

**Committee on Graduate Studies  
Report to the Faculty  
January 2012 - June 2013**

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## **Introduction**

The structure of the Annual Report by the Committee on Graduate Studies (COGS) to the Faculty is as follows:

- brief introduction including a discussion of the importance of Arts & Sciences graduate programs to the university
- continuing and new themes and issues facing graduate programs in Arts & Sciences
- a list of highlights of issues discussed and resolved by COGS
- presentation of Graduate A&S Program Catalog changes that occurred over the past year
- a report on the activities of the Graduate Center
- A&S Graduate Ombudsperson report to COGS
- appendices

## **The Importance of Arts & Sciences Graduate Programs to the University**

Graduate programs in Arts & Sciences are integral to the mission of the College of William & Mary. By providing the expertise and opportunities of a major research university combined with the faculty mentoring and dedication to teaching found at a small liberal arts college, W&M awards A&S graduate degrees that are essential for leadership positions in a diversity of careers. In Arts & Science we have 11 highly selective graduate programs that are often recognized as being among the most academically rigorous in the nation. For example, our Early American History doctoral program is ranked 4<sup>th</sup> in the US. Our Masters programs in Psychology and Biology are among the strongest research-focused Masters programs in the country. We fight well above our weight category.

We are a university because of our graduate programs. Hence our identity as a *Liberal Arts University* is just as much tied to graduate excellence as it is to our reputation as an undergraduate Liberal Arts institution. We must excel at the graduate level and foster a strong sense of community among our graduate students and graduate faculty. The strength of our graduate programs puts us in a select peer group, which helps attract new faculty, students, and staff, as well as instructional, research, and infrastructure resources that would not otherwise be available to us.

We have developed many ways in which our graduate programs synergistically benefit our undergraduate program. For example, our graduate programs enhance the undergraduate program by expanding research and mentoring opportunities. The graduate programs are also vital in retaining approximately a third of the faculty members in Arts and Sciences. The College's ability to recruit and retain a strong research-active faculty in several key disciplines depends on the strength of our A&S graduate programs. In fiscal years 2012 and 2013, more than three quarters of the indirect cost recovery funds in A&S were generated by faculty affiliated with one of the A&S graduate programs. These funds are essential for maintaining the research infrastructure for all W&M faculty.

## **Continuing and New Themes and Issues**

### **Graduate Financial Aid**

Graduate student financial support continues to be the most pressing graduate issue in A&S. Historically, financial aid increases for A&S graduate programs have been dependent on irregular and insufficient allocations from the Commonwealth. The College's budget has never included an annual cost-of-living increase in A&S graduate stipend levels. Thus, A&S graduate financial aid has neither kept up with inflation nor kept up with the aid offered by our peer institutions. Stipend increases and the provision of health insurance subsidies are critical in A&S for the following reasons:

- **Competitiveness:** As graduate student stipends have not kept pace with inflation, A&S graduate programs have shrunk and are currently at their minimum viable size. We are not competitive with our SCHEV peers in A&S graduate student support, even though we are supplementing A&S graduate stipends and benefits with funds from the A&S Dean's contingency and from the units' share of the indirect cost recovery funds. In 2004-05, the Study of Graduate Aid Gaps by the Committee on Graduate Studies documented that the annual stipend provided by A&S graduate programs at the College of William & Mary averaged \$2359 lower than the mean stipend offered by our SCHEV peer group. Since that time, A&S graduate stipends have not kept pace with inflation and stipend increases at our peer institutions. Our competitiveness has been further reduced because more than 85% of our peer institutions now offer partial or full subsidies for graduate student health insurance as an additional form of financial aid, whereas the College does not provide health insurance subsidies to A&S graduate students. Top applicants to all programs are regularly lost to peer institutions offering higher stipends.
- **Diversity:** Members of groups traditionally under-represented in academia receive generous graduate financial aid offers from other institutions. Given the present stipends, graduate programs in A&S at W&M cannot compete with these offers.
- **Undergraduate teaching and mentoring:** A&S graduate students enrich the undergraduate program by serving as tutors, writing preceptors, lab and discussion section leaders, teaching assistants, instructors, and graders in courses with enrollments of approximately 15,000 undergraduate students annually. In addition, A&S graduate student mentors contribute to the success of undergraduate research in a number of disciplines.
- **Subsistence:** In return for serving as teaching assistants in our classes and as research assistants in our laboratories, our graduate students deserve compensation that provides for an adequate standard of life. The cost of living, particularly rent, has risen sharply in Williamsburg in recent years.
- **Faculty retention:** In the A&S disciplines that have graduate programs, the faculty cannot maintain their research productivity and their ability to obtain external grant and contract funding at current levels without the participation of highly qualified graduate students.

Deans Laurie Sanderson (up to July 2012) and John Swaddle (2012-13), the Committee on Graduate Studies, and the Dean of A&S have taken the following steps to continue advocacy for increases in A&S graduate student support:

1. The *Provost's Ad Hoc Committee on Graduate Health Insurance and Stipends*, chaired by Vice Provost Dennis Manos, was formed in the fall of 2006. Both A&S faculty and graduate students consider low-cost, College-subsidized health insurance to be a high priority. The committee's charge was to evaluate the status and compensation of W&M graduate/professional students and to assess changes that may be needed to maintain our competitive position as an attractive place for students to pursue graduate work. In the fall of 2008, the committee's report to Provost Feiss was posted at [http://www.wm.edu/about/administration/strategicplanning/documents/GraduateStudentCompensationReport\\_05092007.pdf](http://www.wm.edu/about/administration/strategicplanning/documents/GraduateStudentCompensationReport_05092007.pdf) as a reference for the College's strategic planning process.
2. The Dean of A&S, in collaboration with the Dean of Graduate Studies and Research, has submitted Planning Budget Requests to the Planning Steering Committee in each year of the PSC's existence requesting further investment in A&S graduate financial aid. These requests were reviewed favorably and there have been significant investment in graduate financial aid, although more is still needed to bring A&S to a nationally competitive level. In 2012-13 a further \$262,500 was added to the base financial aid budget for A&S graduate programs. A similar amount will be allocated in AY 2013-14.
3. The A&S Graduate Studies Advisory Board (GSAB) <http://www.wm.edu/as/graduate/gradadvisoryboard/index.php> enhances the quality of A&S graduate programs in a multitude of ways, including providing support for the following initiatives:
  - Recruitment Fellowships---These fellowships, offered since 2006-07, provide a stipend supplement of \$2,500 per year for each of the first two years at W&M. Incoming students of exceptional caliber who represent extraordinary recruitment opportunities are eligible to be nominated for these fellowships.
  - Diversity Fellowships---These fellowships, which began in 2008-09, provide a stipend supplement of \$3500 per year for each of the first two years at W&M. The Diversity Fellowships, like the above recruitment fellowships, increase the abilities of A&S graduate programs to recruit outstanding students who are receiving generous offers from competing institutions. Eligibility for this fellowship is interpreted broadly, with a preference for nominees who are members of a group that is underrepresented in the discipline.
  - Distinguished Thesis/Dissertation Awards---These awards were established by the Graduate Studies Advisory Board in 2004-05 to recognize exemplary achievement in graduate student research. In 2011-2012 five W&M graduates received the Distinguished Thesis and Distinguished Dissertation Awards and four W&M graduates in 2012-2013.
  - Sponsorship for and participation in the W&M Graduate Research Symposium---The Graduate Studies Advisory Board aided in sponsoring the 2012 and 2013 Graduate Research Symposium, and two GSAB members sponsored corporate awards of \$1000 in 2012 and 2013 each to recognize outstanding graduate student research.

### **W&M Strategic Planning Process, Development, and Budget Planning and Decision-Making Processes**

In 2012-13, the Committee on Graduate Studies continued to be engaged actively in the College's strategic planning process and budget planning and decision-making process, as well as renewing collaborations with A&S Development and the University Development Office. In fall 2012 Dean Swaddle wrote position statements for A&S graduate programs that have been used by Development Officers. A&S graduate students were included in departmental fundraising phone-a-thons conducted by University Development in Spring 2013 in an effort to better engage graduate alumni in giving to the College.

### **Graduate A&S Recruitment**

In the fall of 2012, the College welcomed an impressive group of 128 new A&S graduate students in eleven Master's programs and six doctoral programs. The applicant pool, totaling more than 800 in 2012, has increased by 25% over the past four years. More than 81% of the entering A&S graduate students in fall 2012 had conducted research projects as undergraduate students, with most receiving awards or Honors for their scholarship. More than half had contributed to their communities through volunteer service, and 67% had been teachers or mentors to pre-schoolers through senior citizens. Approximately 20% of the entering A&S graduate students were international students from eight countries.

With the transition to an electronic Graduate Catalog in AY2013-14 Creative Services agreed to move some of the pre-existing print budget to a centralized recruitment pool, so that the OGSR could augment departmental and programmatic recruitment efforts with some centralized and clustered recruitment materials.

### **Graduate Student Research and Travel Funds**

In the fall of 2005, a new competition for support of A&S graduate student research travel, fieldwork, and minor research expenses was instituted by the Office of Graduate Studies and Research (OGSR), with the first awards made in spring 2006. The purpose of this Graduate Student Research Grants program is to provide increased funding in support of A&S graduate student research.

As of the fall 2007 semester, continuous enrollment fees from A&S graduate students have provided a stable source of funding for the Graduate Student Research Grant program, enabling this program to be offered predictably each fall and spring semester. To aid graduate students in conducting summer research, a summer funding program was initiated in summer 2009 by the OGSR. In previous years, spring research grants could include funding for summer activities but the funds had to be expended prior to July 1. The OGSR awarded a total of \$5,919 to 21 A&S graduate students in the spring 2012 semester, \$4,334, to 15 A&S graduate students in the summer of 2012, \$3,520 to 13 graduate students in the fall 2012 semester, \$3,781 to 14 A&S graduate students in the spring 2013 semester and \$3,263 to 12 A&S graduate students in the summer of 2013. The maximum award was \$300.

The OGSR and the W&M student activities office provide support for the A&S Graduate Student Association (GSA) Supplemental Conference Fund. The GSA is responsible for the application and selection process for conference travel funding, with priority given to students who are presenting at a conference. Since conference travel funds appear to be a substantial unmet need, \$2,600 was provided for 13 awards in spring 2012, \$3,000 for 15 awards in summer 2012, \$2,800 for 14 awards in fall 2012, \$2,600 for 13 awards in spring 2013, and \$3,270 for 15 awards in summer 2013. Effective Summer 2013, the OGSR has agreed to fund International Travel for students awarded GSA Conference Funding. Dean Swaddle has worked with the Reves Center to develop a policy that we feel will benefit the student and our depts/programs. The maximum award was \$200.

### **A&S Graduate Studies Advisory Board**

The A&S Graduate Studies Advisory Board (GSAB), created in 2004, is comprised of approximately 15 community, business, and education leaders whose goal is to advocate for and support A&S graduate programs. The Graduate Studies Advisory Board met on campus March 24-25, 2012, held a video conference on December 16, 2012, met again on campus March 23-24, 2013 and held a teleconference on June 5, 2013. The October 2012 Board meeting was cancelled due to Hurricane Sandy.

The GSAB spring meetings and the Graduate Research Symposium were coordinated to be held on the same weekend. More than 94% of the Board participated in symposium events, including four Board members who served on the judging panel for the awards and six Board members who chaired oral sessions at the symposium. Several members also attended oral and poster sessions and were involved in informal career mentoring and networking at the symposium reception and the awards luncheon. Committee on Graduate Studies members were invited to attend the evening reception for the spring 2012

and spring 2013 Board meetings to discuss their perspectives on the strengths and needs of A&S graduate programs.

The GSAB voted unanimously to support the construction of a Graduate Studies Reading Room in Swem Library, in collaboration with Dean Carrie Cooper. The new Reading Room will provide a centralized place for quiet individual and group study, much needed especially in the humanistic social sciences where there is little space in current departmental and programmatic facilities for such activities. We expect construction of the Reading Room, located on the second floor of Swem, to be finished before the start of the fall 2013 semester.

The GSAB also voted unanimously to renew efforts to increase their membership, set more aggressive fundraising goals, and to start new online efforts to provide career and professional mentorship to A&S graduate students.

