

# Phosphorylation, Signaling & Disease

## Session 1 KEYNOTE SPEAKERS

WEDNESDAY 5/16/2007, 7:30 PM

Phil Cohen, University of Dundee

Carol Greider, Johns Hopkins University

## Session 2 RECEPTOR-PROXIMAL SIGNALING I

THURSDAY 5/17/2007, 9:00 AM

D. Morrison

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
1	Wimmer-Kleikamp	Imaging Eph receptor signaling complexes in intact cells	15
2	Haj	Dynamics of cellular protein-tyrosine phosphatase 1B movement and the effects of substrate interaction on phosphatase mobility	15
3	Abella	Role for the Gab1 scaffold protein in down-regulation of the Met receptor tyrosine kinase	15
4	Boyle	Socs3, the Socs box and the negative regulation of cytokine signaling	15
5	Abid	NADPH oxidase activity selectively modulates vascular endothelial growth factor signaling pathways	15
6	Merdek	Intrinsic signaling functions of the $\beta 4$ integrin cytoplasmic domain in carcinoma cells	15
7	Skolnik	Histidine phosphorylation of the CA2+-activated K+ channel KCa3.1 by nucleoside diphosphate kinase B (NDPK-B) is required for KCa3.1 channel activation and the reactivation of CD4 T lymphocytes	15

## Session 3 POSTER SESSION I

THURSDAY 5/17/2007, 2:00 PM

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
8	Toretzky	Identification of Valosin-containing protein (VCP) as a PTPL1 substrate in Ewing's Sarcoma	
9	Rotenberg	Design and characterization of a traceable protein kinase C $\alpha$	
10	Aguirre-Ghiso	Induction of tumor cell quiescence by p38 <sup>SAPK</sup> requires positive regulation of p53 and DEC2/BLHBH3	
11	Ekokoski	Design of substrate competing peptidomimetics as protein kinase inhibitors	
12	Al-Harbi	The molecular genetic analysis of the C <sub>4</sub> -dicarboxylate sensor DcuS—Part of a two component sensor-regulator system (DcuSR) in <i>E. coli</i>	
13	Baldwin	Novel kinase pathways in HPV-associated disease	
14	Barra	The differential roles of specific AMPK kinases in integrating Akt and LKB1 signaling	
15	Bennett	Regulation of Claspin phosphorylation in response to DNA damage or replication arrest	
16	BETTAYEB	Meriolins, a new class of cell death-inducing, cyclin-dependent kinase inhibitors derived from the marine products meridianin and variolin B	
17	Blazkova	I $\kappa$ B kinase participates in the regulation of mitosis	
18	Boivin	A cysteinyl-labeling assay for specific detection of the reversible oxidation of PTPs in vivo	
19	Eyzaguirre	Inhibition of the EGFR sensitizes tumor cells to IGF-1 receptor inhibition by promoting Akt phosphorylation through the IGF-1R-IRS1 pathway	

