

### **Doug Auld**

*Reporter Assays for Diverse Biological Systems*

Educational Course for Chemical Biology and Drug Discovery

Dr. Auld has 17 years of experience in drug discovery. His Ph.D. is from the University of North Carolina Dept. of Chemistry, he completed post-doctoral training at M.I.T. with Prof Paul Schimmel, helped to build the combinatorial chemistry company - Pharmcopeia in Princeton N.J., and was hired by the National Institutes of Health in 2004 to help start the NIH Chemical Genomics Center (NCGC). At NIH he worked on developing the NCGC into a center of scientific excellence which drove the establishment of the National Center for Advancing Translational Sciences (NCATS). He joined NIBR in December of 2010. His lab is intimately involved in basic research into assay design as well as implementing robust assays to drive drug discovery programs.

### **Jonathan Baell**

*The Dangers of Reactive Compounds in HTS*

Educational Course for Chemical Biology and Drug Discovery

Professor Baell is Head of the Australian Translational Medicinal Chemistry Facility and an NHMRC Senior Research Fellow. As a WEHI Laboratory Head for more than a decade, he has now been appointed to Professorial level at MIPS for just over a year. He specializes in adding value to Australian publicly funded research, through improving the quality of HTS libraries, medicinal chemistry hit-to-lead and lead optimization, and computer-aided peptidomimetic design in order to generate compounds with potential therapeutic utility and of value. He has over 26 separate pharmaceutical patents, of which more than half are alive and licensed to a variety of licencees in a variety of disease areas. He has made key contributions to a number of compounds in various stages of development, from preclinical to one currently in phase I clinical trials for anxiolysis, and has consulted widely for the Australian Biotechnology Industry. In 2005 he was awarded the 2004 Biota Medal, a National Award for Excellence in Medicinal Chemistry for an early to mid-career researcher. His 2010 HTS publication on Pan Assay Interference Compounds, or PAINS, and has been most highly cited primary research article in the Journal of Medicinal Chemistry over a 3-year period. In 2011 he formed a medicinal chemistry-based consortium for the discovery of new treatments for human African trypanosomiasis, or Sleeping Sickness, involving six different research organizations from around Australia. His current research interests are focused in the areas of neglected and tropical diseases, small molecule epigenetic modifiers, and HTS library design.

### **Jürgen Bajorath**

*Compound Data Mining in Systems Chemical Biology: Exploring Multi-target Activity Spaces and Compound Promiscuity Patterns*

Session III: Chemical Systems Biology/Chemoinformatics and Modeling

Jürgen Bajorath obtained his diploma and Ph.D. degrees (1988) in biochemistry from the Free University in West-Berlin. He was a postdoc at Biosym Technologies in San Diego. From 1991-2004, he held several appointments in Seattle including positions at the Bristol-Myers Squibb Pharmaceutical Research Institute and the University of Washington. In 2004, he was appointed Full Professor and Chair of Life Science Informatics at the University of Bonn, Germany. He continues to be an Affiliate Professor at the University of Washington. Jürgen has more than 370 scientific publications and is co-inventor on 25 issued patents. He currently serves on 12 editorial and scientific advisory boards and is an editor of the Journal of Medicinal Chemistry. His research focuses on chemoinformatics and the development of computational methods for drug discovery and chemical biology.

### **Paul Bauer**

*Co-Chairperson and Panelist*

Panel Discussion: Industry/Academic/Government Interactions in Drug Discovery

Paul Bauer has a long-standing interest in discovering therapeutics for a variety of disease areas, as well as in utilizing novel technologies and platforms to increase the success and efficiency of lead discovery. Prior to his work at Novartis, he was the Director of Biology at Forma Therapeutics, where he helped build the company's biochemistry and drug discovery platforms and contributed to the successful out-licensing of a pre-clinical candidate. Prior to Forma, Dr. Bauer held a number of roles at Pfizer Inc., including helping found the Pfizer Discovery/Research Technology Center, leading the GPCR and Kinase Gene Family platforms, managing academic collaborations through the Drug Pfunder program, and helping build the RNAi Therapeutic Unit of the Pfizer Biotherapeutics and Bioinnovation Center. Before joining Pfizer, Dr. Bauer was an American Cancer Society Postdoctoral Fellow at Harvard Medical School, where he studied the signal transduction pathways of the polyoma tumor virus. He received a Ph.D. in Pharmacology from the University of Virginia, and a B.A. cum laude in Chemistry from Cornell University.

