

UNIVERSITY COUNCIL MEETING

October 19, 2015

3:00 p.m.

1045 Pamplin Hall

AGENDA

1. Adoption of Agenda Dr. Jack Finney

2. Announcement of approval and posting of minutes of October 5, 2015 Dr. Jack Finney

These minutes have been voted on electronically and will be posted on the University web.

3. Announcement of acceptance and posting of Commission Minutes Dr. Jack Finney

These minutes have been accepted for filing by electronic vote and will be posted on the University web. Note that the purpose of voting on Commission minutes is to accept them for filing. University Council By-laws require that policy items be brought forward in resolution form for University Council action.

Commission on Graduate Studies and Policies
September 16, 2015

4. New Business Dr. Jack Finney

Commission on Graduate Studies and Policies Dr. Gena Chandler-Smith
Resolution CGSP 2015-16A
& Commission on Undergraduate Studies and Policies
Resolution CUSP 2015-16D
Resolution for the Establishment of a School of Neuroscience at Virginia Tech

Presentation Dr. Lay Nam Chang
Establishment of a School of Neuroscience at Virginia Tech

Commission on Faculty Affairs Dr. Montasir Abbas
Resolution 2015-16A
Resolution for Tenure Appointments in the College of Science for Faculty in the School of Neuroscience

5. Adjournment Dr. Jack Finney

University Council Minutes
October 19, 2015
3:00 PM
1045 Pamplin Hall

Present: Jack Finney (presiding) for Thanassis Rikakis, John Lesko for Richard Benson, Lay Nam Chang, David Moore for Dennis Dean, Karen DePauw, Guru Ghosh, Susan Sumner for Alan Grant, Dale Pike for Scott Midkiff, Kim O'Rourke, Joe Edens for Patricia Perillo, Savita Sharma for Dwight Shelton, Elizabeth Spiller, Robert Sumichrast, Andrew Tevington, Tom Tillar, Tyler Walters, Sherwood Wilson, Thomas Olson for Paul Winistorfer, John Ferris for Montasir Abbas, Jan Helge Bøhn, Gena Chandler-Smith, Saul Halfon, Edward Lener, Bonnie Alberts for Alex Parrish, Ross Verbrugge for Susan Volkmar, Randolph Wynne, Debbie Smith for Susan Anderson, Richard Ashley, Robert Bush, Corinne Noirot, Tom Fox, Tom Inzana, Paul Herr, Joan Hirt, Ana Agud, Judy Alford, Lynn Short, Sue Teel, Sally Wieringa, Brett Besag, Raifu Durodoye, Kyrille Goldbeck DeBose, Tara Shockley, Matthew Chan, Stephen Hensell, Olivia Javornik, Andrew O'Sullivan, Warren Nooger, Robbie Ashton for Tanushri Shankar, Danny Strock, Rami Dalloul, Mohammed Seyam

Absent: Tim Sands (with notice), Cyril Clarke (with notice), Jack Davis, Charles Phlegar, Jacquelyn Fisher, Jennifer Nardine, Joe Merola (with notice), Anita Puckett, Susanna Rinehart, Christopher Beattie, Kathrine Carter (with notice), David Dillard (with notice), Nathan King, Stacey Poertner (with notice), Tom Tucker (with notice), Marwa Abdel Latif, Alphonso Garrett, Michael Martin (with notice), Homero Murzi (with notice), Tara Reel, Dan Cook (with notice), Morgan Sykes

Guests: Rachel Gabriele, Gary Long, April Myers, Ellen Plummer, Rick Sparks, David Travis

Dr. Finney called the meeting to order at 3:00 p.m. A quorum was present.

1. Adoption of Agenda

A motion was made and seconded to adopt the agenda. The motion carried.

2. Announcement of approval and posting of minutes of October 5, 2015

Dr. Finney noted that these minutes have been voted on electronically and can be publicly accessed on the Governance Information System on the Web (<http://www.governance.vt.edu>).

3. Announcement of Approval and Posting of Commission Minutes

These minutes have been voted on electronically and will be posted on the University web (<http://www.governance.vt.edu>). Note that the purpose of voting on Commission minutes is to accept them for filing. University Council By-laws require that policy items be brought forward in resolution form for University Council action.

