

# 16<sup>th</sup> Chicago Signal Transduction Symposium



May 22, 2003, NORTHWESTERN UNIVERSITY  
Chicago campus, Thorne Hall, Lake Shore Drive & Chicago Ave

**LINDA BUCK**

FRED HUTCHINSON CANCER RES. CTR.  
*ODOR MAPS AND ODOR CODES*

**GERALD R. CRABTREE**

STANFORD UNIVERSITY SCHOOL OF MEDICINE  
*SIGNALING THROUGH  $Ca^{2+}$ , CALCINEURIN AND NFAT  
IN NEURAL DEVELOPMENT AND AXONAL OUTGROWTH*

**RAVI IYENGAR**

MOUNT SINAI SCHOOL OF MEDICINE  
*CONSEQUENCES OF NETWORKING BETWEEN  
SIGNALING PATHWAYS*

**C. RONALD KAHN**

JOSLIN DIABETES CENTER  
*A GENETIC ANALYSIS OF GLUCOSE HOMEOSTASIS  
AND INSULIN ACTION IN MAN AND MOUSE*

**MARC MONTMINY**

THE SALK INSTITUTE  
*CAN YOU HEAR ME NOW? SIGNALING  
VIA THE CREB/CAMP PATHWAY*

**ELIZABETH J. ROBERTSON**

HARVARD UNIVERSITY  
*TGF $\beta$  SIGNALING PATHWAYS: MAKING HEADS AND  
TAILS OF THE EARLY MOUSE EMBRYO*

**Melvin I. Simon**

CALIFORNIA INSTITUTE OF TECHNOLOGY  
*A COMPLEX GPCR FAMILY INVOLVED IN NOCICEPTION AND OTHER FUNCTIONS*  
*For information, registration, and poster submission visit*

<http://www.pharm.northwestern.edu/SignalTransduction/registration.html>

Preregistration deadline: May 4, 2003; No fee for preregistered predoctoral students  
Lunch included for all; Sponsors will be announced on the program; Tel, 312-503-0800

# Chicago Signal Transduction Symposium 2003



May 22, 2003, Northwestern University  
Chicago Campus, Thorne Hall, Lake Shore Drive & Chicago Ave

## **SYMPOSIUM ORGANIZING COMMITTEE**

Mary Hunzicker-Dunn, Northwestern University, Chairperson  
Nava Segev, University of Illinois at Chicago, Co-Chairperson  
Richard Longnecker, Northwestern University, Fund Raising Coordinator

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Terry Unterman, University of Illinois at Chicago  
Tatyana Voyno-Yasenetskaya, University of Illinois at Chicago  
Richard Ye, University of Illinois at Chicago

**ORGANIZATIONAL SUPPORT:** The organizing committee gratefully thanks Andrena Logan and Laurie Daniels of the Dept of Molecular Pharmacology & Biological Chemistry, Northwestern University, and Susan Hall-Perdomo, Northwestern University Center for Reproductive Sciences, for superb managerial assistance. Finally, we thank members of our laboratories for their assistance with organizational matters.

**T-SHIRTS** are for sale in the lobby; proceeds benefit the symposium fund!

**LUNCH AND POSTERS: PLEASE NOTE!!** Lunches will be distributed in the Main Lounge of Lake Shore Center, 850 N. Lake Shore Drive. Seven tables have been reserved for the Student and Postdoc “Lunch with the Speakers”. Additional seating is available in the Law School Lobby (adjacent to the auditorium). The Poster Session will be held in the Law School Atrium.

THIS SYMPOSIUM WAS MADE POSSIBLE IN PART BY SUPPORT FROM:

The University of Chicago, Committee on Cell Physiology

The University of Chicago, Committee on Cancer Biology

The University of Chicago, Molecular and Cellular Biology Training Program

Northwestern University, Training in Cellular and Molecular Basis of Disease

Northwestern University, Feinberg Cardiovascular Research Institute

Northwestern University, Institute for Neuroscience

Northwestern University, Center for Reproductive Sciences

Northwestern University, Medical Scientist Training Program

Northwestern University, Training Program in Signal Transduction and Cancer

Northwestern University, Division of Endocrinology, Metabolism, and Molecular  
Medicine

