"Does Research Bring Us Together?  
The Blend of Teaching and Research in W&M in the 21st Century."
December 2, 2009

Moderator:  
Michael R. Halleran, Provost

Panel:  
Eric Jensen, Professor of Economics and Public Policy  
Vassiliki Panoussi, Associate Professor, Classical Studies  
Mark Patterson, Associate Professor, Biological Sciences (VIMS)

Opening Remarks
Dr. Halleran opened the conversation by welcoming the audience, which again included more than 120 people. The second in a series of public conversations throughout the year, this session focused on the question, “Does Research Bring Us Together?” The ongoing series of events arises directly from the strategic plan, which states, “Promote a campus-wide conversation about the future of liberal arts education and the role of graduate and professional programs in a liberal arts university” (Challenge 1, Goal 1, Objective 1).

Dr. Halleran noted the ongoing nature of the conversations from the first session and encouraged those present to continue pursuing discussion beyond the formal event. One of the primary goals is to stimulate such ongoing conversations. Dr. Halleran summarized the first event by acknowledging that “liberal arts university” may not be the most appealing term to describe the College, but contains many elements that accurately describe William and Mary. Research emerged in the first conversation as a fundamental quality of William and Mary valued among all fields. Various disciplines may use other terms, such as scholarship, but all can be included under the umbrella term of research. Halleran shared an anecdotal story of a colleague receiving a grant and coordinating the necessary time away from teaching for the research project. The colleague described the needed time away from the classroom not as time off, but as “time on” for another aspect of being a faculty member.

Remarks from the Panelists
Prof. Panoussi opened contrasting William and Mary with her experience teaching at Williams College, stating William and Mary does more research than a liberal arts college, but with a lesser emphasis on pure teaching, larger class sizes and a lower student-to-faculty ratio. She believes William and Mary holds the potential to lead the conversation in defining a liberal arts university. Before moving in that direction, Panoussi encouraged the College community to talk about and, just as importantly, listen to what research means in different disciplines. With regard to the role of research in teaching, Panoussi emphasized students feed off a professor’s interest in the class, describing personal teaching experiences involving new areas of expertise as an enriching and exciting experience. She also noted teaching in areas of existing personal expertise provides the opportunity to offer students a more in-depth learning experience. Panoussi noted the excellent students at William and Mary, which allow for the undergraduate involvement in
research at the College. She described the Classics Department as more competitive than those at liberal arts colleges because of increased research in combination with a unique size (not too small, not too big).

Prof. Panoussi then focused on the role of research at the College. She stated research means different things to different disciplines. Physics requires graduate students to successfully pursue research, but other disciplines, including Classics, do not. At William and Mary, research must be defined in broad terms that embrace these disciplinary differences. She feels that “undergraduate research” as a term is misleading, and prefers Prof. Jensen’s term of “research-based teaching.” From this term, Panoussi noted involving undergraduate students in research is an important and a vital role of a William and Mary professor. She concluded by encouraging the faculty present that a lot can be done in the classroom, including research-based teaching. Panoussi also encouraged her colleagues to think about teaching courses in personal areas of expertise in addition to the necessary General Education Requirement (GER) and basic courses, and also encouraged the administration to find ways to give credit to students and faculty for small research-based discussion classes.

Prof. Jensen is in a unique position working at the intersection of Economics (undergraduate program) and Public Policy (graduate program). Through conversations with others, including Prof. Gene Tracy, Jensen notes the term “balance” regarding research and teaching implies opposites, which also implies an inherent danger of falling off on one side. He prefers the term “blending” research and teaching at the College, which he credits to Jim Golden, Vice President for Strategic Initiatives. Jensen agreed with Prof. Panoussi that W&M is not a liberal arts college, but also not a research university, in both cases by intentional choice. Faculty members also intentionally choose to be at William and Mary because of the blend of teaching and research. Research is a necessity to attract quality colleagues, but also a vital component of a fulfilling faculty experience.