### **Rathnam Chaguturu**

*Enabling Future Pharma: Drug Repurposing Efforts Go Mainstream*

Panel Discussion: Industry/Academic/Government Interactions in Drug Discovery

Dr. Rathnam Chaguturu is the Senior Director-Exploratory Research, and Deputy Site Head-Center for Advanced Drug Research at SRI International, Harrisonburg, VA. He has more than 30 years of experience in executing projects encompassing the full drug discovery cycle including target validation, chemical library management, HTS, automation, new lead discovery and development and managing hit to lead projects. He joined Rutgers University in 1976 as an Assistant Professor of Biochemistry, and later moved to Dow Chemical Company-Central Research Laboratories as a Project Leader. At Dow, Rathnam instituted the first principles of chemical library screening for new lead discovery, and developed tools for mining in-house chemical archives. Rathnam joined Sierra Sciences as Director of Drug Discovery in 2006 after a 22-year outstanding career at FMC Corporation where he led discovery research efforts focused on ion channel, receptor, enzyme and cell-based targets, and instrumental in designing the industry-first Zymark robotic screening platform for new lead discovery. As a representative of FMC, he was one of the founding members of the Society for Biomolecular Sciences. Dr. Chaguturu has authored over 50 research publications including reviews and book chapters, and holds 11 US patents. He is the Editor-in-Chief of the journal, *Combinatorial Chemistry and High Throughput Screening*, published by Bentham. He serves on the Board of Directors of the International Chemical Biology Society.

### **Huw Davies**

*Impact of New Enabling Technologies from Organic Synthesis on Chemical Biology*

Session I: Cutting Edge Medicinal Chemistry and Tool Compounds

Huw M. L. Davies was born in Aberystwyth, Wales, UK. He received his B. Sc. degree from University College Cardiff, Wales and his Ph.D. degree from the University of East Anglia. After a post-doctoral position at Princeton University, he joined the faculty at Wake Forest University. After being promoted to full professor he moved to the University at Buffalo, the State University of New York where he held the positions of UB Distinguished Professor and Larkin Professor of Organic Chemistry. In 2008 he moved to Emory University as the Asa Griggs Candler Professor of Organic Chemistry. Professor Davies' research emphasizes the development of new enantioselective synthetic methods and their applications in total synthesis and drug discovery. His

program covers design of chiral catalysts, carbenoid chemistry, development of new synthetic methodology, total synthesis of biologically active natural products, and development of chiral therapeutic agents. Many research groups have used his chiral dirhodium catalysts and several of them are commercially available. The impact of his carbenoid chemistry was recently recognized as he was chosen to be the recipient of the 2013 eEROS Reagent of the Year Award. A major current theme of his program is catalytic asymmetric C–H functionalization by means of rhodium-carbenoid induced C–H insertion. He is currently the Director of the NSF Phase II Center for Selective C-H Functionalization, which brings together 23 investigators from 15 universities. Professor Davies is actively involved in the chemical community, having served as the Executive Officer of the 2003 National Organic Symposium, the 2005 Program Chair of the Gordon Conference on Heterocyclic Compounds, the 2005 Chair of the Organic Division of the American Chemical Society, and Co-Organizer of the ACS Organic Division yearly Assistant Professor Symposium at the Fall ACS meeting since 2006. Recent awards include the American Chemical Society Cope Scholar Award (2005), Fellow of the Royal Society of Chemistry (2007), Fellow of the American Chemical Society (2009), and Fellow of the American Association for the Advancement of Science (2012).

### **Hakim Djaballah**

*High Content Screening in Drug Discovery: Changing the HTS Paradigm*  
Educational Course for Chemical Biology and Drug Discovery

Dr. Djaballah is a molecular pharmacologist and technologist. He obtained his BSc (Hons) from the University of Birmingham (England), and his Ph.D. from the University of Leicester (England). He began his career at the RW Johnson Pharmaceutical Research Institute followed by positions of increasing responsibilities at various Pharma and biotech companies. He has a significant industrial experience in preclinical drug discovery up to lead compound proof-of-concept. In 2003, He was recruited to the Memorial Sloan-Kettering Cancer Center to set up and direct the newly established HTS Lab, a drug discovery laboratory involved in both chemical and RNAi screening with impacts on chemical biology and chemogenomics. His group has developed, validated, and screened several targets in oncology, virology, and infectious diseases; with MSK-777, a novel CDC7 inhibitor, as the most advanced compound. His work with Dr. David Abramson led to the re-purposing of digoxin for the treatment of retinoblastoma. He was the recipient of the 2007 Robots and Vision User Recognition Award.