Northwestern University, Robert H. Lurie Comprehensive Cancer Center

Northwestern University, Department of Pathology

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# PROGRAM

**8:00 AM REGISTRATION & COFFEE (Thorne Hall)**  
**POSTER SET-UP (Rubloff Atrium--adjacent to Thorne Auditorium)**

**9:00 AM Introductory Remarks**

Session Chair: Jon Lomasney

**9:05 AM GERALD R. CRABTREE**

**9:45 AM ELIZABETH J. ROBERTSON**

**10:25 AM Coffee Break**

Session Chair: Marsha Rosner

**10:50 AM C. RONALD KAHN**

**11:30 AM MARC MONTMINY**

**12:10 PM LUNCH (Lake Shore Center)**

**1:10 PM Poster Session (Rubloff Atrium--adjacent to Thorne Auditorium)**

Session Chair: Mark Rasenick

**2:45 PM RAVI IYENGAR**

**3:25 PM LINDA BUCK**

**4:05 PM MELVIN I. SIMON**

**4:45 PM CLOSING REMARKS and POEM**

**The 17<sup>th</sup> annual Chicago Signal Transduction Symposium** will be held on Thursday, May 20, 2004! Watch for information on our web site: <http://www.pharm.nwu.edu/signal/info.html>

## Poster Session 2003

Number	Authors	Title of Abstract	Institution
1	T.L. Brown	Q-VD-OPH, a broad spectrum caspase inhibitor with potent antiapoptotic properties	Wright State University
2	M.J. Gerdin 1,2, M.A. Rivera-Bermudez 1, M.U. Gillette 3, D.J. Earnest 4, and M.L. Dubocovich 1,2	Melatonin-Mediated Regulation of MT2 Melatonin Receptors	Northwestern University, Dept. of Molecular Pharmacology and Biological Chemistry, Institute for Neuroscience, University of Il. Urbana-Champaign, Dept. Cell and Structural Biology, and Texas A&M University, Dept. of Human Anatomy and Medical Neurobiology
3	Q. Hoang, D. Bajic, M. Yanagisawa, S. Nakajima, and Y. Nakajima	Orexin Effects on GIRK Channels	Univ. of IL at Chicago and Univ. of Texas Southwestern Med. Cntr.
4	M. Koike, T. Kawano, P. Zhao, Q. Zhao, T. Kozasa, and S. Nakajima	Signal Transduction of GIRK Inhibition by Substance P.	University of Illinois at Chicago
5	B.T. Scully, M.C. Keidkamp, X. Wu, and A. Samarel	PYK2 Overexpression Downregulates SERCA2 Gene Expression in Neonatal Rat Ventricular Myocytes	Loyola University Cardiovascular Inst.
6	T.A. Hornberger 1, D.D. Armstrong 1, T.J. Kohl 1, T.J. Burkholder 2, and K.A. Esser 1	Uniaxial and Biaxial Stretch Induce Distinct Signaling Events: A Mechanism for Specificity in Mechanotransduction	UIC School of Kinesiology, Georgia Insti. Of Tech. School of Applied Physiology
7	S. Bajic 1, T. Kawano 2, Y. Nakajima 2, and S. Nakajima 1	Functional Consequences of IRK1 Mutants Linked to Andersen's Syndrome	UIC, Dept. of Pharmacology and Dept. of Anatomy and Cell Biology
8	Q. Zhao, T. Kawano, H. Nakata, Y. Nakajima, S. Nakajima, and T. Kozasa	Interaction Sites of G Protein Beta Subunit with Kir3	University of Illinois at Chicago
9	D.L. Porras, and F. Wondisford	Defining the Histone Code of the Insulin Gene	University of Chicago, Molecular Metabolism and Nutrition
10	K.A. Temple, R.N. Cohen, M.J. Brady, D. Deplewski, and F.E. Wondisford,	Screening a Murine Adipose Tissue cDNA Library for Proteins that Interact Differentially with PPARgamma1 and PPARgamma2	University of Chicago

