1. **Adoption of Agenda**
   Dr. Cyril Clarke

2. **Announcement of approval and posting of minutes of February 5, 2018**
   Dr. Cyril Clarke

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

3. **Old Business**
   Dr. Cyril Clarke

   **Commission on Staff Policies and Affairs**
   Resolution CSPA 2017-18B
   Resolution to Change Authority to Manage the Staff Career Achievement Award
   
   **Commission on Undergraduate Studies and Policies**
   Resolution UC 2017-18D
   Resolution to Approve New Degree, Bachelor of Arts in Science, Technology, and Society

   **Commission on Undergraduate Studies and Policies**
   Resolution UC 2017-18E
   Resolution to Approve New Degree, Bachelor of Science in Science, Technology, and Society

4. **New Business**
   Dr. Cyril Clarke

   **University Council**
   Resolution UC 2017-18B
   Resolution to Approve the Virginia Tech Carilion School of Medicine (MD) Degree Program

5. **Announcement of acceptance and posting of Commission Minutes**
   Dr. Cyril Clarke

   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 Administrative and Professional Faculty Affairs**
   January 10, 2018

   **Commission on Faculty Affairs**
   January 19, 2018

   **Commission on Graduate Studies and Policies**
   January 17, 2018

6. **For Information Only**
   Dr. Cyril Clarke

   Minutes of the University Advisory Council on Strategic Budgeting and Planning
   January 18, 2018

7. **Presentation**
   Ms. Jeri Baker

   Update on Parking and Transportation
8. Adjournment

Dr. Cyril Clarke
University Council Minutes  
February 5, 2018  
3:00 PM  
1045 Pamplin Hall


**Absent:** Rosemary Blieszner, Michael Friedlander, Guru Ghosh, Steve McKnight, Menah Pratt-Clarke, Lisa Wilkes, Eric Kaufman (with notice), Anita Puckett, Tom Inzana (with notice), Chris Lawrence, Mary Marchant (with notice), Yan Jiao (with notice), LaTawnya Burleson (with notice), Brian Huddleston, Jeannie Layton-Dudding, Ginae Seabron, Christine Tyson, Michele Waters Adwoa Baah-Dwomoh, Andre Stevenson, Julia Billingsley, Prateek Mishra, Avalon Roche, Peter Shaw, Brett Netto (with notice), & Hans Robinson

**Guests:** Lori Buchanan, D’Elia Chandler, Jack Finney, Rachel Holloway, Rachel Gabriel, & Rick Sparks

Dr. Sands 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 December 4, 2017**

Dr. Sands 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](http://www.governance.vt.edu)).

3. **Commission Chair Reports**

Dr. Sands asked the Commission chairs to present briefly their goals for the academic year.

1. Commission on Administrative and Professional Faculty Affairs – Ms. Janice Austin, Chair
   a. Reviewing the Telework Agreement Policy with Human Resources
   b. Increasing CAPFA visibility and awareness through shared governance
   c. Planning a university wide A/P faculty outreach project

2. Commission on Equal Opportunity and Diversity – Dr. Deyu Hu, Chair
   a. Membership training
      • University governance structure and procedure
      • COACHE survey results
      • LGBTQ+ Climate Survey Results
b. Subcommittee Projects
   • Diversity in Academic Mission:
     o Workshop and event series on white supremacy
   • Human Resource
     o Building inclusive Human Resources programs and services
     o Campus physical accessibility
     o On-boarding
     o Anti-discrimination statement review
   • Governance and Recognition
     o Principles of Community Award
     o Resolution on the definition of a caucus
     o Resolution to revise CEOD membership

c. Extension and outreach
   • Identify entry points to other diversity groups and university units and establish partnerships with them
   • Collaborate with and support other commissions on resolutions
     o CGSP – resolution to incorporate an inclusion and diversity education component into graduate education
     o COR – resolution to clarify Faculty Handbook language on research faculty promotion process
     o COR – resolution to clarify Faculty Handbook language on overload compensations for research
     o CUS & CEOD – resolution to update membership of Campus Development Committee

3. Commission on Faculty Affairs – Dr. John Ferris, Chair
   a. Discussing numerous questions concerning the Promotion and Tenure process
   b. Discussing equity in access to large-scale facilities and research proposals
   c. Discussing faculty morale, recruiting, and retention
   d. Discussing retiree health benefits for tenured faculty with the Employee Benefits Committee
   e. Discussing expectations and assessment of faculty
   f. Discussing open access policy

4. Commission on Graduate Studies and Policies – Dr. Kevin Edgar, Chair
   a. Complete and communicate the anti-academic bullying initiative
   b. Re-envisioning PhD including digital portfolio
   c. Enhancing the Virginia Tech lab safety culture
   d. Discussing diversity training requirement for graduate students
   e. Purchased anti-plagiarism software and will begin planning the rollout

5. Commission on Outreach and International Affairs – Dr. Jan Helge Bøhn, Chair
   a. Aiming to place an emphasis on elevating the importance of international advancement within the Virginia Tech community. This is paramount to building a global brand in all three of the COIA’s mission areas of learning, discovery, and engagement.
6. Commission on Research – Dr. Jen Irish, Chair
   a. Drafting an Open Access Policy
   b. Revision to Policy 13005, Center and University Institutes
   c. Updates to Faculty Handbook sections regarding research faculty (three resolutions)
      - Clarification of overload compensation related to teaching
      - Clarification of research faculty promotion
      - Search requirements and removal processes
   d. Continuing work through the Committee on Research Competitiveness

7. Commission on Staff Policies and Affairs – Ms. Tammie Smith, Chair
   a. Resolution giving Human Resources the authority to oversee the process for the Career Staff Achievement Award
   b. Discussions regarding changes to the winter closing policy
   c. Discussing having an area on the staff yearly evaluations to encourages and honors those who participate in shared governance

8. Commission on Student Affairs – Mr. Chris Saunders, Chair
   a. Creating a committee to address mental health and mental health resources awareness
   b. Reviewing the structure and mission of the CSA

9. Commission on Undergraduate Studies and Policies – Dr. Dean Stauffer, Chair
   a. The Academic Policy Committee will investigate if academic policies are needed in the following:
      - Undergraduate Teaching Assistants- how they are interacting with departments, faculty members, and within the classroom
      - Reviewing a readmission policy for undergraduates
      - Reviewing of the W grade policy

10. Commission on University Support – Dr. Richard Ashley, Chair
    a. Discussing the process of submitting forms online
    b. Reviewing a resolution to change the name, charge, and membership of the Computing and Communications Resources Committee

4. Old Business

University Council
Resolution UC 2017-18A
Resolution to Amend the University Council By-Laws as Recommended by the Governance Task Force
(Includes Governance Task Force Report as requested by CSA Resolution 2015-16B and CFA Resolution 2015-16D)

Mr. Robert Sebek presented the resolution for second reading and made a motion to approve. The motion was seconded. Ms. Kim O'Rourke made a motion to amend the resolution to change the language in sections B and C. The amendment to the language in section B will add “...or upon receipt of a resolution from a committee or a college.” to the following sentence, “All Commissions shall consult with the four formal constituent groups at the beginning of and during the process of developing resolutions or upon receipt of a resolution from a committee or college.” The amendment in section C will replace the language “Each
respective constituent group shall send its recommendation to the Commission upon conclusion of its next regularly scheduled meeting, but in all cases within four weeks…” with the following language, “Each respective constituent group shall send its recommendation to the Commission upon conclusion of the constituent group’s first meeting subsequent to receipt of the resolution, but in all cases within four weeks…” The motion for the amendment was seconded. A vote was taken on the amendment and the motion passed. A vote was then taken on the resolution as amended, and the motion passed.

5. **New Business**

**Commission on Staff Policies and Affairs**  
Resolution CSPA 2017-18B  
Resolution to Change Authority to Manage the Staff Career Achievement Award

Ms. Tammie Smith presented this resolution for first reading. Currently there is a limit to only five awards per year. This resolution will give Human Resources the ability to manage the awards, which will allow for more than five awards. Ms. Smith indicated that there will be a be it further resolved clause added to read “Be it further resolved that any changes to the selection criteria will still be at the discretion of the Board of Visitors.”

**Commission on Undergraduate Studies and Policies**  
Resolution CUSP 2017-18D  
Resolution to Approve New Degree, Bachelor of Arts in Science, Technology, and Society  
Resolution CUSP 2017-18E  
Resolution to Approve New Degree, Bachelor of Science in Science, Technology, and Society

Dr. Dean Stauffer presented the resolutions for first reading. Science, technology, and society is a growing interdisciplinary and cross-disciplinary field that brings together social sciences, humanities, and technology. These new degrees will support the VT-shaped student, and there is currently no undergraduate degree at Virginia Tech. There is a common core for both degrees. The Bachelor of Arts degree focuses on humanistic social science perspectives in science and technology. The Bachelor of Science degree focuses on technical literacy in science and technology at an advanced undergraduate level.

6. **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 Administrative and Professional Faculty Affairs**  
  November 17, 2017

- **Commission on Graduate Studies and Policies**  
  November 15, 2017  
  December 6, 2017

- **Commission on Outreach and International Affairs**  
  November 16, 2017  
  December 14, 2017
• Commission on Research  
  November 8, 2017 

• Commission on Undergraduate Studies and Policies  
  November 6, 2017  
  November 27, 2017  
  December 11, 2017 

7. **Announcement of Posting of Governance Task Force Final Report**  
   November 3, 2017 

8. **Presentation** 
   Dr. Scott Midkiff gave a presentation (attached) on information technology initiatives. 

9. **For Information Only** 
   Minutes of the University Advisory Council on Strategic Budgeting and Planning  
   November 16, 2017 

10. **Adjournment** 
   There being no further business, a motion was made to adjourn the meeting at 4:00 p.m.
Division of 
Information Technology

University Council
February 5, 2018

Scott F. Midkiff
Vice President for IT & CIO
midkiff@vt.edu
https://it.vt.edu
Agenda

- About the Division of Information Technology
- **Selected highlights**
  - Teaching and Learning
  - Research
  - Operations and Administration
  - User Experience
- Proposed governance change
The mission of Virginia Tech’s Information Technology (IT) organization is to serve the university community and the citizens of the Commonwealth of Virginia by applying and integrating information resources to:

- Enhance and support instruction, teaching and learning;
- Participate in, support and enhance research;
- Foster outreach, develop partnerships with communities and promote the capabilities of advanced networking and communications; and
- Provide, secure, and maintain systems allowing the university to accomplish its missions.
Supporting the mission of the university

- Pillar 1: Enabling networked learning in the networked university
- Pillar 2: Providing competitive advantage through sustainable advanced cyberinfrastructure and collaboration
- Pillar 3: Leveraging information technology to distinguish the Virginia Tech experience
- Pillar 4: Advancing information technology for enterprise effectiveness

Positioning IT for the future

- Pillar 5: Ensuring the security and resilience of information technology resources
- Pillar 6: Improving communication with customers and partners
- Pillar 7: Strengthening the information technology organization
Division of IT Organization (1/3)
Division of IT Organization (2/3)

- **Administration & Planning (A&P):** Provides communications, facilities, financial management, IT purchasing, personnel services, and project management for the Division of IT and the university (under the Deputy CIO and Chief of Staff)

- **Advanced Research Computing (ARC):** Provides services and support for high-performance computing, large-scale storage, and advanced visualization for the university’s research community

- **Collaborative Computing Solutions (CCS):** Supports customer-focused services and infrastructure for collaboration tools, Microsoft technologies, and use of public cloud

- **Enterprise Systems (ES):** Provides enterprise-level services to the university including Ellucian Banner and application information systems, information warehousing and business intelligence, document management systems, database administration, application administration and integration, and web content administration and hosting

- **IT Experience & Engagement (ITE²):** Serves as the “front door” for user support, coordinates user support activities across the Division of IT and beyond, and collaborates across the Division of IT to assess and improve user experience

- **IT Security Office (ITSO):** Provides tools and services, awareness, and guidance to help university units, faculty, staff, and students achieve a safe and secure IT environment for teaching, learning, research, outreach, and the conduct of university business (The associated IT Security Laboratory conducts and supports research and education in cybersecurity and provides students with experiential learning opportunities.)
Division of IT Organization (3/3)

- **Network Infrastructure & Services (Ni&S):** Provides network infrastructure for the university including wireless, Ethernet, voice services, high-data rate research connectivity, campus backbone, and wide-area networking; operates the university data center including enterprise, high-performance computing, and storage systems; collaboratively provides safety and security services; and leads special initiatives including a cellular distributed antenna system.

- **Secure Identity Services (SIS):** Supports the university’s online identity management and authentication processes and services to enable secure access to information resources and systems.

- **Technology-enhanced Learning & Online Strategies (TLOS):** Works with programs and faculty to design effective learning experiences; provides training to enhance faculty digital fluency; explores innovation in teaching and learning using technology; and supports innovative physical and virtual learning environments for traditional, distance, and hybrid courses.

- **Virginia Cyber Range:** Collaborates with Virginia universities, community colleges, and K-12 schools to make the Commonwealth of Virginia a national resource for cybersecurity education by operating a virtual environment for experiential learning, maintaining a repository of teaching resources, and building a community of practice in cybersecurity education.

