forefronts
IN NEPHROLOGY

IgAN

MGN

SLE

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

Sessions will focus on
- Modelling 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"

Co-Chairs
Clemens D. Cohen, Zurich, Switzerland
Matthias Kretzler, Ann Arbor, Michigan
John R. Sedor, Cleveland, Ohio

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

Advancing Nephrology around the World

ISN
INTERNATIONAL SOCIETY OF NEPHROLOGY
1960

Program

Thursday, June 7th
16.30 – 16:45 Welcome and Opening Remarks
16.45 – 18.00 Opening Plenary Lecture: E. Schadt (confirmed): Integrating multiscalar data sets in complex human disease.
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[2]**
Nicholas Steneck, U MIch (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