20	Buckley	Modulation of innate and adaptive immune signaling by the dual specificity phosphatase, JSP1
21	Buckley	The dual specificity phosphatase, JSP1 regulates JNK signaling in a mouse model of Parkinson's Disease
22	Castelletti	Eps8 regulates the activation of cofilin by direct interaction with the phosphatase Slingshot
23	Chan	PAK1 activation via P13K/Cdc42 is specifically downregulated by PP2C $\alpha$ in the hyperosmotic stress-induced p38 pathway
24	Chen	A role for the 3BP2 adapter protein in macrophage chemotaxis and integrin-mediated attachment to non-tissue cultured treated plastic plates
25	Lin	Induction of death receptor 5 and suppression of Survivin contribute to sensitization of TRAIL-induced apoptosis by Quercetin in lung cancer cells
26	Chen	The role of insulin-receptor substrate-1 phosphorylation in the negative feedback loop in p13-kinase/Akt pathway
27	CHEN	Plk1 mediated phosphorylation increase FoxM1B transcriptional activity at G2/M phase
28	Chiang	G4-1(FLJ20644), a novel IKK $\beta$ -interacting protein, negatively regulate NF- $\kappa$ B activation
29	Cho	Autophosphorylation on the carboxyl-terminus of epidermal growth factor receptor (EGFR) is not required for mutant EGFR-mediated cellular transformation in NIH3T3 cells
30	Klebl	An old story with new impact—Cyclin-dependent kinase inhibitors—CDK9 inhibitors in inflammatory diseases
31	Conde	Ser/Thr phosphatases acting on the Chk1 mediated replication checkpoint
32	Couzens	Characterization of the hydrophobic motif of Rho-associated kinase II (ROCKII)
33	Crawford	Preclinical assessment of primitive plant extracts that target actin cytoskeleton in human solid tumor spheroids—Therapeutic and preventive effects
34	Dagnell	Characterization of oxidation susceptibility of cytosolic and receptor-like PTP $\epsilon$ isoforms
35	Kitazawa	CA <sup>2+</sup> -dependent rapid inhibition of myosin phosphatase by phosphoprotein CPI-17 in arterial smooth muscle contraction
36	Joubert	PKC $\epsilon$ translocation and targeting to cell-cell contacts—An essential role for a 20 amino acid module
37	Livnah	Structures of p38 active mutants reveal a molecular switch on the L16 loop that induces autoactivation
38	Dutt	Towards an understanding of Nek10 kinase function
39	Eminaga	PZR and SIRP $\alpha$ serve as signaling scaffolds for Noonan syndrome-associated SHP-2/PTPN11 mutants
40	Escalona-Montaño	Participation of a protein tyrosine phosphatase from <i>L. mexicana</i> in the infection of macrophages
41	Aguirre-García	Protein tyrosine phosphatase from <i>E. histolytica</i> modulate the activation of phagocytic cells
42	Sastry	The protein tyrosine phosphatase, PTP-PEST, regulates colon carcinoma motility through regulation of p120catenin

43	Flockhart	Ultraviolet radiation activates NFAT—Derivation of the NFAT action spectrum and involvement in COX-2 induction
44	Francavilla	The adhesion molecule NCAM modulates FGFR function
45	Frémin	ERK2 plays a key role in normal hepatocytes and transformed hepatic cells proliferation
46	Giamas	Ck1 $\delta$ kinase activity is modulated by PKA
47	Guha	Differences in tyrosine phosphorylated proteins in lung adenocarcinomas generated by mutant EGFR or mutant KRAS
48	Gymnopoulos	Rare, cancer-specific mutations in PIK3CA show gain of function
49	Hägerstrand	Identification of novel subsets of CD133-positive glioblastoma cells with distinct differences in sensitivity to tyrosine kinase inhibitors
50	Hilger	Serine/threonine/tyrosine phosphoproteome of the model organism <i>D. melanogaster</i>
51	Hong-Brown	HIV protease inhibitor lopinavir impairs protein synthesis and increases eukaryotic elongation factor 2 phosphorylation in myocytes
52	Schuessler	Phosphoprofile of activated EGF receptor
53	Hoschuetzky	Validation of phosphoBioMarker™ specific monoclonal antibodies
54	Ibarra-Sánchez	Gleevec increases cell death induced by adriamycin in breast cancer cells
55	Kazlauskas	SFKs promotes vessel stability by antagonizing the Rho/ROCK pathway
56	Iwai	Detection and quantification of phosphoproteome signaling networks in mouse tissue samples
57	Jang	Dephosphorylation of Polo-like kinase 1 by DNA damage in mitosis—Novel mitotic checkpoint to put the cell cycle into reverse
58	Kimmel	A Rheb-TOR complex 2 mechanism that suppresses phagocytosis, actin-dependent nutrient uptake—A potential pathway to coordinate nutrient particle capture and growth
59	Kim	Lack of ERK activation after group 1 metabotropic receptor stimulation in dendritic spines of fragile X mouse
60	Klevernic	Phosphorylation of the oncogene EWS in response to DNA damage
61	Koch	Abl tyrosine kinase inhibitor, Imatinib, enhances downstream signaling of nerve growth factor receptor, TrkA, in BCR-Abl transformed cells
62	Kuddus	Purification and characterization of an extracellular cold-active alkaline protease from <i>S. maltophilia</i>

**Session 4 PHYSIOLOGY AND DISEASE**

THURSDAY 5/17/2007, 7:30 PM

A. Rao			
<b>#</b>	<b>Iname</b>	<b>Title</b>	<b>Talk Length</b>
	Rao	Title only: Calcium signaling in lymphocytes	
63	Simoncic	The adaptor protein 3BP2 regulates bone homeostasis and Src activity in osteoblasts and osteoclasts	15