11	K. Swanson, R. Kang, and T. Radhakrishnan,	Solution NMR Analysis of the Interaction Between VPS27 UIM and Ubiquitin	Northwestern University, Depts of Biochemistry, Molecular Biology and Cell Biology
12	Y. Chen	Role of FKBP12.6 in Protein Methylation Induced Activation of Reconstituted Ryanodine Receptor Channels from Coronary Arterial Smooth Muscle	UIC Toxicology Research Lab, Dept. of Pharmacology
13	M. Koster, J. Mitchell, and R. Pals-Rylaarsdam	Identifying Intragenic Suppressors of McCune-Albright Syndrome Mutations: a Yeast Model to Detect Constitutive G alpha Signaling	Trinity Christian College
14	S.T. Pearce, H. Liu, S. Safe, and V.C. Jordon.	Interaction of the Aryl Hydrocarbon Receptor (AhR) Ligand 6-methyl-1,3,8-Trichlorodibenzofuran (6-MCDF) with Estrogen Receptor Alpha (ER)	Northwestern University, Cancer Center, Texas A&M Univ., Dept. of Veterinary Physiology/Pharmacology
15	H. Liu, E. Lee, C. Gajdos, S.T. Pearce, B. Chen, C. Osipo, J. Loweth, K. Mckian, A. De Los Reyes, L. Wing, and V. Craig Jordon	Apoptotic Action of 17 Beta-Estradiol in Raloxifene Resistant MCF-7 Cells in vitro and in vivo	Northwestern University, Cancer Center
16	Y. Li. and L. Platanias	Phosphorylation and activation of mitogen- and stress-activated protein kinase 1 by interferon	Northwestern University, Cancer Center
17	X. Han, L. Lin, and J. Lomasney	Cardioprotection Medicated by Delta-Opioid Receptor in Intact Rat Heart	Northwestern University, Pathology
18	Y-C Wang, and E.L. Ferguson	Extracellular Modulation of DPP Signaling in Drosophila Blastoderm Stage Embryo	University of Chicago, Dept. OBA
20	H. Mansour, P.P. de Tombe, A.M. Samare1, and B. Russell	Regulation of Resting Sarcomere Length by Fak and PKC during Mechanical Strain	University of Illinois at Chicago, Dept. of Physiology and Biophysics, Loyola University, Cardiovascular Institute
21	K.L. Byron, and L.I. Brueggemann	Evidence Against Reciprocal Regulation of Capacitative and Non-capacitative Calcium Entry Pathways in A7r5 Vascular Smooth Muscle Cells.	Loyola University, Cardiovascular Institute

22	K.J. Damjanoska, B.A. Heidenreich, D.N. Souza, Y. Zhang, F. Garcia, G.H. Kindel, G. Battaglia, L.D. Van de Kar, and N.A. Muma	(-) DOI-INDUCED 5-HT <sub>2A</sub> RECEPTOR DESENSITIZATION IN VIVO	Loyola University, Dept. of Pharmacol. & Center for Serotonin Disorders Research
23	S.J. Engman, and A.M. Samarel, MD	Activation and Localization of Adhesion Kinase in Migrating Vascular Smooth Muscle Cells	Loyola University, Cardiovascular Institute
24	P. Lin, and R.D. Ye,	A Novel Mechanism of Lymphocyte Apoptosis Through the Lysophospholipid Receptor, G <sub>2A</sub>	UIC, Dept. of Pharmacology
25	L.I. Brueggemann and K.L. Byron	Vasopressin inhibits K <sup>+</sup> current and stimulates action potential generation in single A7r5 cells	Loyola University Chicago
26	A.M. Preininger, N. Van Eps, N-J, Yu, M. Medkova, W.L. Hubell and H.E. Hamm	The myristoylated amino terminus of G <sub>α945</sub> plays a critical role in the structure and function of Gα subunits in solution	Northwestern University and Vanderbilt University
27	W. Tawil and S. Conway	Effect of Ethanol on Growth Hormone Induced JAK-StAT Signal Transduction Pathway in 3T3-F442 Cells	Northern Illinois University
28	R.J. Donati, B. Layden, and M.M. Rasenick	Tubulin Interferes with Activation of Adenylyl Cyclase by G <sub>s</sub> Alpha and This is Reversed by Chronic Antidepressant Treatment	UIC, Dept. of Physiology and Biophysics
29	D. Li, C. Ver mes, M-L. Alegre, A.S.F.Chong, Q. Shao, K. Mikecz, A. Finnegan, T.T. Glant, and J. Zhang	CD28 and CTLA-4 Regulate T. Cell Activation Threshold by Controlling Cbl-b Expression	Rush-Presbyterian-St. Luke, Dept. of Orthopedic Surgery
30	T. Hartman, D. Motlagh, T. Desai, and B. Russell	Mechanosignal Mediated Alteration in Gap Junction, Focal Adhesion and Cadherin Expression Patterns in Cultured Rat Neonatal Cardiomyocytes	University of Illinois Chicago
31	J. Zhang, J. Qiao, and H. Lum	Binding of p120 <sup>ctn</sup> (catenin) with activated RhoA in Endothelial Cells: Potential Mechanism in Barrier Function Regulation	Rush University, Dept. of Pharmacology