- **Office of the Vice President for Information Technology:** Leads the Division of IT and collaborates across the university and beyond to grow and transform the institution through technology; and provides specific support for the university’s technology architecture, technology futures, IT policy, and engagement.
Teaching and Learning Repositioned InnovationSpace

1140 Torgersen Hall

Strengthens TLOS’s Focus on Building Faculty Digital Fluency

Expands User Experience and Design Thinking Offerings

Student Fellows Partner with Faculty on “Sandbox Projects”

Provides Venue for Collaboration and Faculty Media Needs

Updated Grant Programs Help Faculty Explore New Technologies

Consolidates Student-Facing Media Services in Newman Library

Strengthens TLOS’s Focus on Building Faculty Digital Fluency

Expands User Experience and Design Thinking Offerings

Student Fellows Partner with Faculty on “Sandbox Projects”

Provides Venue for Collaboration and Faculty Media Needs

Updated Grant Programs Help Faculty Explore New Technologies

Consolidates Student-Facing Media Services in Newman Library
Teaching and Learning
Video for Instruction

Current Usage (Annual)

>150,000 attendees/students
>160 courses recorded

>40,000 meetings
>3.6 million minutes of content

Planning & Implementation

- Video for Instruction Working Group Formed
- Testing of Software & Hardware Options
- RFP
- Product Comparisons & Pilot
- Purchase Decision & Contract Negotiations
- Implementation & Stakeholder Communication
- New Platforms Enter Production
- Refine Self-Service Video Solutions

- Replace Expiring Contracts for WebEx & Echo360
- Allow for Asset Management & Data Collection
- Provide Upgraded Video Services for All Users

2016

Spring 2017

Fall 2017

Nov.- Dec. 2017

Dec. 2017 - Jan. 2018

Jan.- May 2018

May 2018

Summer 2018 & Beyond

Analysis of Needs & Report

Current Contracts Expire June 2018

Deepen Integration with Canvas and Other VT systems

Deepen Integration with Canvas and Other VT systems

Deepen Integration with Canvas and Other VT systems

Deepen Integration with Canvas and Other VT systems
Teaching and Learning
Virginia Cyber Range

Courseware Repository
Courses, modules, and exercises for use in Virginia high school, community college, and university cybersecurity curricula

Exercise Area
Isolated network environments where students can safely complete hands-on cybersecurity exercises and competitions

Community of Purpose
Encouraging a community of cybersecurity educators to share best practices and improve cyber education in Virginia

- 85 Virginia Cyber Range courses supported this year
  - 55 courses at 40 Virginia high schools
  - 17 courses at 6 community colleges
  - 13 courses at 7 universities
- Over 500 student and instructor accounts
- Executive committee partners: Virginia NSA Centers of Academic Excellence in Cybersecurity Education
  - Danville CC
  - George Mason University
  - James Madison University
  - Longwood University
  - Lord Fairfax CC
  - Norfolk State
  - Northern Virginia CC
  - Radford University
  - Thomas Nelson CC
  - Tidewater CC
Research
Advanced Research Computing

- Open access to high-performance computing systems and storage
  - BlueRidge
  - NewRiver
  - DragonsTooth
  - Cascades
  - Huckleberry

- Investment Computing Program
  - Joint investment for priority access for participating researchers

Huckleberry cluster for deep machine learning
Research
Research Security and Compliance

- Security and compliance are increasingly important for all of our data, but research data is on the front edge
- IT and Research are collaborating to address the full scope of compliance needs for data associated with sponsored programs and non-sponsored research
- The Division of IT can provide:
  - Security and data compliance consultation
  - Security reviews
  - Compliant environments as solutions
VT-RNet provides 10-Gbps network connections to dramatically reduce times for large data transfers

- 21 connections in 10 buildings to date
- Request for proposal process used to select locations
- Funded through an NSF grant (Award 1541338) plus Division of IT
Virginia universities collaborate for competitive advantages for research

Shared cyberinfrastructure resources and expertise
- Statewide network partnership with MBC
- Private optical networks
- Research Computing Technical Committee

Research and Education Exchanges in DC and Atlanta
- Access to Internet2, national and international research networks
- Direct peering with content and cloud service providers
- Low-cost commodity services
Operations and Administration
Banner 9 Transition: Administrative Pages
Operations and Administration
Banner 9 Transition: Web Applications

- Employee Self-Service
- Finance Self-Service
- Ethos Analytics for Student
- Faculty Grading Tool
Operations and Administration
Blackbaud (Advancement)
Operations and Administration
Summit Research Administration System
OneCampus (onecampus.vt.edu)

Service Catalog (4help.vt.edu)
User Experience
Service partnerships

- Service partnerships provide a more seamless support experience for users
- ServiceNow enables coordination between local IT support and enterprise (Division of IT) support

Participants to date
- College of Agriculture and Life Sciences
- President’s Office (BAMS)
- Graduate School
- Libraries
- Mining and Materials Engineering
- College of Veterinary Medicine
- Office of Assessment and Evaluation
- Office of the Vice President for Research and Innovation
- Pamplin College of Business
- Office of the Provost
- VTC School of Medicine
User Experience

Two-factor authentication
User Experience
Outdoor Wi-Fi
Proposed IT Services & Systems Committee

- The Computing and Communications Resources Committee has been dormant for many years, being replaced by several advisory committees for the Division of IT
- Proposed to be replace by the IT Services and Systems Committee
  - Reports to Commission on University Support
  - Four themes, each with a subcommittee:
    1) Teaching and learning;
    2) Research computing and research support
    3) Administrative systems and business intelligence
    4) Network infrastructure, IT services, identity and access management, security and user support
WHEREAS, in 2011 the Board of Visitors (the Board) authorized the establishment of the Staff Career Achievement Award to recognize retiring staff members who have distinguished themselves through their exemplary performance over a long period of time; and

WHEREAS, the award program approved by the Board specified that up to five exemplary staff retirees could be recognized each year; and

WHEREAS, the number of staff retirees has increased and the number of nominations has increased since the program’s inception; and

WHEREAS, the Staff Career Achievement Award Selection Committee, as well as the Staff Senate and Commission on Staff Affairs and Policies, has recommended that the university expand the number of award recipients to ensure distinguished staff can be recognized; and

WHEREAS, the Division of Human Resources oversees the award program nomination and selection process and fully supports expanding the number of award recipients in year’s where there are more than five exemplary retired staff; and

WHEREAS, the university recommends no changes to the nomination criteria (Nominees must have served a minimum of ten years at Virginia Tech and have a history of outstanding performance in their position.).

NOW, THEREFORE, BE IT RESOLVED, that the Board delegate authority to manage Staff Career Achievement Award nomination and selection process to the Vice President for Human Resources; and

BE IT FURTHER RESOLVED, that any changes to the selection criteria will still be at the discretion of the Board of Visitors.
WHEREAS, emerging science and technology present new and unanticipated social, political, and ethical consequences; and

WHEREAS, Science, Technology, and Society (STS) is a growing interdisciplinary field that brings together conceptual and methodological frameworks from the social sciences and humanities to develop ways of understanding and intervening in the relationship of science and technology to society; and

WHEREAS, public and private organizations increasingly require management, communication, marketing, and research personnel who have a thorough knowledge of the social and ethical dimensions of emerging science and technology; and

WHEREAS, there is currently no undergraduate degree in Science, Technology, and Society offered at institutions of higher education in Virginia; and

WHEREAS, the Bachelor of Arts in STS embodies the elements of the “VT-shaped Individual,” with depth in the specialized concepts and frameworks of STS, transdisciplinary skills, and problem-driven, experiential learning; and

WHEREAS, the Department of Science, Technology, and Society at Virginia Tech is a leading department in graduate instruction and research in the field and already offers a range of undergraduate courses, providing about two thousand credit hours of undergraduate instruction per year;

THEREFORE BE IT RESOLVED that the Bachelor of Arts in Science, Technology, and Society be approved effective Spring 2019 and the proposal forwarded to the President, the Board of Visitors, and the State Council of Higher Education for Virginia (SCHEV) for approval.
March 20, 2017

To: CLAHS Undergraduate Curriculum Committee
From: Daniel Breslau, Chair, Department of Science and Technology in Society
Re: Proposal for new undergraduate degree

On behalf of the STS Department, I approve of the Department’s proposal for a new undergraduate degree, with Bachelor of Arts and Bachelor of Science options. Initiation of the program will not require additional department resources.
Virginia Tech Degree Proposal
Bachelor of Arts/Bachelor of Science in Science, Technology, and Society
(CIP: 30.1501)
Type of degree action: New

Program Description

The Department of Science, Technology, and Society is proposing a new Undergraduate Degree Program in Science, Technology, and Society. The program will offer both a Bachelor of Arts and a Bachelor of Science. The program anticipates admitting its first students in spring of 2019, and will begin awarding degrees in 2021.

The field of Science, Technology, and Society studies the relationship of science and technology to their social, political, and cultural contexts. It examines the ways that the development of technologies and the course of scientific research are shaped by their social settings, and in turn, the ways that scientific and technological developments impact society.

As an interdisciplinary field, Science, Technology, and Society draws from the social sciences and humanities, particularly from Anthropology, Sociology, History, and Philosophy. The field has also developed its own concepts and frameworks, which have proven particularly revealing in the study of the social dimensions of technical fields. Central concerns of the field include the politics of expertise, public deliberation on science and technology policy, the social consequences of molecular biology and associated technologies, innovation as a social process, information technologies and social change.

In addition to advancing knowledge of this subject area, the field of STS has a strong tradition of practical involvement in the interface between society and the technical fields of science and technology. STS scholars and practitioners work with scientists and engineers to incorporate a greater awareness of the social and ethical consequences of their work into their professional work itself. And STS-trained professionals work with citizens’ groups and other stakeholders to translate and interpret scientific and technological developments in terms of their risks, benefits, and other social consequences. They can often facilitate informed public involvement in deliberation over policy responses. Faculty in STS at Virginia Tech are already working on projects involving reshaping the training of engineers, developing strategies for disaster response, and involving citizens in research on environmental health risks.

The program will build on existing strengths of faculty in the Department of Science, Technology, and Society and the graduate program in Science and Technology Studies. Active scholarship of faculty, with strengths in science and technology policy, energy and environmental issues, engineering studies, biomedicine and society, will expose undergraduates to the state of the art in STS research and public outreach.

The Undergraduate Degree Program in STS has six emphases:

1. The study of STS as a set of perspectives, concepts, and methods that apply across a broad range of issues for research and active intervention involving science and technology.

2. A focus on contemporary problems involving science and technology, developing approaches to those problems that take into account their social dimensions and social consequences.

3. Real-world engagement through experiential and collaborative learning.
4. Acquisition of a set of transdisciplinary skills, including technological literacy, professional presentations, research design, critical thinking, and managing collaborative projects.

5. **For the Bachelor of Arts degree,** advanced knowledge in humanistic and social science perspectives on science and technology.

6. **For the Bachelor of Science degree,** technical literacy at an advanced undergraduate level, in a specialized area of science and technology.

In the degree’s core, students will learn general conceptual tools and perspectives of STS. But beyond the introductory course (STS 1504), these are taught in conjunction with specific contemporary problem areas: environment, biomedicine and the life sciences, global science and technology policy, and innovation.

The core includes an innovative course on the practice of collaborative research (STS 3504 Collaborative Research in Science, Technology, and Society). The course combines research methods with hands-on experience in collaborative work on a social problem involving science and/or technology. During alternate years, the collaborative methods course will be coupled with the STS Department’s Choices and Challenges Forum. This is a public forum on an area of science and technology that is of pressing public concern. Students in the STS Collaborative Methods course will participate in developing information materials for the forum, designing background sessions, and will interact with invited panelists in a closed workshop setting.

Furthermore, all students in the program will specialize in a focus area, where they will take 9 credit hours to acquire technical literacy and deeper knowledge of one area. The focus areas will initially consist of Energy and Environment, Medicine and Life Sciences, and Engineering and Innovation, with a fourth option consisting of a custom focus area that students design in consultation with their advisor.

The capstone, STS 4304, will provide an opportunity to pursue supervised individual research related to the student’s focus area, while gaining experience in presentation and critique in a seminar setting. Students in the STS program will compile a research portfolio based on their projects in the Collaborative Methods course and the STS Capstone.

Students will complete the program with either a Bachelor of Arts or a Bachelor of Science degree. The BA is appropriate for students seeking a broad liberal arts degree, requiring additional upper-level courses in perspectives on science and technology from the humanities, social science and arts. The Bachelor of Science allows students to combine the STS requirements with a more advanced program of study in a scientific or technological area that is linked to their STS focus area.

**Curriculum Summary**

I. **Pathways to General Education (45 credits)**

   Distributive Pathway:
   - Discourse (9 credits)
   - Quantitative and Computational Thinking (9 credits)
   - Reasoning in the Natural Sciences (6 credits)
   - Critique and Practice in Design and the Arts (6 credits)
   - Reasoning in the Social Sciences (6 credits)
Critical Thinking in the Humanities (6 credits)
Critical Analysis of Identity and Equity in the United States (3 credits)
Pathways requirements may also be fulfilled through a Pathways Minor or Alternative Pathway.

II. STS Degree Core Requirement (21 credit hours)
STS Core Sequence
STS 1504: Introduction to Science, Technology, and Society (3 cr)
STS 3504: The Practice of Collaborative Research in STS (3 cr)
STS 4304: Contemporary Issues in Science, Technology, and Society (3 cr)
Core area requirements
STS 2154: Humanities, Technology and the Life Sciences (3 cr)
STS 2254: Innovation in Context (3 cr)
STS 2454: Science, Technology, and the Environment (3 cr)
STS 2444: Global Science and Technology Policy (3 cr)

III. Focus Area Restricted Electives (9 credit hours)
Nine credit hours in one of the following focus areas

Energy and Environment (three of the following):
ENGL 3534: Literature and Ecology (3 cr)
GEOG/NR 1115-1116: Seeking Sustainability¹ (3 cr)
GEOG 3104: Environmental Problems, Population, and Development (3 cr)
HIST 3144: American Environmental History (3 cr)
PHIL 2304: Global Ethics (3 cr)
STS 3334: Energy and Society (3 cr)
UAP/PSCI 3344: Global Environmental Issues: Interdisciplinary Perspectives (3 cr)
UAP 3354: Introduction to Environmental Policy and Planning (3 cr)

Engineering and Innovation (three of the following):
ENGL 3844: Writing and Digital Media (3 cr)
HIST/SOC/STS 2604: Introduction to Data in Social Context (3 cr)
HIST/STS 2715, 2716: History of Technology (3 cr)
HIST 3114: United States Business History (3 cr)
MGT 3064: Cornerstones of Entrepreneurship and Innovation (3 cr)
STS/HIST 2054: Engineering Cultures (3 cr)

Life Sciences and Biomedicine (three of the following):
ENGL 3154: Literature, Medicine, and Culture (3 cr)
ENGL/STS 4314: Narrative Medicine (3 cr)
HIST 3624: Health and Illness in African History (3 cr)
HIST 3714: War and Medicine (3 cr)
HIST 3724: History of Disease, Medicine, and Health (3 cr)
HIST/STS 3734: History of Modern Biology (3 cr)
PHIL 3324: Biomedical Ethics (3 cr)
PHIL 4604: Philosophy of Biology (3 cr)

¹ Only one course of the two-course sequence can be counted toward the STS focus area requirement.
IV. For the Bachelor of Arts Degree: Advanced perspectives from the humanities and social sciences (6 credit hours)
Two additional courses at the 3000-level or higher, and approved by the academic advisor, related to science and technology from the perspective of humanities, social sciences, or the arts. For example, a student in the Engineering and Innovation focus area might fulfill this requirement with CINE 3224 Documentary Cinema Production and CINE 3184 Cinema Production Topics.