- Commission on Graduate Studies and Policies
September 16, 2015

4. New Business

Commission on Graduate Studies and Policies

Resolution CGSP 2015-16A

& Commission on Undergraduate Studies and Policies

Resolution CUSP 2015-16D

Resolution to for the Establishment of a School of Neuroscience at Virginia Tech

Dr. Gena Chandler-Smith presented the resolution for first reading and then called on Dr. Lay Nam Chang to give a presentation (attached) on the School of Neuroscience.

Commission on Faculty Affairs

Resolution CFA 2015-16A

Resolution for Tenure Appointments in the College of Science for Faculty in the School of Neuroscience.


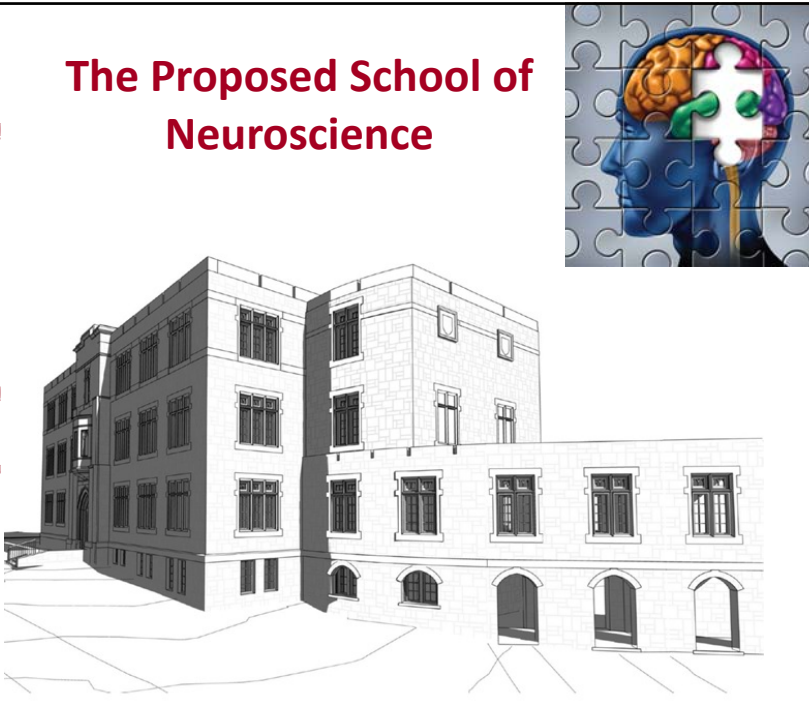
On behalf of Dr. Abbas, Dr. Jack Finney presented the resolution for first reading. New faculty are currently being recruited for the proposed School of Neuroscience. These faculty members are individuals who would typically be recruited by either a school of medicine or an existing school of neuroscience and view themselves as interdisciplinary investigators or researchers who do not identify in a traditional sense to departments of biology, psychology, economics, etc. A request was made by Dr. Harald Sontheimer to begin recruiting tenured and tenure-track faculty for the School of Neuroscience in the current year before the school is officially in existence. These positions will be held temporarily in the College of Science until such time that the School of Neuroscience is formally recognized. There will be one committee formed that will approve faculty appointments. Dr. Finney indicated that these faculty members will report to Dr. Harald Sontheimer as the proposed school director, who in turn will report to the Dean of the College of Science. The committee will mostly review annual evaluations because promotion and tenure is not typically done within the first two years of anyone's appointment. The expectation is for faculty who come in on the tenure track to establish excellence here at Virginia Tech. If a faculty member is to be hired with tenure, then the committee will handle the evaluation and recommendation for tenure, Dr. Harald Sontheimer and Dean Chang will write letters of support. The recommendation and letters will be forwarded to the Executive Vice President and Provost and the President for approval. A question was raised as to the number of committee members. The resolution indicates five but there will be an additional tenured Neuroscience committee member in the second year. A suggestion was made to amend the sixth whereas clause to state "...five or six individuals drawn from cognizant programs with the college..." The resolution will be edited for the second reading.

5. Adjournment

There being no further business, a motion was made to adjourn the meeting at 3:40 p.m.

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The Proposed School of Neuroscience




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What is Neuroscience?

The scientific study of Brain-Mind & Behavior

- **Broad, interdisciplinary**
- **Attempts to explain complex behavior at a genetic, molecular, cellular and systems level**
- **Evolved from neurology and biology as independent discipline**
- **One of the “hot” emerging majors with tremendous student interest**





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What draws students to Neuroscience?





