



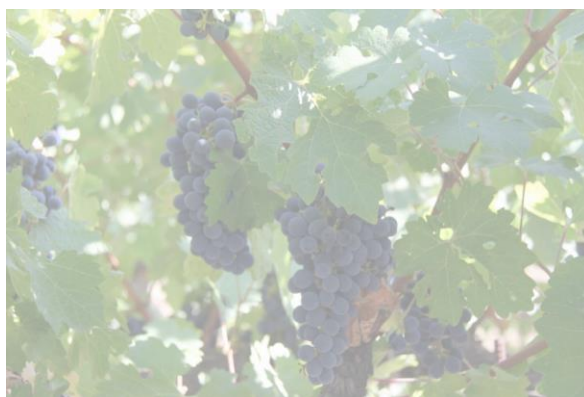
OXYGEN CLUB OF CALIFORNIA

2014

OXIDANTS AND ANTIOXIDANTS IN BIOLOGY

*NUTRITION AND REDOX BIOLOGY
IN
DEVELOPMENT AND HEALTH*

PROGRAM



7-10 MAY 2014

UNIVERSITY OF CALIFORNIA DAVIS CONFERENCE CENTER
DAVIS, CALIFORNIA

OXIDANTS AND ANTIOXIDANTS IN BIOLOGY
NUTRITION AND REDOX BIOLOGY IN DEVELOPMENT AND HEALTH
7-10 MAY 2014
UNIVERSITY OF CALIFORNIA DAVIS CONFERENCE CENTER
– CONFERENCE CO-SPONSORED BY THE LINUS PAULING INSTITUTE –

CONFERENCE ORGANIZERS

Maret G. Traber – OCC President

SCHOOL OF BIOLOGICAL AND POPULATION HEALTH SCIENCES,
LINUS PAULING INSTITUTE, OREGON STATE UNIVERSITY, CORVALLIS, OREGON, USA

Patricia Oteiza

DEPARTMENT OF NUTRITION, UNIVERSITY OF CALIFORNIA, DAVIS, CALIFORNIA, USA

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HEINRICH-HEINE-UNIVERSITY DÜSSELDORF, DÜSSELDORF, GERMANY

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DSM NUTRITIONAL PRODUCTS, BASEL, SWITZERLAND

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UNIVERSITY OF BUENOS AIRES, IBIMOL, UBA-CONICET, BUENOS AIRES, ARGENTINA

Klaus Kraemer

SIGHT AND LIFE, BASEL, SWITZERLAND
DEPARTMENT OF INTERNATIONAL HEALTH, JOHNS HOPKINS BLOOMBERG
SCHOOL OF PUBLIC HEALTH, BALTIMORE, USA

Lester Packer

PHARMACOLOGY & PHARMACEUTICAL SCIENCES, SCHOOL OF PHARMACY,
UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES, CALIFORNIA, USA

WEDNESDAY
MAY 7

10:00 – 02:00 REGISTRATION

02:00 – 02:15 WELCOME

Maret G. Traber

SCHOOL OF BIOLOGICAL AND POPULATION HEALTH SCIENCES, LINUS
PAULING INSTITUTE, OREGON STATE UNIVERSITY, CORVALLIS,
OREGON, USA

Patricia Oteiza

DEPARTMENT OF NUTRITION, UNIVERSITY OF CALIFORNIA, DAVIS,
CALIFORNIA, USA

Francene M. Steinberg

DEPARTMENT OF NUTRITION, UNIVERSITY OF CALIFORNIA, DAVIS,
CALIFORNIA, USA

SESSION I THE FIRST 1000 DAYS: FROM METABOLIC SIGNAL TO SOCIETAL IMPACT

CHAIRPERSONS *Christine P. Stewart*

PROGRAM IN INTERNATIONAL AND COMMUNITY NUTRITION, DEPARTMENT OF NUTRITION, UNIVERSITY OF CALIFORNIA, DAVIS, CALIFORNIA, USA

Klaus Kraemer

SIGHT AND LIFE, BASEL, SWITZERLAND
DEPARTMENT OF INTERNATIONAL HEALTH, JOHNS HOPKINS BLOOMBERG SCHOOL OF PUBLIC HEALTH, BALTIMORE, USA

02:15 – 02:30 The first 1000 days – Introductory remarks

Christine P. Stewart

PROGRAM IN INTERNATIONAL AND COMMUNITY NUTRITION, DEPARTMENT OF NUTRITION, UNIVERSITY OF CALIFORNIA, DAVIS, CALIFORNIA, USA