### **S. Laurie Sanderson Awards for Excellence in Undergraduate Mentoring**

In the spring of 2009, the A&S Graduate Studies Advisory Board and the A&S Committee on Graduate Studies voted unanimously in support of the Board's concept for initiating these annual awards to A&S graduate students in recognition of outstanding undergraduate mentoring in scholarship and research outside of classroom teaching. Undergraduate mentoring includes, among other examples, graduate students who mentor undergraduates in the context of the undergraduate students' senior theses, honors theses, writing projects, term papers, or research in a laboratory, field site, museum, or archive. Undergraduate students and faculty collaborate to nominate graduate students. Five awards of \$250 were presented at the 2012 Graduate Research Symposium's awards luncheon on March 24, and four awards of \$250 were presented at the 2013 Graduate Research Symposium's awards luncheon on March 23, drawing more undergraduate students and faculty to the symposium and increasing visibility for the important contributions of graduate students in mentoring undergraduate students in scholarship and research.

### **Carl J. Strikwerda Awards for Excellence**

In the spring of 2011, the A&S Graduate Studies Advisory Board and the A&S Committee on Graduate Studies voted unanimously in support of the Board's concept of initiating the annual Carl J. Strikwerda Award for Excellence in the Humanities and Social Sciences and the Carl J. Strikwerda Award for Excellence in the Natural and Computational Sciences in the amount of \$250 each for an outstanding written paper by a W&M A&S student who is engaged in thesis research/scholarship to earn an MA, MS, or MPP degree. The first three awards were presented at the 2012 Graduate Research Symposium Awards Luncheon to Master's students who submit symposium written papers that are judged to be outstanding by a ranking panel of faculty and GSAB members and three awards were presented at the 2013 Graduate Research Symposium Awards Luncheon.

### **A&S Graduate Portfolio Website**

In 2009, the A&S Graduate Student Association (GSA) and the Office of Graduate Studies and Research initiated a website at [http://www.wm.edu/as/graduate/graduate\\_portfolio/index.php](http://www.wm.edu/as/graduate/graduate_portfolio/index.php) to highlight the quality of A&S graduate programs by compiling and disseminating information on the accomplishments of A&S graduate students, including external awards, conference presentations and publications, and recent alumni employment/positions. The Graduate Portfolio website serves as a resource for strategic planning, program review, Development and University Relations offices, prospective students, the Graduate Studies Advisory Board, and alumni networking. GSA representatives collect information on graduate student achievements in their respective departments/programs. This year students also had the option to submit their information on the web at <https://forms.wm.edu/1539>. At least three times per year, these updated entries provided by A&S graduate students are posted by the Office of Graduate Studies and Research to

the Graduate Portfolio website. In the future, the site can be expanded to include ongoing updates from alumni.

### **Graduate Research Forum Organized by Virginia Council of Graduate Schools**

The 7th Annual Graduate Research Forum was held at the Library of Virginia in Richmond on February 16 2012. The Forum is hosted annually by the Virginia Council of Graduate Schools to highlight the research of graduate students at public institutions in the Commonwealth. General Assembly members and staff, Governor's staff, University administrators, and staff of the State Council of Higher Education for Virginia are the primary audience. There were more than 60 student poster presentations from across the state and from many disciplines, with an emphasis on research that can benefit Virginia and its citizens. Dean Laurie Sanderson organized the participation of five W&M graduate students and accompanied them to the event. (see <http://www.wm.edu/as/graduate/news/Borrowed%20Story5.php>).

## **COGS Highlights**

### **January 27, 2012**

#### **Pilot summer workshops led by A&S graduate students for public**

Grey Gundaker proposed a pilot project to enable A&S graduate students to offer four-week summer workshops (2 hours/week) for the public, funded by the Office of Graduate Studies & Research, during Summer 2012. A similar concept had been discussed by Laurie Sanderson and the Graduate Studies Advisory Board in previous years, but there was an unmet need for planning and coordination. Grey Gundaker initiated the planning, which involved three American Studies doctoral students who served as workshop leaders. Each received a \$400 summer fellowship for planning and coordinating a project. Given modest enrollments, the project was not continued for Summer 2013.

### **February 10, 2012**

#### **Discussion on possibility of medical extension policy**

Henry Broaddus (Associate Provost for Enrollment), Ed Irish (Director of Financial Aid), Sallie Marchello (University Registrar), Trish Volp (Dean of Students), and Trista Sikes (Student Insurance Coordinator) have reviewed the proposed medical extension policy.

#### **Summary of Problem**

The College needs a way to keep chronically ill students from skewing the time-to-degree profile of our graduate programs as a whole. Chronically ill students need a way to remain registered that permits them to make progress toward the degree at the best pace they can manage.

#### **Proposed Solution**

A medical EXTENSION option should be added to the present options of medical leave, medical withdrawal, standard leaves of absence, and standard annual requests for degree extensions. To apply for a medical extension, students must present to the Office of Graduate Studies & Research a doctor's diagnosis of chronic disease which impedes but does not preclude progress to the degree. The doctor's statement should also include the proviso that the disease does not render the student a danger to him or herself or to others. The application will also include letters of support from the student's adviser and director of graduate studies, and a realistic work timetable toward completion of the degree, based on the student's condition at the time of application. Progress will be assessed annually. If benchmarks in the completion timetable are not met, available options will be submission of a revised medical report and revised timetable to fit changing conditions, medical leave; or medical withdrawal. Students who meet annual review benchmarks will be approved by programs and departments for an extension for the coming year without having to go through increasingly rigorous justifications to COGS. To the extent possible the application and approval process for medical extensions should be handled confidentially.

#### **Benefits**

- Students on medical extensions can be listed by number, not name, as a separate category on the time-to-degree profiles of programs and departments, and the College.
- Standards for granting standard extensions can be tightened because the number of students with viable extenuating circumstances will be greatly reduced.
- Students granted medical extensions will stay in better touch with departments and programs because they will be working toward their degrees on a realistic timetable that spares them the embarrassment of having to use illness as (as they see it) an "excuse" for performance that appears poor compared to that of other students.
- Students granted medical extensions will remain part of the College community, not marginalized from it by illness.
- Students granted medical extensions will usually, in due course, receive their degrees and add to our graduation statistics, rather than our withdrawal statistics.
- Students granted medical leave will make valuable contributions to research in their respective disciplines.

### **April 13, 2012**

#### **Issues of importance to COGS during 2012-13 transitions in A&S administration**

COGS members are encouraged to identify A&S graduate issues that will be of importance to COGS during the transition to the new Dean of A&S and the new Dean of Graduate Studies & Research during 2012-13.

### **September 20, 2012**

#### **Graduate Program Deferral an Application**

For how long can a graduate program defer an application without requiring the applicants to resubmit a new application file? Currently our policy states that an application is active for 12 months and then would need to be renewed. However, we also state that a graduate program can defer entry for an accepted student but we do not state a time limit on these deferrals. Should we impose a limit here? The current Application Policy and Procedures document is on the 9-20-12 meeting folder on Blackboard. The member questioned, if this is allowed, is there a maximum number of times an applicant would be allowed to reapply. Currently there is no rule that would stop an applicant from reapplying as many times as they wish to. COGS members voted to keep the current policy that after an approved deferral from the Dean, an application is active for only 12 months and the applicant would then need to reapply and pay the required application fee. Departments and programs currently have the option to pay the application fee for an applicant using their own funds if the student submits a paper application. Note that three COGS members abstained.

#### **Increased visibility of A&S Graduate Students**

COGS formed a small working group to write a white paper reporting on what kinds of events would be suitable for increasing the visibility of A&S graduate students, along with the justification for a suggested plan of action. Elaine McBeth, Matthew Wawersik, and Fred Smith collected data via student surveys and suggestions and produced a summary working document that included suggestions such as adding an A&S Graduate Studies booth to the Career Fair, encouraging A&S graduate students to apply to College-wide committees, and continuing work with the Cohen Career Center to introduce activities focused on the needs of A&S graduate students.

### **November 15, 2012**

#### **Draft statement from COGS regarding timely feedback on draft theses/dissertations**

At the October 13, 2011 COGS Meetings the members voted to have the Dean of Graduate Studies and Research send annually a statement to faculty members in all graduate A&S programs a statement regarding the importance of timely feedback on drafts of theses and dissertations.

#### **SPEAK test for all A&S graduate students for whom English is a second language.**

COGS members passed unanimously a SPEAK test requirement for all A&S graduate students for whom English is a second language, whether or not the student received a TOEFL waiver.

### **Online Catalog Software**

Dean Swaddle informed COGS members of new software that the College of William and Mary will be utilizing for an online graduate catalog that will replace the current paper version. The Dean explained that the College would explore how best to be represented electronically and asked COGS members to think about how this might apply to their particular programs. Electronic formats allow for information to be presented in different ways than on paper, hence departments and programs may want their graduate programs' entries in an online catalog to look somewhat different to the current print version. Following the COGS meeting Dean Swaddle circulated examples of how the software the College has purchased has been implemented at other universities.

### **November, 29, 2012**

#### **Grant initiative from the Virginia Council of Graduate Schools – Virginia Alliances for Graduate Education and the Professoriate (VAGEP)**

William and Mary is part of a consortium of graduate schools among Virginia's public institutions. One of our activities this year is to put together an *Alliances for Graduate Education and the Professoriate* (AGEP) grant to the National Science Foundation. This would be the only such AGEPE initiative in the whole of Virginia. The main goal of this proposal will be to facilitate collaborations among institutions to help prepare students traditionally under-represented in STEM (Science, Technology, Engineering, and Mathematics) to advance to careers in the professoriate (defined broadly).

One of the first steps in preparing this VAGEPE proposal is to take an inventory of the kinds of programs and initiatives that are offered to students at our own institutions. John Swaddle will circulate a short form this week that will help us share information from W&M. Please indicate the kinds of programming that we currently offer to students in STEM areas. This is simply an inventory and does not bind us in to any form of agreement with another institution right now. There will be later conversations about how we want to offer opportunities for students from other institutions. Topics of interest are:

- Mentoring Programs (undergraduate, graduate, faculty):
- Recruitment:
- Assessment:
- GTA Training:
- Pedagogy Training:
- Preparing the Future Professoriate Programs:
- Student Advising Training:
- Technology Training:
- Career Advising:
- Training on Special Services offered by your institution:
- Other (ethics training, scholarly integrity, etc.):

Dean Swaddle requested an inventory of the kinds of programs and initiatives that are offered to their students, in regards to the above topics, from each relevant program/department by January 14<sup>th</sup>, 2013. This information will coalesced to be presented to the Deans on the council of the VAGEPE

### **January 29, 2013**

#### **OGSR staff are meeting with CollegeNet, our online application system vendor, to discuss additional software that could more seamlessly integrate application reviews with the submission of application materials.**

This action was directly stimulated by COGS members submitting their workflows about how they review graduate applicants.

### **February 12, 2013**

#### **How long can a thesis/dissertation committee chair serve on a committee as chair after they leave the college?**

The COGS members agreed that when a faculty member who is a thesis or dissertation committee chair leaves the College then they should **immediately** either be removed as the committee chair (but could



continue as an external committee member, if allowed by departmental/program rules) or remain as a co-chair when the other co-chair is a current full-time faculty member of the respective graduate program (see below for definition of a full-time faculty member in a graduate program). The co-chair who is the current full-time faculty member will have signatory authority on forms. This co-chair arrangement will help ensure the availability of an on-site advisor to the student.

COGS members also agreed that the same practice should occur when a faculty member leaves the relevant graduate program but remains affiliated with the College; for example, if a faculty member changes the nature of a joint appointment and is no longer appointed to the graduate program, or if the faculty member retires and is awarded emeritus status. Current arrangements will be “grandfathered in” on a case-by-case analysis.

To be the sole chair of a thesis or dissertation committee a faculty member must currently be a full-time faculty member within that graduate program. For these purposes we define a full-time faculty member as someone who holds a tenured or tenure-eligible faculty position or a courtesy or research professor appointment in that graduate program.

This was agreed upon as a formal statement from COGS.

### **February, 26, 2013 COGS Annual Report**

Provost Halleran has approved a request that the COGS Annual Report be based on the academic year instead of on the calendar year. A draft of the 2012 COGS Annual Report will be e-mailed to COGS members in advance of the first meeting in Fall 2013 to allow feedback from COGS members to be incorporated into the report in time for COGS discussion and vote approving the document. The A&S Faculty Affairs Committee will schedule the COGS Annual Report to be presented by the Dean of Graduate Studies & Research at the October 1, 2013 A&S Faculty Meeting. The A&S Dean's office must post the COGS report on the A&S web site and the agenda no later than September 17, 2013.

### **March 12, 2013 Extension Template**

To clarify the information needed to assess extension requests the OGSR has generated a new form, which is attached to these minutes and will be posted on the OGSR website.