32	S. Jirawatnotai, D. Moons, C. Stocco, R. Franks, D. Hales, G. Gibori, H. Kiokawa	The CDK Inhibitor p27Kip1 and p21Cip1 Cooperate to Restrict Proliferative Life span in Differentiating Ovarian Cells	UIC, Dept. of Molecular Genetics
33	T. Sarma, J.Z. Yu, T.J. Hope, M.M. Rasenick	Synaptic Targeting of G Protein Alpha S	UIC, Depts. of Physiology and Biophysics, Microbiology and Immunology
34	J-Z. Yu, T. Sarma, B. Shah, and M.M. Rasenick	Activation of Gs Promotes its Association with Microtubules	University of Illinois at Chicago
35	Yee-Kin Ho	Probing the Catalytic Mechanism of Retinal cGMP Phosphodiesterase with Deuterium Oxide Solvent Kinetic Isotope Effect and Proton Inventory	University of Illinois at Chicago
36	N. Sharma, B. Johnson, and S.K. DebBurman	Expression and Characterization Studies of alpha-Synuclein in Yeast to Model for Parkinson's Disease	Lake Forest College
37	D. Ducan and C. Ober	HLA-Getting a Grip on Preeclampsia	University of Chicago
38	M. Vracar-Grabar and B. Russell	Autophosphorylation of Creatine Kinase Alters its RNA Binding Affinity to Alpha Myosin Heavy Chain 3'UTR	University of Chicago, Dept. of Physiology and Biophysics
39	F. Huang <sup>1</sup> , P.V. Subbaiah <sup>2</sup> , O. Holian <sup>3</sup> , R. Walter <sup>4</sup> , J. Qiao <sup>1</sup> , and H. Lum <sup>1</sup>	Lysophosphatidylcholine Decreases Resistance of Microvascular Endothelial Cells through Activation of PKC	Rush Medical Center, Depts. Of Pharmacology and Medicine and Cook County Hospital, Depts. Of Medicine and Surgery
40	A.J. Emerick, M.P. Richards, E.J. Neafsey, G.L. Kartje, and E.B. Stubbs Jr.	Central Nervous System Reorganization in Experimental Diabetes Mellitus	Loyola University Medical Center
41	J. Qiao, O. Holian, F. Huang, R.J. Walter, P.V. Subbaiah, and H. Lum	Vascular Endothelial Cells Express Receptor for the Inflammatory Lipid Mediator, Lysophosphatidylcholine	Rush Medical Center and Cook County Hospital

42	M.L. Villereal, T. Zagranichnaya, and X. Wu	Role of Store-Operated Calcium Channels in Regulating Gene Expression	University of Chicago, Neurobiology, Pharmacology, & Physiology
43	A. Orem, L. Devente, J. Zheng, K. Matsuda, G-G. Du, and P. Dallos	Effects of cGMP on Prestin-transfected Cells	Northwestern University, Auditory Physiology
44	R. Ramos and J. Bass	Role of PI-3 Kinase and mTOR in ER Associated Degradation of the Insulin Receptor	Northwestern University, Dept. of Medicine and Evanston NU Healthcare Research Inst.
45	R. Ramos 1,3, A. Swanson 3, and J. Bass 2,3	Endoproteolytic Cleavage Triggers ER Associated Degradation of the Insulin Receptor	Northwestern University, Dept. of Medicine and Evanston NU Healthcare Research Inst.
46	B.C. Barnhart P. Legembre, and M.E. Peter	NF-kappaB Mediates Specific CD95 Tumor Promoting Activities in Apoptosis Resistant Cells	University of Chicago
47	C.M. Christ 1, E.C. Cole 2, M. Petcherskaia 1, and K.E. Kirk 1	Cell Cycle Defects in Tetrahymena Thermophila Telomere Mutants	Lake Forest College and St. Olaf College
48	W. Ishida, M. Kato, and K. Miyazono	Smad 6 is a Smad1/5-induced Smad6 Inhibitor	Cancer Inst. of the Japanese Foundation for Cancer Research
49	S. Takagawa, G. Lakos, O. Oyenola, and J. Varga	Sustained Activation of Fibroblast TGF-beta/Smad Signaling in a Murine Model of Scleroderma	UIC, Section of Rheumatology
50	A. Lysakowski and S.D Price	Ultrastructural Localization of Potassium Channels in Rodent Inner Ear	University of Illinois at Chicago
51	C.C. Greenberg, K.N. Meredith, L. Yan, and M.J. Brady	PTG Overexpression Specifically Enhances Glycogen Accumulation in 3T3-L1 Adipocytes	University of Chicago, Dept. of Medicine
53	J.C. Lee, O. Schickling, A.H. Stegh, and M.E. Peter	The I-Disc: A New Paradigm For Caspase Activation	University of Chicago, The Ben May Institute of Cancer Research