### **Yuhong Du**

*Biochemical Assays: Design, Development, and Case Studies*  
Educational Course for Chemical Biology and Drug Discovery

Yuhong Du, Ph.D., is the Associate Director of Assay Development and HTS at the Emory Chemical Biology Discovery center (ECBDC) and an Assistant Professor of Pharmacology at the Emory University School of Medicine. Dr. Du received her Ph.D. in Pharmacy from the National University of Singapore in 2003. Her Postdoctoral training was carried out in the Department of Pharmacology at Emory University, where she studied molecular mechanisms that control cell survival signaling. In 2008, Dr. Du was promoted to faculty as Assistant Professor. Dr. Du is a founding member of the ECBDC and has directed the design, acquisition, assembly, and operation of the ECBDC's two advanced robotic screening systems to facilitate ultra-high throughput biochemical and image-based phenotypic screening. Dr. Du's expertise includes innovative assay design and HTS/HCS assay development and implementation. She is also actively involved in educational programs on high throughput screening technologies and has chaired scientific sessions on assay development at various national conferences. Currently, Dr. Du oversees the daily operation of the high throughput screening program at Emory.

### **Haian Fu**

#### *Chairperson*

Session X: Global Rising Stars of Chemical Biology

Haian Fu, Ph.D., is a well-recognized global leader in the field of chemical biology and is a co-founder of the ICBS. He is a Professor of Pharmacology, Hematology & Medical Oncology at Emory University, and is the Director of the Emory Chemical Biology Discovery Center. Dr. Fu plays important leadership roles in two major initiatives in chemical biology and cancer genomics in the USA. He serves on the national Steering Committee of the NIH/NCI's Chemical Biology Consortium (CBC) and on the Steering Committee of the NCI Cancer Target Discovery and Development (CTD2) Network. Dr. Fu received his Ph.D. from the University of Wisconsin-Madison in the US and BS from Anhui University in China, carried out his postdoctoral training at Harvard University where he became faculty in 1991, and joined Emory University in 1994. Dr. Fu's research focuses on protein-protein interactions in signal transduction, targeting these interactions for chemical probe discovery, and translating this basic research into clinical applications in collaboration with physician scientists. In his research, high-throughput screening technologies are used to identify small molecule modulators as chemical tools to advance biological understanding and to translate the vast amounts of genomic information into potential therapeutics. His research projects involve collaborations with scientists around the world, including China, Japan, Singapore, and European countries. He is a member of the overseas expert review panel for the Chinese Academy of Sciences. In addition to his more than one hundred original research publications, Dr. Fu edited the widely circulated book "Protein-Protein Interactions" (2004) and the recently published "Chemical Genomics" (2012). The quality and impact of Dr. Fu's research has been recognized by numerous honors from prestigious organizations, including The Pharmaceutical Research and Manufacturers of America (PhRMA) and the Burroughs Wellcome Fund. Currently, Dr. Fu is a GRA Distinguished Investigator and Georgia Cancer Coalition Distinguished Cancer Scholar. Perhaps closest to his heart, Dr. Fu's commitment to mentoring young investigators has been recognized with multiple teaching and mentor awards. Dr. Fu currently serves as the President on the International Chemical Biology Society (ICBS) Board of Directors.

### **Masatoshi Hagiwara**

#### *Chairperson*

Session VII: Role of Kinases in Chemical Genetics

Masatoshi Hagiwara, Ph.D., is an academic leader in chemical biology and the mechanism-driven drug discovery field. Dr. Hagiwara currently serves as Professor and Chair of the Department of Anatomy & Developmental Biology, Graduate School of Medicine, Kyoto University, Japan. He is a founding member of Board of Directors for the ICBS, and is also the current President of the Japanese Society for Chemical Biology. He received his medical degree and Ph.D. from Mie University School of Medicine in Japan. As a postdoctoral fellow at the Salk Institute in Dr. Marc Montminy's laboratory, Dr. Hagiwara made a number of seminal discoveries, including the role of PP-1-mediated dephosphorylation of CREB in transcriptional attenuation following cAMP induction (Cell, 1992) and the identification of CBP as a phosphorylated CREB binding protein (Nature, 1993). In 1993, Dr. Hagiwara returned to Japan and started his laboratory at Nagoya University School of Medicine as an Assistant Professor. He became a Professor in the Medical Research Institute of Tokyo Medical and Dental University, and there he began his work aimed at deciphering the splicing code. Also during this time, he was selected to serve as the Director of Biomedical Science Ph.D. Program (2003-2006) and the General Manager of the Intellectual Property Center (2003-2006). In 2010, Dr. Hagiwara was recruited to Kyoto University to lead the Anatomy and Developmental Biology department. Throughout his career, Dr. Hagiwara has focused on mechanism studies and small molecule modulator discoveries. As a medical student at Mie University School of Medicine, he studied in

