ISN FOREFRONTS SYMPOSIUM 2012
SYSTEMS BIOLOGY AND THE KIDNEY
June 7-10, 2012
Ann Arbor Michigan

For more information
www.isnforefronts.org/annarbor/2012

Sessions will focus on
• Modeling of complex dependencies in biological systems
• Integrating genetic variance with clinical phenotypes
• Integration of omics data sets along the regulatory continuum
• Implementing systems biology in basic and clinical renal research
• Hands-on seminars in “Bioinformatic boot camp”

Organizers
Clemens D. Cohen, Zurich, Switzerland
Mathias Kreidler, Ann Arbor, Michigan
John R. Sedor, Cleveland, Ohio

Advancing Nephrology around the World
Program

Thursday, June 7th
16.30 – 16:45 Welcome and Opening Remarks
18.00 – 19.30 Welcome Reception

Friday, June 8th
09.00 – 10.00 Session I: Integrative Biology: Harnessing genome wide data sets for a holistic understanding of renal disease processes
TBA, Univ. of Michigan: Integrative biology: Lessons to be learned from prostate cancer.
Thomas Werner, Munich, Germany (confirmed): Integrative biology of gene regulation: Re-defining the genome

10.30 – 11.00 Coffee Break in Poster Area

11.00 – 12.00 Session II: Modeling of complex dependencies in biological systems
Olga Troyanskaya, Princeton (confirmed): Defining tissue specific regulatory networks: from worms to nephrons
Allan Attie, Univ. Wisconsin (confirmed): Modeling complex regulatory networks over time: Case study in diabetes, hyperlipidemia and obesity
Kerby Shedden, Statistics, Univ. of Michigan (confirmed): Extracting predictors of clinical behavior from complex data sets: lesions learned in oncology and nephrology
Ravi Iyengar, Mount Sinai Medical School, NY (confirmed): Modeling molecular behavior on a subcellular level

12.00 – 13.30 Networking Lunch & Poster Viewing

13.30 – 15.00 Session III: Integrating genetic variance with clinical phenotypes
Steve Rich (confirmed), Univ. Virginia: The NHLBI Large Scale DNA sequencing project: Emerging opportunities for nephrology
Caroline Fox (confirmed): Genetic risk for CKD: Linking CKDgene to the phenotype
Sudha Iyengar, Case Western, Cleveland (confirmed) / Carl Langfeld, Wake Forest (tentatively confirmed): SLEGENE and FIND: Diabetic Nephropathy and Lupus Nephritis: two case studies to link genetic variance with renal disease
Olivier Devuyst, Univ. Zurich (confirmed): Genetic screening in rare renal diseases in 2012
Andrey Shaw, U. Wash, St. Louis (confirmed): Capturing the podocyte: high throughput platform for candidate exome sequencing.
15.00 – 15.30 Coffee Break in Poster Area

15.30 – 18.00 Session IV: Integration of -omics data sets along the regulatory continuum
Katalin Susztak, Univ. Penn (confirmed): Genome wide analysis of epigenetics of diabetic nephropathy
Masaomi Nangaku, Univ. Tokyo (confirmed): Epigenetic modulation of renal ischemic response
Clemens Cohen, Univ. Zurich (confirmed): Transcriptional network analysis of renal disease
John (Cijang) He, Mount Sinai Medical School, NY (confirmed): Defining the drivers of renal fibrosis on a network level
Rainer Oberbauer/Gerd Mayer, Vienna, Austria: CDK network definition in Syskid.
Finian Martin, Univ. College Dublin (confirmed): Modeling regulatory elements in diabetic nephropathy
Official Dinner (in Palmer Commons)

**Saturday, June 9th**
09.00 – 9:30: Gonzalo Abecasis (confirmed) Uni. of Michigan: The 1000 Genome Project:
  What defines variance in humans and what impact does variance have on our lives.

9:30-10.30 **Session V: Implementing systems biology in your renal research: the first step is easier than you think**
Barbara Mirel, School of Information, Univ. Michigan (confirmed): Dismanteling the tower of Bable: How to make bioinformatician and renal researcher understand each other
Matthias Kretzler, Univ. Michigan (confirmed): Bridging the gap in renal translational research: bringing large scale data sets into the renal research labs
Jim Cavalcoli, CCMB, Univ. Michigan (confirmed): Introduction to web based systems biology tools: just a mouse click away.

10.30 – 15.00 **Session VI and VII combined with lunch break:**
**Break out session I and II**
Using online tools for large scale data mining; Hands on tutorials in computer labs
(40 dry labs slots (Computer work stations), each 2-3 participants):
- NCBI resources (including Nephromine)
- NCBC resource tool sets
- Industry resources

15.00 – 15.30 Coffee Break in Poster Area

15.30 – 18.00 **Session VIII: Integration of large-scale data sets across species and tissues**
Eva Feldman and Frank Brosius, Univ. Michigan (confirmed): Diabetic endorgan damage:
  Lessons learned between nephrons and neurons
Tom Tuschl, Rockefeller, NY (confirmed): Role of miRNA in renal cell lineage definition.
Rama Natarajan, UCLA (confirmed): miRNA’s in Diabetic Nephropathy
Sub Pennathur, Univ. Michigan (confirmed): Using transcriptomics to identify targets for focused metabolomics
Kumar Sharma, UCSD (confirmed): Metabolomics of diabetic nephropathy in mouse and man
Tom Coffman, Duke (confirmed): Recapitulating genetic variance in the mouse: first lesions learned

**Sunday, June 10th**
09.00 – 10.30 **Session IX: Bringing systems biology to the clinic**
TBA: Harnessing the clinical data warehouses for translational research
TBA: Extracting knowledge from free text clinical case records
John Sedor, Case Western, Cleveland (confirmed): Integrating molecular markers in clinical decision analysis

10.30 – 11.00 Coffee Break in Poster Area
11.00 – 12.30 Session X: Translation
Nicholas Steneck, U Mlch (invited): Brave new world: do we really want to know all this?
   Ethical and social impacts of genomic research in nephrology
Round Table Industry:
   Re-connecting to the source: strategies to bridge the gap between academic target identification and drug development, the industry perspective.
Round Table Funding Agencies: NIDDK/EU FP/JDRF:
   The public, genomics, and renal research: perspective of funding agency towards ‘big’ science in renal genomics.

12.30 – 13.00 Closing Remarks