64	Ross	M-CSF regulates osteoclastic bone resorption via a pathway involving spleen tyrosine kinase Slp76 and Vav3	15
65	Hattori	Fyn protein tyrosine kinase as a target for antipsychotic drugs	15
66	Gentile	Ion channel phosphorylopathies—Human disease associated SNPs which alter hormonal regulation of ion channels through reversible protein phosphorylation	15
67	Dimitroulakos	Activation of the integrated stress response regulates lovastatin-induced apoptosis	15
68	Li	Mutations in PINK1 of familial Parkinson's Disease cause mitochondrial dysfunction, reduced proteasome activity, and increased $\alpha$ -synuclein aggregation	15

**Session 5 CANCER**

FRIDAY 5/18/2007, 9:00 AM

G. Gilliland

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
69	Grueneberg	Differential kinase requirements in genetically related and distinct human tumor cell	15
70	Muthuswamy	Brk is coamplified with ErbB2 to promote proliferation in breast cancer	15
71	Elson	Neu directs RPTP $\epsilon$ to activate Src in mammary tumor cells—Generating a specific and coherent outcome of PTP activity	15
72	Sablina	The tumor suppressor PP2A A $\beta$ negatively regulates the RalA GTPase through dephosphorylation	15
73	Hantschel	The Btk tyrosine kinase is a major target of the Bcr-Abl inhibitor dasatanib	15
74	Zhao	Ahi-1, a novel signaling protein, interacts with BCR-ABL and modulates BCR-ABL transforming activity and imatinib sensitivity of primitive CML cells	15
75	Xie	The 44 Kda Pim-1 kinase phosphorylates BCRP/ABCG2 and promotes its drug resistant activity in human prostate cancer cells	15

**Session 6 POSTER SESSION II**

FRIDAY 5/18/2007, 2:00 PM

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
76	LARIVE	Proteomic identification of Syk kinase substrates, a tumor suppressor in breast cancer cells	
77	Laszlo	Expression of activated mutant <i>src</i> gene at endogenous level is not sufficient for cellular transformation—Compensatory degradation of activated mutant Src	
78	Li	Protein phosphatase-1 acts as a major phosphatase to modulate the function of Pax-6, a prominent transcription factor controlling brain and eye development	
79	Seykora	Srcasm decreases cutaneous squamous cell carcinoma incidence in keratin 14-Fyn Y528F transgenic mice	
80	Li	Role of the activation loop tyrosines in regulation of the insulin-like growth factor 1 receptor tyrosine kinase	
81	Li	Kinase requirements in paired human tumor cell lines with low or high metastatic potential	
82	Liao	Purification of new factors associated with TOR complex 2 in <i>Dictyostelium</i>	

83	Rajagopal	A eukaryotic-type kinase and a two-component system regulate toxin expression in the human pathogen <i>S. agalactiae</i>
84	Loenne	Protein kinase $\delta$ and $\epsilon$ may be important for the survival of estrogen receptor negative breast cancer cells
85	Loos	Signaling mechanisms and phospholipase A <sub>2</sub> translocation in TNF- $\alpha$ mediated cytoprotection in ischaemia
86	Villa-Moruzzi	Protein tyrosine phosphatases in breast cancer cell lines displaying differential HER2 activities
87	Lucs	Y1226/7 and Y1253 mediate ErbB2 induced protection from apoptosis
88	Mahajan	Activated Cdc42-associated kinase Ack1 promotes prostate cancer progression via androgen receptor tyrosine phosphorylation
89	Malewicz	Inhibitory phosphorylation regulates the transcriptional activity of Nurr1 orphan nuclear receptor
90	Manning	Signal integration feedback inhibition, and metabolic regulation by the TSC-TOR signaling network
91	Marignani	Identification of LKB1 emergent properties
92	Ghaffari	Foxo3 transcription factor is required for the regulation of oxidative stress during red cell development
93	Martin	Protein phosphatase 2A controls the subcellular distribution and biological activity of class IIA histone deacetylases
94	Masson	Identification of three tyrosine residues of importance for survival signaling of the Flt3 ITD through Gab2
95	Matitau	Phosphorylation of MEKK3 at threonine 294 promotes 14-3-3 association
96	Molinari	Hypertension-related adducin polymorphism activates signal transduction pathways
97	Moon	Role of PDK-1 S396 phosphorylation on the activation of PKB
98	Muehlich	Phosphorylation of MKL1 and regulation of immediate early gene expression
99	NIIMI	Notch signaling is necessary for epithelial growth arrest of TGF- $\beta$
100	Oren-Young	Down-regulation of erythropoietin receptor signaling—A role for HSP90
101	Ostheimer	Measurement and modeling of the DNA damage response
102	Pedersen	Stem cell factor induced regulation of hypoxia-inducible factor 1 $\alpha$ under normoxia
103	Ratto	STAT3 expression in sporadic canine malignant tumors
104	Piccini	Phosphorylation regulates PTEN function in the central nervous system
105	Prathapam	p27 <sup>KIP1</sup> inhibition can rescue the cell cycle block induced by MYC knockdown in MYC-amplified ovarian cancer cells
106	Prieto	Intramolecular regulation of ACK1
107	Gope	Role of p53 and RB1 phosphorylation in the growth of human intracranial tumors