### **Dean Kate Conley visit**

Dean Conley expressed to the COGS members the importance of Graduate Studies, Arts and Sciences to the College of William and Mary in that Graduate Studies increases its fabric of excellence. She praised Graduate Studies, Arts and Sciences for the ability to draw grants and special projects. Dean Conley said this draw creates stronger programs with a strong faculty and a degree of flexibility in teaching and research. Dean Conley expressed her support in Dean Swaddle's vision to streamline college processes and his efforts to increase visibility of Arts and Sciences Graduate programs campus wide. Dean Conley discussed William and Mary's mission and the goal of creating a clear Arts and Sciences identity. Dean Conley expressed her enthusiasm to meet with the Graduate Studies Advisory Board and asked COGS members to share relevant issues they would like her to relay to the GSAB. Evgenia Smirni, expressed the idea of increasing the number of fellowships and increased recruitment incentives. Brett Rushforth discussed a need for a stronger statement from Liberal Arts University to College; stating that the meaning is slipping. Dean Conley noted the need to reverse the order of teaching and research to research and teaching in the mission statement. Matthew Wawersik discussed the idea that the Board of Visitors does not have the same connection with the College of William and Mary as the Advisory Board. Dean Conley talked about sending an informed Graduate Studies report to the BOV. Dean Conley informed COGS members that she and Ginny Elwell are prepping for how Development can better connect to the BOV. It was also mentioned that Graduate financial aid should be on the same level as general student financial aid.

**March 26, 2013****2013-2014 Arts & Sciences Graduate Catalog Proofs**

Departments/Programs will receive the proofs (Word Document) for the 2013-2014 A&S graduate catalog the week of March 25. The University Registrar's office has received a Committee on Sustainability Green Fees grant to purchase a digital catalog management system. The new system is ACALOG by Digital Architecture. Because of the new system, we will be on a very tight deadline this year. Please submit your copy to Chasity Roberts ([cyroberts@wm.edu](mailto:cyroberts@wm.edu)) electronically by Friday April 26, 2013. All substantive program or course changes must be approved by COGS before a catalog change is made. Please don't forget to update your faculty listing.

**Geographic Information Science (GIS) Postbaccalaureate certificate program.**

Dean Swaddle and Stuart Hamilton (Director of W&M's Center for Geospatial Analysis) were funded through the Provost's Creative Adaptation Fund to start a new Geographic Information Science (GIS) Postbaccalaureate certificate program, operating out of the DC Office. They have been working with the Provost's office and DC office to get this established for Summer 2013. They have brought a Catalog description of the certificate program as well as the final course for consideration by COGS. Relevant documents are attached to this agenda. The proposal to approve the description of a new Geographic Information Science (GIS) Postbaccalaureate Certificate program with a minor addition of the word "Washington" in the first paragraph, first sentence, before "DC" was passed unanimously. The proposal to approve online Catalog Course descriptions of a new Geographic Information Science (GIS) Postbaccalaureate certificate program titled 501/502. Fundamentals of GIS, GIS 550. Independent Research in GIS and 510/511. Geospatial Pattern Analysis and Visualization was passed unanimously.

**Exit Survey for graduate students.**

At the recent Graduate Studies Advisory Board meeting the Board decided to help support our implementation of an Exit Survey by funding a student assistant. Dean Swaddle will ask COGS members to help identify a suitable student assistant. The OGSR still needs to receive 5-10 department/program specific exit survey questions to help complete the survey questions. The proposal for COGS members to help identify a suitable student assistant that will help support our implementation of an Exit Survey was passed unanimously.

**April 9, 2013****Successful 12th Annual Graduate Research Symposium on March 22-23**

The 2013 Graduate Research Symposium was highly productive, with 150 oral and poster presentations and a total of more than 1100 attendees at symposium events with an average attendance of 17 per session. The presenters included 43 graduate students from 19 regional institutions such as Georgetown, UNC-Wilmington, Georgia State University, Tufts and the University of Virginia. Based on written papers that were submitted by presenters and ranked by a judging panel of A&S faculty and Graduate Studies Advisory Board members, awards totaling \$6950 were provided to W&M graduate students and visiting student scholars. The Carl J. Strikwerda Awards for Excellence were presented by A&S Dean Kate Conley to three W&M students engaged in thesis research/scholarship to earn an MA, MS, or MPP degree. In addition, four \$250 S. Laurie Sanderson Awards for Excellence in Undergraduate Mentoring were presented to A&S graduate students in recognition of outstanding undergraduate mentoring in scholarship and research outside of classroom teaching.

Vice Provost Dennis Manos moderated a special Mock Interview Career Development Workshop at the Cohen Career Center, and President Reveley and Provost Halleran were guest speakers at the symposium awards luncheon Saturday. The Graduate Studies Advisory Board helped to sponsor the symposium and eleven Board members participated extensively in symposium events. Undergraduate students were invited to attend the symposium, and the current 150 undergraduate Honors students received personal e-mail and hard copy invitations to the symposium.

**Further discussion of the impact of equalizing graduate and undergraduate tuition**

Dean Swaddle proposed to COGS members a general structured model of the impact of equalizing graduate and undergraduate tuition to be bought before Vice Provost Manos. The model consists of three categories. The first is the fully funded graduate student, who is covered by tuition waivers. It was agreed that any tuition changes would have a minor impact on students in this category. The second category is split into two subgroups. The first subgroup consists of those students whose tuition is covered by internal, and maybe some external, grants. COGS members agreed that this group, consisting mostly of PhD students, would be impacted by a reduction in either the number of grants offered or the amounts of the grants received. The second subgroup consists of those students receiving Graduate Research and Teaching Assistants. This group would be affected by any increases in tuition in that without a corresponding offset in the budget of the Office of Graduate Studies, any funds available after the increase would be limited, thus reducing support for research funds, conference travel, etc. The third category consists of graduate students paying their own way. After discussion, Dean Swaddle's proposal passed unanimously.

### **April 23, 2013**

#### **Revision to the Physical Standards**

Jeff Nelson proposed allowing either Arial or Computer Modern font if students use LaTeX to format the required front pages of their thesis or dissertation. His proposal passed unanimously.

### **May 7, 2013**

#### **Annual reviews**

COGS discussed the merits of requiring all graduate students to complete annual reviews that are read and commented upon by their advisors. Many graduate programs already require this. It was generally thought that this process could be beneficial to all A&S graduate students as it gives the students feedback on their progress and also ensures that advisors (and committee members) are engaged with the academic achievements and goals of their students. Dean Swaddle commented that members of his Graduate Cabinet (a focus group of graduate students representing A&S programs) were keen for all graduate programs to require annual reviews so long as the faculty were engaged in the process and the students received useful feedback. This discussion will continue in fall 2013.

#### **Recruitment materials**

With the transition to an online only Graduate Catalog in 2013-14 part of the designated printing budget has now been redirected toward generating central recruitment and informational posters and brochures. Dean Swaddle requested that all graduate programs send the OGSR their current recruitment and advertisement information and the OGSR would start to coordinate with Creative Services to produce clustered print posters and brochures. COGS generally agreed that it would make sense to add some form of clustered and centralized recruitment to augment their own departmental and programmatic efforts. The OGSR products are not intended to replace what the departments and programs already do in terms of recruitment. The proposed clusters were:

- Humanistic social sciences: American Studies, Anthropology, History
- Physical sciences: Computer Science, Computational Operations Research, Physics
- Research Masters: Biology, Chemistry, Psychology
- Public Policy

It was recognized that Public Policy does not fit easily in to one of these clusters and may not require additional print products, as this program already has well-developed recruitment strategies.

## **Course Approvals and Revised Degree Requirements**

### **American Studies**

The following changes were approved by COGS email vote on April 27, 2012.

### General Description

The general mission of the graduate program is to prepare students for careers in which scholarly knowledge of and approaches to American cultures and society are requisite. These include professions in higher education, museums, publishing, government, and other areas requiring a capacity for rigorous, interdisciplinary investigation.

The M.A.-only program offers excellent opportunities for persons seeking advanced study in the Liberal Arts for its own sake as well as to enhance preparation for careers involved in interpreting American life to far-reaching audiences. Some students may also undertake the M.A. in preparation for entrance into a doctoral program.

The J.D./M.A., a joint program leading to the J.D. in the Marshall-Wythe School of Law and the M.A. in American Studies is designed to encourage the interdisciplinary study of law and other aspects of American society and culture. For some students, the program may foster investigation of American legal history within the broader framework of U.S. cultural and intellectual history. Others may pursue inquiries on broad historical or contemporary themes, exploring the interplay between law and culture in forming institutions, policies, and thought within the United States.

The M.A./Ph.D. and Ph.D. programs are designed for those students who wish to pursue original, interdisciplinary research and whose professional goals require a doctorate.

Students must hold a bachelor's level degree from an accredited institution of higher learning to enter the M.A., J.D./M.A., or M.A./Ph.D. program. M.A. degrees in the humanities and social sciences are generally acceptable preparation for admission to the Ph.D.; however, all M.A. transcripts are reviewed by the admissions committee prior to acceptance. Students seeking admission to these programs may usually transfer up to six credit hours earned in another graduate program at an accredited institution toward their degree requirements.

### Degree Requirements for the Master of Arts

#### I. M.A.-Only

**A. Students admitted to the MA-only program can complete their coursework in one academic year, taking 12 credits each semester, and have 6 years from matriculation to complete the degree.**

~~Full-time students in the M.A./Ph.D program must complete all coursework in the first year of study, defend the thesis in 3rd semester, and receive the M.A degree the December following the 3rd semester.~~

~~A. Part-time M.A./Ph.D. students must complete all requirements for the M.A. within 6 years from matriculation.~~

**B. Course distribution (24 credit hours) consists of an introductory seminar (661), a broad framework for the study of American culture and society; as well as formal courses and directed reading. Two of these courses are independent study (six credits of AMST 695) for the Master's thesis, usually under the supervision of the student's advisor.**

**C. Students complete a thesis, based on original research, which develops a coherent argument and makes a contribution to the study of American life. The thesis, supplemented by an oral defense before a faculty committee, will serve as the M.A. field examination in American Studies.**

#### II. MA in the M.A./Ph.D program

**A. Full-time, funded students in the M.A./Ph.D program must complete all coursework in the first year of study, defend the thesis in the 3rd semester, and receive the M.A in December of the 3rd semester in order to remain in good standing and receive funding to begin candidacy in the Ph.D. program in the 4th semester.**

**B. Course distribution (24 credit hours) consists of an introductory seminar (661), a broad framework for the study of American culture and society; as well as formal courses and directed readings designed to prepare the student in a coherent field of inquiry. Two of these courses (six credits of AMST 695) are independent study during which the student undertakes the research and writing of the Master's thesis, usually under the supervision of the student's advisor.**

**C. The thesis consists of two substantive research papers related to the student's proposed specializations for the Ph.D. program. They will be developed as part of the requirements for formal courses or independent studies taken during the first year. An oral defense before a faculty**

committee during the second week of the third semester will serve as the M.A. field examination in American Studies.

D. Part-time M.A./Ph.D. students **should must** complete all requirements for the M.A. within 3 years from matriculation in order to continue to candidacy in the Ph.D. program.

### **II. Course distribution**

~~A. An two-semester introductory seminar (661-662), designed to provide a broad framework for the study of American culture and society.~~

~~B. Formal courses and independent readings, designed to prepare the student in a coherent field of inquiry. The courses, readings, and field will be chosen in consultation with the student's advisor and the Director of Graduate Studies.~~

~~C. Two courses of directed study during which the student undertakes the research and writing of the Master's thesis, under the supervision of a faculty member in an area of American Studies.~~

### ~~III. TA thesis,~~

~~based on original research, which develops a coherent argument and makes a contribution to the study of American life. The thesis, supplemented by an oral defense before a faculty committee, will serve as the M.A. field examination in American Studies.~~

~~The M.A. degree coursework can be completed in one academic year, with students taking 12 credits each semester. Students who enroll in the program on a full-time basis are expected to submit their theses by the end of their third semester in the program. Alternatively, students may elect to pursue the M.A. on a part time basis, taking up to six years to complete the requirements.~~

### ~~IV. American Studies~~

~~(See general College requirements in the section entitled 'Graduate Regulations' in this catalog.)~~

~~Note: Students should consult the American Studies Graduate Handbook, available at the Program website, for a fuller account of program requirements.~~

#### ~~I. Course distribution~~

~~A. A two-semester introductory seminar (661-662), designed to provide a broad framework for the study of American culture and society.~~

~~B. Formal courses and independent readings, designed to prepare the student in a coherent field of inquiry. The courses, readings, and field will be chosen in consultation with the student's advisor and the Director of Graduate Studies.~~

~~C. Two courses of directed study during which the student undertakes the research and writing of the Master's thesis, under the supervision of a faculty member in an area of American Studies.~~

~~II. A thesis, based on original research, which develops a coherent argument and makes a contribution to the study of American life. The thesis, supplemented by an oral defense before a faculty committee, will serve as the M.A. field examination in American Studies.~~

~~The M.A. degree coursework can be completed in one academic year, with students taking 12 credits each semester. Students who enroll in the program on a full-time basis are expected to submit their theses by the end of their third semester in the program. Alternatively, students may elect to pursue the M.A. on a part time basis, taking up to six years to complete the requirements.~~

### **Degree Requirements for the Doctor of Philosophy**

*(See general College requirements in the section entitled 'Graduate Regulations' in this catalog.)*

*Note: Students should consult the American Studies Graduate Handbook, available at the Program website, for a fuller account of program requirements.*

Students may enter the Ph.D. program by one of two routes. They may enroll directly into the sequential M.A./Ph.D. course of studies at William and Mary, or they may matriculate in the doctoral program, after completing M.A. degrees at other institutions.