02:30 – 03:00 Gut microbiota: nutritionally and environmentally sensitive ecosystems that influence the host biology

Mark J. Manary

DEPARTMENT OF PEDIATRICS, WASHINGTON UNIVERSITY IN ST. LOUIS, ST. LOUIS, MISSOURI, USA

03:00 – 03:30 The damaged gut: enteropathy, enteric infection, and malnutrition

Audrie Lin

DIVISION OF EPIDEMIOLOGY, SCHOOL OF PUBLIC HEALTH, UNIVERSITY OF CALIFORNIA, BERKELEY, CALIFORNIA, USA

03:30 – 04:00 Early nutrition: consequences for the immune system

Charles Stephensen

USDA-AGRICULTURAL RESEARCH SERVICE WESTERN HUMAN NUTRITION RESEARCH CENTER, UNIVERSITY OF CALIFORNIA, DAVIS, CALIFORNIA, USA

04:00 – 04:30 *Coffee break*

04:30 – 05:00 **Developmental programming for obesity: epigenetic modifications in the hypothalamus**

Mulchand Patel

DEPARTMENT OF BIOCHEMISTRY, SCHOOL OF MEDICINE AND BIOMEDICAL SCIENCES, UNIVERSITY AT BUFFALO, THE STATE UNIVERSITY OF NEW YORK, BUFFALO, NEW YORK, USA

05:00 – 05:30 **Hormonal regulation of infant and child growth**

Morey W. Haymond

DEPARTMENT OF PEDIATRICS, SECTION OF DIABETES AND ENDOCRINOLOGY, TEXAS CHILDREN'S HOSPITAL AND CHILDREN'S NUTRITION RESEARCH CENTER, BAYLOR COLLEGE OF MEDICINE, HOUSTON, TEXAS, USA

05:30 – 06:00 **Carotenoid and retinoid metabolism in early development: Priming of metabolic disease?**

Johannes von Lintig

DEPARTMENT OF PHARMACOLOGY, CASE WESTERN RESERVE UNIVERSITY, SCHOOL OF MEDICINE, CLEVELAND, OHIO, USA

06:00 – 06:30 **Integration of basic biology and public health research: bringing research disciplines together**

Lindsay H. Allen

USDA, ARS-WESTERN HUMAN NUTRITION RESEARCH CENTER, DAVIS, AND PROGRAM IN INTERNATIONAL AND COMMUNITY NUTRITION, UNIVERSITY OF CALIFORNIA, DAVIS, CALIFORNIA, USA

07:00 **WELCOME RECEPTION**

**THURSDAY
MAY 8**

SESSION II FLAVONOIDS: FROM METABOLISM TO DIETARY GUIDELINES

CHAIRPERSONS *César G. Fraga*

PHYSICAL CHEMISTRY, SCHOOL OF PHARMACY AND BIOCHEMISTRY,
UNIVERSITY OF BUENOS AIRES, IBIMOL, UBA-CONICET, BUENOS AIRES,
ARGENTINA

Carl L. Keen

DEPARTMENT OF NUTRITION, UNIVERSITY OF CALIFORNIA, DAVIS,
CALIFORNIA, USA

09:00 – 09:30 [2-¹⁴C](–)-Epicatechin metabolomics: absorption and
metabolism in the small intestine and colon

Alan Crozier

SCHOOL OF MEDICINE, COLLEGE OF MEDICAL, VETERINARY AND LIFE
SCIENCES, UNIVERSITY OF GLASGOW, UK

09:30 – 10:00 miRNA as molecular targets of flavonoid metabolites
involved in preservation of endothelial cell function

Dragan Milenkovic

INRA, CLERMONT UNIVERSITÉ, UNIVERSITÉ D'AUVERGNE, UNITÉ DE
NUTRITION HUMAINE, CLERMONT-FERRAND, FRANCE

10:00 – 10:30 Flavanols and cardiovascular health: clinical outcomes
of the FLAVIOLA project (Seventh Framework
Programme of the European Commission)

Christian Heiss

DIVISION OF CARDIOLOGY, PULMONOLOGY, AND VASCULAR MEDICINE,
DÜSSELDORF UNIVERSITY HOSPITAL, DÜSSELDORF, GERMANY

10:30 – 11:00 *Coffee break*

11:00 – 11:30 Anthocyanin intake and the risk of cardiovascular
disease

Aedin Cassidy

DEPARTMENT OF NUTRITION, NORWICH MEDICAL SCHOOL, UNIVERSITY OF
EAST ANGLIA, NORWICH, UK

11:30 – 12:00 Flavonoids improve spatial memory performance and increase hippocampal brain-derived neurotrophic factor

Jeremy P. Spencer

MOLECULAR NUTRITION GROUP, SCHOOL OF CHEMISTRY, FOOD AND PHARMACY, UNIVERSITY OF READING, READING, UK

12:00 – 12:30 Dietary guidelines on Flavonoids? Where are we today?