Prof. Jensen then posed the question, “How are we different from the research mills and liberal arts colleges?” He proposed the answer is “research-based teaching,” which provides ways in which undergraduate students leave William and Mary with experience in what they will do in the future. Jensen acknowledged there are certain budgetary implications of research-based teaching, such as the amount of faculty required to devote the necessary time with students, that may be better reserved for better financial times. Involving students is time intensive and takes a lot of work to find the right students and then provide proper training. Graduate students are an alternative. Jensen notes that William and Mary intentionally does not allow graduate students to be teaching assistants or teach classes, and with good reason. He cited a study that found 70% of university faculty members send at least one child to a liberal arts college because of the emphasis on teaching by professors, not teaching by graduate students. However, there are lots of opportunities to include undergraduates in research through graduate involvement at the College. Jensen offered as an example the Public Policy capstone course that involves undergraduates as research assistants to the graduate students. He suggested this model could be further developed to provide academic credit for involved undergraduates rather than, or complementary to, wages. Jensen concluded some of the conflicts between research and teaching or graduate and undergraduate education are, in fact, not structural, but rather based on the current models in use. Jensen believes William and Mary can develop new models that reduce this tension.
Prof. Patterson began with a story from his education in a physics course, generally not the most popular subject among biology students. He and a lab partner were given access to the university wind tunnel and instructed by the professor simply to learn physics. Along with some entertaining experiments, the end result was a deeper understanding of an interest in the subject matter. His professor for the course later shared that he only understood complicated physics material through intensive study (often requiring several readings) before it could be internalized and shared with others. Patterson also referenced a meta-analysis that suggests that excellence in research and teaching are not correlated and, in fact, undergraduate learning sometimes suffers with greater emphasis on research (Prince et al, 2007). Patterson noted that William and Mary deliberately seeks to include students in research and then pursued the rationale behind this choice. He commented that conversations with students involved in research with faculty almost uniformly say it was a wonderful experience, but questioned the reason for this. Patterson suggested it lies in integrating the nexus between teaching and research into learning for the students. He quoted a study from the United Kingdom finding that research and teaching can be successful together, but only with appropriate faculty time allowed for both. Excessive demands on either cause both to suffer. Patterson suggested people learn best by doing and then reflecting in study, which is not the norm for much of teaching. He then returned to his physics experience, which led to his senior thesis and ultimately shaped his graduate pursuits. Patterson offered the following quote from the Boyer Commission on Educating Undergraduates in the Research University,

As undergraduates advance through a program, their learning experiences should become closer and closer to the activity of the graduate student. By the senior year, the able undergraduate should be ready for research of the same character and approximately the same complexity as the first-year graduate student; the research university needs to make that zone of transition from senior to graduate student easy to enter and easy to cross. For those who do not enter graduate school, the abilities to identify, analyze, and resolve problems will prove invaluable in professional life and in citizenship” (Final Report, 1998, p. 17).

He concluded that society would be the winner if we make all undergraduates participate in research before they leave the institution. Patterson acknowledged there are some great examples at the College already, but we can also do more in the future.

**Audience Questions and Comments**

- Dr. Halleran started by referencing the “special sauce” alluded to in Prof. Patterson’s written statement. He asked what is the William and Mary “special sauce?” As a second question, he asked if the ingredients need to be changed.
  - Prof. Patterson responded that we don’t necessarily know what all the ingredients are at the College and need to continue to investigate this. One part is the ability of undergraduates to get undivided attention from a professor.
  - Prof. Jensen added it’s “slow cook” recipe at William and Mary requiring extensive time. He emphasized the need for discrete blocks of time in faculty schedules to find the synthesis of research, teaching, and students.
  - Prof. Panoussi emphasized William and Mary faculty members already do very good things and need to continue the good work.
Christopher Del Negro (Applied Sciences) noted academic units at the College are smaller than at a research university. This size provides the space for interdisciplinary collaboration. He emphasized the positive outcomes of smaller academic units and faculty talking with one another.

David Kranbuehl (Chemistry) emphasized the key is size. Size drives how faculty members spend their time. Faculty cannot have a true open door policy with a class of 100, or the professor is swamped. The “sauce” is keyed by attracting the right people to the College. Faculty whose first interest is teaching, and in addition have a passion for research, fit at William and Mary. He stated research is learning how to answer the unanswered questions, which is what all professionals do (even in non-academic occupations). Kranbuehl concluded the key ingredients at the College are the right environment with regard to teaching load and size combined with the right people.