The following requirements hold for all doctoral candidates.

I. Course distribution (~~60 credit hours beyond the B.A.; i.e., 24 credit hours for the M.A. and 36 credit hours for the Ph.D.~~)

A. An two-semester introductory seminar (661-662), ~~designed to which~~ provides a broad framework for the study of American society and culture. (Normally, students will have taken this course in the first year of the M.A./Ph.D. program.)

B. Formal courses and independent readings, chosen in consultation with the student's advisor ~~and the Director of Graduate Studies~~, and designed to prepare the student to present Major and Minor Fields for the comprehensive examination.

II. Reading knowledge of a foreign language of scholarship by the end of the fourth semester.

III. A qualifying exam in one Major and one or more Minor Fields. Major fields encompass established disciplines, such as History or English, and area or interdisciplinary studies, such as African-American Studies, Material Culture, or Women's and Gender Studies. Minor fields may also be devised to suit the students' particular interests. ~~They may cover special areas of strength at William and Mary, specific topics within Major Fields, or comparative or theoretical perspectives on American life, such as Critical Theory or Race Relations in the Americas.~~

IV. A dissertation based upon original research, which makes a scholarly contribution to the study of American life.

~~Ph.D. students may expect to take five or six years of full-time work to complete all requirements for the doctorate.~~

Normally, full-time students will pursue three semesters of course work beyond the M.A. and then take the qualifying examination in the fourth semester of their doctoral studies. After successful completion of the qualifying examination, students will embark upon their dissertations.

The American Studies Program also enables students to pursue the Ph.D. on a part time basis. Students may take ~~some of their Ph.D.~~ course work part-time, but they must spend at least one academic year in continuous residence as a full-time student at the College. ~~Ph.D. After their courses are complete, part-time students must also meet the same deadlines as full-time students and students have seven years to complete their doctorate after matriculation in the Ph.D. program. the colloquium held in preparation for the qualifying examination.~~

COURSE NAME AND DESCRIPTION CHANGES:

**~~512. Maroon Societies.~~**

~~Spring (3) Staff. (Not offered 20112-20123)~~

~~An exploration of the African American Communities created by escaped slaves through-out the Americas, from Brazil through the Caribbean and into the southern United States. Emphasis on the processes by which enslaved Africans from diverse societies created new cultures in the Americas, on the development of these societies through time, and on the present-day status of surviving maroon communities in Suriname and French Guiana, Jamaica, Colombia, and elsewhere.~~

**~~515. The Cultural Politics of Art Artists & Cultures.~~**

~~Fall (3) Staff. (Not offered 20124-20123)~~

This course will explore the artistic ideas and activities of people in a variety of cultural settings. Rather than focusing primarily on formal qualities (what art looks like in this or that society), it will examine the diverse ways that people think about art and artists, and the equally diverse roles that art can play in the economic, political, religious and social aspects of a cultural system. Materials will range from Australian barkcloth paintings to Greek sculptures, from African masks to European films.

**~~529. Exploring the African Diaspora-African Past.~~**

~~Fall (3) Staff. (Not offered 20124-20132)~~

~~A study of the commonalities and differences across the Diaspora Afro-America from the U.S. to Brazil. Works in Anthropology, History, and literature will be used to explore the nature of historical consciousness within the African diaspora and diverse ways of understanding and writing about the social-cultural complexities of the world's largest forced migration. Afro-American pasts.~~

**~~545. The Making of a Region: Southern Literature and Culture.~~**

~~Spring/Fall (3) Donaldson.~~

The U.S. South has long functioned as a repository of national anxieties, failings, and backwardness, the "exception" to the American narrative of freedom, success, and progress by virtue of its defining features of slavery, segregation, economic exploitation, and endemic violence. This course will focus on the role of the region as the nation's imaginative borderlands in the aftermath of the Civil War and emancipation, when definitions of regional and national identity were undergoing radical realignment along with reformulations of family, community, race, and racialization. Making use of narratives, nonfiction, film, history, and visual representations, we'll examine the highly contested arena of Reconstruction, the rise of Jim Crow,

contending narratives over memory and ownership of the past, visual and verbal critiques of segregation, Civil Rights battles, and postmodern reclamations and reconstructions of a region that continues to struggle with its long legacy of cultural abjection and marginalization.

#### **570. Topics in American Studies.**

*If there is no duplication of topic, may be repeated for credit.*

#### **Topics for Fall 2012+**

##### **The Cultural Politics of Art** (3) *Gundaker*

Exploration of the cultural and political world of art as experienced by artists, museum visitors, gallery owners, teachers, collectors, curators, critics, and charlatans.

##### **Women and Gender in the Early Modern Atlantic World.** (3) *Wulf*

This seminar examines the experience of women and the political and economic representation of ideas about gender around the early modern (1500-1800) Atlantic World.

##### **Mobility** (3) *Lelievre*

This seminar will explore movement and mobility across the Americas as both empirical phenomena and as analytical categories from an array of established and emergent interdisciplinary perspectives. Themes will include, among others, quotidian practices of movement, migration, tourism, and pilgrimage.

##### **Black Atlantic Literature** (3) *Reid-Pharr*

In this seminar we will follow the lead of Paul Gilroy in *The Black Atlantic: Modernity and Double Consciousness* in which he argues that slavery and the trans-Atlantic slave trade stand at the center of modern culture and society. Specifically, we will ask whether it is possible to imagine a "black Atlantic" literature that exists outside national political and cultural traditions. In addition to Gilroy, we will read: Aime Cesaire, *Discourse on Colonialism*; Toni Morrison, *Playing in the Dark: Whiteness and the Literary Imagination*; Frantz Fanon, *The Wretched of the Earth*; Edwidge Danticat, *Breath, Eyes, Memory*; Leonora Sansay, *Secret History*; or, *The Horrors of Santo Domingo*; Olaudah Equiano, *The Interesting Narrative of the Life of Olaudah Equiano, or Gustavus Vassa, the African, Written by Himself*; Joseph Conrad, *Heart of Darkness*; Herman Melville, *Benito Cereno*; Saidiya Hartman, *Lose Your Mother: Journeys Along the Atlantic Slave Route*; Caryl Phillips, *Dancing in the Dark*; Charles Johnson, *Middle Passage*; Chris Abani, *Graceland*. In addition to a research paper, students will be required to write and deliver a formal class presentation.

##### **Performing Sovereignty: Tribal Nationalism and Self-Determination in the Age of Biopolitical Reproduction.** (3) *Thompson.*

This seminar investigates the concepts of sovereignty, self-determination, and biopolitics through the U.S. federal incursions into tribal politics. By reading theoretical accounts of sovereignty and biopolitics in the context of Native American

#### **605. Practicum in American Visual and Material Culture.**

*Fall or Spring (3-6) Staff. Gundaker. (Not offered 2011-2012)*

*The practicum combines requires permission of both the instructor and specialist host prior to enrollment and may be taken for 3 or 6 credits, depending upon the student's overall course of study. It The practicum combines an individual learning experience in one area of hands-on or curatorial study with related directed readings. Students should propose a practicum at least one semester in advance of projected enrollment. In some cases the practicum can be combined with an assistantship assignment at a cultural institution. material culture study with bibliographic research and participation in group discussion. The focus of the practicum is an internship or hands-on project supervised by a specialist or curator. Suggested topics include vernacular architecture, decorative arts, landscape, conservation and restoration, ethnographic and archeological fieldwork, and instruction in a mode of material production. Ideally the chosen topic should relate to the student's long-term professional plans. During the course of the semester students develop a bibliographic essay on their specialty. They also join other practicum participants in a weekly discussion designed to relate practical learning to broader issues of material culture theory and research*

*The practicum requires permission of the instructor prior to enrollment and may be taken for 3 or 6 credits, depending upon the student's overall course of study. The practicum combines an individual learning experience in one area of material culture study with bibliographic research and participation in group discussion. The focus of the practicum is an internship or hands-on project supervised by a specialist or curator. Suggested topics include vernacular architecture, decorative arts, landscape, conservation and restoration, ethnographic and archeological fieldwork, and instruction in a mode of material production.*

Ideally the chosen topic should relate to the student's long-term professional plans. During the course of the semester students develop a **research or bibliographic essay** on their specialty. ~~They also join other practicum participants in a weekly discussion designed to relate practical learning to broader issues of material culture theory and research.~~

### **661. Introduction to American Studies.**

Fall (3) ~~Wu/McGovern.~~

This ~~is the first of a two semester course (continued by AMST 662)~~ course is required of all entering graduate students in American Studies. In this reading- and writing-intensive seminar, students encounter both current and classic works of the field. They will acquaint themselves with a wide array of interdisciplinary approaches, focusing on both critical theory and practical application in research. MA-only students will produce the first iterations of the Master's thesis, MA/Ph.D students will acquire **Interdisciplinary research skills for use in their two thesis papers**, while Ph.D. students will produce the first outline of their comprehensive fields or alternatively, a dissertation topic. The course provides training in the responsible and ethical conduct of research, including discussions of fabrication, falsification, and plagiarism.

### **662. Introduction to Research in American Studies.**

Spring (3) ~~Brown/Staff. Graded Pass/Fail.~~

~~This research seminar, which is the second part of the required introductory sequence in American Studies, helps students gain tools for research in three categories: theory, approaches to content, and practices, procedures and vocabularies within and between disciplines. Students will encounter and discuss exemplary texts particularly rich in method. Students will be expected to produce a paper that will comprise an important element of either the master's thesis or (in the case of Ph.D. only students) of a comprehensive exam field or possible dissertation topic.~~

The following changes were approved by COGS email vote on September 6, 2012.

Catalog changes for American Studies approved (9-0) on 7/19/12.

Added two Topics for Fall 2012 courses and remove one for the American Studies section of the 2012-13 catalog.

Religion and State. (3) Fitzgerald.

"This seminar will investigate the relationship between the state and religion in America through a multidisciplinary lens and theories of state formations in multiple religious settings, thus setting the stage with historians, anthropologists, legal scholars and other scholars concerned about Judaism, Islam and Christianity, as well as what we call the "secular," state. Thematically, a third of the course will focus on issues of poverty/social justice as well as gender and sexuality, and the way the U.S. state is used as a medium through which Americans contest very contradictory religious approaches to the state's development, and function, as well as its larger culture. A final project will include an opportunity to investigate either historical or contemporary crises in the ever-changing relationship between the state and religion in the U.S.."

Visual Politics of Nature. (3) Braddock.

This course explores the role of aesthetics and visual culture in mediating environmental perception in North America, 1800 to present.

Remove Black Atlantic Literature from catalog because it's an undergrad course only.

### **Anthropology**

The following changes were approved by COGS email vote on April 27, 2012.

### **Degree Requirements for the Doctor of Philosophy with specializations in Historical Archaeology and Historical Anthropology**

(See general College requirements in the section entitled 'Graduate Regulations' in this catalog.)

The doctoral program in Anthropology (M.A./Ph.D. **or Ph.D.**) is designed for students who wish to



specialize in Historical Archaeology or Historical Anthropology and who wish to pursue original, advanced research toward a doctorate.

A separate application is not necessary for ~~financial aid consideration for a graduate assistantship~~. Financial assistance is also available for summer research. Pending admission, students with national fellowships are welcome to the program. Each student will be evaluated at the end of every academic year. Funding is contingent on satisfactory progress as determined by the department's Graduate Committee. All fees must be paid in accordance with College guidelines to maintain active status in the program.