Joanne R. Lupton

DEPARTMENT OF NUTRITION AND FOOD SCIENCE, TEXAS A&M UNIVERSITY, COLLEGE STATION, TEXAS, USA

12:30 – 01:30 *Lunch*

01:30 – 02:00 Hydroxytyrosol is a rising star of nutraceuticals after resveratrol on targeting mitochondria to prevent age-associated diseases

Jiankang Liu

CENTER FOR MITOCHONDRIAL BIOLOGY AND MEDICINE, THE KEY LABORATORY OF BIOMEDICAL INFORMATION ENGINEERING OF MINISTRY OF EDUCATION, SCHOOL OF LIFE SCIENCE AND TECHNOLOGY AND FRONTIER INSTITUTE OF SCIENCE AND TECHNOLOGY, XI'AN JIAOTONG UNIVERSITY, XI'AN, CHINA

02:00 – 02:30 Pomegranate consumption, the microbiome, and urolithin production

Zhaoping Li

DIVISION OF CLINICAL NUTRITION, DEPARTMENT OF MEDICINE, DAVID GEFFEN SCHOOL OF MEDICINE, UNIVERSITY OF CALIFORNIA LOS ANGELES, LOS ANGELES, CALIFORNIA, USA

02:30 – 03:30 **ROUND TABLE DISCUSSION**

MICRONUTRIENTS: THE FIRST 1000 DAYS

COORDINATORS *Christine P. Stewart*
Lindsay H. Allen

PANEL MEMBERS *Morey W. Haymond*
Klaus Kraemer
Mark J. Mannary
Mulchand Patel

03:30 – 04:00 *Coffee break*

ORAL PRESENTATIONS FROM SELECTED POSTERS

CHAIRPERSONS *Josiane Cillard*

CELLULAR AND MOLECULAR BIOLOGY, FACULTY OF PHARMACY,
UNIVERSITY OF RENNES 1, RENNES, FRANCE

Nesrin Özer

DEPARTMENT OF BIOCHEMISTRY, FACULTY OF MEDICINE, GENETIC AND
METABOLIC DISEASES RESEARCH CENTER, MARMARA UNIVERSITY,
ISTANBUL, TURKEY

John Maguire

04:00 – 04:20 The metabolic triad in brain aging: Mitochondria,
insulin/IGF-1 signaling, and JNK signaling

Fei Yin

PHARMACOLOGY & PHARMACEUTICAL SCIENCES, SCHOOL OF PHARMACY,
UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES, CALIFORNIA, USA

04:20 – 04:40 Mitochondrial localized STAT3 modulates reactive
oxygen species and apoptotic cell death in pancreatic
cancer

Gerardo G. Mackenzie

DEPARTMENT OF PREVENTIVE MEDICINE, STONY BROOK CANCER CENTER,
STONY BROOK UNIVERSITY, STONY BROOK, NEW YORK, USA

04:40 – 05:00 Progressive alterations in brain bioenergetic system
during female reproductive aging: Implications for risk
identification and disease prevention

Jia Yao

PHARMACOLOGY & PHARMACEUTICAL SCIENCES, SCHOOL OF PHARMACY,
UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES, CALIFORNIA, USA

05:00 – 05:20 Nitric oxide promotes insulin responsiveness in endothelium through S-nitrosylation and inactivation of protein phosphatase PTP1B

Tzu-Ching Meng

INSTITUTE OF BIOLOGICAL CHEMISTRY, ACADEMIA SINICA, TAIPEI, TAIWAN
AND INSTITUTE OF BIOCHEMICAL SCIENCES, COLLEGE OF LIFE SCIENCES,
NATIONAL TAIWAN UNIVERSITY, TAIPEI, TAIWAN

05:20 – 05:40 SHC depletion stimulates brown fat activity *in-vivo* and *in-vitro*

Alexey Tomilov

DEPARTMENT OF MOLECULAR BIOSCIENCES, UNIVERSITY OF CALIFORNIA
DAVIS, DAVIS, CALIFORNIA, USA

05:40 – 06:00 NADPH oxidase-mediated ROS in inactivation of Toll-like receptors: a positive feedback regulator?