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the Department of Pharmacology (chaired by Prof. Hiroyoshi Hidaka) and found that a semisynthetic alkaloid, Vinpocetine, caused vasodilation by inhibiting a specific type of a cyclic nucleotide phosphodiesterase through the same mechanism as Viagra. The chemical was developed as a clinical drug to improve blood circulation in the brain by Takeda Pharmaceutical Company Ltd. His Ph.D. research focused on the mechanism of isoquinolinesulfonamide inhibition of protein kinases. He successfully developed a number of specific kinase inhibitors, such as H-89 (PKA kinase inhibitor), KN62 (CaM kinase inhibitor) and CKI-7 (Casein kinase I inhibitor). One of the compounds, Fasudil (Rho kinase inhibitor), has been developed as a clinical drug for treating subarachnoid hemorrhage. His recent research has led to establishment of splicing reporter systems which allow visualization the tissue-specific and/or developmental stage-specific alternative splicing of pre-mRNAs (Nature Methods 2006, Nature Protoc. 2010). He is developing novel chemical compounds which alter the amounts and patterns of mRNA splice variants to identify new therapeutics for congenital diseases (Nature Commun. 2010 & 2011). Dr. Hagiwara serves on the Board of Directors of the International Chemical Biology Society.

### **Lars G. J. Hammarström**

*The Delicate SAR of Cordyceps as Experimental Therapeutics for Human African Trypanosomiasis*  
Session VIII: Neglected Diseases and Global Health

Dr. Hammarström is a senior scientist in the department of medical biochemistry and biophysics at **Karolinska Institutet** in Stockholm. He obtained his Ph.D. in organic chemistry from Louisiana State University in 2001, studying the application of synthetic amino acids in *de novo* peptide design. After a postdoctoral research fellowship at Roche Bioscience in Palo Alto, he continued his industrial career at the biopharmaceutical company **Biovitrum** in Stockholm, where he was appointed director of medicinal chemistry in 2006. Lars returned to academia in 2010 and was a founder of the **Chemical Biology Consortium Sweden**, a national research infrastructure established with the goal of advancing the development of small molecules in basic biomedical research.

### **Babak Javid**

*A Small Molecule Screen Targetting Mycobacterial Translational Fidelity*  
Session VIII: Neglected Diseases and Global Health

Babak Javid trained as a physician and scientist at Cambridge University, UK. He underwent further research training with Eric Rubin at the Harvard School of Public Health. The main interest of his lab is translational fidelity in mycobacteria, and mycobacterial phenotypic drug resistance. He is currently Professor at Tsinghua University School of Medicine (since 2011), and a visiting Senior Research Fellow at the University of Cambridge Department of Medicine.

### **Koji Kawakami**

*Clinical/Pharmaco Epidemiology and the Drug Development*  
Educational Course for Chemical Biology and Drug Discovery

Koji Kawakami, MD, Ph.D. is Deputy Vice President (Research) and Professor and Chairman, Department of Pharmacoepidemiology, Graduate School of Medicine and Public Health, Kyoto University. After the residency training in head and neck surgery and otorhinolaryngology, Dr. Kawakami served as postdoc and later promoted to clinical trial (IND) reviewer at the Center for Biologics Evaluation and Research (CBER) of the United States Food and Drug Administration (FDA) from 1999-2004. From 2006, Dr. Kawakami moved to Kyoto University Graduate School of Medicine as a Professor of Pharmacoepidemiology, where he is conducting various research

programs focusing on the development, evaluation, and cost effectiveness of drugs, biologics, medical devices, and medical care. He has published more than 95 original articles and 16 review articles in peer-reviewed global scientific journals as of March, 2013. Since October 2010, Prof. Kawakami also serves as a Deputy Vice President for research in Kyoto University.

### **Xin Ku**

*New Affinity Probes for Proteomic Selectivity Profiling of FGFR Inhibitors*

Session VII: Role of Kinases in Chemical Genetics

Xin Ku received her MSc in medicinal chemistry from Shanghai Institute of Materia Medica, Chinese Academy of Sciences in 2010. After that she went to Germany to continue her Ph.D. study with Prof. Bernhard Kuster at Chair of Proteomics and Bioanalytics, Technical University of Munich. Her current research focuses on the development and applications of new chemical probes for selectivity profiling of kinase inhibitors using quantitative mass spectrometry.