~~M.A./Ph.D. s~~Students will normally complete ~~three years of full-time graduate course work~~ 30 credits towards a Master's degree (including 6 credits of ANTH 700) and 36 credits of Ph.D. course work (including 6 credits of ANTH 800). ~~Ph.D. students will normally complete for the M.A./Ph.D. 36 credits (including 6 credits of ANTH 800). This consists of 30 credits of Master's-level course work (including 6 credits of ANTH 700) and 36 credits of Ph.D. course work (including 6 credits of ANTH 800).~~

Students will pursue their studies in either Historical Archaeology or Historical Anthropology. All students entering the M.A./Ph.D. or Ph.D. tracks are required to take ~~Socio-Cultural Theory 4 core Courses: one in each subfield~~ (ANTH 600), ~~602~~, Archaeological Theory (ANTH 603, ~~605~~), one graduate level course in linguistic anthropology, and one graduate-level course in biological anthropology. ~~Plus one additional course in each of the 3 subfields selected for the comprehensive exam by the student (see below).~~ All students are also required to take the Presentation and Paper course (ANTH 640) during their fourth semester in conjunction with the fourth-semester "Presentation and Paper" requirement (see below).

The intent of these requirements is to build general proficiency and professional skills required in the discipline ~~as a whole~~. This approach is designed to produce graduates who are maximally equipped to succeed in the job market for teaching positions ~~and other equivalent professional positions, which often demand mastery of anthropology as a four-field discipline.~~

~~M.A./Ph.D. students who come to the program without a master's degree are required to defend their M.A. theses by the end of their fourth semester.~~ By May 1st of their first year all students in the M.A./Ph.D. and Ph.D. program are required to submit to the Director of Graduate Studies a one-page prospectus in anticipation of their fourth-semester "Presentation and Paper" along with a list of at least three Presentation and Paper committee members from the Anthropology Department. All students in the M.A./Ph.D. and Ph.D. tracks will complete the Presentation and Paper process during their fourth semester. Fourth-semester students will enroll in the Writing and Publishing in Anthropology class (ANTH 640), write an article-length paper in conjunction with the class that engages questions of anthropological significance, and present the paper to the department by the end of the academic year. For students in the doctoral tracks who are earning a W&M Master's degree, the paper will be submitted as the thesis and the presentation will serve as the defense. Although the instructor of ANTH 640 will assess and grade students' work in the course, a student's committee will evaluate the Presentation and Paper to assess whether the student will be recommended to advance to candidacy in the Ph.D. program. ~~Once students complete their M.A. thesis, the thesis~~ Once the Presentation and Paper process is complete, the student's committee chair will write a letter to the Graduate Committee summarizing the committee's assessment of the ~~thesis and defense~~ Presentation and Paper. The Graduate Committee will then evaluate the ~~M.A. thesis~~ Presentation and Paper in light of the committee's assessment and will determine whether ~~the student should be allowed to advance~~ admit the M.A./Ph.D. or Ph.D. student toward candidacy in the Ph.D. program, to awarded a terminal M.A, or to require withdrawal of the student. To continue to qualify for a graduate assistantship, M.A./Ph.D. students must be awarded the M.A. degree before the beginning of the fifth semester, and both M.A./Ph.D. and Ph.D. students must be admitted to candidacy in the Ph.D. program before the beginning of the fifth semester to continue to qualify for a graduate assistantship.

~~Before the beginning of their third year in the program, each student must pass a reading examination in a language of scholarship relevant to their research interests; the language selected should be useful in reading the literature in their field of study. During the first week of classes of their third year in the M.A./Ph.D. program, all students will take a written comprehensive examination that covers three of the four subdisciplines of anthropology. This examination will be prepared and read by the faculty as a~~

~~whole.~~ During the summer between their second and third years in the doctoral program, all students will write a draft grant proposal designed to support the student's dissertation research, written according to the guidelines of one of the principal granting agencies in anthropology (e.g., Wenner-Gren, National Science Foundation, or Fulbright-Hays). Students will consult with their advisor to determine the target granting agency and thus the style that the proposal will take. Draft grant proposals should engage with a research question of broad anthropological significance in a particular setting and demonstrate fluency in the related literature. Draft grant proposals should be submitted to the Director of Graduate Studies by September 1st of the student's third year.

During their third year in the program, ~~s~~Students ~~who pass the comprehensive examination~~ will form a preliminary dissertation committee in consultation with their advisor. The student will present a draft proposal at a meeting with the committee to plan the content of the qualifying examination. This exam will explore key theoretical concerns and methodological issues related to the dissertation as well as ethnographic, historical and archaeological data that forms a background to their research. Preparation will incorporate a thorough review of the relevant literature and preparation of an extensive bibliography of works to be read. No later than March of their third year of study all students must take an oral qualifying exam conducted by the student's preliminary dissertation committee.

~~Before the beginning of their fourth year in the program, each student must pass a reading examination in a language of scholarship relevant to their research interests; the language selected should be useful in reading the literature in their field of study.~~

By the end of the ~~seventh~~ eighth semester of graduate study, or before embarking on their dissertation research, each student, in cooperation with their advisor and committee, will write and present a dissertation proposal suitable for submission to a funding agency. The proposal will be defended at a meeting open to all faculty members and students in the Anthropology ~~d~~Department and any guests they might invite. The defense is evaluated by the student's dissertation committee. ~~Students whose dissertation proposal is passed will be admitted to candidacy (ABD status).~~

Each candidate for the Ph.D. must submit an acceptable dissertation based on original research and constituting a contribution to scholarly knowledge.

All requirements for the doctoral degree must be completed within a maximum of seven (7) calendar years of the time the student was admitted to the doctoral candidacy (see above).

The table below summarizes the typical M.A./Ph.D. and Ph.D. curricula. Course availability may require some adjustments to this sequence. See the Anthropology Department's Web page, <http://www.wm.edu/anthropology>, for additional information about requirements and course of study.

Students who arrive at W&M **without** an Anthropology MA:

Year 1 Four required courses (ANTH 600, ANTH 603, linguistic anthropology, biological anthropology), ANTH 690, One elective class, 6 credits of ANTH 700, Presentation and Paper prospectus

Year 2 Fall: Three elective classes, ANTH 690

Spring: Two elective classes, ANTH 640, Presentation and Paper

Summer 2 Draft grant proposal (due September 1)

Year 3 Fall: Three elective classes, Language examination

Spring: Qualifying examination, Two elective classes (ANTH 790 recommended), 6 credits of ANTH 800

Year 4 Dissertation proposal defense, Grant proposal submission, Begin dissertation research

Year 5+ Dissertation research and writing

Students who arrive at W&M **with** an Anthropology MA:

Year 1 Four required courses (ANTH 600, ANTH 603, Linguistic anthropology, Biological anthropology), Two elective classes, Presentation and Paper prospectus

Year 2 Fall: Three elective classes, Language examination

Spring: ANTH 640, Presentation and Paper, 6 credits of ANTH 800

Optional: One elective class

Summer 2 Draft grant proposal (due September 1)

Year 3 Qualifying examination, Dissertation proposal defense

Optional: Additional elective classes

Year 4 Grant proposal submission, Begin dissertation research

## Year 5+ Dissertation research and writing

### **Applied Science**

The following changes were approved by COGS vote on January, 27, 2012.

COURSE NAME AND DESCRIPTION CHANGES:

APSC 755. Population Nonlinear Dynamics.

~~An introduction to population dynamics and bifurcation theory. Classic models including the logistic map, predator-prey systems, and epidemic models will be used to motivate dynamics concepts such as stability analysis, bifurcations, chaos, and Lyapunov exponents. Additional topics may include time delay and reaction-diffusion systems.~~

Linear systems of ODEs. Nonlinear systems; dynamical systems, existence/uniqueness of solutions; phase plane analysis; bifurcation; Poincare-Bendixson theory. Applications in biology, circuit theory, and mechanics. Discrete dynamical systems.

The following changes were approved by COGS vote on March, 26, 2013

COURSE NAME AND DESCRIPTION CHANGES:

In coordination with their advisor, Applied Science graduate students may choose one of the following research fields to be listed on the final transcript as their concentration area.

Accelerator Science

Applied Mathematics

Applied Mechanics

Applied Robotics

Atmospheric and Environmental Science

Computational Neuroscience

Interface, Thin Film, and Surface Science

Lasers and Optics

Magnetic Resonance

Materials Science & Engineering

Mathematical and Computational Biology

Medical Imaging

Nanotechnology

Neuroscience

Non-Destructive Evaluation

Polymer Chemistry

Remote Sensing

The following changes were approved by COGS vote on April 23, 2013.

### **General Description**

The Department of Applied Science is an interdisciplinary graduate department that offers M.S. and Ph.D. degrees in the physical and natural sciences. The program is offered by the core faculty of Applied Science in cooperation with affiliated faculty from the Departments of Biology, Chemistry, Computer Science, Geology, Mathematics, Physics, Psychology and the Virginia Institute of Marine Science (VIMS), as well as from the NASA Langley Research Center (LaRC) and the Thomas Jefferson National Accelerator Facility (JLab).

Faculty research interests include biomacromolecules, cell biology, computational neuroscience, electronic materials, epidemic modeling, **ecology**, in-situ sensing techniques, laser spectroscopy, medical imaging, molecular self-assembly, nanotechnology, neurophysiology, nondestructive evaluation, novel chemical instrumental techniques, physical and chemical properties of polymers, polymer characterization techniques, robotics, solid state nuclear magnetic resonance and surface science. Applied Science students perform their thesis and dissertation research in the laboratories at William and Mary, Jefferson Lab, and LaRC. The coursework component of each student's curriculum is highly flexible and is planned in

consultation with his or her faculty advisory committee. Prospective students are strongly encouraged to open an email dialog with those faculty whose research is most of interest.

COURSE NAME AND DESCRIPTION CHANGES:

~~601. Computational Methods for Molecular Dynamics.~~

~~Spring (3) Prerequisites: Working knowledge of elementary statistical mechanics, ability to program in Fortran and/or C, access to at least a Pentium-level computer, and consent of the instructor.~~

~~This course is intended to give graduate students the ability to design and implement molecular dynamic simulations, which are useful in their research projects. Topics to be covered include Newtonian and Langevin dynamics, periodic boundary conditions, constraint forces, correlation functions, and selected applications in chemistry and physics.~~

**622. Quantitative Materials Characterization.**

*Spring Fall (4) Prerequisite: APSC 621.*

This course presents a wide variety of means by which the properties and characteristics of materials can be experimentally determined. These include electrical, optical, acoustic, thermal, spectroscopic, and resonance methods. The objective is to discuss these separate means under the umbrella of fundamentals of interactions of matter with particles and waves. The course will address issues of data acquisition, such as sampling, discretization, and signal processing. Applications of these techniques to research in materials development, synthesis, processing, and in situ manufacturing.

**623. Materials Science of Surfaces and Interfaces.**

*Fall-Spring (3) Prerequisite: consent of instructor.*

Fundamental and applied aspects of metal, inorganic, polymer and other organic surfaces. Solid/solid, solid/liquid and solid/vapor interfaces. Their structure and defects, thermodynamics, reactivity, electronic and mechanical properties. Applications depend on class interests, but have previously included microelectronics, soils, catalysis, colloids, composites, environment sensitive mechanical behavior, UHV single crystal studies, materials durability, batteries and fuel cells, vacuum science and technology, and surface bioactivity.

**625. Device Processing.**

*Fall (3) Prerequisites: CHEM 302 or PHYS 313 and MATH 302.*

~~This course is an introduction to the applied science of thin film devices and manufacturing. The course covers vacuum physics and technology, microstructure in thin film nucleation and growth, film deposition methods, surface implantation, and lithography and patterning. Plasma, ion, and neutral atom interactions with solids are described. The fundamentals of the electronic properties of thin films and semiconductor device physics will be presented, including the relationship between processing methods, device damage, and device performance.~~

**651. Cellular Biophysics and Modeling.**

*Fall (3) Prerequisites: MATH 111 and 112 or MATH 113.*

This course is an introduction to simulation and modeling of dynamic phenomena in cell biology and neuroscience. Topics covered include membrane transport and diffusion, the biophysics of excitable membranes, the gating of voltage and ligandgated ion channels, intracellular calcium signaling, and electrical bursting in neurons and other cell types.