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Neuroscience Subdisciplines

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- Genetic Neuroscience
- Molecular Neuroscience
- Cellular Neuroscience
- Neurophysiology
- Systems Neuroscience
- Developmental Neuroscience
- Cognitive Neuroscience
- Clinical Neuroscience
- Behavioral Neuroscience
- Social Neuroscience
- Neuroeconomics
- Neuroethology
- Neuro-Law
- The Artistic Brain
- Computational Neuroscience
- Neuro-Robotics





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Careers Paths of Neuroscience Students

Pre-Health Major (Med/Dentistry/Vet/PA/Optomety)

- Physician, Dentist, Veterinarian, Physicians Assistant


Pre-Lifesciences Major (Graduate studies)

- Graduate Faculty, Federal Research National Institutes of Health (NIH)/Centers for Disease Control and Prevention (CDC), Biotech, Big Pharma, Sales & Product Support


Pre-Professional Major (A broad range of professions)

- Law, Business, Finance, Architecture, Marketing, Art, Science Policy, Educational Leadership

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


Why a “School of Neuroscience”?

- Captures the interdisciplinary nature of Neuroscience and prevents “siloeing”
- Communicates to students and faculty that Virginia Tech is making this a major emphasis area
- Positions VT-Neuroscience to be a **Destination Program**
- Support the “One Health Mission” of Virginia Tech, Virginia Tech Carilion Research Institute (VTCRI), Veterinary Medicine and Carilion Clinic
- Tremendous potential economic impact for Virginia Tech and the Commonwealth

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Direct Economic Impact

- **Additional 800-1000 students**
=> \$4M/year additional tuition revenue
- **30 additional faculty at Virginia Tech & VTCRI**
=> \$20 M/year grant expenditures
- **Institutional & individual training grants**
- **Joint large grant initiatives with engineering, computer science, Veterinary Medicine, Carilion Clinic**
- **Access to federal funding streams where Virginia Tech is not currently receiving its market share (NINDS, NIMH, NIDA, NSF, DOD)**

