

NTP 900 - Monday Seminar dates – 2021-22

You'll also find these details for each week in the Canvas course here: (LINK TBD)

Fall 2021:

Sep. 13—Faculty Research Presentation “title” – Dr. Andre Sousa, Assistant Professor, Dept. of Neuroscience

Sep. 20—Student Research Presentation – “title” – Korri Burnett (Halloran)

Sept. 27—Student Research Presentation – “title” – Lowell Thompson (Rosenberg)

Oct. 4—Faculty Research Presentation – “title” - Dr. Katie Drerup, Assistant Professor, Dept. of Integrative Biology

Subgroup 301: Efficient coding of natural environments

Faculty Leader: Xin Huang NOTE: Subgroup will meet virtually

About half a century ago, Horace Barlow (1961) hypothesized that the spikes generated by neurons in the sensory system formed a neural code for efficiently representing sensory information and that the neural code minimized the number of spikes needed to transmit a given signal. Conceivably, if signals in natural environments follow certain statistical regularities, an efficient coding system should best represent signals that happen more frequently and also reduce redundancy in the sensory input. In more recent years, exciting progress has been made in testing the hypothesis of efficient coding using approaches of statistical modeling, neural computation, and sensory neurophysiology. The results have further shed light on the function of the sensory system given ecological constraints. In this subgroup, we will draw examples from the visual and auditory system to discuss some of the theoretical ideas, computational models, and neurophysiological experiments that are centered on efficient coding.

Oct. 11— Subgroup 301 – Presentation #1

Oct. 18— Subgroup 301 – Presentation #2

Oct. 25 – Subgroup 301 – Presentation #3

Subgroup 302: Molecular and cellular pathology of retinal disease

Faculty Leaders: Colleen McDowell and Freya Mowat

Student TA leaders: Emma Geiduschek and one other (TBD soon)

The retina is the innermost, light-sensitive layer of tissue of the eye. The optics of the eye create a focused two-dimensional image of the visual world on the retina, which translates that image into electrical neural impulses to the brain to create visual perception. The retina has 10 distinct layers which can be grouped into 4 main processing stages: photoreception; transmission to bipolar cells; transmission to ganglion cells; and transmission along the optic nerve. Damage to any of the cells types in the retina can lead to disease and loss of vision. This subgroup will explore molecular and cellular pathology of retina ganglion cell death in glaucoma as well as mitochondrial damage on macular function in aging and disease.

Nov 1— Subgroup 302 – Presentation #1

Nov 8— Subgroup 302 – Presentation #2

Nov 15 – NO Seminar – SfN meeting

Nov 22 – Subgroup 302 – Presentation #3

Subgroup 303: Developing Immunotherapy for Brain Tumors From Bedside to Bench and Back Again: The full cycle of Clinical Translational Research

Faculty Leader: Mahua Dey

Student TA leader: Jack Shireman

A significant portion of NIH directed funding is devoted to the study of basic science mechanisms with the understanding that they will be translated into the next generation of therapies for societies most challenging illnesses. This subgroup will examine highly translational research that seamlessly blends the boundaries between

basic science and clinical medicine in the area of immunotherapy as it relates to one of the hardest to treat cancers: malignant brain tumor. A particular emphasis will be placed on understanding clinical findings that inspired the fundamental basic science hypotheses which then directly led to clinical trials in order to give students an idea of the processes involved in conducting true translational clinical science.

Nov 29— Subgroup 303 – Presentation #1

Dec 6— Subgroup 303 – Presentation #2

Dec 13 – Subgroup 303 – Presentation #3

Spring 2021:

Student Research Presentations: Claire Erikson, Will Mayner, Olivia Surgent, Akshay Kohli

January 31: Student Research Presentation 1

February 7: Student Research Presentation 2

February 14: Student Research Presentation 3

February 21: Student Research Presentation 4

Subgroup 301: Still under construction! Topic will be either basal ganglia or prodromal neurodegenerative diseases

Faculty Leader: Jane Paulsen

Subgroup 302: Still under construction! Topic will be Great Papers with a specific focus

Faculty Leader: TBD

February 28 – Subgroup Presentation 1

March 7 - Subgroup Presentation 2

March 15 – NO SUBGROUP – SPRING BREAK

March 21 – Subgroup Presentation 3

March 28 - Subgroup Presentation 1

April 4 - Subgroup Presentation 2

April 11 – Subgroup Presentation 3

Subgroup 303: Dates will be used for other speakers (Faculty, Diversity, etc.)

April 18 - Subgroup Presentation 1

April 25 - Subgroup Presentation 2

May 2 - Subgroup Presentation 3