108	Ronkina	MK2 and MK3 cooperates in stimulation of TNF biosynthesis and in regulation of p38 stability and function
109	Ross	The small GTPase Cdc42 mediates M-CSF/RANKL-stimulated proliferation and differentiation of osteoclast precursors and bone resorption by mature cells
110	Samarakoon	TGF- $\beta$ -1-induced plasminogen activator inhibitor-1 expression in vascular smooth muscle cells requires cooperative Rho/ROCK and EGFR signaling
111	Kotlyarov	MAPKAP kinase MK2 maintains self-renewal capacity of hematopoietic stem cells by targeting p38 MAPK to the polycomb repressive complex
112	Seifert	Phosphorylation of caspase-9 by DYRK1A
113	Donaldson	Src kinase activity and SH3 domain regulate the dynamics of Src association with lipid and protein targets
114	Singh	Src family kinases as evolvable signaling modules
115	Smith	Activation of the TAK1/p38MAPK pathway through forced expression of the heat shock protein H11/HspB8 causes growth arrest and apoptosis in melanoma cells
116	Sunesson	PKC $\epsilon$ binds to the intermediate filament peripherin via its C1B domain
117	Talman	Ligands targeted to the C1 domain of PKC inhibit growth of HeLa cells
118	Tanaka	Structural analysis of the cancer-related signaling adaptor protein Crk
119	Tomassetti	The epithelial phenotype contributes to activation of P13K/AKT pathway in ovarian cancer
120	Truempler	Mechanism of calpain-mediated degradation of reversibly oxidized PTP1B
121	Ulsamer	BMP-2 activation of Osterix expression involves upregulation of Dlx5 and its phosphorylation by p38
122	Verbeek	The role of protein kinase C $\gamma$ in spinocerebellar ataxia type 14
123	Wang	Role of protein tyrosine phosphatase receptor type O in B lymphocyte antigen receptor signaling
124	Wu	Structural basis for recruitment of insulin receptor substrate-2 to insulin receptor
125	Khew-Goodall	Regulation of epithelial-mesenchymal transition—From tyrosine phosphatase Pez to microRNAs
126	Xia	Mechanisms of c-Jun downregulation in response to osmotic stress
127	Xue	Thymocytes with an unusual cell cycle status are the origin of PTEN-deficient lymphomas
128	Yalcin	Foxo3 regulates hematopoietic stem cell activity through control of oxidative stress
129	Yang	Ligand-independent phosphorylation of Y845 links mutant EGF receptor signaling to STAT-mediated gene expression
130	Yissachar	Nek7 kinase binds and phosphorylates the cyclin-dependent kinase-activating kinase (CAK) assembly/targeting factor, Mat1
131	Zaremba	Adenoviral E1A oncoproteins interact with Sprouty which leads to the modulation of the receptor tyrosine kinase (RTK) signaling pathway
132	Zeliadt	ERK-dependent regulation of MAP kinase phosphatase-3 in H-ras MCF10A cells