**652. Self-organization in Life and Chemical Sciences.**

*Spring (3).*

~~Here we investigate self-organization and complex collective behaviors that emerge from simple dynamical principles in a variety of living and chemical systems. We consider, for example, oscillatory chemical reactions, single-celled organisms and their communal behaviors, as well as the spread of HIV in human populations using agent-based computer simulation to model and analyze these systems. The course culminates in a final research project wherein students, in consultation with the instructors, develop and analyze their own original model.~~

**654. Bioinformatics and Molecular Evolution.**

*Spring (3) Prerequisite: MATH 112 or 113, BIOL 203, or consent of instructor.*

An introduction to computational molecular biology and molecular evolution including nucleotide and amino acid sequence comparison, DNA fragment assembly, phylogenetic tree construction and inference, RNA

and protein secondary structure prediction and substitution models of sequence evolution. [Cross-listed with BIOL 454]

**672. Applied Quantum Mechanics.**

*Spring (3) Prerequisite: APSC 607. Corequisite: APSC 608.*

This course is intended for first-year graduate students. Topics to be covered include: the postulates of quantum mechanics, exact and approximate solutions of Schrodinger's equation, methods of electronic structure calculations for discrete molecules and semiconductors, quantum tunneling and its relevance to scanning tunneling microscopy (STM) and atomic force microscopy (AFM), and quantum descriptions of radio frequency, infrared, and optical spectroscopic methods of materials characterization.

**694. Internship.**

*Fall, Spring and Summer (Hours and credits to be arranged). This course may be repeated for credit. Approval of the Director of Applied Science is required prior to enrollment.*

Research in accelerator science, atmospheric science, polymer science, or quantitative materials characterization at the NASA-Langley Research Center in Hampton or the Thomas Jefferson National Laboratory (TJNAF) in Newport News.

**721. Metallic Materials Characterization.**

*Fall (3) Prerequisite: MATH 302.*

**Examination of the intrinsic structure and defective nature of materials, particularly metals and metal composites, with emphasis on structure, strengthening mechanisms, defect growth, response to temperature, and environmental deterioration.**

**726. Solid Surfaces and Interfaces.**

*Spring (3) Prerequisite: APSC 625.*

An extension and continuation of the discussion of physical and chemical deposition, growth, and etching of surfaces. Detailed study of plasma-surface interactions of importance for material processing. Diagnostics of plasma, gas phase reactors and solid surfaces. Discussion of plasma sources and diagnostics including parallel plate, electron cyclotron resonance, helicon, lower-hybrid, and other advanced geometries, and the science and technology of manufacturing uses of surface modification methods.

**732. Thin Film Deposition and Nanostructure Synthesis.**

*Spring (3) Prerequisites: APSC 525, 607 or consent of instructor.*

An advanced discussion of thin film and nanostructure formation techniques at a level commensurate with an advanced graduate course. The course content will focus on the fundamentals of the techniques rather than discussing currently available commercial technology. Topics covered will usually include evaporation, sputtering, chemical vapor deposition, atomic layer deposition, and laser ablation. Some sections may be switched for other topics based on class interest.

**764. High Performance Composites.**

*Spring (3) Prerequisite or corequisite: APSC 511 or 512.*

Fundamental aspects of high performance composite materials. Topics include organic, inorganic, and carbon fiber reinforcements; fiber/resin interfaces; epoxy and other thermoset matrices; thermoplastic and metal matrices; lamina and laminate properties; static and dynamic mechanical tests; failure and damage tolerance; processing; nondestructive evaluation; resin/composite property relationships; and applications.

**768. Polymer III - Special Topics in Polymer Chemistry.**

*Spring (2) Prerequisites: APSC 511 and 512.*

The students are given a topic relating to Polymer Chemistry. After reviewing the literature on their subject the students are required to present two, one-hour, lectures instructing the rest of the class on the material they have reviewed. Typical polymer topics to be covered include liquid crystalline polymers, birefringence, wide and small angle x-ray scattering, neutron diffraction, and other characterization techniques.

**782. Measurement of Material Properties.**

*Spring (3) Prerequisite: APSC 721 or consent of instructor.*

An introduction to the principles and techniques of measuring physical and mechanical material properties. Topics include optical, acoustic and electron microscopies (SEM, TEM, SAM, STM); x-ray analysis (diffractometer, Laue camera, EDS and WDS systems); and mechanical testing (tension, creep, hardness, fatigue, fracture toughness and corrosion).

**794. Internship-**

~~Fall, Spring and Summer (Hours and credits to be arranged). Approval of the Chair of Applied Science is required prior to enrollment.~~

*Research in accelerator science, atmospheric science, polymer science, or quantitative materials characterization at the NASA-Langley Research Center in Hampton or the Thomas Jefferson Labs (TJNAF) in Newport News.*

**Computer Science**

The following changes were approved by COGS on April 13, 2012.

## COURSE NAME AND DESCRIPTION CHANGES:

The proposed catalog changes below in Computer Science were passed unanimously, with one revision to correct a typographical error so that the revised title for 515 is "Systems Programming".

1. Add the following course, CSCI 643, to page 91 after 638 and before 648:

643 Automated Logical Reasoning.

Fall or Spring (3) Prerequisite: Knowledge of algorithms and finite automata.

Automated logical reasoning has enabled substantial progress in many fields of computer science, including software and hardware verification, theorem proving, program analysis, and artificial intelligence. In this course, we will study widely-used logical theories and decision procedures for answering whether formulas in these theories are satisfiable. In particular, we will consider automated reasoning techniques for propositional logic, first-order logic, linear arithmetic over reals and integers, theory of uninterpreted functions, and combinations of these theories. This course will examine automated logical reasoning both from a theoretical and practical perspective, giving interested students a hands-on experience building useful tools, such as SAT solvers.

2. Renumber "674 Parallel Computing" as "774 Parallel Computing" on page 93 and move the course description to page 95 after 770 and before 780

3. Make all 600-level and 700-level courses "Fall or Spring" with the exceptions of 670/770, 695, 700, 710, 795, 800, and all courses with numbers 6x8.

4. In the section of "Degree Requirements for the Doctor of Philosophy", remove the last 12 lines on page 86 (from "Six" to "Systems"). At the beginning of the first paragraph on page 87, add sentence "Six courses must be chosen from 600 level courses, excluding 670, 690, 695, and all courses with numbers 6x8".

5. In the section of "Degree Requirements for the Master of Science", replace "following seven courses: CSCI 626, CSCI 634, CSCI 635, CSCI 649, CSCI 652, CSCI 663, CSCI 664" from line 2 to line 3 on page 86 with "additional 600 level courses, excluding 670, 690, 695, and all courses with numbers 6x8".

6. In the section of "Degree Requirements for the Masters of Science with a Specialization in Computational Science", replace "following courses: CSCI 626, CSCI 634, CSCI 635, CSCI 652, CSCI 663, CSCI 664" from line 4 to line 5 in the paragraph of the section with "600-level courses, excluding 670, 690, 695, and all courses with numbers 6x8".

7. 515. Systems Programming.

Spring (3) Prerequisite: Computer Organization.

The design and implementation of programs which provide robust and efficient services to users of a computer. Macro processors; scripting languages; graphical interfaces; network programming. Unix and X are emphasized. ~~No credits earned in this course may be applied to the number of credits required for a graduate degree. [Cross-listed with CSCI 315]~~

The following changes were approved by COGS on April 23, 2013.

COURSE NAME AND DESCRIPTION CHANGES:

**~~521. IMPLEMENTATION OF DATABASE SYSTEMS.~~**

**~~FALL (3) PREREQUISITE: AN INTRODUCTORY COURSE IN DATABASE.~~**

*~~ISSUES INVOLVED IN DESIGNING EFFICIENT DATABASE SYSTEMS, AND THE STRATEGIES, DATA STRUCTURES, AND ALGORITHMS USED IN THE IMPLEMENTATION OF SUCH SYSTEMS. SOME ADVANCED TOPICS COVERED: DATA WAREHOUSING, ONLINE ANALYTICAL PROCESSING, DATA MINING, SPATIAL DATA MANAGEMENT.~~*

**Public Policy**

The following changes were approved by COGS on April 13, 2012.

Proposed 2012-13 catalog changes in Public Policy

The proposed catalog changes in Public Policy were passed unanimously.

The proposed new course is a one-credit course that requires students to complete a portfolio of experiences involving the practice of public policy outside of the classroom. These experiences must include but are not limited to 1) participation in the Washington Program (normally in the fall of the first year of study), 2) completion of an approved 10-week full-time internship, normally between the first and second year of study, and 3) participation in at least three Policy Dialogues (normally two Policy Dialogues are offered each semester). The final portfolio will include a paper that synthesizes the student's observations of policy in practice and the how their experiences have shaped their views on public policy. This course is perhaps most analogous to the Senior Portfolio (COLL 400) recently proposed by the Curriculum Review Steering Committee for the undergraduate program but also appears consistent with American Studies 671: Profession and Practice and the pass/fail colloquia that a number of our graduate programs offer.

Rationale for adding this course to the MPP graduation requirement:

Students in the MPP program currently participate in a number of experiences outside of traditional classroom settings that are an important part of their education in the public policy, particularly in how public policy is currently practiced. None of the classes for which students currently receive credit capture the academic efforts related to these experiences so we have proposed this course to appropriately acknowledge the work we require from them. Writing a final paper that synthesizes their experiences will require students to reflect on how these experiences have shaped their opinions of and approach to public policy and will provide a capstone to these experiences.

Mechanics:

Because this course is a capstone to the student's experiences outside the classroom over the course of the MPP program, this course will normally be taken in the spring of each student's final year in the program

Catalog copy for new course description.

590. Policy in Practice.

Spring (1) McBeth. Graded pass/fail.

An introduction to the practice of public policy. Students must complete a portfolio of experiences involving the practice of public policy outside of the classroom. A passing grade requires that the portfolio contain a written synthesis of the student's observations of policy in practice and how their experiences have shaped their views on public policy. Those experiences must include, at a minimum, the following three elements: (1) participation in the Washington Program, normally in the fall of the first year of study; (2) completion of an approved 10-week full-time internship, normally occurring between the first and second year of study; and (3) participation in at least three Policy Dialogues offered by the program.

Changes to existing catalog copy (changes in italics):

Last paragraph, first page of Public Policy section

Special Opportunities: On the Williamsburg campus and in our offices in Washington, D.C., William and Mary's Public Policy Program brings the real world into your learning experience. On campus, the Center for Public Policy Research provides the base for bringing client driven projects into the curriculum. First-year MPP students attend a three-day Washington conference examining the breadth of career opportunities available to policy analysts. We offer several "Policy Dialogues" each semester at which students have informal access to high-level policymakers and policy analysts. Other career events in Williamsburg and Washington occur throughout the year.

#### DEGREE REQUIREMENTS FOR THE DEGREE OF MASTER OF PUBLIC POLICY

The master of public policy (M.P.P.) degree program is a two-year, full-time, residential program requiring forty-nine hours of course credit. Students accepted for the degrees of MPP/JD, MPP/MBA, MPP/MS in Marine Science, MPP/PhD in Marine Science, or MPP/MS in Computational Operations Research are required to have thirty-seven hours of MPP course credit.

1. The following core courses are required: PUBP500-Mathematics for Public Policy Analysis; PUBP590-Policy in Practice; PUBP601-The Political Environment; PUBP602-Quantitative Methods I; PUBP603-Quantitative Methods II; PUBP604-Microeconomics of Public Policy; PUBP606-Benefit-Cost Analysis; PUBP607-Law and Public Policy; PUBP609-Ethics and Public Policy; PUBP610-Policy Research Seminar; PUBP612-Public Management and Organizational Behavior.

#### **Additional Graduate Courses**

The following changes were approved by COGS on April 13, 2012.

Proposed 2012-13 catalog additions for Modern Languages and Literatures

A motion to approve the proposed catalog additions for Modern Languages and Literatures in the section listing "Additional Graduate Courses" was passed unanimously

MDLL 545, Methods in Teaching English to Speakers of Other Languages.

Summer 2012, (3)

Instructional methodology for teaching foreign languages including English as a second or foreign language. Focus on skill development, teaching techniques, assessment, cultural instruction and technology in foreign language teaching.

MDLL 546, Foreign Language Acquisition Processes: theory and practice.

Summer 2012, (3)

How are foreign languages acquired? Factors influencing individual variation in skill and fluency include language transfer, optimal input, age, learning styles, and language dysfunction. Focus on foreign language acquisition with respect to learning theory, and physical, cognitive and social development.

MDLL 547, TESOL Curriculum Design and Materials Development.

Summer 2012, (3)

Curriculum design for Teaching English to Speakers of Other Languages: the development of ESL lessons and material, adaptation of content instruction for English Language Learners; cross-cultural factors faced when integrating ELLs into content classes and communication with ELL family members.