Daniel Hwang

WESTERN HUMAN NUTRITION RESEARCH CENTER, ARS/USDA AND
DEPARTMENT OF NUTRITION, UNIVERSITY OF CALIFORNIA DAVIS, DAVIS,
CALIFORNIA, USA

06:00 – 08:00 *Poster Viewing and Refreshments*

**FRIDAY
MAY 9**

SESSION III REDOX SIGNALING AND SYSTEMS BIOLOGY IN HEALTH

CHAIRPERSONS *Enrique Cadenas*

PHARMACOLOGY & PHARMACEUTICAL SCIENCES, SCHOOL OF PHARMACY,
UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES, CALIFORNIA, USA

Lester Packer

PHARMACOLOGY & PHARMACEUTICAL SCIENCES, SCHOOL OF PHARMACY,
UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES, CALIFORNIA, USA

09:00 – 09:30 Thiol signaling, redox circuits, and systems biology in health status

Dean P. Jones

DEPARTMENT OF MEDICINE, EMORY UNIVERSITY, ATLANTA, GEORGIA, USA

09:30 – 10:00 Coupling of metabolism to local circadian clock via reversible hyperoxidation of peroxiredoxin III

Sue Goo Rhee

YONSEI BIOMEDICAL RESEARCH INSTITUTE, YONSEI UNIVERSITY COLLEGE OF MEDICINE, SEOUL, KOREA

10:00 – 10:30 Role of selenium and selenoproteins in insulin-regulated energy metabolism

Holger Steinbrenner

INSTITUTE FOR BIOCHEMISTRY AND MOLECULAR BIOLOGY I, HEINRICH-HEINE UNIVERSITY, DÜSSELDORF, GERMANY

10:30 – 11:00 *Coffee break*

11:00 – 11:30 Brain cholesterol oxidation and 4-hydroxynonenal in the pathogenesis of Alzheimer's disease

Giuseppe Poli

DEPARTMENT OF CLINICAL AND BIOLOGICAL SCIENCES, UNIVERSITY OF TURIN, TURIN, ITALY

11:30 – 12:00 Allopregnanolone as a regenerative and mitochondrial regulator: Therapeutic implications for Alzheimer's disease

Roberta Díaz Brinton

PHARMACOLOGY & PHARMACEUTICAL SCIENCES, SCHOOL OF PHARMACY,
UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES, CALIFORNIA, USA

12:00 – 12:30 Fusion and fission: interlinked processes critical for mitochondrial health

David Chan

DIVISION OF BIOLOGY, CALIFORNIA INSTITUTE OF TECHNOLOGY, PASADENA,
CALIFORNIA, USA

12:30 – 01:00 Mitochondrial dynamics

Jodi Nunnari

DEPARTMENT OF MOLECULAR AND CELLULAR BIOLOGY, UNIVERSITY OF
CALIFORNIA, DAVIS, CALIFORNIA, USA

01:00 – 02:30 *Lunch*

CHAIRPERSONS *João Laranjinha*

FACULTY OF PHARMACY AND CENTER FOR NEUROSCIENCES AND CELL
BIOLOGY, UNIVERSITY OF COIMBRA, COIMBRA, PORTUGAL

Enrique Cadenas

PHARMACOLOGY & PHARMACEUTICAL SCIENCES, SCHOOL OF PHARMACY,
UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES, CALIFORNIA, USA

02:30 – 03:00 Exercise and mitochondrial dynamic remodeling

Yong Zhang

TIANJIN KEY LABORATORY OF EXERCISE PHYSIOLOGY AND SPORTS
MEDICINE, DEPARTMENT OF HEALTH & EXERCISE SCIENCE,
TIANJIN UNIVERSITY OF SPORT, TIANJIN, CHINA

03:00 – 03:30 Hypoxia activation of mitophagy

Quan Chen

STATE KEY LABORATORY OF BIOMEMBRANE AND MEMBRANE
BIOTECHNOLOGY, INSTITUTE OF ZOOLOGY, CHINESE ACADEMY OF SCIENCES,
BEIJING, CHINA