For the Bachelor of Science Degree: Specialized study in science and technology (6 credits)
Two additional courses at the 3000-level or higher in a technical area outside of social sciences and humanities related to the student’s focus area, and approved by the academic advisor. These must be courses with subject matter in science, mathematics, technology, or engineering. For example, a student in the Energy and Environment focus area pursuing the Bachelor of Science Degree might fulfill this requirement with BIOL 3114: Field and Laboratory Ecology (3), and BIOL 4004: Freshwater Ecology (3).

V. Free electives (39 credits)

Relevance to university mission and strategic planning
The BA/BS in Science, Technology, and Society is designed to harmonize with the university’s goals of developing “VT-shaped individuals.” First, it will provide disciplinary knowledge in the form of STS as a comprehensive way of thinking about the relationship of science and technology to society. This involves a set of specialized concepts and frameworks developed expressly for studying and understanding technical fields as thoroughly intertwined with social, cultural, and political realities.

Second, the curriculum will provide cross-cutting skills such as research design, managing collaborative projects, policy development and evaluation, writing and speaking skills for public engagement. Focus areas and specialization requirements will provide students with literacy in a specific problem area. Students in the Bachelor of Science option will undertake further study in a technical area.

Third, the program will provide guided experiential learning in the 3000-level core course on the practice of collaborative research and in the STS capstone. Students will be encouraged to pursue internships related to their STS studies. The STS Department has piloted a summer course for students pursuing internships in the National Capital Region.
Finally, the program will promote informal communal learning through co-curricular activities using existing departmental resources: undergraduate research symposia, guest speakers, presentations of student work in the ST Global student meeting held annually in the National Capital Region.

**Destination areas:** Students in the STS program will be able to combine their degree requirements in STS with a major in any of the planned Destination Areas. The STS program will complement work in a Destination Area by providing social science and humanities perspectives on the area’s subject matter. The major will also include courses that fit within specific destination areas, allowing students to count STS courses toward a Destination Area major. For instance, our courses in Engineering and Innovation might count toward a major in Intelligent Infrastructures and Human-Centered Design.

Other planned features of the program that relate directly to the VT mission and strategic plan:

- With our department’s presence in the National Capitol Region, we will initiate undergraduate activities there, offering summer courses that will provide an opportunity to combine internships with classroom study and research.
- The program combines transdisciplinary competence with specialization. It pursues general learning outcomes, with regard to interdisciplinary and transdisciplinary perspectives and methods of STS, and specialized learning outcomes, requiring the application of those tools in the process of developing deep knowledge of a particular focus area.

**Justification**

The establishment of a Bachelor of Arts/Bachelor of Science in Science, Technology, and Society at Virginia Tech will answer two related and growing demands. On one hand, Virginia Tech attracts many students with strong interests in science and technology, but who are not interested in majoring in engineering or in specializing solely in a scientific field. They are drawn to science and technology through personal interest and an awareness of the pervasive influence of science and technology in modern life. They will be seeking the range of skills typically acquired in a liberal arts degree, such as writing, public speaking, research, but coupled with technological literacy and a focus on specific areas of science and technology.

On the other hand, employers and graduate programs are increasingly placing a high value on college graduates who are neither engineers nor science majors, but who are effective problem solvers due to their understanding of the ways that science and technology interact with social life, culture, and politics.

Science, Technology, and Society (STS) bridges these two growing demands. It provides students with an understanding of the ways that science and technology are embedded in social life, as well as practical conceptual frameworks and methods for pursuing interdisciplinary solutions to contemporary problems. Combined with literacy in one or more areas of science and technology, analytic and writing abilities, and experience in collaborative work, these students will acquire a highly valued and marketable set of competencies.

An undergraduate STS degree is excellent preparation for any career that calls for a liberal arts degree, but with special relevance to science and technology-rich fields, such as science communication, technology marketing and management, environmental organizations, research
administration, science policy, military careers, and museum work. And it prepares students for graduate and professional study in areas such as Business, Law, Health Professions, Information Science, and Environmental Policy.

**Student demand**
Science, Technology, and Society is a growing field, nationally and internationally. The College Board lists STS undergraduate programs at 68 higher education institutions in the U.S., including public land-grant schools such as Penn State, University of California at Davis, and North Carolina State University. Ohio State University has recently added a concentration in STS within its Comparative Studies major. In our region, at North Carolina State University, the STS undergraduate degree program has over 110 students currently enrolled. There are no undergraduate degree programs in Science, Technology, and Society in public higher education institutions in Virginia.

The department’s undergraduate courses have experienced consistently high enrollment. The introductory course in STS has filled to its capacity of 120 students for the past two years. Other courses that will be included in the degree program indicate a strong student interest in the subject matter.

We recently surveyed students enrolled in STS 1504, Introduction to Science, Technology, and Society. Out of 67 responses, 30, or 45% indicated that they were “extremely interested” or “somewhat interested” in the degree program in STS. Of the 25 students who had not yet declared a major 12, or 48% indicated that they were either “extremely interested” or “somewhat interested” in the STS degree program.

**Market demand**
The STS degree program combines instruction and real-world application of communication skills, both written and oral; powerful conceptual frameworks for understanding the social and cultural dimensions of science and technology; and focused knowledge of a particular problem domain. Graduates of the program will be well prepared for positions that require writing, speaking, research, and analytic skills in science- and technology-rich settings.

A growing body of knowledge suggests that pay is not only growing for graduates of liberal arts programs, but that their long-term earning potential is comparable to, or outpacing that of graduates of STEM programs. The *Wall Street Journal* writes, “When asked to define the résumé traits that matter most, however, the NACE-surveyed employers rated technical skills 10th. Four of the top five traits were hallmarks of a traditional liberal-arts education: teamwork, clear writing, problem-solving aptitude and strong oral communications. Mindful of those longer-term needs, some employers end up hiring humanities and social-sciences graduates, even if such majors aren’t explicitly singled out when recruiting.”

The *World Economic Forum* report, ‘The Future of Jobs,’ confirms the importance of these skills. The top five desired traits for employees in 2020 include complex problem solving, critical thinking, creativity, people management, and coordinating with others – all trademarks of degree programs emerging from the liberal arts.

---

Yet these traits must be tailored for a rapidly changing and evolving world marketplace. The same report from which the above skills are derived notes that technological developments are driving commerce, development, and production in disruptive ways. “Developments in previously disjointed fields such as artificial intelligence and machine learning, robotics, nanotechnology, 3D printing and genetics and biotechnology are all building on and amplifying one another. Smart systems—homes, factories, farms, grids or entire cities—will help tackle problems ranging from supply chain management to climate change. Concurrent to this technological revolution are a set of broader socioeconomic, geopolitical and demographic developments.” Thus, not only do graduates need to build desirable traits, they must be familiar with new and emerging scientific and technological environments.

**Required resources**
The program can be implemented with existing departmental resources. As enrollment reaches our five-year target, it may require a half-time academic advisor and an additional graduate teaching assistantship. A future faculty position in STS approaches to information technology would allow us to add an additional focus area, but is not necessary for initiating the program.

<table>
<thead>
<tr>
<th>RESOURCE</th>
<th>ESTIMATED COSTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty</td>
<td>$0</td>
</tr>
<tr>
<td>Administrative Staff</td>
<td>$15000/yr., starting in year 5</td>
</tr>
<tr>
<td>Graduate Teaching/ Graduate Research Assistant</td>
<td>$32000/yr., starting in year 5 (includes tuition and stipend)</td>
</tr>
<tr>
<td>Space</td>
<td>$0</td>
</tr>
<tr>
<td>Library</td>
<td>$0</td>
</tr>
<tr>
<td>Equipment</td>
<td>$0</td>
</tr>
<tr>
<td>Other</td>
<td>$1000 (printing, web design, publicity, information events)</td>
</tr>
</tbody>
</table>
COLLEGE OF LIBERAL ARTS AND HUMAN SCIENCES
BACHELOR OF SCIENCE IN SCIENCE, TECHNOLOGY, AND SOCIETY
DEPARTMENT OF SCIENCE, TECHNOLOGY, AND SOCIETY
FOR STUDENTS GRADUATING IN THE 2021 CALENDAR YEAR

I. STS Degree Core Requirements (21 credit hours)

STS 1504 Introduction to Science, Technology, and Society 3 cr ____________

STS 3504 The Practice of Collaborative Research for Science, Technology, and Society (Pre: 1504, and one of 2154 or 2444 of 2454 or 2254) 3 cr ____________

STS 4304 Contemporary Issues in Science, Technology, and Society (Pre: 1504) 3 cr ____________

STS 2154 Humanities, Technology, and the Life Sciences 3 cr ____________
STS 2254 Innovation in Context 3 cr ____________
STS 2444 Global Science and Technology Policy 3 cr ____________
STS 2454 Science, Technology, and the Environment 3 cr ____________

II. STS Focus Area Restricted Electives (9 credit hours)

Complete 9 hours of courses in one of the following areas

1. Engineering and Innovation 3 cr ____________
ENGL 3844: Writing and Digital Media (Pre: ENGL 1106 or 1204H or COMM 1016) 3 cr ____________
HIST/SOC/STS 2604: Introduction to Data in Social Context 3 cr ____________
HIST/STS 2715, 2716: History of Technology 3 cr ____________
HIST 3114: United States Business History 3 cr ____________
MGT 3064: Cornerstones of Entrepreneurship and Innovation 3 cr ____________
STS/HIST 2054: Engineering Cultures 3 cr ____________

2. Energy and Environment 3 cr ____________
ENGL 3534: Literature and Ecology (Pre: ENGL 1106 or 1204H or COMM 1016) 3 cr ____________
GEOG/NR 1115-1116: Seeking Sustainability\(^1\) (Pre: 1115 for 1116) 3 cr ____________
GEOG 3104: Environmental Problems, Population, and Development

\(^1\) Only one course of the two-course sequence can be counted toward the STS focus area requirement.
HIST 3144: American Environmental History
PHIL 2304: Global Ethics
STS 3334: Energy and Society
UAP/PSCI 3344: Global Environmental Issues: Interdisciplinary Perspectives
UAP 3354: Introduction to Environmental Policy and Planning

3. Life Sciences and Biomedicine
ENGL 3154: Literature, Medicine, and Culture (Pre: ENGL 1106 or 1204H or COMM 1016) 3 cr
ENGL/STS 4314: Narrative Medicine (Pre: ENGL 3154 or 3324) 3 cr
HIST 3624: Health and Illness in African History 3 cr
HIST 3714: War and Medicine
HIST 3724: History of Disease, Medicine, and Health
HIST/STS 3734: History of Modern Biology
PHIL 3324: Biomedical Ethics
PHIL 4604: Philosophy of Biology
SOC 3714: Sociology of Aging (Pre: 1004)
SOC 4704 Medical Sociology (Pre: 1004)
STS 3284: Technology and Disability
STS 3314: Medical Dilemmas and Human Experience
WGS/SOC/STS 3324: Perspectives on the Biology of Women (Pre: WGS 1824)
WGS/SOC/STS 4334 Sexual Medicine (Pre: WGS 1824)
WGS/STS 4704: Gender and Science (Pre: WGS 2244 or STS 1504)

4. Custom Focus Area
Nine credit hours in a selected specialty of Science, Technology, and Society, approved by academic advisor

III. Specialized Study in Science and Technology (6 credit hours)
Two additional courses at the 3000-level or higher in a technical area outside of social sciences and humanities related to the student’s focus area, and approved by the academic advisor. These must be courses with subject matter in science, mathematics, technology, or engineering. Please refer to the Prerequisites section, below.

IV. Pathways to General Education (45 credit hours)
STS courses outside of the 21-credit core may be counted toward the Pathways requirements.
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discourse (9 credit hours)</td>
<td>3 cr</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantitative and Computational Thinking (9 credit hours)</td>
<td>3 cr</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Reasoning in the Natural Sciences (6 credit hours)</td>
<td>3 cr</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Critique and Practice in Design and the Arts (6 credit hours)</td>
<td>3 cr</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Reasoning in the Social Sciences (6 credit hours)</td>
<td>3 cr</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical Thinking in the Humanities (6 credit hours)</td>
<td>3 cr</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical Analysis of Identity and Equity in the United States</td>
<td>3 cr</td>
</tr>
</tbody>
</table>

Pathways to General Education Credits can also be fulfilled through a Pathways Minor or Alternative Pathway

V. **Free electives (39 credit hours)**

|                  |         |
|                  |         |
|                  |         |
|                  |         |
|                  |         |
|                  |         |

VI. **Foreign Language**
Students who did not successfully complete at least two years of a single foreign, classical, or sign language during high school must successfully complete six semester hours of a single foreign, classical, or sign language at the college level. Courses taken to meet this requirement do not count toward the hours required for graduation. Please consult the Undergraduate Catalog for details.

**Prerequisites**
Some courses listed on this checksheet have prerequisites, please consult the University Course Catalog, or check with your advisor.

**Graduation Requirements**

- Minimum of 120 credit hours for the degree
- In-major GPA (courses in sections I, II, III, above) must be 2.0 or higher.
- Minimum overall GPA of 2.0.

**Satisfactory Progress Policy**

In addition to the satisfactory progress toward a degree policy required by the University, satisfactory progress toward a B.S. in STS requires that upon having attempted 72 semester hours (including transfer, AP, advanced standing, and credit by exam) an STS student must have:

- Completed at least 9 credits of the STS core requirements (Section I, above)
- At least a 2.0 overall GPA
- At least a 2.0 in-major GPA.

