-1 mice to nucleoside reverse transcriptase inhibitors (NRTIs) leads to temporal changes in mitochondrial structure, function, and mutations

5:20 PM Sher Hendrickson (NCI): Association between Mitochondrial DNA Haplogroups and AIDS Progression

5:30 PM Surabhi Chandra (Tulane): Mitochondrial Oxidative Stress in HIV-1 Protease Inhibitor Mediated Suppression of Glucose Stimulated Insulin Release by Rat Insulinoma Cells

5:40 PM Luis Carlos Lopez Garcia (Columbia U): Respiratory chain dysfunction and oxidative stress correlate with severity of primary CoQ10 deficiency

5:50 PM Courtney Kim (Hawaii) Improvements in mitochondrial function, morphology, and lipid profiles in HIV-positive patients switching from stavudine to a tenofovir-containing therapy

6:00 PM – 7:00 PM Session 8: Vitamin and Cofactor Therapy and Clinical Trials for Mitochondrial Disease

6:00 Bruce Cohen: Introduction to CoQ10, carnitine, creatine, B-vitamin, antioxidant cocktails, and clinical monitoring guidelines for assessing clinical outcomes

6:10 Mark Tarnopolsky (McMaster): Exercise and Nutraceuticals in Mitochondrial Disease and Aging

6:25 Panel Q/A: Bruce Cohen, Mark Tarnopolsky, Paul Coates, Bob Naviaux, Rashmi Gopal-Srivastava, Doug Wallace

Friday January 11, 2008

8:00 AM – 9:50 AM Session 9: Mitochondrial DNA Repair

8:00 AM Chair- Vilhelm Bohr (LMG-NIA): Mitochondrial DNA Repair

8:10 AM Yves Pommier (NCI): Mitochondrial topoisomerase I (Top1mt) controls mitochondrial DNA replication through D-loop formation

8:25 AM Barry Hoffer (NIDA Scientific Director): Mitochondrial Respiratory Enzyme Dysfunction in Midbrain DA Neurons Elicits Parkinsonian Symptomatology: A Novel Genetic Model

8:40 AM Lawrence F. Povirk (VCU): Is tyrosyl-DNA phosphodiesterase a mitochondrial DNA repair enzyme?

8:55 AM Nadja Souza-Pinto (NIA): Pathways for mitochondrial DNA repair: relevance to aging and disease

Selected Abstract Platform Presentations

9:10 AM Ryuji Yamaguchi (La Jolla Institute for Allergy & Immunology) Opa1 Regulates Crista Junction Sizes and Cytochrome c Accessibility

9:20 AM Fábio Klamt (Federal University of Rio Grande do Sul, RS, Brazil) and CDER, FDA: The actin-binding protein Cofilin as the major promoter of oxidant-induced apoptosis in tumor cells

9:30 AM Krish Patel (NCI): SIRT3 as a regulator of intracellular superoxide levels

9:40 AM Rachelle J Bienstock (NIEHS): The DNA polymerase GAMMA Y955C disease variant associated with PEO and parkinsonism mediates the incorporation and translesion synthesis opposite 7,8-dihydro-8-oxo-2'-deoxyguanosine

9:50 AM Mitochondria Refueling Break and Posters/Networking

**10:30 AM – 11:30 AM Session 10: Invited Lecture
Douglas C. Wallace: A Mitochondrial Paradigm for Metabolic and Degenerative Diseases, Cancer and Aging**