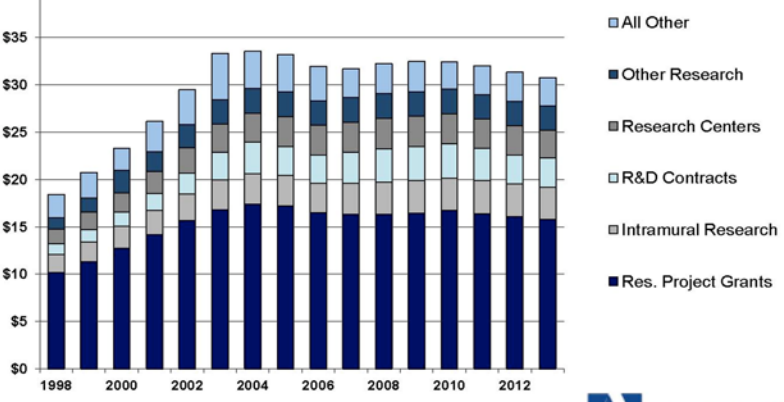





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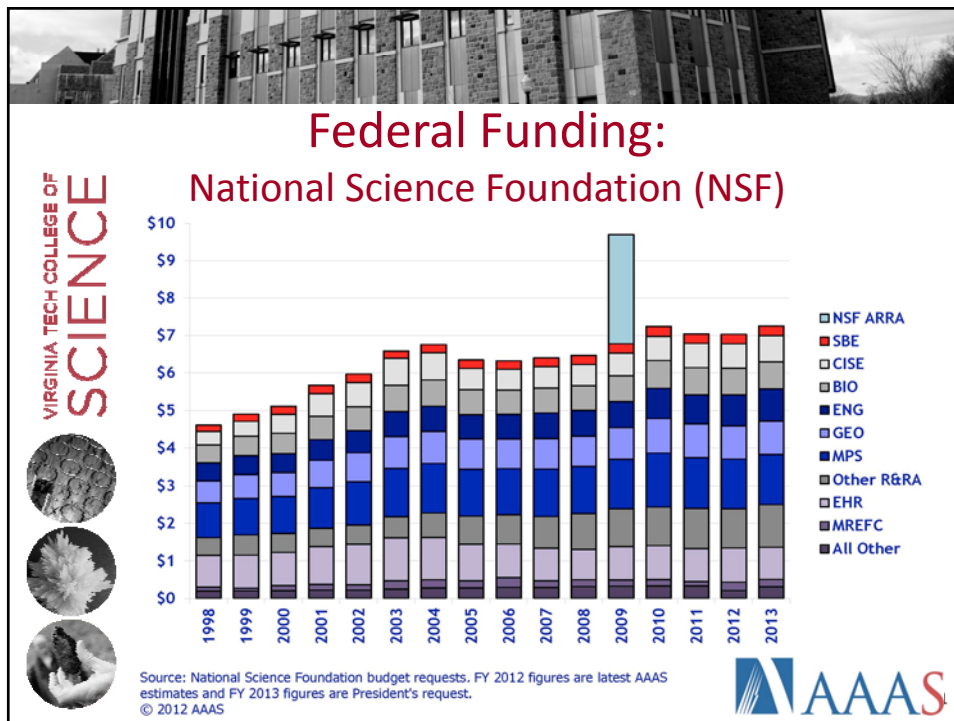
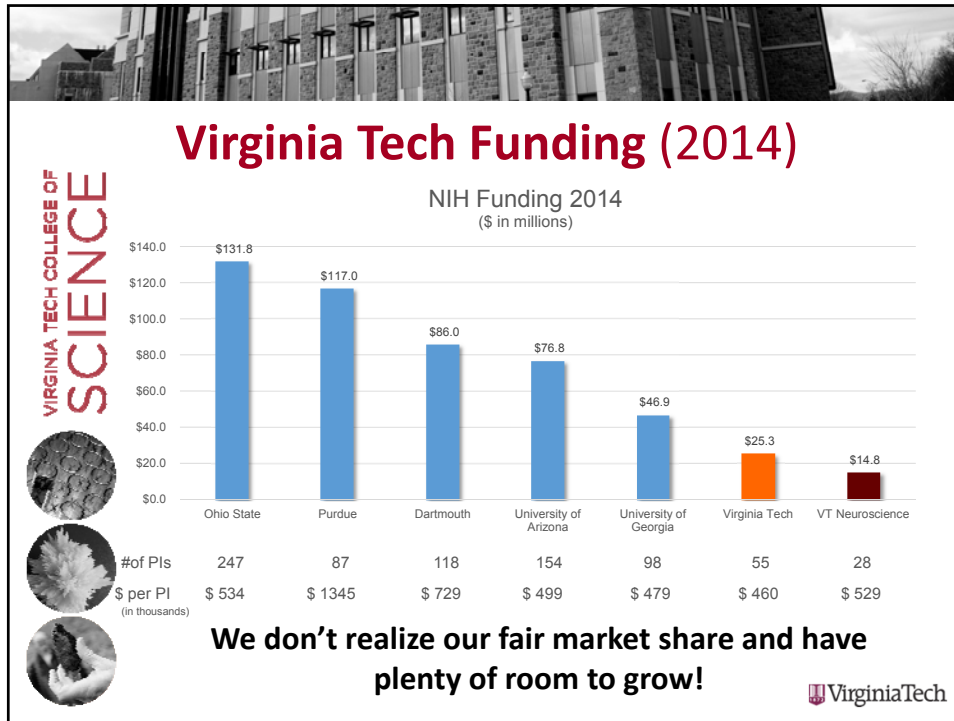





Federal Funding: National Institutes of Health (NIH)





Source: AAAS Report: Research and Development series and agency budget documents. FY 2012 and FY 2013 figures are latest estimates. © 2012 AAAS









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NSF - 2016 Appropriations Bill

- \$146.9M in total funding for neuroscience, an increase of \$40.5M above the FY15 level
- Virginia Tech is uniquely positioned to take advantage of funding requests for neuro-engineering projects such as brain machine interfaces, neuro-robotics and smart prostheses





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Ensures that we compete for marquee programs





THE WHITE HOUSE IS ANNOUNCING
OVER \$300 MILLION IN PUBLIC AND PRIVATE INVESTMENTS
IN SUPPORT OF THE BRAIN INITIATIVE



BRAIN RESEARCH THROUGH ADVANCING
INNOVATIVE NEUROTECHNOLOGIES

Since President Obama announced the **BRAIN Initiative** in April 2013, dozens of leading technology firms, academic institutions, scientists and other key contributors to the field of neuroscience have answered his call and made significant commitments to advancing the Initiative.