In-major courses include all STS core courses (Section I), Focus Area requirements (II), and Specialized Study in Science and Technology (III).
approval for English courses on STS check sheet

Bernice Hausman <bhausman@vt.edu>  
To: Daniel Breslau <dbreslau@vt.edu>, Virginia C Fowler <vfowler@vt.edu>  
Mon, Jan 30, 2017 at 11:17 AM

Dear Daniel:

The Department of English endorses the undergraduate degree program in Science, Technology, and Society and supports the inclusion of the ENGL courses listed below as electives. The English Department will be able to support the additional student enrollment up to existing capacity, and welcomes the opportunity to teach students in the STS undergraduate major:

ENGL 3154 Literature, Medicine, and Culture  
ENGL 4314: Narrative Medicine  
ENGL 3844: Writing and Digital Media  
ENGL 3534 Literature and Ecology  
ENGL 4874: Issues in Professional and Public Discourse

Sincerely,

BH

Bernice L. Hausman
Chair, Department of English, Virginia Tech  
Edward S. Diggs Professor in the Humanities  
Professor, Virginia Tech Carilion School of Medicine

540-231-8466  
bhausman@vt.edu
The Department of Engineering Education endorses the proposed undergraduate degree program in Science, Technology, and Society, and supports the inclusion of ENGE 2004 Citizen Engineering. The Department welcomes the enrollment of additional students in these courses, and we acknowledge no additional resources are needed.

Thanks,

Donna

Boise State University
Boise, Idaho
Donna Riley, Ph.D.
Professor and Interim Head
Department of Engineering Education
Affiliate Faculty, Science, Technology, & Society
Affiliate Faculty, Women's & Gender Studies
Virginia Polytechnic Institute and State University
Gender pronouns: she/her, they/them

349 Goodwin Hall
635 Prices Fork Rd.
Blacksburg, VA, USA 24061
dmriley@vt.edu

[Quoted text hidden]

Daniel Breslau
Associate Professor and Chair
Department of Science and Technology in Society
Virginia Tech
133 Lane Hall
Blacksburg, VA 24061-0247
(540) 231-8472 (work)
(540) 449-9791 (mobile)
approval for listing HIST courses in new STS major

Mark Barrow <mabarro2@vt.edu>  
To: Daniel Breslau <dbreslau@vt.edu>  
Cc: Heather Gumbert <hgumbert@vt.edu>  

Wed, Feb 1, 2017 at 7:35 PM

Dear Daniel,

By this note I am granting permission for the following HIST course to be added to the new STS major:

HIST 3144 American Environmental History  
HIST 3724 Disease, Medicine, and Health  
HIST 3624 Health and Illness in African History  
HIST 3714 War and Medicine  
HIST 3734 History of Modern Biology  
HIST 3114 History of Capitalism  
HIST 3715, 3716: History of Technology (changing to 2715-16 by fall 2017)  
HIST 2604 Introduction to Data in Social Context (when approved)

We plan to offer these courses regularly, and adding them to your checksheet will require no additional resources.

Please let me know if you need anything else.

Best,
Mark Barrow

Mark V. Barrow, Jr.  
Professor and Chair  
Department of History (0117)  
Virginia Tech  
Blacksburg, VA  24060  
540-231-4099
The Department of Management endorses the proposed undergraduate degree program in Science, Technology, and Society, and supports the inclusion of the MGT 3064 Cornerstones of Entrepreneurship and Innovation. The department welcomes the enrollment of additional students in this course, and we acknowledge no additional resources are needed.

Best regards.

Devi

Devi R. Gnyawali, Ph.D.
R. B. Pamplin Professor and Department Head
Department of Management (mail code 0233), 2007 Pamplin Hall
880 West Campus Drive, Blacksburg, VA 24061
Email: devi@vt.edu
Phone: 540-231-6353
Associate Editor, Journal of Management
http://www.management.pamplin.vt.edu/devi-r-gnyawali/
February 3, 2017

Dear Curriculum Committee:

The Department of Sociology endorses the undergraduate degree program in Science, Technology, and Society and supports the inclusion of the SOC courses listed below as electives. The department welcomes the enrollment of additional students in these courses, and we acknowledge no additional resources are needed.

SOC 3714 Sociology of Aging
SOC 4704 Medical Sociology

Sincerely,

John Ryan
Professor and Chair
February 1, 2017

RE: Letter of Support for UAP Courses for New Undergraduate Degree in Science, Technology, and Society

The Urban Affairs and Planning Program (UAP) endorses the undergraduate degree program in Science, Technology, and Society and supports the inclusion of the UAP courses listed below as electives. We welcome the enrollment of additional students in this course, and we expect that no additional resources will be needed.

UAP 3344 (PSCI 3344): Global Environmental Issues: Interdisciplinary Perspectives

UAP 3354: Introduction to Environmental and Policy Planning

UAP 4214: WOMEN, ENVIRONMENT AND DEVELOPMENT IN A GLOBAL PERSPECTIVE

UAP 4264: ENVIRONMENTAL ETHICS AND POLICY

UAP 4394: COMMUNITY RENEWABLE ENERGY SYSTEMS

Please contact me if you have any questions or comments.

Sincerely,

Thomas W. Sanchez, PhD
Chair & Professor, Urban Affairs and Planning
tom.sanchez@vt.edu
Monday, February 13, 2017

The Program of Women’s and Gender Studies (WGS) in the Department of Sociology endorses the undergraduate degree program in Science, Technology, and Society and supports the inclusion of the WGS courses listed below as electives. The Program welcomes the enrollment of additional students in this course, and we acknowledge no additional resources are needed:

WGS 4704 Gender and Science
WGS 3324 Perspectives on the Biology of Women
WGS 4334 Sexual Medicine

We are very excited to have these doubly listed options for STS and WGS.

My very best,

Sharon P. Johnson
Director of WGS
Memorandum

TO: CLAHS Undergraduate Curriculum Committee
FROM: Douglas Lind
Head, Department of Philosophy
RE: Proposed undergraduate degree program in STS
DATE: March 21, 2017

The Department of Philosophy endorses the proposed undergraduate degree program in Science, Technology, and Society (STS) and supports the inclusion of the Philosophy courses listed below as electives. The Philosophy Department welcomes the enrollment of additional students in these courses, and we acknowledge no additional resources are needed.

PHIL 2304: Global Ethics
PHIL 3324: Biomedical Ethics
PHIL 4604: Philosophy of Biology

Douglas Lind
April 19, 2017

Daniel Breslau
Science and Technology in Society, 0247
Virginia Tech

Dear Dr. Breslau,

The Department of Geography is pleased to endorse the undergraduate degree program in Science, Technology, and Society and supports the inclusion of the GEOG courses listed below as electives. The Department welcomes the enrollment of additional students in these courses, and we acknowledge that no additional resources are needed. Specifically, we grant permission to include the following Geography courses as electives:

GEOG 1115-1116 (NR 1115-1116): Seeking Sustainability
GEOG 3104 Environmental Problems, Population, & Development

Sincerely,

Korine Kolivras
Associate Professor and Co-Chair
WHEREAS, emerging science and technology present new and unanticipated social, political, and ethical consequences; and

WHEREAS, Science, Technology, and Society (STS) is a growing interdisciplinary field that brings together conceptual and methodological frameworks from the social sciences and humanities to develop ways of understanding and intervening in the relationship of science and technology to society; and

WHEREAS, organizations of many kinds are reporting a need for college graduates with a combination of liberal arts skills – writing, research, critical thinking, collaboration – and advanced scientific or technological literacy; and

WHEREAS, there is currently no undergraduate degree in Science, Technology, and Society offered at institutions of higher education in Virginia; and

WHEREAS, the Bachelor of Science in STS embodies the elements of the “VT-shaped Individual,” with depth in the specialized concepts and frameworks of STS, transdisciplinary skills, and problem-driven, experiential learning; and

WHEREAS, the Department of Science, Technology, and Society at Virginia Tech is a leading department in graduate instruction and research in the field and already offers a range of undergraduate courses, providing about two thousand credit hours of undergraduate instruction per year;

THEREFORE BE IT RESOLVED that the Bachelor of Science in Science, Technology, and Society be approved effective Spring 2019 and the proposal forwarded to the President, the Board of Visitors, and the State Council of Higher Education for Virginia (SCHEV) for approval.
March 20, 2017

To: CLAHS Undergraduate Curriculum Committee
From: Daniel Breslau, Chair, Department of Science and Technology in Society
Re: Proposal for new undergraduate degree

On behalf of the STS Department, I approve of the Department’s proposal for a new undergraduate degree, with Bachelor of Arts and Bachelor of Science options. Initiation of the program will not require additional department resources.
Program Description

The Department of Science, Technology, and Society is proposing a new Undergraduate Degree Program in Science, Technology, and Society. The program will offer both a Bachelor of Arts and a Bachelor of Science. The program anticipates admitting its first students in spring of 2019, and will begin awarding degrees in 2021.

The field of Science, Technology, and Society studies the relationship of science and technology to their social, political, and cultural contexts. It examines the ways that the development of technologies and the course of scientific research are shaped by their social settings, and in turn, the ways that scientific and technological developments impact society.

As an interdisciplinary field, Science, Technology, and Society draws from the social sciences and humanities, particularly from Anthropology, Sociology, History, and Philosophy. The field has also developed its own concepts and frameworks, which have proven particularly revealing in the study of the social dimensions of technical fields. Central concerns of the field include the politics of expertise, public deliberation on science and technology policy, the social consequences of molecular biology and associated technologies, innovation as a social process, information technologies and social change.

In addition to advancing knowledge of this subject area, the field of STS has a strong tradition of practical involvement in the interface between society and the technical fields of science and technology. STS scholars and practitioners work with scientists and engineers to incorporate a greater awareness of the social and ethical consequences of their work into their professional work itself. And STS-trained professionals work with citizens’ groups and other stakeholders to translate and interpret scientific and technological developments in terms of their risks, benefits, and other social consequences. They can often facilitate informed public involvement in deliberation over policy responses. Faculty in STS at Virginia Tech are already working on projects involving reshaping the training of engineers, developing strategies for disaster response, and involving citizens in research on environmental health risks.

The program will build on existing strengths of faculty in the Department of Science, Technology, and Society and the graduate program in Science and Technology Studies. Active scholarship of faculty, with strengths in science and technology policy, energy and environmental issues, engineering studies, biomedicine and society, will expose undergraduates to the state of the art in STS research and public outreach.

The Undergraduate Degree Program in STS has six emphases:

1. The study of STS as a set of perspectives, concepts, and methods that apply across a broad range of issues for research and active intervention involving science and technology.
2. A focus on contemporary problems involving science and technology, developing approaches to those problems that take into account their social dimensions and social consequences.
3. Real-world engagement through experiential and collaborative learning.
4. Acquisition of a set of transdisciplinary skills, including technological literacy, professional presentations, research design, critical thinking, and managing collaborative projects.

5. **For the Bachelor of Arts degree**, advanced knowledge in humanistic and social science perspectives on science and technology.

6. **For the Bachelor of Science degree**, technical literacy at an advanced undergraduate level, in a specialized area of science and technology.

In the degree’s core, students will learn general conceptual tools and perspectives of STS. But beyond the introductory course (STS 1504), these are taught in conjunction with specific contemporary problem areas: environment, biomedicine and the life sciences, global science and technology policy, and innovation.

The core includes an innovative course on the practice of collaborative research (STS 3504 Collaborative Research in Science, Technology, and Society). The course combines research methods with hands-on experience in collaborative work on a social problem involving science and/or technology. During alternate years, the collaborative methods course will be coupled with the STS Department’s Choices and Challenges Forum. This is a public forum on an area of science and technology that is of pressing public concern. Students in the STS Collaborative Methods course will participate in developing information materials for the forum, designing background sessions, and will interact with invited panelists in a closed workshop setting.

Furthermore, all students in the program will specialize in a focus area, where they will take 9 credit hours to acquire technical literacy and deeper knowledge of one area. The focus areas will initially consist of Energy and Environment, Medicine and Life Sciences, and Engineering and Innovation, with a fourth option consisting of a custom focus area that students design in consultation with their advisor.

The capstone, STS 4304, will provide an opportunity to pursue supervised individual research related to the student’s focus area, while gaining experience in presentation and critique in a seminar setting. Students in the STS program will compile a research portfolio based on their projects in the Collaborative Methods course and the STS Capstone.

Students will complete the program with either a Bachelor of Arts or a Bachelor of Science degree. The BA is appropriate for students seeking a broad liberal arts degree, requiring additional upper-level courses in perspectives on science and technology from the humanities, social science and arts. The Bachelor of Science allows students to combine the STS requirements with a more advanced program of study in a scientific or technological area that is linked to their STS focus area.

---

**Curriculum Summary**

**I. Pathways to General Education (45 credits)**

**Distributive Pathway:**
- Discourse (9 credits)
- Quantitative and Computational Thinking (9 credits)
- Reasoning in the Natural Sciences (6 credits)
- Critique and Practice in Design and the Arts (6 credits)
- Reasoning in the Social Sciences (6 credits)
Critical Thinking in the Humanities (6 credits)
Critical Analysis of Identity and Equity in the United States (3 credits)
Pathways requirements may also be fulfilled through a Pathways Minor or Alternative Pathway.