#### **Graduate Regulations**

The following changes were approved by COGS on April 13, 2012.

The following proposed changes make this section consistent with the section titled "Requirements for Degrees" on page 22.

strikethrough = deleted text; bold = inserted text

Top of page 13, Grading and Quality Points



P carries credit but is not included in a student's cumulative grade quality point average. F carries no credit but the hours attempted are included in the student's average. A course graded C-, D+, D, D-, or F is included in the student's quality point average but carries no credit towards the graduate degree.

Laurie Sanderson clarified that, if departments/programs have GPA standards or other degree requirements that are more specific than those listed in the Graduate Regulations section of the catalog, those department/program policies must be approved by COGS and included in the department's/program's section of the Graduate A&S Program Catalog. If GPA standards and other degree requirements are not listed in the Graduate A&S Program Catalog, they are not valid and cannot be enforced.

### **Geographic Information System (GIS) post-baccalaureate certificate program**

The following additions were approved by COGS on March 12, 2013.

The William & Mary Postbaccalaureate Geographic Information Science (GIS) certificate brings the high-quality research focused education of William and Mary to the Washington DC area. The program is targeted at working professionals in the DC area who utilize, or plan to utilize, GIS in their employment. The program offers 11 credit hours of graduate level GIS instruction that results in a Postbaccalaureate certification.

The focus of the program is to bring the full capability of Geographic Information Science to decision makers in DC including those in governmental organizations. In keeping with the William and Mary tradition, courses are taught in a small group setting with a focus on faculty student mentoring and contact. Although some course material is online, the majority of the courses are conducted face-to-face in the William and Mary Office in DC located in the heart of DC at 1779 Massachusetts Ave, NW - Suite 810. The program has a focus on analytical cartography and spatial analyses with a particular emphasis on policy relevant international databases such as the AidData international aid database and the social conflict in Africa database. The program builds on the applied component of current degree programs in Anthropology, Biology, Environmental Science and Policy, Geology, Government, International Relations, Public Policy, and Sociology.

#### Requirements for Certificate

Required credit hours: 11

#### Core Requirements:

1. GIS 501,502 Fundamentals of GIS (4 credits)
2. GIS 510,511 Geospatial Pattern Analysis and Visualization (4 credits)
3. GIS 550 Independent Research in GIS (3 credits)

#### Description of Courses

##### 501. Fundamentals of GIS

Summer (3) Staff. Prerequisites: Postbaccalaureate status and consent of instructor.

GIS combines spatial data, often alongside tabular data, to map, analyze, and offer answers to questions posed in many differing disciplines. At William and Mary, GIS is used to model nutrient inputs from agriculture into the Chesapeake Bay, evaluate the role of school boundaries in determining neighborhood demographics, analyze international aid flows, create species distribution models, assess the role of fire in agriculture, monitor social discord in Africa, assess local health outcomes, and measure the extent of coastal deforestation in South America. The GIS fundamentals course will use GIS-based research projects to introduce the fundamentals of vector data, raster data, database operations, and interpolative techniques within a GIS environment.

##### 502. Fundamentals of GIS

Summer (1) Staff. Prerequisites: Postbaccalaureate status and consent of instructor.

GIS combines spatial data, often alongside tabular data, to map, analyze, and offer answers to questions posed in many differing disciplines. At William and Mary, GIS is used to model nutrient inputs from agriculture into the Chesapeake Bay, evaluate the role of school boundaries in determining neighborhood demographics, analyze international aid flows, create species distribution models, assess the the role of

fire in agriculture, monitor social discord in Africa, assess local health outcomes, and measure the extent of coastal deforestation in South America. The GIS fundamentals course will use GIS-based research projects to introduce the fundamentals of vector data, raster data, database operations, and interpolative techniques within a GIS environment

510. Geospatial Pattern Analysis and Visualization.

Summer (3) Staff. Prerequisites: Postbaccalaureate status and consent of instructor.

Spatial patterns, like the clustered results of an electoral outcome map, hot spots of disease infestation, or the uneven distribution of fresh produce venues in a city, are the outcome of important social and environmental processes and give us clues about the causes, impacts and the potential actions that can help enhance or inhibit them. Geospatial technology, analytical methods and visual capabilities provide a crucial toolkit to identify, extract, measure, analyze, and interpret spatial patterns, as well as to communicate analytical results in compelling visual ways according to various medium and to diverse audiences. This course is designed to cover key spatial pattern analytical techniques, their interpretation and effective visual representation.

511. Geospatial Pattern Analysis and Visualization.

Summer (1) Staff. Prerequisites: Postbaccalaureate status and consent of instructor.

Spatial patterns, like the clustered results of an electoral outcome map, hot spots of disease infestation, or the uneven distribution of fresh produce venues in a city, are the outcome of important social and environmental processes and give us clues about the causes, impacts and the potential actions that can help enhance or inhibit them. Geospatial technology, analytical methods and visual capabilities provide a crucial toolkit to identify, extract, measure, analyze, and interpret spatial patterns, as well as to communicate analytical results in compelling visual ways according to various medium and to diverse audiences. This course is designed to cover key spatial pattern analytical techniques, their interpretation and effective visual representation.

550. Independent Research in GIS.

Spring, Summer, or Fall (1-3) Staff. Prerequisites: GIS 501, GIS 510, and consent of instructor. This course is designed to permit students to engage in applied GIS research projects with mentorship from their instructor. Working closely with their mentor each student will be expected to conduct original research and prepare a substantial research report. It is expected that the project can be conducted in the context of the student's current employment or place of work, and the project be spread over multiple semesters if necessary. The course can be repeated for credit up to a maximum of 3 credits of GIS 550.

## **Graduate Center Annual Report 2012**

### **Staff and Facilities**

The Graduate Center organizes and sponsors a variety of activities, events, and non-credit courses for W&M graduate and professional students. The Center is administered by John Swaddle, Dean of Graduate Studies and Research in Arts & Sciences, Chasity Roberts, Assistant to the Dean of Graduate Studies and Research, and M. Lee Alexander, English for Speakers of Other Languages (ESOL) Program Manager. The Center is housed in the Stetson House at 232 Jamestown Road.

Dr. M. Lee Alexander joined the Graduate Center as ESOL Program Manager on January 10, 2013. Ms. Alexander received a Master's degree in Applied Linguistics from Indiana University and was previously the Graduate TESOL Program Director at Nazareth College. Ms. Alexander has worked for the English Department since 2005, and has previous experience as a COLL course instructor for graduate studies.

We appreciate the many important contributions that Cortney Cain made to the Graduate Center and to the development of ESL programs, graduate student writing programs, and international student programs at the College.

In the spring, summer, and fall of 2012 and spring 2013, seven College faculty and staff taught 12 Graduate Center courses. The Graduate Center continued to work collaboratively with other College offices and schools in expanding the scope of activities and events to enhance the participation of a diversity of W&M graduate and professional students as well as undergraduate students where appropriate.

### **Graduate Center Highlights**

Appendix I provides a listing and summary of participation in Graduate Center activities, events, and courses since fall 2008. Highlights from the spreadsheet include:

- *Course enrollments* for the calendar years were 90 in 2008, 71 in 2009, 86 in 2010, 71 in 2011 and 121 in 2012/spring 2013. The students enrolled were a mix of domestic and international graduate students from A&S, Business, and Education.
- In the Fall of 2012, the Graduate Center's *Conversation Partner Program* (CPP) paired 60 native and nonnative English speakers to meet informally and discuss topics of mutual interest. The nonnative English speakers included graduate students from A&S, Business, and Law. Native English speakers included both graduate and undergraduate students in A&S and Law, and some community volunteers.
- Prior to the 2012 and 2013 Graduate Research Symposium, the Graduate Center sponsored a ten-hour workshop by Robin Cantor-Cooke on *enhancing speaking skills*, as well as individualized coaching sessions and Barbara Monteith lead a workshop on *designing conference posters*, with an offer to workshop participants to receive individualized feedback on poster layout and design.
- A&S graduate students on the 2012 and 2013 Graduate Research Symposium Committee and the Graduate Student Association worked with the Office of Graduate Studies and Research and the Graduate Center. The 2012 Graduate Research Symposium was highly productive, with 150 oral and poster presentations and a total of more than 1300 attendees at symposium events. The presenters included 45 graduate students from 18 regional institutions such as Georgetown, UNC-Chapel Hill, University of Pennsylvania, and Howard University. Based on written papers that were submitted by presenters and ranked by a judging panel of A&S faculty and Graduate Studies Advisory Board members, awards totaling \$6150 were provided to W&M graduate students and visiting student scholars. In 2013 they prepared annual graduate research symposia, with over 1,100 students, faculty, and guests, with an average attendance of 17 per session. The presenters in 2013 included 43 graduate students from 19 regional institutions such as Georgetown, UNC-

Wilmington, Georgia State University, Tufts and the University of Virginia. Highlights of the symposium included advance workshops on poster preparation techniques and oral presentation skills, symposium awards in all disciplines to fourteen students totaling \$6,950, luncheon remarks by President Reveley, Provost Michael Halleran and A&S Dean Conley, and Graduate Studies Advisory Board member participation in a careers panel discussion. The Graduate Studies Advisory Board was a symposium sponsor in 2012 and 2013 and Board members also participated in the symposium by chairing oral sessions, serving on the judging panels, offering recruitment and mentoring opportunities, and providing two corporate awards each year of \$1000 each as well as corporate sponsorship for the symposium.

- The popular annual *Raft Debate*, sponsored by the Office of Graduate Studies and Research, the Graduate Center, and the A&S Graduate Student Association, was attended by an audience of approximately 575 undergraduate and graduate students, faculty, and community members on November 7, 2012. On the W&M web site, the Raft Debate is featured in the summary of College traditions at <http://www.wm.edu/about/history/traditions/index.php>.
- Graduate Center *social events* for the spring and fall of 2012 included a *Meet-and-Greet Reception* in August for the new international graduate students in A&S which had 18 in attendance, and a *Thanksgiving celebration* in November for international graduate students and their Conversation Partners which had 60 in attendance and was also co-sponsored by the International Law Society (ILS) from the Marshall-Wythe School of Law.
- Cortney Cain spoke at both the international undergraduate and the international graduate student *Orientations* in August 2012. Topics discussed included American values and speech, the stages of homesickness and culture shock.

### Newsletter

The Graduate Center's electronic newsletter ***DID YOU KNOW THAT?*** is distributed by e-mail to A&S graduate students every Monday during the academic year. Beginning in the fall of 2008, DYKT? was also published online at <http://www.wm.edu/as/graduate/studentresources/newsletter/index.php>. Each academic year there are approximately thirty issues. Under the editorship of Chasity Roberts, the newsletter has expanded its coverage and scope, especially in bringing funding sources to the attention of graduate students. These funding sources are also published to the Graduate Studies "Funding Sources" webpage (<http://www.wm.edu/as/graduate/studentresources/fundingsources/index.php>). The Directors of Graduate Studies, Department Chairs/Program Directors, and College administrators also receive *DYKT?* and value its contribution to the university's graduate culture.

## **A&S Graduate Ombudsperson Report for January 2012-June 2013**

### **Activities for January through July 2012**

Elizabeth Barnes, Professor, Department of English and American Studies Program  
[elbarn@wm.edu](mailto:elbarn@wm.edu)

4 cases involving three departments were mediated between January and July 2012. Issues included mediation with a student's advisor with respect to timeliness of feedback (two cases), grade appeal, faculty-student breakdown in communication. All of these cases were initiated by graduate students.

The time-scale for cases spanned from 1 meeting to several consultations, in person.

### **Activities for August 2012 through March 2013**

Hiroshi Kitamura, Associate Professor, Department of History and American  
[hxkita@wm.edu](mailto:hxkita@wm.edu)

3 cases were mediated by the Ombudsperson between August 2012-March 2013. Issues included mediation concerning a dispute between advisor and advisee, a student complaint over rules on thesis formatting, and plagiarizing.

All cases were initiated by graduate students. Three additional cases were "consultations" that did not require the Ombudsperson's direct mediation of the involved parties. Consultations included concerns of ownership of lab research, possible amorous relationship between student and faculty and timing of feedback for a thesis from an advisor.

The time-scale of the cases spanned from one meeting to several consultations, in person, via e-mail, or by phone.

One case is ongoing. All other cases have been resolved.

### **Activities for April 2013 through June 2013**

Elizabeth Barnes, Professor, Department of English and American Studies Program  
[elbarn@wm.edu](mailto:elbarn@wm.edu)

4 cases were mediated by the Ombudsperson between April 2013-June 2013. Issues included graduate student with issues about defending their dissertation, a sexual harassment issue, a non-sexual harassment conflict, and a grad student dealing with advisor issues.