FEDERAL COMMITMENTS

PROMISE CELLS

NIH
NATIONAL INSTITUTES OF HEALTH

NIH is announcing \$46 million in new BRAIN-related grant awards, focusing on new tools and techniques

DARPA
DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

DARPA is building on four existing programs and is planning new investments in the BRAIN Initiative, with the ultimate goal of relieving and rehabilitating our fighters and civilians suffering from traumatic injury and neuro-psychiatric illness

NSF
NATIONAL SCIENCE FOUNDATION

NSF is continuing to make investments to support BRAIN Initiative by accelerating fundamental research and the development of new technologies for neuroscience and neuroengineering

FDA
FOOD AND DRUG ADMINISTRATION

FDA is joining the BRAIN Initiative, with the goal to increase the transparency of the regulatory landscape for neurological medical devices

IARPA
INTELLIGENCE ADVANCED RESEARCH PROJECTS ACTIVITY

IARPA is joining the BRAIN Initiative and will use multidisciplinary approaches to advance understanding of cognition and computation in the brain



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Return on investment (annual)

1. Tuition: \$4-6M
2. Grants: \$20M
3. Contracts: \$10M
4. Licensures
5. Startup Companies




NOW IS THE TIME TO INVEST IN BRAIN RESEARCH

POSSIBLE LONG-TERM OUTCOMES


The BRAIN Initiative has the potential to do for neuroscience what the Human Genome Project did for genomics by supporting the development and application of innovative technologies that can create a dynamic understanding of brain function. It aims to help researchers uncover the mysteries of brain disorders, such as Alzheimer's and Parkinson's diseases, depression, Post-Traumatic Stress Disorder (PTSD), and traumatic brain injury (TBI).

DENTATE GYRUS

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Indirect impact

- Supports the growth of Virginia Tech Carilion Research Institute and Carilion Clinic
- Move towards one campus
- Expanding entrepreneurship opportunities
- Strengthens Virginia Tech's role in Virginia's Brain State Initiative
- Growth of additional graduate programs in NS related fields, neuro-robotics, neuroeconomics, neuro-medicine
- Increase research impact/publications and thereby school ranking
- Community outreach/raising awareness

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Current status of Neuroscience

- Degree approved for fall 2015
- Already 178 students enrolled
- Core curriculum in place
- A growing list of electives in place
- New electives rolling out in 2016
- 61 faculty members affiliated
- 15 additional faculty members to be hired over the next 3 years, with 5 new hires in 2015/2016

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NEW Neuroscience courses in 2016

Some will be offered as "Special Study" in the coming semesters





- NEUR 4034 Diseases of the nervous system
- NEUR 3144 Mechanisms of learning and memory
- NEUR 4984 Neuroeconomics
- NEUR 3464 Neuroscience and society
- NEUR 3XXX Molecular basis for addiction
- NEUR 3XXX Neuroimmunology
- NEUR 3XXX Neurogenetics
- NEUR 4544 Synaptic structure and function
- NEUR 4964 Neuroscience capstone experience



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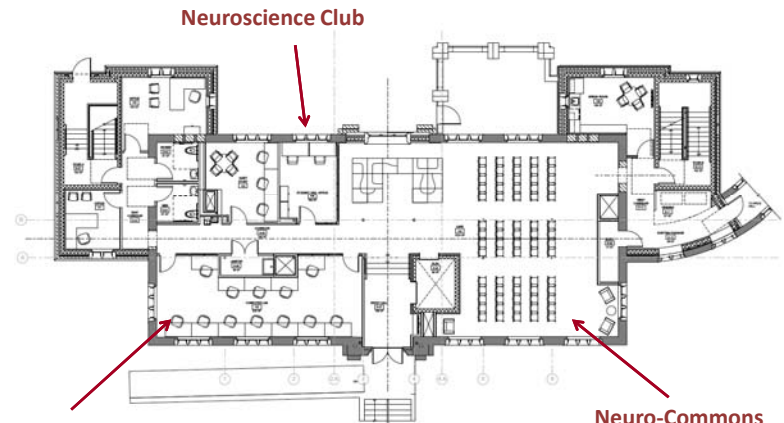
Future of Neuroscience at Virginia Tech

- School of Neuroscience => 2016
- Additional majors including a B.A.
- A minor will be added (2017)
- Master's/Ph.D. pathways planned (2017/18)
- New location: Sandy Hall (2017)

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Sandy Hall, School of Neuroscience




Neuroscience Club


Computer Lab

Neuro-Commons
TED talks



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Neuroscience Q & A