II. STS Degree Core Requirement (21 credit hours)
STS Core Sequence
STS 1504: Introduction to Science, Technology, and Society (3 cr)
STS 3504: The Practice of Collaborative Research in STS (3 cr)
STS 4304: Contemporary Issues in Science, Technology, and Society (3 cr)
Core area requirements
STS 2154: Humanities, Technology and the Life Sciences (3 cr)
STS 2254: Innovation in Context (3 cr)
STS 2454: Science, Technology, and the Environment (3 cr)
STS 2444: Global Science and Technology Policy (3 cr)

III. Focus Area Restricted Electives (9 credit hours)
Nine credit hours in one of the following focus areas

Energy and Environment (three of the following):
ENGL 3534: Literature and Ecology (3 cr)
GEOG/NR 1115-1116: Seeking Sustainability\(^1\) (3 cr)
GEOG 3104: Environmental Problems, Population, and Development (3 cr)
HIST 3144: American Environmental History (3 cr)
PHIL 2304: Global Ethics (3 cr)
STS 3334: Energy and Society (3 cr)
UAP/PSCI 3344: Global Environmental Issues: Interdisciplinary Perspectives (3 cr)
UAP 3354: Introduction to Environmental Policy and Planning (3 cr)

Engineering and Innovation (three of the following):
ENGL 3844: Writing and Digital Media (3 cr)
HIST/SOC/STS 2604: Introduction to Data in Social Context (3 cr)
HIST/STS 2715, 2716: History of Technology (3 cr)
HIST 3114: United States Business History (3 cr)
MGT 3064: Cornerstones of Entrepreneurship and Innovation (3 cr)
STS/HIST 2054: Engineering Cultures (3 cr)

Life Sciences and Biomedicine (three of the following):
ENGL 3154: Literature, Medicine, and Culture (3 cr)
ENGL/STS 4314: Narrative Medicine (3 cr)
HIST 3624: Health and Illness in African History (3 cr)
HIST 3714: War and Medicine (3 cr)
HIST 3724: History of Disease, Medicine, and Health (3 cr)
HIST/STS 3734: History of Modern Biology (3 cr)
PHIL 3324: Biomedical Ethics (3 cr)
PHIL 4604: Philosophy of Biology (3 cr)

\(^1\) Only one course of the two-course sequence can be counted toward the STS focus area requirement.
SOC 3714: Sociology of Aging (3 cr)
SOC 4704 Medical Sociology (3 cr)
STS 3284: Technology and Disability (3 cr)
STS 3314: Medical Dilemmas and Human Experience (3 cr)
WGS/SOC/STS 3324: Perspectives on the Biology of Women (3 cr)
WGS/SOC/STS 4334: Sexual Medicine (3 cr)
WGS/STS 4704: Gender and Science (3 cr)

Custom Focus Area, designed with academic advisor (9 credits)

IV. For the Bachelor of Arts Degree: Advanced perspectives from the humanities and social sciences (6 credit hours)
Two additional courses at the 3000-level or higher, and approved by the academic advisor, related to science and technology from the perspective of humanities, social sciences, or the arts. For example, a student in the Engineering and Innovation focus area might fulfill this requirement with CINE 3224 Documentary Cinema Production and CINE 3184 Cinema Production Topics.

For the Bachelor of Science Degree: Specialized study in science and technology (6 credits)
Two additional courses at the 3000-level or higher in a technical area outside of social sciences and humanities related to the student’s focus area, and approved by the academic advisor. These must be courses with subject matter in science, mathematics, technology, or engineering. For example, a student in the Energy and Environment focus area pursuing the Bachelor of Science Degree might fulfill this requirement with BIOL 3114: Field and Laboratory Ecology (3), and BIOL 4004: Freshwater Ecology (3).

V. Free electives (39 credits)

Relevance to university mission and strategic planning
The BA/BS in Science, Technology, and Society is designed to harmonize with the university’s goals of developing “VT-shaped individuals.” First, it will provide disciplinary knowledge in the form of STS as a comprehensive way of thinking about the relationship of science and technology to society. This involves a set of specialized concepts and frameworks developed expressly for studying and understanding technical fields as thoroughly intertwined with social, cultural, and political realities.

Second, the curriculum will provide cross-cutting skills such as research design, managing collaborative projects, policy development and evaluation, writing and speaking skills for public engagement. Focus areas and specialization requirements will provide students with literacy in a specific problem area. Students in the Bachelor of Science option will undertake further study in a technical area.

Third, the program will provide guided experiential learning in the 3000-level core course on the practice of collaborative research and in the STS capstone. Students will be encouraged to pursue internships related to their STS studies. The STS Department has piloted a summer course for students pursuing internships in the National Capital Region.
Finally, the program will promote informal communal learning through co-curricular activities using existing departmental resources: undergraduate research symposia, guest speakers, presentations of student work in the ST Global student meeting held annually in the National Capital Region.

**Destination areas:** Students in the STS program will be able to combine their degree requirements in STS with a major in any of the planned Destination Areas. The STS program will complement work in a Destination Area by providing social science and humanities perspectives on the area’s subject matter. The major will also include courses that fit within specific destination areas, allowing students to count STS courses toward a Destination Area major. For instance, our courses in Engineering and Innovation might count toward a major in Intelligent Infrastructures and Human-Centered Design.

Other planned features of the program that relate directly to the VT mission and strategic plan:

- With our department’s presence in the National Capitol Region, we will initiate undergraduate activities there, offering summer courses that will provide an opportunity to combine internships with classroom study and research.
- The program combines transdisciplinary competence with specialization. It pursues general learning outcomes, with regard to interdisciplinary and transdisciplinary perspectives and methods of STS, and specialized learning outcomes, requiring the application of those tools in the process of developing deep knowledge of a particular focus area.

**Justification**

The establishment of a Bachelor of Arts/Bachelor of Science in Science, Technology, and Society at Virginia Tech will answer two related and growing demands. On one hand, Virginia Tech attracts many students with strong interests in science and technology, but who are not interested in majoring in engineering or in specializing solely in a scientific field. They are drawn to science and technology through personal interest and an awareness of the pervasive influence of science and technology in modern life. They will be seeking the range of skills typically acquired in a liberal arts degree, such as writing, public speaking, research, but coupled with technological literacy and a focus on specific areas of science and technology.

On the other hand, employers and graduate programs are increasingly placing a high value on college graduates who are neither engineers nor science majors, but who are effective problem solvers due to their understanding of the ways that science and technology interact with social life, culture, and politics.

Science, Technology, and Society (STS) bridges these two growing demands. It provides students with an understanding of the ways that science and technology are embedded in social life, as well as practical conceptual frameworks and methods for pursuing interdisciplinary solutions to contemporary problems. Combined with literacy in one or more areas of science and technology, analytic and writing abilities, and experience in collaborative work, these students will acquire a highly valued and marketable set of competencies.

An undergraduate STS degree is excellent preparation for any career that calls for a liberal arts degree, but with special relevance to science and technology-rich fields, such as science communication, technology marketing and management, environmental organizations, research
administration, science policy, military careers, and museum work. And it prepares students for graduate and professional study in areas such as Business, Law, Health Professions, Information Science, and Environmental Policy.

**Student demand**

Science, Technology, and Society is a growing field, nationally and internationally. The College Board lists STS undergraduate programs at 68 higher education institutions in the U.S., including public land-grant schools such as Penn State, University of California at Davis, and North Carolina State University. Ohio State University has recently added a concentration in STS within its Comparative Studies major. In our region, at North Carolina State University, the STS undergraduate degree program has over 110 students currently enrolled. There are no undergraduate degree programs in Science, Technology, and Society in public higher education institutions in Virginia.

The department’s undergraduate courses have experienced consistently high enrollment. The introductory course in STS has filled to its capacity of 120 students for the past two years. Other courses that will be included in the degree program indicate a strong student interest in the subject matter.

We recently surveyed students enrolled in STS 1504, Introduction to Science, Technology, and Society. Out of 67 responses, 30, or 45% indicated that they were “extremely interested” or “somewhat interested” in the degree program in STS. Of the 25 students who had not yet declared a major 12, or 48% indicated that they were either “extremely interested” or “somewhat interested” in the STS degree program.

**Market demand**

The STS degree program combines instruction and real-world application of communication skills, both written and oral; powerful conceptual frameworks for understanding the social and cultural dimensions of science and technology; and focused knowledge of a particular problem domain. Graduates of the program will be well prepared for positions that require writing, speaking, research, and analytic skills in science- and technology-rich settings.

A growing body of knowledge suggests that pay is not only growing for graduates of liberal arts programs, but that their long-term earning potential is comparable to, or outpacing that of graduates of STEM programs. The *Wall Street Journal* writes, “When asked to define the résumé traits that matter most, however, the NACE-surveyed employers rated technical skills 10th. Four of the top five traits were hallmarks of a traditional liberal-arts education: teamwork, clear writing, problem-solving aptitude and strong oral communications. Mindful of those longer-term needs, some employers end up hiring humanities and social-sciences graduates, even if such majors aren’t explicitly singled out when recruiting.”

The *World Economic Forum* report, ‘The Future of Jobs,’ confirms the importance of these skills. The top five desired traits for employees in 2020 include complex problem solving, critical thinking, creativity, people management, and coordinating with others – all trademarks of degree programs emerging from the liberal arts.

---

Yet these traits must be tailored for a rapidly changing and evolving world marketplace. The same report from which the above skills are derived notes that technological developments are driving commerce, development, and production in disruptive ways. “Developments in previously disjointed fields such as artificial intelligence and machine learning, robotics, nanotechnology, 3D printing and genetics and biotechnology are all building on and amplifying one another. Smart systems—homes, factories, farms, grids or entire cities—will help tackle problems ranging from supply chain management to climate change. Concurrent to this technological revolution are a set of broader socioeconomic, geopolitical and demographic developments.” Thus, not only do graduates need to build desirable traits, they must be familiar with new and emerging scientific and technological environments.

**Required resources**
The program can be implemented with existing departmental resources. As enrollment reaches our five-year target, it may require a half-time academic advisor and an additional graduate teaching assistantship. A future faculty position in STS approaches to information technology would allow us to add an additional focus area, but is not necessary for initiating the program.

<table>
<thead>
<tr>
<th>RESOURCE</th>
<th>ESTIMATED COSTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty</td>
<td>$0</td>
</tr>
<tr>
<td>Administrative Staff</td>
<td>$15000/yr., starting in year 5</td>
</tr>
<tr>
<td>Graduate Teaching/</td>
<td></td>
</tr>
<tr>
<td>Graduate Research Assistant</td>
<td>$32000/yr., starting in year 5 (includes tuition and</td>
</tr>
<tr>
<td></td>
<td>stipend)</td>
</tr>
<tr>
<td>Space</td>
<td>$0</td>
</tr>
<tr>
<td>Library</td>
<td>$0</td>
</tr>
<tr>
<td>Equipment</td>
<td>$0</td>
</tr>
<tr>
<td>Other</td>
<td>$1000 (printing, web design, publicity, information</td>
</tr>
<tr>
<td></td>
<td>events)</td>
</tr>
</tbody>
</table>
I. **STS Degree Core Requirements (21 credit hours)**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STS 1504 Introduction to Science, Technology, and Society</td>
<td>3 cr</td>
</tr>
<tr>
<td>STS 3504 The Practice of Collaborative Research for Science, Technology, and Society (Pre: 1504, and one of 2154 or 2444 of 2454 or 2254)</td>
<td>3 cr</td>
</tr>
<tr>
<td>STS 4304 Contemporary Issues in Science, Technology, and Society (Pre: 1504)</td>
<td>3 cr</td>
</tr>
<tr>
<td>STS 2154 Humanities, Technology, and the Life Sciences</td>
<td>3 cr</td>
</tr>
<tr>
<td>STS 2254 Innovation in Context</td>
<td>3 cr</td>
</tr>
<tr>
<td>STS 2444 Global Science and Technology Policy</td>
<td>3 cr</td>
</tr>
<tr>
<td>STS 2454 Science, Technology, and the Environment</td>
<td>3 cr</td>
</tr>
</tbody>
</table>

II. **STS Focus Area Restricted Electives (9 credit hours)**

Complete 9 hours of courses in **one** of the following areas:

1. **Engineering and Innovation**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 3844: Writing and Digital Media (Pre: ENGL 1106 or 1204H or COMM 1016)</td>
<td>3 cr</td>
</tr>
<tr>
<td>HIST/SOC/STS 2604: Introduction to Data in Social Context</td>
<td>3 cr</td>
</tr>
<tr>
<td>HIST/STS 2715, 2716: History of Technology</td>
<td>3 cr</td>
</tr>
<tr>
<td>HIST 3114: United States Business History</td>
<td>3 cr</td>
</tr>
<tr>
<td>MGT 3064: Cornerstones of Entrepreneurship and Innovation</td>
<td></td>
</tr>
<tr>
<td>STS/HIST 2054: Engineering Cultures</td>
<td></td>
</tr>
</tbody>
</table>

2. **Energy and Environment**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 3534: Literature and Ecology (Pre: ENGL 1106 or 1204H or COMM 1016)</td>
<td>3 cr</td>
</tr>
<tr>
<td>GEOG/NR 1115-1116: Seeking Sustainability¹ (Pre: 1115 for 1116)</td>
<td>3 cr</td>
</tr>
<tr>
<td>GEOG 3104: Environmental Problems, Population, and Development</td>
<td></td>
</tr>
</tbody>
</table>

¹ Only one course of the two-course sequence can be counted toward the STS focus area requirement.
HIST 3144: American Environmental History  
PHIL 2304: Global Ethics  
STS 3334: Energy and Society  
UAP/PSCI 3344: Global Environmental Issues: Interdisciplinary Perspectives  
UAP 3354: Introduction to Environmental Policy and Planning

3. Life Sciences and Biomedicine
ENGL 3154: Literature, Medicine, and Culture (Pre: ENGL 1106 or 1204H or COMM 1016)  
ENGL/STS 4314: Narrative Medicine (Pre: ENGL 3154 or 3324)  
HIST 3624: Health and Illness in African History  
HIST 3714: War and Medicine  
HIST 3724: History of Disease, Medicine, and Health  
HIST/STS 3734: History of Modern Biology  
PHIL 3324: Biomedical Ethics  
PHIL 4604: Philosophy of Biology  
SOC 3714: Sociology of Aging (Pre: 1004)  
SOC 4704 Medical Sociology (Pre: 1004)  
STS 3284: Technology and Disability  
STS 3314: Medical Dilemmas and Human Experience  
WGS/SOC/STS 3324: Perspectives on the Biology of Women  
(WGS 1824)  
WGS/SOC/STS 4334 Sexual Medicine (Pre: WGS 1824)  
WGS/STS 4704: Gender and Science (Pre: WGS 2244 or STS 1504)

4. Custom Focus Area
Nine credit hours in a selected specialty of Science, Technology, and Society, approved by academic advisor

III. Advanced Perspectives in the Humanities and Social Sciences (6 credit hours)
Two additional courses at the 3000-level or higher, and approved by the academic advisor, related to science and technology from the perspective of humanities, social sciences, or the arts. Please refer to the Prerequisites section, below.
### IV. Pathways to General Education (45 credit hours)

STS courses outside of the 21-credit core may be counted toward the Pathways requirements.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discourse (9 credit hours)</td>
<td>3 cr</td>
</tr>
<tr>
<td></td>
<td>3 cr</td>
</tr>
<tr>
<td></td>
<td>3 cr</td>
</tr>
<tr>
<td>Quantitative and Computational Thinking (9 credit hours)</td>
<td>3 cr</td>
</tr>
<tr>
<td></td>
<td>3 cr</td>
</tr>
<tr>
<td></td>
<td>3 cr</td>
</tr>
<tr>
<td>Reasoning in the Natural Sciences (6 credit hours)</td>
<td>3 cr</td>
</tr>
<tr>
<td></td>
<td>3 cr</td>
</tr>
<tr>
<td>Critique and Practice in Design and the Arts (6 credit hours)</td>
<td>3 cr</td>
</tr>
<tr>
<td></td>
<td>3 cr</td>
</tr>
<tr>
<td>Reasoning in the Social Sciences (6 credit hours)</td>
<td>3 cr</td>
</tr>
<tr>
<td></td>
<td>3 cr</td>
</tr>
<tr>
<td>Critical Thinking in the Humanities (6 credit hours)</td>
<td>3 cr</td>
</tr>
<tr>
<td></td>
<td>3 cr</td>
</tr>
<tr>
<td>Critical Analysis of Identity and Equity in the United States (3 credit hours)</td>
<td>3 cr</td>
</tr>
</tbody>
</table>

Pathways to General Education Credits can also be fulfilled through a Pathways Minor or Alternative Pathway.

