

Neuroscience in Urology Think Tank: Meeting Summary

The *Neuroscience in Urology Think Tank*, sponsored by the NIDDK, was held in Bethesda from 19-21 May 2019, bringing together experts across several disciplines to discuss strategies for enhancing neuroscience research in the urinary system. Presentations on the intersection between neuroscience and urology were complemented by presentations from investigators with expertise in brain and behavior, as well as neural control of the gastrointestinal and respiratory systems. Highlighted concepts also included interactions between the nervous system, immune cells, glia and epithelia. A session focused on cutting edge technologies that are advancing areas across neuroscience provided participants with the opportunity to learn strategies for analysis of neural circuits regulating the urinary system.

At the outset the specific goals of the meeting were to:

- Facilitate new collaborations between experts in neuroscience and urology.
- Identify concepts and technical advances well established in other areas of neuroscience and neurology that can be used to manipulate peripheral and CNS circuits relevant to urogenital function.
- Expand the scope of input to understanding urological conditions by involving experts in diverse domains of neuroscience expertise, including behavioral neuroscience, developmental neurobiology, systems neuroscience, neurovascular regulation, neural regeneration and neuroimmunology.
- Developing a scientific roadmap for the future of neuro-urology research over the next 5-10 years, including identification of major gaps and opportunities.

Group discussions included diverse participants ranging from trainees at multiple levels to established investigators and world-renowned plenary speakers. These discussions identified several activities that participants agreed would promote future neuroscience research in urology:

- Facilitate research to better understand the neurological contributors to urological conditions by promoting interdisciplinary teams, encouraging better understanding of the normal cellular, molecular and physiological aspects of the urinary system, and supporting development of new animal models to enable studies of lower urinary tract in normal and disease states.
- Leverage support for longitudinal patient collections through community engagement, patient outreach, telemedicine, and social media groups.
- Building infrastructure for biospecimens and deep phenotyping including imaging and EMG data with an emphasis on identifying cohorts with rare urological conditions.
- Establishment of a communication platform to increase community awareness of resources available for neuroscience in urology research, such as a technology page (listing standardized assays, tools available, protocols, current databases, and data visualization tools).
- Continuation of a NeuroUrology Think Tank meeting, to build upon the momentum achieved in May. It was preferred that the meeting would continue as a standalone meeting, however the value of supporting a dedicated symposium or a satellite day alongside larger venues like the SFN or SBUR was also acknowledged. It was further

suggested to continue to waive registration for this meeting, especially to facilitate trainee participation and interaction with experts in other areas of neuroscience.

Overall the meeting was met with great enthusiasm and a hope that the momentum will enable the development of a high-quality scientific roadmap for the future of neuroscience research in urology.

Meeting Organizers: Drs Janet Keast (University of Melbourne), Michelle Southard-Smith (Vanderbilt University), Sanjay Jain (Washington University in St Louis)