A faculty member from Marine Science noted interdisciplinary work is key to growing the faculty in an intellectual sense, both individually and collectively. His field of environmental science is fundamentally interdisciplinary. William and Mary needs to not only say it encourages interdisciplinary work, but also provide the structures to create a habitat to make that happen. He commented that some departments are open to collaboration, but others have non-porous walls. He concluded that any administrative action to break down walls between departments is a positive.

Rachel Dinitto (Modern Languages and Literatures) commented on the difficulty knowing all the opportunities for interdisciplinary research at William and Mary. She used her focus on Japan as an example of not knowing if other faculty members were engaged in research on the area. She suggested the need to create a shared space to involve and inform the faculty on what’s going on with interdisciplinary research and opportunities for collaboration.

- Carl Strikwerda, Dean of Arts & Sciences, was asked to respond. He noted a project, Digital Measures, will help track research by both faculty and students, but is at the very early stages. The Charles Center is beginning to do the work to expose the various projects that are ongoing. Strikwerda also noted students are building this culture and are ahead of the faculty in using areas to find opportunities for collaboration and involvement.

John Rofrrio (Modern Languages and Literatures) emphasized the role of tenure requirements in allowing junior faculty to contribute to and engage in the culture of integrating teaching and research at the College. He described his personal experience at a large research university, which he quickly left for William and Mary. He noted the teaching load is the same, but the research expectations are less, allowing junior faculty to actually devote time to students, teaching, and research. At his previous institution, senior faculty suggested that junior faculty spend less time grading students, assign less work, etc. to allow more time to focus on exclusively on research. The tenure requirements provide the opportunity to pursue the things that are critical to the institutional culture. He concluded the William and Mary structure allows faculty to involve students and actually teach.

- Dr. Halleran noted the rarity that teaching is a deciding factor in tenure at other institutions, but is critical to the tenure review process at the College.
- Tim Barnard (American Studies) commented from a unique perspective as an alumnus of the American Studies program and current visiting assistant professor. He suggested an important ingredient of the “sauce” is graduate students and added that graduate students do participate in teaching at the College (cited advanced seminars as examples). These graduate students are at the forefront of research in their respective areas and provide a unique learning experience intensively tied to research. He concluded that calling William and Mary a university requires graduate students, and these students should be viewed as a more critical ingredient to the “special sauce.”
  - Prof. Jensen responded that graduate students do matter. He noted some institutions use the model of recruiting graduate students simply to fill a teaching need for introductory undergraduate classes, which is counter to the William and Mary model of graduate education.
  - Barnard responded that graduate students are certainly not exploited labor at the College as is often the case elsewhere, which is another piece to the size and position of William and Mary.
  - Prof. Patterson noted that size in current climate is troubling with talk of the student-to-faculty ratio increasing. He posed the question, “Does altering this ratio change William and Mary, wrecking the special sauce?”
  - Prof. Panoussi noted other colleges, including liberal arts colleges, are also increasing in size. She concluded there is a place for graduate programs at the College, including identifying niches they can fill to boost programs.
- Silvia Tandeciarz (Hispanic Studies) commented that while the faculty is doing many things well in regard to teaching and research, a common frustration is the question of access. Many faculty members have found creative ways of involving students in research out in the field, but that takes money to get students to the field to participate in research. Some students can afford to pay, but others can’t. She emphasized that William and Mary needs to think about the sustainability of student involvement in research if this is truly a priority.
- John Griffin (Biology and Neuroscience) has taught in both research and liberal arts cultures. He reflected on experiences at both, including undergraduates not being allowed in laboratories at a research university, and a liberal arts college where the resources did not actually allow for the desired undergraduate involvement in research. The culture at William and Mary to involve undergraduates in research was evident to him immediately. On the medical sciences side, getting funding is a real issue. However, he concluded involving undergraduates is crucial to the volume that he is able to publish.
- David Kranbuehl (Chemistry) added these issues must be included in the discussion of a new economic model. Size is a huge factor for the atmosphere at William and Mary and the ability to do interdisciplinary work. Size must be coupled with the research question. He again concluded that, in the end, it's in the people at William and Mary (combined passion for teaching and research).
- Dr. Halleran asked the panel to respond to an exchange he had recently regarding requiring a research experience of all undergraduates. He noted the demands on faculty to fulfill such a requirement. He asked the panel, “If we wanted to integrate research, would we need to, or should we, rethink how we provide our education?”
Prof. Patterson responded the College would have to change to do so. He added it would require leadership from the top as such a requirement would involve a battle with faculty who have already found a comfortable equilibrium in teaching and research.