### **Tapas Kundu**

*Chromatin Modifications in Neural Differentiation and Memory: Implications of Lysine Acetylation and Arginine Methylation*

Session IX: Chemical Approaches for Translational Sciences

Professor Tapas K. Kundu completed his Ph.D. in the Indian Institute of Science, Bangalore, India. Later on, he was a postdoctoral researcher at the National Institute of Genetics, Japan, and the Rockefeller University, New York. In 1999, he joined the Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, India, where he is a full Professor now. He is not only elucidating the mechanisms of transcription regulation through the epigenetic modifications in humans, but also targeting them to design new generation cancer diagnostics, as well as therapeutics. In brief, he has found transcriptional coactivator, PC4 as a novel non-histone component of chromatin and activator of p53 function. The Nucleolar protein, NPM1 was shown to have RNA polymerase II driven transcriptional coactivation activity which is acetylation and chromatin dependent. Presently, they have linked these function to cancer manifestation. They have elegantly, discovered several small molecule modulators of chromatin modifying enzymes which could serve as excellent molecular probes to understand the functions of these enzymes in vivo and also be useful to design new generation therapeutics. Over the years, he has published several research papers in many international journals. Professor Kundu edited two books, entitled "Chromatin and Disease" and "Epigenetics: Disease and Development", published by Springer press. A few patents on small molecule modulators of chromatin modifying enzymes from the laboratory have been granted and or under process. These also includes several academically important research reagents with potential commercial values, some of which have already been commercialized by renowned companies. He was awarded the prestigious, SSB Prize by CSIR-Govt of India, Sir J C Bose National Fellowship from Department of Science and Technology, Govt. of India and GD Birla Award, 2012, India Innovation Award, 2012 by MERCK Millipore, Ranbaxy Award for basic Research in Medical Sciences and JB Prize 2013, by Japanese Biochemical Society. He is a Fellow of The National Academy of Sciences, India (FNASc), Fellow of Indian Academy of Sciences (FASc), and Fellow of Indian National Science Academy (FNA). He is an Editorial Board Member of the Journal of Biological Chemistry.

### **Pamela Lochhead**

*Studies with a Novel DYRK1B Inhibitor Demonstrate that DYRK1B Phosphorylates Cyclin D1 at Threonine-286, Not Threonine-288, to Promote Its Proteasomal Degradation*

Session VII: Role of Kinases in Chemical Genetics

Pamela A. Lochhead, Ph.D. is a senior research associate with Dr. Simon Cook at the Babraham Institute, Cambridge, UK. The focus of her research is the role and regulation of MAP kinases in disease, with a focus on the lesser studied MAP kinase, extracellular regulated kinase (ERK)5 and the distantly related dual-specificity tyrosine-phosphorylation regulated kinases (DYRKs). She obtained her Ph.D. at the MRC Protein Phosphorylation Unit, University of Dundee in 2002, in the laboratory of Dr. Calum Sutherland, where she studied the hepatic insulin signalling pathway that regulates glucose production. From there she undertook postdoctoral work at the Cancer Research UK Beatson Laboratories in Glasgow with Dr. Vaughn Celghon and Dr. Mike Olson. There she defined the cis-activation mechanism of DYRKs and GSK3 protein kinases, and demonstrated that somatic mutations in Rho-kinase were “drivers” of cancer progression. Her work has contributed to several drug discovery projects at the target validation, biomarker identification, hit-to-lead and lead optimisation stages. Industrial collaborators include AstraZeneca, Cancer Research Technology, Astex Pharmaceuticals, GlaxoSmithKline and The Northern Institute for Cancer Research. She is an Associate Member of the Pharmacology Drug Discovery section of the Faculty of 1000.

### **David Nes**

*Exploring Chemodiversity and Function for Phytosterols*

Session VI: Chemical Biology Outside of Drug Discovery

W. David Nes, born in Bethesda Maryland, and educated at Gettysburg College (BA), Drexel University (MS) and University of Maryland (Ph.D.) is the Paul Whitfield Horn Professor in the Department of Chemistry and Biochemistry, and Director of the Center for Chemical Biology at Texas Tech University. In 1980, he began his career in the ARS-USDA and was promoted to Lead Scientist in 1988. He joined the Chemistry & Biochemistry faculty at Texas Tech University in 1993. He is currently Division Chair of Biochemistry and from 2013 holds a joint appointment in the Department of Immunology and Molecular Microbiology at the Texas Tech University Health Sciences Center. From 2003-2005, he was a Visiting Scientist and Program Director at the National Science Foundation; in 1984 he was a Visiting Professor at Karlsruhe University, Germany, in 2008 a Visiting Professor at the Max Planck Institute for Chemical Ecology, Germany and in 2013 a Visiting Professor at Swansea University, Wales. He has served on federal advisory panels for the NSF and NIH and received several awards. His research broadly in natural products chemistry, mechanistic enzymology and sterol biosynthesis has resulted in 175 publications and 9 books. He has mentored over 60 graduate students, post-doctoral fellows and visiting scientists from around the globe.