### V. Free electives (39 credit hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### VI. Foreign Language

Students who did not successfully complete at least two years of a single foreign, classical, or sign language during high school must successfully complete six semester hours of a single foreign, classical, or sign language at the college level. Courses taken to meet this requirement...
do not count toward the hours required for graduation. Please consult the Undergraduate Catalog for details.

**Prerequisites**

Some courses listed on this checksheet have prerequisites, please consult the University Course Catalog, or check with your advisor.

**Graduation Requirements**

- Minimum of 120 credit hours for the degree
- In-major GPA (courses in sections I, II, III, above) must be 2.0 or higher.
- Minimum overall GPA of 2.0.

**Satisfactory Progress Policy**

In addition to the satisfactory progress toward a degree policy required by the University, satisfactory progress toward a B.A. in STS requires that upon having attempted 72 semester hours (including transfer, AP, advanced standing, and credit by exam) an STS student must have:

- Completed at least 9 credits of the STS core requirements (Section I, above)
- At least a 2.0 overall GPA
- At least a 2.0 in-major GPA.

In-major courses include all STS core courses (Section I), Focus Area requirements (II), and Advanced Perspectives in the Humanities and Social Sciences requirements (III).
approval for English courses on STS check sheet

Bernice Hausman <bhausman@vt.edu>  
To: Daniel Breslau <dbreslau@vt.edu>, Virginia C Fowler <vfowler@vt.edu>  
Mon, Jan 30, 2017 at 11:17 AM

Dear Daniel:

The Department of English endorses the undergraduate degree program in Science, Technology, and Society and supports the inclusion of the ENGL courses listed below as electives. The English Department will be able to support the additional student enrollment up to existing capacity, and welcomes the opportunity to teach students in the STS undergraduate major:

ENGL 3154 Literature, Medicine, and Culture  
ENGL 4314: Narrative Medicine  
ENGL 3844: Writing and Digital Media  
ENGL 3534 Literature and Ecology  
ENGL 4874: Issues in Professional and Public Discourse

Sincerely,

BH

Bernice L. Hausman  
Chair, Department of English, Virginia Tech  
Edward S. Diggs Professor in the Humanities  
Professor, Virginia Tech Carilion School of Medicine

540-231-8466  
bhausman@vt.edu
The Department of Engineering Education endorses the proposed undergraduate degree program in Science, Technology, and Society, and supports the inclusion of ENGE 2004 Citizen Engineering. The Department welcomes the enrollment of additional students in these courses, and we acknowledge no additional resources are needed.

Thanks,

Donna

Donna Riley, Ph.D.
Professor and Interim Head
Department of Engineering Education
Affiliate Faculty, Science, Technology, & Society
Affiliate Faculty, Women's & Gender Studies
Virginia Polytechnic Institute and State University

Gender pronouns: she/her, they/them

349 Goodwin Hall
635 Prices Fork Rd.
Blacksburg, VA, USA 24061
dmriley@vt.edu
approval for listing HIST courses in new STS major

Mark Barrow <mabarro2@vt.edu>  
To: Daniel Breslau <dbreslau@vt.edu>  
Cc: Heather Gumbert <hgumbert@vt.edu>  

Dear Daniel,

By this note I am granting permission for the following HIST course to be added to the new STS major:

HIST 3144 American Environmental History  
HIST 3724 Disease, Medicine, and Health  
HIST 3624 Health and Illness in African History  
HIST 3714 War and Medicine  
HIST 3734 History of Modern Biology  
HIST 3114 History of Capitalism  
HIST 3715, 3716: History of Technology (changing to 2715-16 by fall 2017)  
HIST 2604 Introduction to Data in Social Context (when approved)

We plan to offer these courses regularly, and adding them to your checksheet will require no additional resources.

Please let me know if you need anything else.

Best,  
Mark Barrow

Mark V. Barrow, Jr.  
Professor and Chair  
Department of History (0117)  
Virginia Tech  
Blacksburg, VA 24060  
540-231-4099
The Department of Management endorses the proposed undergraduate degree program in Science, Technology, and Society, and supports the inclusion of the MGT 3064 Cornerstones of Entrepreneurship and Innovation. The department welcomes the enrollment of additional students in this course, and we acknowledge no additional resources are needed.

Best regards.

Devi

Devi R. Gnyawali, Ph.D.
R. B. Pamplin Professor and Department Head
Department of Management (mail code 0233), 2007 Pamplin Hall
880 West Campus Drive, Blacksburg, VA 24061
Email: devi@vt.edu
Phone: 540-231-6353
Associate Editor, Journal of Management
http://www.management.pamplin.vt.edu/devi-r-gnyawali/
February 3, 2017

Dear Curriculum Committee:

The Department of Sociology endorses the undergraduate degree program in Science, Technology, and Society and supports the inclusion of the SOC courses listed below as electives. The department welcomes the enrollment of additional students in these courses, and we acknowledge no additional resources are needed.

SOC 3714 Sociology of Aging
SOC 4704 Medical Sociology

Sincerely,

John Ryan
Professor and Chair
February 1, 2017

RE: Letter of Support for UAP Courses for New Undergraduate Degree in Science, Technology, and Society

The Urban Affairs and Planning Program (UAP) endorses the undergraduate degree program in Science, Technology, and Society and supports the inclusion of the UAP courses listed below as electives. We welcome the enrollment of additional students in this course, and we expect that no additional resources will be needed.

UAP 3344 (PSCI 3344): Global Environmental Issues: Interdisciplinary Perspectives

UAP 3354: Introduction to Environmental and Policy Planning

UAP 4214: WOMEN, ENVIRONMENT AND DEVELOPMENT IN A GLOBAL PERSPECTIVE

UAP 4264: ENVIRONMENTAL ETHICS AND POLICY

UAP 4394: COMMUNITY RENEWABLE ENERGY SYSTEMS

Please contact me if you have any questions or comments.

Sincerely,

Thomas W. Sanchez, PhD
Chair & Professor, Urban Affairs and Planning
tom.sanchez@vt.edu
Monday, February 13, 2017

The Program of Women's and Gender Studies (WGS) in the Department of Sociology endorses the undergraduate degree program in Science, Technology, and Society and supports the inclusion of the WGS courses listed below as electives. The Program welcomes the enrollment of additional students in this course, and we acknowledge no additional resources are needed:

WGS 4704 Gender and Science
WGS 3324 Perspectives on the Biology of Women
WGS 4334 Sexual Medicine

We are very excited to have these doubly listed options for STS and WGS.

My very best,

Sharon P. Johnson
Director of WGS
Memorandum

TO: CLAHS Undergraduate Curriculum Committee
FROM: Douglas Lind
Head, Department of Philosophy
RE: Proposed undergraduate degree program in STS
DATE: March 21, 2017

The Department of Philosophy endorses the proposed undergraduate degree program in Science, Technology, and Society (STS) and supports the inclusion of the Philosophy courses listed below as electives. The Philosophy Department welcomes the enrollment of additional students in these courses, and we acknowledge no additional resources are needed.

PHIL 2304: Global Ethics
PHIL 3324: Biomedical Ethics
PHIL 4604: Philosophy of Biology

Douglas Lind
April 19, 2017

Daniel Breslau
Science and Technology in Society, 0247
Virginia Tech

Dear Dr. Breslau,

The Department of Geography is pleased to endorse the undergraduate degree program in Science, Technology, and Society and supports the inclusion of the GEOG courses listed below as electives. The Department welcomes the enrollment of additional students in these courses, and we acknowledge that no additional resources are needed. Specifically, we grant permission to include the following Geography courses as electives:

GEOG 1115-1116 (NR 1115-1116): Seeking Sustainability
GEOG 3104 Environmental Problems, Population, & Development

Sincerely,

Korine Kolivras
Associate Professor and Co-Chair
WHEREAS, since 2007, Virginia Tech and Carilion Clinic have benefited from a partnership that has resulted in successfully launching the Virginia Tech Carilion Research Institute and the Virginia Tech Carilion School of Medicine, and

WHEREAS, the university has a strong strategic interest in continuing to advance research and education in biomedicine, neuroscience, infectious disease, cardiovascular sciences, metabolism and obesity, biomaterials and body-device interfaces; and

WHEREAS, the Virginia Tech Carilion Research Institute continues to exceed its goals and surpassed $100M in total research funding awarded; and

WHEREAS, the Virginia Tech Carilion School of Medicine continues to exceed its goals as an accredited independent medical school; and

WHEREAS, the VTCSOM curriculum is innovative in its integration of research into the program of study resulting in the Doctor of Medicine (MD) degree including 126 on-going research projects with 73 VTCSOM faculty mentors; and

WHEREAS, 100% of the physicians who have completed their education at the VTCSOM pass the US Medical Licensing Exam Step 3, and the school has a 100% residency matching rate for each graduating class; and

WHEREAS, the school and the Virginia Tech and Carilion partners have agreed to integrate the school into Virginia Tech as a college; and

WHEREAS, Virginia Tech will confer the MD degree upon the integration of the school into the university; and

WHEREAS, the MD curriculum was developed and approved by the VTCSOM faculty, under the governance oversight of the VTCSOM’s Medical Curriculum Committee that represents the faculty and the 11 departments that comprise the VTCSOM; and
WHEREAS, the MD curriculum continues to be taught and delivered solely by VTCSOM faculty and, thus, does not require resources from other colleges; and

WHEREAS, the VTCSOM including its MD curriculum is accredited by the Liaison Committee on Medical Education (LCME) which is jointly sponsored by the Association of American Medical Colleges (AAMC) and the American Medical Association (AMA): and

WHEREAS, the VTCSOM is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC), the same body that accredits Virginia Tech; and

WHEREAS, the desire is for the University Council to affirm the integration of the VTCSOM and the MD degree program into the university; and

NOW, THEREFORE BE IT RESOLVED, that the University Council votes to affirm and approve the integration of the VTCSOM as a college within Virginia Tech; and

BE IT FURTHER RESOLVED, that the University Council votes to approve the integration of the VTCSOM’s Doctor of Medicine degree and existing curriculum into the university’s graduate offerings.
VTCSOM Medical Doctor (MD) Degree Curriculum

The Virginia Tech Carilion School of Medicine (VTCSOM) offers a program of study leading to the MD degree (MD). After the VTCSOM becomes an academic unit of Virginia Tech, the MD will be awarded by Virginia Tech.

The curriculum for the VTCSOM Doctor of Medicine degree (MD) is a 169-week, four-year program. The curriculum is designed around four “value domains” that shape course delivery and instruction. The four value domains are: basic science, clinical science, research, and interprofessionalism.

In addition to the four value domains, the VTCSOM’s curriculum places patient care at the center of all learning. This approach trains students to be physicians who place patients at the center of medical practice. The VTCSOM’s pedagogical approach is active and reduces passive learning, and uses patient case-studies in facilitator-guided, small-group discussions. As life-long learners, the medical students at the VTCSOM acquire, integrate, and apply knowledge in pedagogically active settings that include peer teaching, communication, and professionalism.

The VTCSOM curriculum is divided into two phases with Years 1 and 2 referred to as Phase I and Years 3 and 4 referred to as Phase II. During Phase I, the curriculum is separated into units of study referred to as blocks. Each block in Year 1 lasts eight weeks and each block in Year 2 lasts six weeks. The four value domains form the cornerstone of student instruction in blocks, rotations, and clinical practice. The curriculum will remain unchanged upon integration of the school into the university. See Appendix B for a sample plan of study.