Prof. Panoussi responded a lot of the problems arise in this notion of adding onto the current demands of faculty. She believes if both the student and faculty would get credit for the undergraduate research experience, then it’s feasible. Panoussi noted there are limits to the volume of undergraduate research faculty can support, particularly when they do not get credit for their efforts.

Prof. Jensen has spoken with colleagues at liberal arts colleges that require every student to conduct a senior thesis research project. The requirement does work at those institutions, even from less academically inclined students, because the students pick topics that are interesting to them. But, Jensen noted such a requirement is extremely faculty intensive and those places include this in faculty numbers and compensation.

Bill Cook (Physics) explained that Physics has been involving undergraduates in research for a number of years. All undergraduate Physics majors are required to complete a thesis, and are aware of the requirement before declaring the major. However, he acknowledged that Physics is unique because it brings in the large amounts of grant funding required to have graduate students who work closely with and train the undergraduates involved in research. Most other departments do not have large sources of external funds. Given this funding reality, Cook stated the College should encourage areas likely to obtain the necessary research funding. He concluded that having a wish list without a plan for funding is impractical.

Dr. Halleran noted the differences in size among departments (for instance, approximately 20 Physics major graduates to 150 Government major graduates annually). He noted the student-to-faculty ratio is critical to being able to incorporate undergraduates in research.

Prof. Cook responded it is a matter of resources. In order to mandate an undergraduate research requirement for everyone would require an influx of a large amount of resources.

Keith Griffioen (Physics) added that while the Physics Department may only graduate around 20 undergraduate majors annually, there are also 60 graduate students in the department. The graduate program requires an intense faculty involvement.

Prof. Panoussi explained undergraduates in the Sciences often produce publishable theses, which is very rare in the Humanities. She noted that engaging undergraduates in research doesn’t necessarily mean publishable work.

A Biology faculty member explained that some undergraduate majors accumulate 3-4 years of laboratory experience to build to a publishable honors thesis. That situation is impossible to duplicate with all students, but it can be done well with some.

Liz Allison (Biology) explained that grants to involve undergraduates in research are often considered starter grants with the expectation that the
institution will take on funding the project. These grants are not intended as a continuing source of funding. Several grants to William and Mary have been continued, but the institution needs to find a mechanism for funding these projects.

- Sarah Stafford (Economics) commented that research is very different for some faculty and some disciplines. In some areas research can be complementary, but in other areas serves as a substitute for teaching. Some faculty do want to do research-based teaching and interdisciplinary teaching, but it’s not a one size fits all solution. It may not be the right thing to force on all faculty and students.
  - Dr. Halleran stated from his perspective providing the opportunity for, not the requirement of, undergraduate research is a more realistic objective for the College.
- Sophia Serghi (Music) noted the difficulty in quantifying research in the Arts, offering the example of herself as a composer. She encouraged opening a forum for what research is in different fields. Serghi stated that research happens in real time during every class in the Arts. She concluded a collective understanding of research in the various disciplines is needed at the College.
- Kate Slevin (Sociology) agreed the disciplines are very different. She explained that sociology is not offered in high schools, or, if available, is inadequately taught. In sociology, a student often does not declare a major until the junior year, taking research methods in the senior year. She concluded that incorporating a research experience for all majors is not possible.
- Keith Griffioen (Physics) offered a definition of research. He stated, “Research is everything that has been done or will be done to create the fields that we are working in.” He then emphasized that we sell ourselves short by not looking to those who will do research in the future as well as those who have done research in the past.
  - Prof. Jensen added that involving graduate students could allow extension of existing resources.
- Margaret Saha (Biology) observed the conversation has focused on disciplinary differences. She added that most biology students do not approach publishable work unless there is an intensive involvement by faculty. Saha concluded there might be more similarities than differences between disciplines in the role of faculty in undergraduate research.
- Dr. Halleran acknowledged that differences certainly exist among the disciplines, but stated that research, and the value placed on conducting research, does bring William and Mary together as an academic community. He thanked the audience for attending and encouraged the conversations to continue before concluding the session.

Discussion notes compiled and written by Jeremy P. Martin.