03:30 – 04:00 Measuring and manipulating mitochondrial ROS signals

Michael Murphy

MEDICAL RESEARCH COUNCIL, MITOCHONDRIAL BIOLOGY UNIT, WELLCOME
TRUST, CAMBRIDGE, UK

04:00 – 04:30 Metabolomic analyses of mitochondrial metabolism

Oliver Fiehn

DAVIS GENOME CENTER, UNIVERSITY OF CALIFORNIA, DAVIS, CALIFORNIA,
USA

04:30 – 05:00 *Coffee break*

05:00 – 06:00 **ROUND TABLE DISCUSSION**
REDOX SIGNALING AND HEALTH

COORDINATOR *Michael Murphy*

PANEL MEMBERS *Oliver Fiehn*
Dean P. Jones
Jodi Nunnari
Giuseppe Poli
Sue Goo Rhee
Oren Tirosh

06:00 – 07:00 *Poster Viewing and Refreshments*

07:00 CONCERT

08:00 GALA DINNER

PRIZES AND AWARDS

OCC & Jarrow Formulas Health Sciences Prize

Selection Committee

Lester Packer, Jarrow Rogovin, Enrique Cadenas

Science and Humanities Award

Selection committee

Maret G. Traber, Carroll E. Cross, Yuki Hayashi

Young Investigator Awards

Selection committee

Josiane Cillard, Nesrin Özer, John Maguire

Oxygen Club of California

Linus Pauling Institute

Society for Free Radical Research International

Archives Biochemistry & Biophysics – Elsevier

Oxygen Club of California Honorary Awards

SATURDAY
MAY 10

**SESSION IV VITAMIN E: TOCOPHEROL AND TOCOTRIENOLS IN
TRANSLATIONAL MEDICINE**

CHAIRPERSONS *Maret G. Traber*

SCHOOL OF BIOLOGICAL AND POPULATION HEALTH SCIENCES,
LINUS PAULING INSTITUTE, OREGON STATE UNIVERSITY, CORVALLIS,
OREGON, USA

Manfred Eggersdorfer

DSM NUTRITIONAL PRODUCTS, BASEL, SWITZERLAND

09:00 – 09:30 α -Tocotrienol: multimodal protection against stroke

Chandan K. Sen

DEPARTMENT OF SURGERY, DAVIS HEART AND LUNG RESEARCH INSTITUTE,
OHIO STATE UNIVERSITY WEXNER MEDICAL CENTER, COLUMBUS, OHIO,
USA

09:30 – 10:00 Vitamin E and nonalcoholic fatty liver disease

Arun Sanyal

DIVISION OF GASTROENTEROLOGY, HEPATOLOGY, AND NUTRITION, VIRGINIA
COMMONWEALTH UNIVERSITY SCHOOL OF MEDICINE, RICHMOND, VIRGINIA,
USA

10:00 – 10:30 Isoforms of vitamin E differentially regulate
inflammation

Joan M. Cook-Mills

ALLERGY-IMMUNOLOGY DIVISION, NORTHWESTERN UNIVERSITY,
FEINBERG SCHOOL OF MEDICINE, CHICAGO, ILLINOIS, USA

10:30 – 11:00 *Coffee break*

- 11:00 – 11:30 **Anti-inflammatory functions of vitamin E metabolites**
Qing Jiang
DEPARTMENT OF FOODS AND NUTRITION, PURDUE UNIVERSITY,
WEST LAFAYETTE, INDIANA, USA
- 11:30 – 12:00 **Vitamin E and apoptosis: free radical scavenging versus
regulation of enzymatic lipid peroxidation.**
Valerian Kagan
CENTER FOR FREE RADICAL AND ANTIOXIDANT HEALTH AND DEPARTMENT
OF ENVIRONMENTAL AND OCCUPATIONAL HEALTH, UNIVERSITY OF
PITTSBURGH, PITTSBURGH, PENNSYLVANIA, USA
- 12:00 – 12:30 **The location, activity and behavior of α -tocopherol in
membranes**
Jeffrey Atkinson
DEPARTMENT OF CHEMISTRY, BROCK UNIVERSITY, ST. CATHARINES,
ONTARIO, CANADA
- 12:30 – 01:00 **Promotion of plasma membrane repair by vitamin E**
Paul L. McNeil
INSTITUTE OF MOLECULAR MEDICINE AND GENETICS, GEORGIA REGENTS
UNIVERSITY, AUGUSTA, GEORGIA, USA
- 01:00 *Farewell Lunch*

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