### **Hiroyuki Osada**

*Isolation of New Microbial Metabolites for Natural Product Depository (NPDepo)*

Session IV: Global Natural Product Resources: Unique Features, Collaboration Models, and Success Stories

Professor Hiroyuki Osada was born in Fukushima Prefecture, Japan in 1954. He received his BS (1978) and Ph.D. (1983) degrees from the University of Tokyo, Japan. He joined RIKEN as a research scientist (1983) and studied with Stuart Aaronson in NCI, Bethesda, USA as a visiting scientist (1985-86). He is heading the Antibiotics Laboratory and Chemical Biology Department in RIKEN since 1992 and 2008, respectively. He serves as a visiting professor of Saitama University (from 1999), Tokyo Medical Dental University (from 2006), Universiti Sains

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Malaysia (from 2006), and so on. He is also playing important roles as an editorial member, and as an advisory board member to international journals (Cancer Science, Journal of Antibiotics, Oncology Research, ACS Chemical Biology, Chemistry Asian Journal and so on). His current research interests include discovery of novel bioactive compounds, biosynthesis of bioactive microbial metabolites, molecular target identification of bioactive compounds, and development of new methods for chemical biology. Professor Osada is a recipient of the Research Promotion Award from Agricultural Chemical Society of Japan (1991), the Sumiki-Umezawa Memorial Award from Japan Antibiotic Research Association (1996), the Award of the Society for Actinomycetes Japan (2000), the Award of the Minister of Education, Culture, Sports, Science and Technology (2001), the Award of the Bioindustry Association (2007) and the Award of Agricultural Chemical Society of Japan (2009).

### **Seung Bum Park**

*FITGE-Based Target Identification for the Connection of Rational Drug Discovery with Phenotypic Screening*  
Session V: Phenotypic Screening, Target Identification, Associated Novel Technologies

Seung Bum Park was born in Seoul, Korea, in 1970. He received his B.S. in chemistry and M.S. in organic chemistry at Yonsei University (Seoul, Korea). After one and half years of military service in Korean Air Force, he started his graduate study at Texas A&M University and received a Ph.D. in 2001 under the supervision of Prof. Robert F. Standaert. Then, he was appointed as a HHMI Postdoctoral Research Fellow in the Department of Chemistry and Chemical Biology at Harvard University (with Prof. Stuart L. Schreiber). In 2004, he started his independent carrier as an Assistant Professor, and promoted to an Associate Professor with tenure (2008) in Chemistry Department at Seoul National University. He finally promoted to a full professor (2013) and currently serves as a vice chair of Chemistry Department. In 2009, he spent his sabbatical as a visiting Professor at the Scripps Research Institute, San Diego, USA (with Prof. Peter Schultz). His research interests range from Chemical Biology, Diversity-oriented Synthesis, Combinatorial Chemistry, Bioorganic/Organic Chemistry, Medicinal Chemistry, Phenotypic Screening, Target Identification, Fluorescent Bioprobes. He published more than 100 scientific papers / 3 books and filed 25 patents so far. sbpark@snu.ac.kr; Tel (82)2-880-9090: <http://plaza.snu.ac.kr/~sbpark/>

### **Melvin Reichman**

*Chairperson*

Session VI: Chemical Biology Outside of Drug Discovery

Dr. Mel Reichman received his Ph.D. in Neuroscience from the University of Rochester Center for Brain Research. He has held several leadership positions in pharma over his 20-year career in industry. These include: Head, Cellular Pharmacology Laboratory at G.D. Searle; Head, Molecular Pharmacology Laboratory at Berlex Biosciences; Director New Leads Discovery at Ligand Pharmaceuticals; Head, Head of Drug Discovery Operations at Oncogene Science and Director, HTS Project Planning and Management at DuPont Pharma. He has co-authored 28 peer-reviewed publications and has given over 50 invited talks worldwide on all aspects of drug discovery from concept to clinic. He has been an ad-hoc reviewer for many NIH study sections, is an editor of several leading journals and is a scientific advisor in pharmaceutical R&D for startup companies. He joined Lankenau Institute for Medical Research (LIMR) in 2006 as Senior Investigator and founded the LIMR Chemical Genomics Center (LCGC) in 2007, where he serves as President and CSO. Dr. Reichman serves on the Board of Directors of the International Chemical Biology Society.

