



Announcements

- Research Seminar
 - October 11th 7-10pm
 - SAC Ballroom A
 - Interest form on our website: you.stonybrook.edu/neuroscienceaxis
- Biology department website
- Research Workshop meeting
 - September 28th 7-8pm
 - SAC 312
 - Join email list now or on our website!

Neuroscience of Movement



Basic Concepts of Motor Control

1. Fine motor control requires internal feedback (proprioception)
2. Motor control is organized hierarchically and in parallel
 - a. Outgoing motor commands: Cortical → subcortical → brainstem → spinal cord
3. Motor programs can be created and modified through response chunking and shifting hierarchy

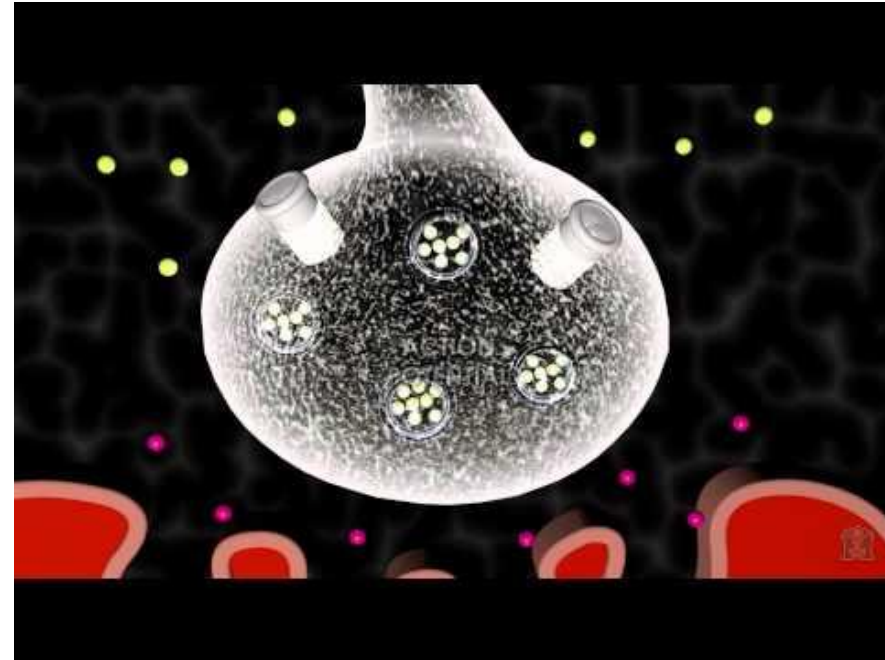


Muscle Physiology

Motor unit = one motor neuron + muscle fiber bundle

At the neuromuscular junction:

- Motor neuron fires and releases ACh into the synapse
- ACh triggers a cascade of calcium ions to be released
- Calcium ions trigger the contraction of skeletal muscle





Physical Therapy

- Treatment of disease, injury or deformity using techniques such as massage, heat treatment or exercise
- Many different subspecialties, such as:
 - Cardiovascular and Pulmonary
 - Clinical Electrophysiology
 - Geriatrics
 - Orthopaedics
 - Pediatrics
 - Sports
 - Women's Health
 - Neurologic



Neurological Disorders treated by PTs

- Stroke
- Sciatica
- Neuropathy
- Impingement
- Fibromyalgia
- Radiculopathy
- Cerebral Palsy
- Herniated discs
- Spinal Cord Injury
- Multiple Sclerosis
- Parkinson's Disease
- Traumatic Brain Injury

Join SBU PRE-Physical Therapy CLUB !!

Wednesdays (biweekly) @ 8:30 PM

Health Science Center

Level 2

PT Lab B

Meeting Schedule for the semester:

9/13 – Pre-Requisites (classes and requirements for DPT school)

9/27 – PTCAS (application site) and Observation Hours

10/11 – Cadaver Lab

10/25 – Mock Interviews with DPT staff

11/8 – Activity and Q&A with 2nd year DPT students

11/29 – Activity and Q&A with 3rd year DPT students

Facebook: <https://www.facebook.com/groups/sbupreptclub/>

Instagram: [@sbu_preptclub](https://www.instagram.com/sbu_preptclub)

Email: preptclubsbu@gmail.com

Stony Brook Pre-Physical Therapy Club

Wednesdays (bi-weekly) at 8:30 pm

Health Sciences Center Level 2 PT lab B

Occupational Therapy

- Uses assessment and intervention to help recover, maintain, and develop meaningful activities of individuals, groups or communities
- Many different specialties, such as Neurology, Psychiatry, Critical Care, or Pediatrics





Stony Brook Pre-Occupational Therapy Society

Facebook: [Stony Brook University Pre-Occupational Therapy Society](#)



Demonstrations

Hallway: Electromyography

Front stage: Human to Human interface

Left side: Occupational Therapy

Right side: Physical Therapy



**Join us next week for an intro into
Computational Neuroscience!**