<table>
<thead>
<tr>
<th>VTCSOM Doctor of Medicine Curriculum</th>
<th>Value Domains: basic science, clinical science, research, and interprofessionalism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase I</td>
<td>Year 1 4, 8-week blocks of study</td>
</tr>
<tr>
<td></td>
<td>Year 2 4, 6-week blocks of study</td>
</tr>
<tr>
<td>Phase II</td>
<td>Year 3 Carilion Clinic clerkships/clinical practice Six-week rotations: internal medicine, surgery, family and community medicine, pediatrics, psychiatry, and OB/GYN. Two-week rotations: radiology, neurology Four-week block: research Electives</td>
</tr>
<tr>
<td></td>
<td>Year 4 Carilion Clinic clerkships/clinical practice Four-week: emergency medicine Three, two-week electives: medical subspecialty, surgical subspecialty, ICU/critical care 18 to 26 weeks additional electives Two-week “Transition to Residency I” requirement Time for residency program interviews Two-week research rotation</td>
</tr>
</tbody>
</table>
VTCSOM -- Sample Plan of Study

PHASE I - Year 1 Block Schedule: Normal Structure and Function

Block I: August - October (8 weeks)

Functional Biology of Cells and Tissues: Molecules, Genes, Chromosomes, Proteins, Cells, Tissues, Metabolism, Transcription, Translation, Early Development, Pharmacodynamics, Pharmacokinetics

Interviewing and Professionalism: Interviewing Skills, Relationships with Colleagues, Medical Student Professionalism, Medicine as a Profession, Physician Privileges and Responsibilities, Medical Humanities

Fundamentals and Foundations of Research: Scientific Method, Thinking like a Researcher, Quantitative/Quantitative Research, Basic Clinical Translational Research Principles, Hypothesis Generation, Introduction to Medical Literature, "Research Live" - Intro

Interprofessional Healthcare: Introduction to Team Building Concepts, Interpersonal Relationships and Development of Camaraderie and Partnerships

Block II: October - December (8 weeks)

Human Body I: Immunology, Cardiovascular, Respiratory, Musculoskeletal, Autonomic Nervous System, Nutrition

Physical Exam and Human Life Cycle I: Major Body Regions, Cultural Diversity in the Medical Interview, Vital Signs, Heart and Lungs, Infancy and Early Childhood Development, Medical Humanities

Research Tools: Biostatistics, Epidemiology, Keys to Successful Collaboration, "Research Live" - Block Topics, Research Rotations

Interprofessional Healthcare: Theoretical Foundations and Models of Healthcare, Public Health, Population Health, Normal Structure and Function of Society, Experiential Team Learning (e.g., following a family)

Block III: January - March (8 weeks)

Human Body II: GI Tract, Liver & Biliary, Renal, Endocrine, Reproduction, Nutrition

Physical Exam and Human Life Cycle II: Abdominal, Male and Female Genitourinary Exams, Sexuality, Difficult Patient Interview - Sensitive Topics, Adolescent to Adult Development, Medical Humanities

Research Application: Biostatistics, Epidemiology, Research Design and Methods, Law and Medicine, Regulatory Principles, Research Rotations, "Research Live" - Block Topics

Interprofessional Healthcare: Healthcare Professional Roles, Conflict Resolution, Negotiations, Leadership, Clinical Skills Team Training (simulation), Experiential Team Learning, Patient Safety, Quality Improvement

Block IV: March - May (8 weeks)

Biology of the Nervous System: Central Nervous System, Peripheral Nervous System, Special Sensory Structures, Nutrition

Neurological Exam - Biopsychosocial Aspects: Aging, Death and Dying, Palliative Care, Lifestyle Modification and Stages of Change, Medical Humanities

Research Outcomes: Manuscript Preparation, Journal Selection, Manuscript Revision, Grant Writing, Grant Review Process (Study Sections), Research Mentor Selection Deadline, Project Identification Deadline, "Research Live" - Block Topics

Interprofessional Healthcare: Clinical Skills Team Training (simulation), Introduction Health Delivery Systems, Experiential Team Learning, Patient Safety, Quality Improvement
PHASE I - Year 2 Block Schedule - Abnormal Structure and Function

Block V: July - August (6 weeks)
Fundamentals of Pathobiology: Cells and Tissues, Necrosis, Neoplasia, Inflammation, Genetic Disorders, Immunological Diseases, Infection, Microbiology, Virology, Pharmacology, Therapeutics
Communicating with Patients and Families: Enhancement of Interviewing Skills, Fundamentals of Case Presentations, Psychosocial Aspects of Disease, Domestic Violence, Ambulatory Care Experience
Research Project: Individual Student Research Project (hypothesis generation / specific aim), Ethics, "Research Live" - Block Topics
Interprofessional Healthcare: Global Health Issues, Team Training in Disaster Preparedness, Patient Safety, Quality Improvement

Block VI: September - October (6 weeks)
Pathobiology of the Human Body I: Hematology, Bleeding disorders, White Cell Disorders, Vascular Diseases, Heart, Pulmonary, ENT, Lymph Nodes and Spleen, Microbiology, Virology, Pharmacology, Therapeutics, Nutrition
The Physician & Society and Clinical Skills: H & P and Psychosocial Aspects of CV and Pulmonary Diseases, Stress management for Physicians, Medical Marriages, Lifestyle Balance, Changing Healthcare Systems, Managed Care, Medical Legal Issues, Ambulatory Care
Research Project: Individual Student Research Project (research design, tests), IRB, Ethics, "Research Live" - Block Topics
Interprofessional Healthcare: Case Studies in Acute and Chronic Disease Management, Patient Safety, Quality Improvement

Block VII: November - December (6 weeks)
Pathobiology of the Human Body II: GI Tract, Liver, Pancreas, Renal, Male and Female GU, Breast, Microbiology, Virology, Pharmacology, Therapeutics, Nutrition
Health Promotion, Disease Prevention and Clinical Skills: H & P and Psychosocial Aspects of GI, Renal, and Urogenital Diseases, Ambulatory Care Experience, Writing Orders and Prescriptions
Research Project: Individual Student Research Project (anticipated outcomes and preliminary data), IRB, Ethics, "Research Live" - Block Topics
Interprofessional Healthcare: Case Studies in Acute and Chronic Disease Management Experiential Team Learning

Block VIII: January - February (6 weeks)
Pathobiology of the Human Body III: Endocrine, Skeletal and Soft Tissues, Skin, Environmental and Nutritional Diseases, Central and Peripheral Nervous Systems, Nutrition
Psychobiology and Substance Abuse: H & P and Psychosocial Aspects of Neurological Diseases, Clinical psychiatric syndromes and their underlying neurobiological dysfunctions, Ambulatory Care Experience
Research Project: Individual Student Research Project (proposal in grant format), "Research Live" - Block Topics
Interprofessional Healthcare: Health Policy Analysis, Case Studies in Acute and Chronic Disease Management, Experiential Team Learning

The basic science curriculum taught in the first two years of the medical school’s curriculum prepares students to enter into the more formal clinical phase in their third and fourth years.
PHASE II - Year 3 is spent at Carilion Medical Center with clinical faculty who are largely members of Carilion Clinic. There, students complete a year of required clerkships consisting of six-week rotations in the core clinical disciplines (internal medicine, surgery, family and community medicine, pediatrics, psychiatry, and OB/GYN) and two-week rotations in radiology and neurology. Research continues to be integrated into the clerkship year with a dedicated four-week block. In addition, there are four weeks available for electives in Year 3.

PHASE II - Year 4, students complete a four-week required clinical experience in Emergency Medicine as well as electives that must include one medical subspecialty, one surgical subspecialty, and one ICU/critical care rotation, each for two weeks. Students have 18 to 26 weeks of additional elective time, a two-week “Transition to Residency I” requirement, and additional flexible time for interviewing for residency programs and vacation. Finally, there is a required two-week research rotation, which can be lengthened for students whose research requires additional time.
CAPFA Minutes
Commission on Administrative and Professional Faculty Affairs
January 10, 2018 – 1:30pm – 2400 North End Center/WebEx

Present: Janice Austin, John Benner, Laurie Brogdon, Allen Campbell, Mallory Foutch, Alan Grant, Debbie Greer, Amy Hogan, Monika Lawless, Cayce Myers, Mary Norris, Vicky Ratcliffe, Sue Teel, Lonnie Johnson, Margaret Ratcliffe.

Absent: Maria Balota (with notice), Mary Christian, David Clubb (with notice), Martin Daniel (with notice), Jeremy Daubert, Prateek Mishra, Karisa Moore, Laura Neff-Henderson.

Guests: Jessica Davis, Patricia Smith

Dr. Austin called the meeting to order at 1:32pm. A quorum was present.

Approval of Minute from November 8, 2017

Dr. Austin reported all noted corrections/typos were corrected, the minutes were approved electronically, and they have been forwarded to the University Council. The December CAPFA meeting was cancelled.

Old Business
None.

New Business
Dr. Austin updated the Commission on two A/P faculty grievances that had been received.

Dr. Austin provided a report from the December CAPFA working group that focused on CAPFA visibility and a CAPFA outreach project. She then introduced Ms. Tricia Smith and Ms. Jess Davis from VTEngage who talked through outreach project ideas with the Commission. The minutes from the working group will be distributed to the Commission members.

Margaret Radcliffe presented for the first reading of Resolution CAPFA 2017-18A. After discussions with Martin Daniel, Ms. Radcliffe recommended tabling discussion until our February meeting when Mr. Daniel will present on Human Resources Office changes and planned revisions to policies. Ms. Radcliffe, Laurie Brogdon and Sue Teel indicated interest in working with Mr. Daniel when the HR policy committee is formed.
Commission Representative Reports:

Commission on Faculty Affairs (Laurie Brogdon) – Ms. Brogdon reported that CFA is currently working on updates to the promotion and tenure process as well as tenured faculty retirees’ health benefits.

Commission on Staff Policies and Affairs (Margaret Radcliffe) – Nothing to report.

Commission on Student Affairs (Mallory Foutch) – Ms. Foutch reported that CSA met with Provost Clarke in December to get more information on his role and directions for the University under his leadership. The Commission will be reviewing the Master Plan this semester.

Faculty Senate (Cayce Myers) – Nothing to report.

Graduate Student Assembly (Mary Norris) – Nothing to report.

Staff Senate (Sue Teel) – Nothing to report.

Transportation and Parking (Debbie Greer) – The committee has reviewed Purple Heart Recipient parking and determined designated spaces for these community members is not feasible but reduced parking rates may be possible. The committee is considering who should qualify as a visitor and get free parking rather than new categories of paid parking. The bike share program will start soon; 85 bikes at 8 stations of which 7 are on campus.

Other New Business:

None.

Our next meeting will be February 14, 2018

The meeting was adjourned at 2:37pm
Commission on Faculty Affairs
Minutes
January 19, 2018
10:30 a.m.-12:00 p.m.
130 Burruss Hall

In Attendance:  J. Ferris (Chair), R. Blieszner, S-Y Chien, G. Daniel (for C. Clarke), J. Finney, V. Groover, B. Hicok, T. Schenk, R. Speer, J. Spotila, R. Willis, P. Young

Absent:  G. Amacher, L. Brogdon, M. McGrath

Guests:  T. Bluestein, D. Musick, E. Plummer

Upcoming Meetings:  Feb. 2, 2018 (130 Burruss), Feb. 16, 2018 (130 Burruss)

1.  Welcome and Approval of Agenda
    Meeting called to order at 10:30 a.m.
The agenda was approved unanimously.

2.  Approval of December 1, 2017 Minutes
    The minutes were approved unanimously.

3.  COR Resolutions for Research Faculty
    The Commission reviewed two Resolutions from the Commission on Research, and offered their suggestions for J. Ferris, Chair of the Commission on Faculty Affairs to share with the Commission on Research. These two resolutions were, “Resolution to Clarify Faculty Handbook Language on Research Faculty Promotion Process” (COR 2017-18 A) and “Overload Compensation for Teaching Credit Classes” (COR 2017-18 B).

    For Resolution COR 2017-18 A, the Commission engaged in a discussion, and urged J. Ferris to report to the Commission on Research that in the third “whereas” clause, the word “intentional” be replaced because it seemed to imply that previous recognitions were somehow unintentional. Additionally, the Commission suggested that Section 6.2.1 be split into two sections to differentiate the promotion process for non-professorial and professorial research faculty more clearly.

    For Resolution COR 2017-18 B, the Commission suggested that language be added to make an exception to the Resolution’s language requiring research faculty to be the instructor of record and be assigned to teach the entire semester to be considered for overload compensation. The exception offered was in regard to large integrated classes such as those that exist in the College of Veterinary Medicine and the Virginia Tech School of Medicine that have 18 credit courses that are taught by a variety of faculty, and research faculty may not teach an entire semester or be instructor of record.

4.  Promotion and Tenure Work Group Update
    J. Ferris
J. Ferris, Chair of the Commission on Faculty Affairs gave an update on the Promotion and Tenure Work Group. The Work Group is reviewing various issues presented to them from the Commission and other faculty constituents. These issues include Expectations documents from individual Departments, the treatment and value placed on excellence in Research, Outreach and Service, and Teaching, timing and notification issues during the process, the use of 2 and 4 year reviews in tenure dossiers, and a variety of other matters. Proposed changes from the Work Group will go through the Commission on Faculty Affairs in the forms of resolutions to amend the Faculty Handbook. J. Finney, Vice Provost for Faculty Affairs, will gather information from C. Clarke, Interim Provost, in relation to communication to promotion and tenure candidates at each stage of review. The Commission also discussed the civility and collegiality as a part of the promotion and tenure process. J. Ferris suggested that Commission members should feel free to bring additional issues for the Work Group to consider.

5. Replacement for Leon Geyer

J. Ferris, Chair of the Commission on Faculty Affairs reported that the Faculty Senate will be nominating a replacement for L. Geyer, a Commission member who retired from Virginia Tech at the end of the Fall 2017 semester, at their next meeting.

6. Other Business

J. Ferris, Chair of the Commission on Faculty Affairs asked Commission members for any agenda items for future meetings. Three suggestions were made. The first suggestion was to expand the earlier discussion on civility and collegiality to issues of academic bullying and issues associated with faculty treatment of students. J. Ferris will invite K. DePauw, Dean of the Graduate School to this discussion. Second, P. Young requested time to discuss the Open Access Work Group, which has consulted with University legal Counsel and has findings to present. The third suggestion was a discussion of faculty dissatisfaction with SPOT surveys. These suggestions will be added to the agenda of future Commission meetings.

7. Adjourn

The meeting was adjourned at 12:00 p.m.
MINUTES
Commission on Graduate Studies & Policies
January 17, 2018
3:30 – 5:00 p.m.
Graduate School Conference Room

Present: Kevin Edgar (Chair), Alan Abrahams, Lujean Baab, Rajesh Bagchi, Sudip Bhattacharjee, Nancy Bodenhorn, Karen DePauw (ex officio), Lesa Hanlin, Eric Hill, Rachel Holloway, Erin Lavender-Stott, Peizhen Lu, Brett Netto, Sally Paulson, Annie Pearce, Kevin Carlson (for Robert Sumichrast), Martina Svyantek, and Zhiwu Xie.