### **Terry Riss**

*Cell-Based Assays to Detect the Mechanism of Toxicity*

Educational Course for Chemical Biology and Drug Discovery

Dr. Terry Riss started the Cell Biology program at Promega Corporation in 1990 and has held several R&D and Project Management positions. Dr. Riss managed development of cell viability, cytotoxicity, apoptosis, and protease assay systems and also lead efforts to identify and promote multiplexing of cell-based assays to determine the mechanism of cell death. Dr. Riss now serves as Senior Product Specialist, Cell Health involved in outreach educational training activities. Dr. Riss regularly participates in NIH study sections reviewing HTS grants and is co-editor of the cell culture assays section of the Assay Guidance Manual hosted by NIH.

### **Motonari Uesugi**

*Small Molecules for Cell Biology and Cell Therapy*

Session VI: Chemical Biology Outside of Drug Discovery

Motonari Uesugi is a Professor and Deputy Director of The Institute for Integrated Cell-Material Sciences, Kyoto University; Editorial Board Member of Chemistry & Biology (Cell Press) and MedChemComm (Royal Society of Chemistry); Editor of Biochemical Journal (London). After completing postdoctoral training in Harvard Chemistry Department, Dr. Uesugi started his independent career in Baylor College of Medicine, Houston, where he has established an interdisciplinary laboratory in the area of chemical biology. He was tenured in Baylor in 2005, and moved to Kyoto University as a full professor in 2005. He is a recipient of Gold Medal Award, Tokyo TechnoForum 21 (2006), The Pharmaceutical Society of Japan Award for Divisional Scientific Promotions (2011) and German Innovation Award Gottfried Wagener Prize (2011). Dr. Uesugi and his co-workers aim to gain a fundamental understanding of biological events through the study of small molecules.

### **Shudong Wang**

*Targeting Cancer with Small Molecule Kinase Inhibitors*

Session I: Cutting Edge Medicinal Chemistry and Tool Compounds

Professor Shudong Wang is the Chair in Medicinal Chemistry at School of Pharmacy and Medical Sciences, University of South Australia. As Head of the Centre for Drug Discovery and Development at Sansom Institute for Health Research, Professor Wang leads a team of computational & medicinal chemists, biologists and pharmacologists aiming to develop new and effective anti-cancer therapeutics. This involves structure-guided inhibitor design & medicinal chemistry, target-driven pharmacological evaluations and translational research aiming to rapidly convert laboratory discoveries into therapeutic gains for patients. Prior to the current position, Professor Wang was the head of chemistry, and drug discovery program manager in a British Pharmaceutical company (NASDAQGM: CYCC), and then carried out research and teaching at the University of Nottingham, United Kingdom. She has a number of compounds in various stages of development, from preclinical to clinical trials for cancer treatment.

### **James Wells**

*Challenging Targets for Chemical Biologists*

Keynote I

James A. Wells, Ph.D., focuses on development of enabling technologies for engineering proteins and for identifying small molecules to aid in drug discovery for challenging targets such as allosteric regulation and

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protein-protein interactions. He is interested in the discovery and design of small molecules and enzymes that trigger or modulate cellular processes in inflammation and cancer. Using small molecules and engineered proteins, the Wells lab is studying how activation of particular signaling nodes involving protease, kinases, or ubiquitin ligases drives cell biology. The lab has focused much on a set of proteases, known as caspases, responsible for fate determining cellular decisions involved in apoptosis and innate inflammation among others. These enzymes act as cellular remodelers and help us understand the essential protein struts that support life. These targets also provide leads for developing new cancer therapeutics and biomarkers for cancer treatment. Wells is a professor and chair of the Department of Pharmaceutical Chemistry in the UCSF School of Pharmacy. He holds a combined appointment as professor in the Department of Cellular & Molecular Pharmacology in the School of Medicine. He joined UCSF in 2005 as holder of the Harry Wm. and Diana V. Hind Distinguished Professorship in Pharmaceutical Sciences. Wells also founded and directs the Small Molecule Discovery Center (SMDC) located at UCSF's Mission Bay campus. He earned a Ph.D. degree in biochemistry from Washington State University with Professor Ralph Yount in 1979 and completed postdoctoral work at Stanford University School of Medicine with Professor George Stark in 1982. Before joining UCSF, Wells was a founding scientist in Genentech's Protein Engineering Department and in 1998 co-founded Sunesis Pharmaceuticals. Wells is a recipient of the Hans Neurath Award by the Protein Society, the Pfizer Award and Smissman Award given by the American Chemical Society, the Perlman Lecture Award given by the ACS Biotechnology Division, the du Vigneaud Award given by the American Peptide Society, the Merck Award from the ASBMB and in 1999 a member of the National Academy of Sciences.

