ReBuilding a Kidney

December 2019 Scientific Meeting Agenda

Starts: Tuesday, Dec 10 at **2:00 PM** Eastern
Ends: Thursday, Dec 12 at **2:30 PM** EDT (4pm for EEP).
Location: **Bolger Center** in Potomac, Maryland.
9600 Newbridge Dr, Potomac, MD 20854

Latest version

NIH/NIDDK	**EEP**	**Guests**
Danny Gossett	Dale Abrahamson,	Michael Burgio, *Dept of Veterans Affairs*
Deborah Hoshizaki	*UKMC*	Richard Conroy, *NIH/OD*
Chris Ketchum	Moshe Levi,	Zorina Galis, *NIH/NHLBI*
Christine Maric-Bilkan	*Georgetown*	Blue Lake, *UCSD*
Ryan Morris	Thomas Peterson,	Venkat Malladi, *UTSW*
Anna Sadusky	*United Therapeutics*	Ryuji Morizane, *MGH*
Ivonne Schulman	Kaiming Ye,	Kimberlee Potter, *Dept of Veterans Affairs*
Robert Star	*Binghamton University*	Venkata Sabbisetti, *BWH*
		Dan Shiwarski, *Carnegie Mellon*

Except where noted, the meeting is held in the Franklin Building, Rooms F18 & 19

Tuesday, December 10th	
1:00 pm to 2:00 pm	*Poster presenters set up in **Franklin Building, Room F21***
2:00 pm to 3:00 pm	**Around the room introductions**
	NIDDK Welcome *(Star or Hoshizaki)*
	Showcase the RBK data (comprehensive datasets) and resources including publications *(Valerius/Kesselman)*
	Provide a vision on how the THM in pubs and the RBK data facilitate the goals of RBK (*Drummond*)
3:30 pm to 5:00 pm	**Poster session** (**Franklin Building, Room F21)** Cash bar and appetizers *(Dinner is on your own)*

Wednesday, December 11th	
6:00 am to 8:15 am	Breakfast in Cafeteria ***(Osgood Building)***
8:15 am to 8:45 am	**Introduction and Perspectives from NIDDK** *(Star or Hoshizaki)* Meeting goals and deliverables (*Valerius*) Confidentiality announcements (*Kesselmen*)
8:45am to 10:15 am	Group Discussion: **Technical discussion on Omics approaches** Moderator: Todd Valerius - *Explain why a technical discussion is important and what we want at the end of the discussion (5 min)* Panel members: Blue Lake, Andy Ransick, Ben Humphreys, Parker Wilson, Sanjay Jain, Melissa Little, Junhyong Kim
10:15 am to 10:30 am	**Break**
10:30 am to 12:50 pm	Project Presentations: **Transcriptomics** *(12 min presentation, 8 min discussion)* Moderator: Parker Wilson **Defining what is there –** Baseline transcriptomics of developing and adult kidney and kidney organoids "Defining endothelial cells and their location" *(Ondine Cleaver)* "Patterning of the developing interstitium" *(Tom Carroll)* "Transcriptional profiling of stem-cell derived distal nephron and collecting duct" *(Melissa Little)* Moderator: Monica Change-Panesso **Defining what is there** - Transcriptomics of injured/disease kidneys from biopsies or injury models transcriptomics "FoxM1 drives proximal tubule proliferation during repair from acute ischemic kidney injury" *(Monica Chang-Panesso, Humphreys lab)* "Identifying Mechanisms of Renal Repair through Single Nucleus RNA Sequencing" *(Andy Ransick, McMahon lab)* "Proximal Tubule Translational Profiling during Kidney Fibrosis Reveals Proinflammatory and lncRNA Expression Patterns with Sexual Dimorphism" (*Haojia Wu, Humphreys lab*)
12:50 pm to 1:50 pm	**Lunch *(Osgood Cafeteria)***

Wednesday, December 11th - Continued	
1:50 pm to 3:30 pm	Project Presentations: **A beneficial brew: Generation, expansion, maturation and engraftment of kidney cell types for building kidney parts** *(12 min presentation, 8 min discussion)* Moderator: Mitzy Cowdin "Stem cell-derived kidney epithelial cells and podocytes - an update" *(Oliver Wessely)* "Glomerular regeneration - glomerular parietal epithelial cells can transdifferentiate toward the adult podocyte fate" *(Stuart Shankland)* "Cell signaling in new nephron formation during zebrafish kidney regeneration" *(Iain Drummond)* "Detecting organoids in vivo" *(Leif Oxburgh)* "Optimisation of transplantable stem cell-derived kidney tissue." *(Melissa Little)*
3:30 pm to 3:50 pm	**Break**
3:50 pm to 5:50 pm	Project Presentations: **Organoids as a tool** - What have we learned from and about organoids (structure and function)? What are the practical uses or organoids for rebuilding a kidney? What systems are they an appropriate model for? (e.g. development, disease, replacement) *(12 min presentation, 8 min discussion)* Moderator: Alicia Fessler "Understanding podocyte and proximal tubule patterning and disease." (*Melissa Little*) "Kidney Organoids for Disease Modeling" *(Ryuji Morizane)* "Organoid physiology update" *(Tom Kleyman)* "Functional mapping of the maturing organoid" *(Lisa Satlin)* "Patterning of nephron segments in organoids" *(Kyle McCracken, Bonventre/Lee/Lewis lab)* "Modeling a DAMP mediated injury response in human kidney organoids" *(Aneta Przepiorski, Hukriede/Davidson lab)*
7:00 pm	Group Dinner: **Grilled Oyster Company** 7943 Tuckerman Lane, Potomac, MD. Cabin John Village

Thursday, Dec 12th	
6:00 am to 8:30 am	**Breakfast in Cafeteria *(Osgood Building)***
8:30 am to 10:10 am	Project presentations: **Bioengineering approaches to creating kidney tissues** - Placing new nephrons into useful devices/contexts, engineering medicine *(12 min presentation, 8 min discussion)* Moderator: Haojia Wu "Ex vivo vascularization of kidney organoids and 3D tissues" *(Jennifer Lewis)* "Pluripotent-derived cell engraftment into scaffold structures" *(Jason Wertheim)* "Bioengineering approaches to kidney tissue engineering" *(Sophia Szymkowiak, Kaplan lab)* "Bioengineering vascular systems" *(Ondine Cleaver)*
10:10 am to 10:30 am	**Break**
10:30 am to 11:10 am	Project presentations: **Metabolomics and Growth Factor Engineering** *(12 min presentation, 8 min discussion)* "Metabolic datasets and trends across human kidney organoid development" *(Jason Wertheim)* "New growth factor targeting approaches" *(Michael White, Hubbell Lab)*
11:10 am to 12:00 pm	**Update on the RBK Data Hub** *(Valerius/Kesselman)* Topics include: F.A.I.R. principles adherence, data/resource availability, user experience improvements, scRNAseq interactive tool.
12:00 pm to 1:00 pm	**Lunch in Cafeteria *(Osgood Building)***
1:00 pm to 2:00 pm	**Drafts from writing groups** - completion timeline (e.g. submission due dates): Repair and regeneration *(Naved and Drummond)* and Device Engineering *(Lewis)*
2:00 pm to 2:30 pm	**Summing it all up** *(Iain Drummond)* – Present agreed upon submission dates for consortium publications from group.
2:30 pm	**Adjourn main meeting**
2:30 pm to 4:00 pm	**External Experts Panel (EEP) Meeting** *(NIDDK and EEP members)*