- 133 Zhan Loss of the polarity gene Scribble disrupts 3D epithelial organization and protects apoptosis during oncogenes-induced transformation of 3D organized epithelial cells
- 134 Porras Dual role of p38 $\alpha$ MAPK in the regulation of Rac-1 activity

**Session 7 METABOLIC AND STRESS SIGNALING**

FRIDAY 5/18/2007, 7:30 PM

J. Blenis

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
135	Koromilas	Site-specific tyrosine phosphorylation is required for optimal activation of the eIF2 $\alpha$ kinase PKR and links extracellular signaling to translational control	15
136	Maina	mTOR acts on Mdm2 translation to signal cell survival in vivo	15
137	Djouder	A mitochondria-based URI-PP1 $\gamma$ -dependent mechanism attenuates S6K1 signaling in response to growth factors	15
138	Kietzmann	Glycogen synthase kinase-3 phosphorylates hypoxia-inducible factor-1 $\alpha$ and mediates its VHL-independent ubiquitylation and proteasomal degradation	15
139	Niwa	A novel role of the DFG motif for the recovery phase of Ire1 during the unfolded protein response signaling	15
140	Gaestel	MAPKAP kinases—MKs—Are differentially regulated and contribute to innate immunity, stress response and development	15
141	Engelberg	Constitutively active variants of all p38 isoforms—Mechanism of action and biological activities	15

**Session 8 SIGNALING PATHWAYS IN SURVIVAL AND PROLIFERATION**

SATURDAY 5/19/2007, 9:00 AM

R. Davis

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
142	Davis	Signal transduction by stress-activated MAP kinases	15
143	Janas	Oncogenic tyrosine kinase-induced down-regulation of Dok-1	15
144	Tiganis	DNA replication stalls attenuate PTK pathways to suppress S-phase and mitotic progression	15
145	Bozulich	PKB is activated by DNA-PK in response to double-strand DNA-breaks to regulate survival, proliferation and transcription	15
146	Homma	Inhibition of CK2 activity by adenomatous polyposis coli (APC) protein	15
147	Aguirre-Ghiso	PERK-eIF2 $\alpha$ -mediated inhibition of proliferation during mammary acini morphogenesis results in a tumor suppressive function in vivo	15
148	Ranganathan	Activation of PERK-eIF2 $\alpha$ pathway suppresses malignancy and induces a quiescent phenotype in human epidermoid carcinoma cells	15
149	Gorlach	The serum - and glucocorticoid-regulated kinase-1 induces hypoxia-inducible factor-1 via HDM2	15

**Session 9 MODEL SYSTEMS**

SATURDAY 5/19/2007, 2:00 PM

P.-P. Pandolfi

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
150	Yang	Lineage and stage-specific requirements for Shp-2 in lympho-hematopoiesis	15
151	Den Hertog	Phosphotyrosine signaling in zebrafish gastrulation cell movements—Implications for human Noonan and LEOPARD syndromes	15
152	Stewart	The PTPN11 (SHP2) phosphatase is differentially required for survival of neural crest progenitor cells in a zebrafish model of LEOPARD syndrome	15
153	Stronach	Regulation of Jun kinase signaling in <i>Drosophila</i> by the mixed lineage kinase, Slipper	15
154	Gao	Functional analysis of alternatively spliced disabled-1 isoforms in developing retina	15

**Session 10 RECEPTOR-PROXIMAL SIGNALING II**

SUNDAY 5/20/2007, 9:00 AM

A. Newton

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
155	Newton	Signal termination—PHLPPing the switch in Akt signaling	15
156	Olsen	Cross-talk between EGF and TNF- $\alpha$ signaling pathways analyzed by quantitative phosphoproteomics	15
157	Lito	The role of Sprouty-2 in tumor growth and apoptosis	15
158	Hink	Quantitative analysis of MAPK complexes suggests spatial regulation of Fus3 in yeast pheromone signaling	15
159	Chow	Integration of protein kinases mTOR and ERK5 in regulating nucleocytoplasmic localization of NFATc4	15
160	Lu	Phosphorylation of $\beta$ -catenin by Akt promotes $\beta$ -catenin transcriptional activity	15
161	Graziani	Diacylglycerol kinase- $\alpha$ mediates HGF-induced cell scattering, by regulating Rac membrane targeting and activation	15