### **Jiang Wu**

*Chemical Inhibitors of the Histone Acetyltransferase TIP60*

Session I: Cutting Edge Medicinal Chemistry and Tool Compounds

Jiang Wu received his B.S. degree from Lanzhou University of China in 2004, and his M.S. and Ph.D. degrees in organic chemistry from Georgia State University in 2009 and 2011, respectively. At present, he is a lecturer of chemistry department at Lanzhou University. Jiang Wu's research is focused on the understanding of small molecule modulators of histone acetyltransferases Tip60.

### **Kozo Yoneda**

*Novel Protein-protein Interaction Induced by the Marine Natural Product Aplyronine A*

Session IV: Global Natural Product Resources: Unique Features, Collaboration Models, and Success Stories

Kozo Yoneda is currently a Ph.D. student at the Graduate School of Pure and Applied Sciences at the University of Tsukuba studying under the direction of Professor Hideo Kigoshi. Kozo obtained a MSc in Chemistry from the University of Tsukuba in 2013 and his BSc in Chemistry from the University of Tsukuba in 2011.

### **Zhong-Yin Zhang**

*Drugging the Undruggable: Therapeutic Potential of Protein Tyrosine Phosphatases*

Session IX: Chemical Approaches for Translational Sciences

Zhong-Yin Zhang received his undergraduate degree in Chemistry from Nankai University, China, in 1984. He went to Purdue University for graduate school and earned a Ph.D. degree in Biochemistry in 1990. After a brief stint at the Upjohn Company, he completed his postdoctoral training at the University of Michigan. In 1994 he became an Assistant Professor of Molecular Pharmacology and Biochemistry at the Albert Einstein College of Medicine, where he rose to the rank of Professor in 2002. He joined the faculty of Indiana University School of

Biographies received as of October 1, 2013 are presented in alphabetical order by surname.

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Medicine in 2005, where he is Robert A. Harris Professor and Chairman of the Department of Biochemistry and Molecular Biology. Among his awards and honors, Professor Zhang is the recipient of a Chemistry Graduate Program (CGP) Fellow (1985), a Sinsheimer Scholar (1997) and an Irma T. Hirschl Career Scientist (1999). Professor Zhang's research spans the disciplines of chemistry and biology with an emphasis on chemical approaches to protein phosphorylation and dephosphorylation; mechanistic enzymology; molecular recognition; and inhibitor design. Professor Zhang has employed a multidisciplinary approach to investigate protein tyrosine phosphatases (PTP) substrate recognition, regulation, and reaction mechanism. Professor Zhang has also established a unique academic chemical genomic program to carry out high-throughput screening, combinatorial chemistry, and biological evaluation. He is developing small molecule PTP probes that not only serve as powerful tools to elucidate signaling mechanisms but also find use for therapeutic development. He has authored more than 195 publications, and he is an internationally recognized authority in the field of PTPs.

### **Lixin Zhang**

*Chairperson*

Session VIII: Neglected Diseases and Global Health

Prof. Lixin Zhang is a Deputy Director of CAS Key Laboratory of Pathogenic Microbiology & Immunology, Institute of Microbiology, Chinese Academy of Sciences (IMCAS). Before joining IMCAS in 2006, Dr. Zhang worked in 3 pharmaceutical companies in USA: SynerZ, Cetek and Microbia, Inc. He received his Ph.D. degree in Institute of Applied Ecology, CAS and did his postdoc at Emory University, USA. He has published 8 books, more than 120 papers and holds eleven PCT patents. He co-edited a book with Prof. Arnold Demain on natural products in 2005 by Humana Press. He was recognized as an Honorary lifetime member, Sino-American Pharmaceutical Professional Association (SAPA). He has been appointed as an Associate Editor-in-Chief for "Applied Microbiology and Biotechnology", "Frontiers in Synthetic Biology" and on the editorial board of 6 other peer-reviewed journals. The long-term goal of his research is to discover and develop synergistic medicines from marine microbial natural products. His research is focused on: Diversifying marine microbial natural product library; screening for synergistic medicines in a high throughput manner; increasing the production of drugable secondary metabolites from microbial producers by synthetic biology (serve as a chief PI for a 973 program). His Avermectin project won Award for "Excellence to improve science and technologies" and the paper was published in PNAS. He was recognized as an Awardee for National Distinguished Young Scholar Program, China. Dr. Zhang serves on the Board of Directors of the International Chemical Biology Society and a co-chair for 2013 ICBS annual meeting in Kyoto, Japan.