All cases have been resolved.

**Committee on Graduate Studies Members, 2012-13**

John Swaddle, Chair  
Arthur Knight, American Studies  
Fred Smith, Anthropology  
Gunter Luepke, Applied Science  
Matthew Wawersik, Biology  
Debbie Bebout, Chemistry  
Evgenia Smirni, Computer Science  
Larry Leemis (fall) and Rex Kincaid (spring), Computational Operations Research  
Brett Rushforth, History  
Jeffrey Nelson, Physics  
Pam Hunt, Psychology  
Elaine McBeth, Public Policy

# APPENDICES

APPENDIX I

GRADUATE CENTER PARTICIPATION  
Fall 2008 thru Spring 2013

Course	F 2008	S 2009	Su 2009	F 2009	S 2010	Su 2010	F 2010	S 2011	Su 2011	F 2011	S 2012	Su 2012	F 2012	S 2013
COLL 501 001	15			12			10			13			15	
COLL 501 002				9			8			8			9	
COLL 503 001		8			13			14			7			10
COLL 503 002											14			15
COLL 505	15			15			15			16			15	
COLL 508														
COLL 520 001		14	2		13			5			12			16
COLL 520 002		6			14									
COLL 525	12						10			11				
COLL 530		5			3			4			4		9	5
COLL 550														
<b>Course Subtotals</b>	<b>42</b>	<b>33</b>	<b>2</b>	<b>36</b>	<b>43</b>	<b>0</b>	<b>43</b>	<b>23</b>	<b>0</b>	<b>48</b>	<b>37</b>	<b>0</b>	<b>48</b>	<b>46</b>
Workshops	F 2008	S 2009	Su 2009	F 2009	S 2010	Su 2010	F 2010	S 2011	Su 2011	F 2011	S 2012	Su 2012	F 2012	S 2013
Cultural Workshop	11													
French Refresher				1										
Poster Workshop		5			26			5						16
Presenting Yourself		13		7	8			9		8	7			6
Enhance Your Presentation		6												
Spanish Language Refresher				4	2									
<b>Workshop Subtotals</b>	<b>11</b>	<b>24</b>	<b>0</b>	<b>12</b>	<b>36</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>8</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>22</b>
Programs	F 2008	S 2009	Su 2009	F 2009	S 2010	Su 2010	F 2010	S 2011	Su 2011	F 2011	S 2012	Su 2012	F 2012	S 2013
Conversation Partners	60	34		48	51		47	48		60	39		52	
Graduate Symposium		550			900			1100			1100			1300
Raft Debate	300			375			400			425			575	
International Education Week														
Int'l Music & Dance Showcase	256													
<b>Program Subtotals</b>	<b>616</b>	<b>584</b>	<b>0</b>	<b>423</b>	<b>951</b>	<b>0</b>	<b>447</b>	<b>1148</b>	<b>0</b>	<b>485</b>	<b>1139</b>	<b>0</b>	<b>627</b>	<b>1300</b>
Social Events	F 2008	S 2009	Su 2009	F 2009	S 2010	Su 2010	F 2010	S 2011	Su 2011	F 2011	S 2012	Su 2012	F 2012	S 2013
Meet and Greet	18			21			16			18			18	
Int'l Thanksgiving	55			68			77			75			60	
CPP Appreciation		35			23			8			9			
<b>Social Event Subtotals</b>	<b>73</b>	<b>35</b>	<b>0</b>	<b>89</b>	<b>23</b>	<b>0</b>	<b>93</b>	<b>8</b>	<b>0</b>	<b>93</b>	<b>9</b>	<b>0</b>	<b>78</b>	<b>0</b>
<b>GRAND TOTAL</b>	<b>742</b>	<b>676</b>	<b>2</b>	<b>560</b>	<b>1053</b>	<b>0</b>	<b>583</b>	<b>1193</b>	<b>0</b>	<b>634</b>	<b>1192</b>	<b>0</b>	<b>753</b>	<b>1368</b>



**APPENDIX II**

**Applied, Accepted and Enrolled  
Fall 2008 - Fall 2012**

		Applied	Accepted		Enrolled		Avg UG <sup>(1)</sup> GPA	Avg GRE Scores <sup>(1,2)</sup>		
			Total	Rate	Total	Rate		Verbal	Math	Writing
American Studies <sup>(3)</sup>	2008	83	30	36%	18	60%	3.41	610	589	
	2009	85	0		0					
	2010	101	23	23%	9	39%	3.74	603	621	5
	2011	90	21	23%	7	33%	3.67	600	637	4.56
	2012	75	27	36%	12	44%	3.54	651 / 163	654 / 148	4.50
Anthropology	2008	70	18	26%	10	56%	3.57	559	601	
	2009	82	24	29%	5	21%	3.61	548	570	5
	2010	77	16	21%	10	63%	3.64	595	621	5.00
	2011	70	14	20%	7	50%	3.47	514	600	4.19
	2012	72	14	19%	5	36%	3.44	520 / 160	690 / 149	4.70
Applied Science	2008	47	19	40%	8	42%	3.57	408	744	
	2009	49	22	45%	9	41%	3.59	503	767	4
	2010	50	13	26%	9	69%	3.57	502	744	3.55
	2011	38	10	26%	7	70%	3.32	527	724	3.86
	2012	40	18	45%	8	44%	2.99	476 / 146	778 / 157	3.75
Biology	2008	38	17	45%	8	47%	3.49	580	680	
	2009	35	12	34%	9	75%	3.46	549	681	5
	2010	48	15	31%	9	60%	3.42	607	681	4.28
	2011	41	11	27%	6	55%	3.52	567	672	4.08
	2012	40	12	30%	10	83%	3.50	497 / 158	587 / 156	4.27
Chemistry	2008	8	5	63%	5	100%	3.50	526	706	
	2009	12	6	50%	5	83%	3.56	540	734	4
	2010	18	8	44%	7	88%	3.39	493	566	3.85
	2011	18	7	39%	7	100%	3.11	533	705	3.20
	2012	23	6	26%	4	67%	3.79	470 / 160	790 / 159	4.30
Computer Science <sup>(4)</sup>	2008	61	47	77%	20	43%	3.31	489	746	
	2009	74	52	70%	28	54%	3.34	538	733	4
	2010	97	42	43%	27	64%	3.40	524	738	3.85
	2011	120	61	51%	31	51%	3.38	521	751	3.59
	2012	118	70	59%	30	43%	3.35	534 / 156	763 / 161	3.76
History	2008	135	30	22%	15	50%	3.42	584	599	
	2009	140	35	25%	22	63%	3.57	643	626	5
	2010	151	35	23%	16	46%	3.82	609	632	5.19
	2011	155	27	17%	17	63%	3.73	641	644	4.76
	2012	152	24	16%	13	54%	3.73	685 / 166	648 / 151	4.73
Physics	2008	107	44	41%	16	36%	3.70	528	746	
	2009	102	27	26%	13	48%	3.64	429	748	3
	2010	139	29	21%	8	28%	3.65	540	771	4.13
	2011	125	32	26%	14	44%	3.59	469	763	3.43
	2012	108	41	38%	15	37%	3.50	504 / 159	784 / 161	4.09
PsyD <sup>(5)</sup>	2008	244	13	5%	10	77%	3.49	537	631	
Psychology	2008	86	16	19%	7	44%	3.70	570	689	
	2009	65	21	32%	8	38%	3.74	578	676	5
	2010	79	10	13%	6	60%	3.81	603	673	4.83
	2011	94	13	14%	9	69%	3.68	594	679	4.78
	2012	133	11	1%	8	73%	3.75	625 / 163	710 / 155	4.78
Public Policy	2008	73	45	62%	25	56%	3.46	577	684	
	2009	98	50	51%	21	42%	3.54	606	689	5
	2010	97	43	44%	21	49%	3.55	589	683	4.41
	2011	88	42	48%	22	52%	3.50	607	687	4.55
	2012	98	51	52%	20	39%	3.55	637 / 160	699 / 155	4.58

<sup>(1)</sup> Average of UG transcripts and GRE scores submitted by enrolled students.

<sup>(2)</sup> GRE General Test (tests taken prior to August 1, 2011) scores reported 200–800, in 10-point increments  
GRE revised General Test (tests taken on or after August 1, 2011) scores reported 130–170, in 1 point increments

<sup>(3)</sup> The American Studies Program did not admit students for 2009-2010.

<sup>(4)</sup> This includes students in the Computational Operations Research program.

<sup>(5)</sup> The Psychology Doctoral program admits students through the VA Consortium Program in Clinical Psychology. Data is supplied by the Consortium. Effective 2009-2010, W&M does not participate in admissions to the Consortium.

**APPENDIX III  
GRADUATE STUDENT ENROLLMENTS<sup>(1)</sup>**

**Fall 2008 to Fall 2012**

Department	Fall 2008	Fall 2009	Fall 2010	Fall 2011	Fall 2012
American Studies	89	70	75	74	75
Anthropology	46	49	47	49	48
Applied Science	32	33	35	36	38
Biology	30	27	29	22	24
Chemistry	8	10	13	13	11
Computer Science <sup>2</sup>	68	75	80	93	97
History	92	91	92	94	79
Physics	69	68	65	66	74
Psychology	16	16	15	17	18
PsyD <sup>3</sup>	25	24	18	1	0
Public Policy	44	46	42	43	43
<b>TOTALS</b>	<b>519</b>	<b>509</b>	<b>511</b>	<b>508</b>	<b>507</b>

Notes:

<sup>1</sup> Totals include full-time, part-time and continuous enrollment registration, including dual degree students in Law, Business and Marine Science (11 dual degree students in 2012).

<sup>2</sup> Includes Computational Operations Research.

<sup>3</sup> Fall 2008-2012 enrollment reflects only students enrolled through W&M and does not include total consortium count.

**APPENDIX IV  
GRADUATE STUDENT ENROLLMENT BY DEGREE FALL 2012**

Program	MA	MS	MA/PhD	MS/PhD	PhD	MPP	PsyD	Total
American Studies	14		10		51			75
Anthropology	13		4		31			48
Applied Science		1		0	37			38
Biology		24						24
Chemistry	1	10						11
Computer Science		11		6	59			76
COR		21						21
History	25		13		41			79
Physics				14	60			74
Psychology Master's	18							18
Clinical Psychology (PsyD)							0	0
Public Policy (MPP)						43		43

	MA	MS	MA/PhD	MS/PhD	PhD	MPP	PsyD	
<b>Total Enrollment</b>	<b>71</b>	<b>67</b>	<b>27</b>	<b>20</b>	<b>279</b>	<b>43</b>	<b>0</b>	<b>507</b>

**APPENDIX V**

**GRADUATE DEGREES AWARDED DURING THE LAST 10 YEARS  
(August - May)**

DEPARTMENT	PROGRAM INITIATED	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	SINCE AUG. 2003
American Studies	1982-MA	9	12	6	4	7	7	6	9	4	6	70
	1988-PhD	2	10	5	5	1	2	5	4	4	7	45
Anthropology	1979-MA	5	8	7	5	5	9	8	5	6	7	65
	2001-PhD	0	0	0	0	1	1	0	0	0	4	6
Applied Science	1970-MA/MS	6	8	5	5	4	2	11	4	3	4	52
	1990-PhD	5	6	4	3	8	6	3	2	2	8	47
Biology	1963-MA/MS	15	8	7	7	11	6	12	6	11	11	94
Chemistry	1964-MA/MS	4	3	6	2	3	5	4	4	7	6	44
Computer Science <sup>1</sup>	1984-MS	16	20	17	16	20	19	11	18	26	15	178
	1986-PhD	4	8	1	3	3	1	9	3	6	7	45
History	1955-MA	8	10	12	9	13	15	13	22	15	14	131
	1967-PhD	3	1	5	7	5	3	3	3	7	3	40
Physics	1959-MA/MS	9	9	11	12	11	11	14	13	9	13	112
	1964-PhD	7	5	9	9	6	8	6	12	6	5	73
PsyD	1978-PsyD	8	6	10	8	10	5	4	0	0	0	51
Psychology	1953-MA	9	5	9	7	6	9	8	4	7	4	68
Public Policy	1991-MPP	19	24	21	20	25	16	25	19	19	20	208
Totals	MA/MS/MPP	100	107	101	87	105	90	112	104	107	100	1,022
	PhD	21	30	24	27	24	21	26	24	25	34	256
	PsyD	8	6	10	8	10	5	4	0	0	0	51

<sup>1</sup> Includes Computational Operations Research.