Absent with notification: Adwoa Baah-Dwomoh, Jacob Barney, Alex Hyler, Xin Luo, and Hannah Parks.

Absent without notification: Julie Billingsley and Tyler Walters (ex officio).

Visitors and invited guests: Janice Austin, Bill Huckle, Libbie Sonnier-Netto, and Kenneth Wong.

Call to Order
The meeting was called to order by Dr. Edgar at 3:30 p.m.

Approval of the Agenda
The agenda was approved as presented.

Approval of the Minutes
The minutes of December 6, 2017 were approved as presented.

Committee Reports

Graduate Curriculum Committee
The minutes of December 14, 2017 were accepted as presented. Dr. Bagchi reported on the many proposals that were reviewed, revised, and/or tabled.

Graduate Student Appeals Committee
Dr. DePauw reported the committee has completed its work. There are no new appeals as of today.

Degree Requirements, Standards, Criteria, and Academic Progress (DRSCAP) Committee
Dr. Bodenhorn reported a representative from COED will meet with DRSCAP next week.

Constituency Updates
Graduate Student Assembly

Ms. Baah-Dwomoh provided the following written report in her absence.

GSA's 1st General Assembly meeting for the spring semester will be Thursday January 25 in the GLC Multipurpose Room.

GSA is hosting a cross campus social weekend with the NCR graduate students and the Roanoke graduate students, Feb 3-4. This was done in response to the positive feedback we got from last semester by hosting a tailgate for a football game, so we decided to make it a whole weekend of activities so that as many students as possible from our other campuses can attend. We are working closely with the NCR GSA and RGSA and four main events have been planned for the weekend. Dean DePauw was able to secure tickets to the VT vs Miami basketball game on Feb 3, so we are providing tickets to NCR GSA and RGSA to distribute out. For the students that don't receive tickets to the game but still wish to watch it, we are planning a watch party for any interested students (will most likely be held at Champs downtown). Our Spring Beer and Wine Social will be Saturday Feb 3, and we decided to do it specifically on that date to include the NCR and Roanoke graduate students. On Sunday, Feb 4, we are hosting a brunch with Dean DePauw for the NCR and Roanoke graduate students. After brunch, we will have campus tours and trips to the bookstore since several of the NCR students have remarked that they have never been to campus. If there are any questions or comments please direct them to Alex Hyler or Adwoa Baah-Dwomoh.

Graduate Honor System

Ms. Lavender-Stott reported there are four cases in progress. A constitution review will be done this spring.

University Library Committee

The graduate data management working group has reached out to a number of departments about establishing graduate data management planning procedures. One department officially signed on, and one department is currently considering. The committee will meet with the third department in early February.

Faculty Senate

The Faculty Senate has not met since the last report.

Student Government Association

There was no report.

Board of Visitors

Mr. Netto reminded everyone that the application period is now open for next year’s BOV representatives. He asked for students to volunteer to serve in the selection process.
University Council and Commission Updates

Dr. Edgar reported University Council meets next week.

There were no other commission updates.

Graduate School Update

Dr. DePauw reported on the Molecular and Cellular Biology program announcement in VT News. This serves as an IGEP model. Dr. DePauw also commented on accelerated programs to be expanded beyond the department and moving into other departments. This fits well with destination areas. Currently, there is an environmental program that will allow students to attend VT while enrolled at other campuses. The VSU program may develop to allow their undergraduate students to attend online VT engineering programs with possible graduate admission in industrial systems engineering. Dr. Carlson reported on the faculty activity reporting system, ELEMENTS, and suggested it could potentially develop to provide a site for graduate students to record scholarly activity.

Old Business

The revised Turnitin and iThenticate document was presented and accepted by the membership. Clarification was given on the use of the tool beginning in summer, 2018.

New Business

Currently, to chair a graduate committee, the individual must have a terminal degree, a record of current scholarly activity, and working in graduate education. This suggests not every collegiate faculty will be qualified to chair a committee. Currently, all tenure track faculty are permitted to chair without consideration of this criteria expected of collegiate faculty. Clinical faculty may also be impacted by this requirement. Non-tenure track faculty are meeting the requirements. The form will be updated to reflect this definition more clearly and the policies in the catalog will be clarified.

Announcements

Strategic planning announcements will be forthcoming.

Adjournment

The meeting was adjourned at 4:35 p.m.

Respectfully Submitted,

/s/

Marilynn R. King
On behalf of Karen P. DePauw, Ph.D.
Vice President and Dean for Graduate Education
MINUTES
UNIVERSITY ADVISORY COUNCIL ON
STRATEGIC BUDGETING AND PLANNING
January 18, 2018

PRESENT: Maria Balota (via teleconference), Michele Borgarelli, Tim Hodge, Omchand Mahdu, Cayce Myers, Amr Hilal (substitute for Andi Ogier), Robert Sebek, Ken Smith, Michael Sorice, Jack Washington (substitute for Jason Soileau) and Susan White.

ABSENT: Cyril Clarke, Henri de Hahn, Quinton Nottingham, Randy Penson, Hans Robinson, Dwight Shelton, Benjamin Tracy, Linbing Wang, and Rex Willis.

1. CALL TO ORDER AND WELCOME NEW MEMBERS

Mr. Tim Hodge, Associate Vice President for Budget and Financial Planning, called the meeting to order.

2. APPROVAL OF THE NOVEMBER 16, 2017 MINUTES

Mr. Hodge stated that the November 16, 2017 minutes were shared electronically, having received no feedback, those minutes are considered approved and are forwarded to the University Council for posting on the web.

3. UPDATE ON EXECUTIVE BUDGET

Mr. Hodge provided an update on the Governor’s 2018-20 Executive Budget, which was communicated to campus in a memorandum by Mr. Dwight Shelton, Vice President for Finance and CFO, on December 20, 2017. Mr. Hodge reminded the council that the State is in a slow growth economy yet revenues are outpacing expectations modestly. The State’s efforts are focused on bolstering Virginia’s revenue reserves and addressing mandated costs and core government services (i.e. K-12 Education, workforce training, and healthcare). The State has proposed an increase in Student Financial Aid, continued support for the Equipment Trust Fund, restoration of the interest earnings and credit card rebate financial incentives, which were eliminated in the prior year biennium, and maintenance reserve for higher education. Mr. Hodge shared the Executive Budget proposes a two percent salary increase for all state employees in the second year of the biennium, effective December 1st, 2019. The State also proposed to fully cover the employee share of the health insurance premium increases using state General Fund and university nongeneral funds revenue. There was no additional support for higher education capital projects, but there was an increase of $8.4 million to VT’s Maintenance Reserve fund. Mr. Hodge reminded the Council that the Executive Budget is subject to change during the General Assembly session, which convened on January 10, 2018 and is scheduled to adjourn on March 10, 2018. A copy of Mr. Shelton’s memorandum is attached to these minutes.

4. UPDATE ON ADVANCEMENT

Mr. Charles Phlegar, Vice President for Advancement, provided an update to the Council on the current activities of the Division of Advancement. Mr. Phlegar shared with the Council that the Division of Advancement was a vision of Dr. Sands and was created by the merging of University Development (fund raising), Alumni Relations and University Relations (communications and marketing) into the Division of Advancement. This merger was the first step in instituting a new advancement model at Virginia Tech, a model that has been very successful at many institutions. Mr. Phlegar shared how his group is working to educate VT
stakeholders on the importance of philanthropy and how they are changing the culture of giving with Virginia Tech alumni (to increase the participation rate), beginning while students are still undergraduates. Mr. Phlegar also spoke of the importance of Virginia Tech’s ‘brand’ being more than a new logo, but how people outside of Virginia perceive Virginia Tech. Mr. Phlegar concluded that while the Division of Advancement has much more to do in implementing the advancement model, they are making progress. In August of 2017, it was announced that for the second straight year, Virginia Tech set a new donation record, doubling what had previously been raised.

5. No further business was discussed, and the meeting adjourned at 5:00 p.m.
MEMORANDUM

TO: Deans
    Vice Presidents
    Members of the President’s Council

FROM: M. Dwight Shelton, Jr.

SUBJECT: Analysis of 2018-20 Executive Budget

On December 18th, Governor McAuliffe presented the proposed 2018-20 Executive Budget to the House Appropriation and Senate Finance Committees. With underlying economic indicators trending upward, the Commonwealth’s fiscal outlook continues to improve. However, although revenues are outpacing expectations, efforts to bolster Virginia’s revenue reserves and to address mandated costs and core government services like K-12 education, workforce training, and healthcare have largely limited the administration’s proposed new spending on discretionary initiatives including higher education.

Given the Commonwealth’s financial challenges of rising fixed costs and federal budget uncertainty, the university appreciates the additional support provided for student financial aid and maintenance reserve, as well as the restoration of financial benefits associated with Higher Education Restructuring performance that are included in the Executive Budget proposal.

The major direct and indirect impacts of the proposed budget are summarized below:

Operating Budget

Student Financial Aid: The Executive Budget proposes increased undergraduate student financial aid at Virginia Tech of $474 thousand General Fund (GF) in the first year and $1.6 million GF in the second year.

Interest Earnings & Credit Card Rebate: Financial incentives related to Higher Education Restructuring that had been eliminated in the prior biennium are restored. This results in approximately $700 thousand in each year of the biennium for Virginia Tech.

Equipment Trust Fund: Continuation of the current year funding of $10.3 million for traditional equipment and $5.2 million for research equipment is proposed.

Compensation

Faculty and Staff Salaries: The Executive Budget proposes a two percent salary increase for all state employees in the second year of the biennium, effective December 1, 2019. The Commonwealth would fund the General Fund share of this action. No compensation changes in the first year of the biennium are recommended.
Employee Health Insurance: Premium increases of 8.5 percent in the first year and 8.7 percent in the second year of the biennium are projected, and the Executive Budget proposes that the state fully cover the employee share of these increases using state General Fund and university nongeneral funds revenue. While coverage of the employee share of this increase is a welcome action, this will increase costs to the university beyond what would normally be anticipated.

Statewide Actions of Interest

GO Virginia: Additional support of $637 thousand GF is proposed to increase program administration of the GO Virginia initiative.

Virginia Research Investment Committee: An additional $233 thousand GF in the first year and $253 thousand GF in the second year is proposed to support salary and operating support for the development of the Research and Technology Roadmap.

Reserve Fund: The Executive Budget contains language providing institutional authority to create a reserve fund using any unexpended Educational & General (E&G) resources. The optional fund is encouraged as a long-term financial planning tool that could promote efficient resource utilization and/or mitigate substantial increases in future tuition and fees.

Mandatory Fee Limit: The Executive Budget proposes lowering the current five percent annual limit on increases of non-E&G mandatory fees to three percent. As a Level III institution, Virginia Tech is exempt from this language.

Capital

Maintenance Reserve: Maintenance Reserve funding for the university totals $27.1 million for the biennium. This is an increase of $8.4 million over the current biennium funding.

Capital Projects: No new state support for higher education capital projects was proposed in the Executive Budget.

A summary of the direct financial impacts of the Governor’s proposed amendments on the university’s operating and capital budgets is attached.

As in years past, the university will continue our efforts to communicate the impact of these budget initiatives to our elected representatives and advocate for the university’s critical funding needs during the 2018 General Assembly session. If you have any questions about the Executive Budget proposal, please feel free to contact me.

Attachment

cc: Alex Hyler, President of the GSA
    Robert Sebek, President of the Staff Senate
    Rex Willis, President of the SGA
    University Advisory Council on Strategic Budgeting and Planning
SUMMARY OF EXECUTIVE BUDGET AMENDMENTS FOR 2018-20 BIENNium
VIRGINIA TECH
December 18, 2017
(Dollar Amounts in Thousands)

OPERATING BUDGET

<table>
<thead>
<tr>
<th>University Division</th>
<th>State Support</th>
<th>2018-19</th>
<th>2019-20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational and General (E&amp;G)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restoration of Interest Earnings and Credit Card Rebates</td>
<td></td>
<td>$ 700</td>
<td>$ 700</td>
</tr>
<tr>
<td>Technical Adjustments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State share of technical adjustments, such as annualizing state support for FY18 costs only partially funded in the current year. (These are not new resources for 2018-20)</td>
<td></td>
<td>6,748</td>
<td>6,748</td>
</tr>
<tr>
<td>Student Financial Aid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virginia Undergraduate Students</td>
<td></td>
<td>474</td>
<td>1,572</td>
</tr>
<tr>
<td>Equipment Trust Fund</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traditional Allocation</td>
<td></td>
<td>10,332</td>
<td>10,332</td>
</tr>
<tr>
<td>Research Allocation</td>
<td></td>
<td>5,240</td>
<td>5,240</td>
</tr>
<tr>
<td>Subtotal University Division</td>
<td></td>
<td>23,494</td>
<td>24,592</td>
</tr>
<tr>
<td>Cooperative Extension/Agricultural Experiment Station Division (VCE/VAES)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational and General (E&amp;G)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical Adjustments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State share of technical adjustments, such as annualizing state support for FY18 costs only partially funded in the current year. (These are not new resources for 2018-20)</td>
<td></td>
<td>2,123</td>
<td>2,123</td>
</tr>
<tr>
<td>Subtotal VCE/VAES Division</td>
<td></td>
<td>2,123</td>
<td>2,123</td>
</tr>
<tr>
<td>TOTAL OPERATING SUPPORT</td>
<td></td>
<td>$ 25,617</td>
<td>$ 26,715</td>
</tr>
</tbody>
</table>

CAPITAL BUDGET

<table>
<thead>
<tr>
<th>Maintenance Reserve</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL CAPITAL SUPPORT</td>
<td></td>
<td>$ 13,574</td>
<td>$ 13,574</td>
</tr>
</tbody>
</table>

(a) This represents no change to the current year (2017-18) allocation for equipment.
(b) This represents an increase of $3.9 million per year over the current year (2017-18) allocation.