

**Nomination Cover Sheet
2016 Virginia Outstanding Faculty Awards**

1. NAME Full (Legal): John Peter Swaddle Preferred First Name: John	
2. INSTITUTIONAL INFORMATION Institution: College of William & Mary Rank/Position Title: Professor of Biology Year Rank/Title Attained: 2010 (Professor) Years at Institution: 14 Campus Email Address: jpswad@wm.edu Campus Phone: 757-221-2231 Campus Mailing Address: Biology Department, Landrum Drive, College of William & Mary, Williamsburg, VA 23187-8795 Campus Communications Contact: -Name: Christin Fiedler -E-mail: cefiedler@wm.edu	3. PROFESSIONAL INFORMATION Academic Discipline: Biology Specialization/Field: Ecology and Evolution Type of Terminal Degree: Ph.D. Year Awarded: 1994 Awarding Institution: University of Bristol, UK
	4. PERSONAL INFORMATION

Please check only one box:

- RESEARCH/DOCTORAL INSTITUTION NOMINEE:
- MASTERS/COMPREHENSIVE INSTITUTION NOMINEE:
- BACCALAUREATE INSTITUTION NOMINEE:
- TWO-YEAR INSTITUTION NOMINEE:
- TEACHING WITH TECHNOLOGY NOMINEE:
- RISING STAR NOMINEE:

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Mission Statement

College of William & Mary

At William & Mary, teaching, research, and public service are linked through programs designed to preserve, transmit, and expand knowledge. Effective teaching imparts knowledge and encourages the intellectual development of both student and teacher. Quality research supports the educational program by introducing students to the challenge and excitement of original discovery, and is a source of the knowledge and understanding needed for a better society. The university recognizes its special responsibility to the citizens of Virginia through public and community service to the Commonwealth as well as to national and international communities.

Summary of Accomplishments

Professor John Swaddle is the quintessential teacher-scholar: an internationally-acclaimed research star, a passionate, highly effective and sought-after teacher, a mentor to more than 100 undergraduate and 27 graduate students, and a dedicated servant to his institution and international academic communities. In the words of Taylor Reveley, President of W&M, "**John Swaddle is a poster child for the perfect recipient of an Outstanding Faculty Award.**"

Prof. Swaddle directs a world-class international ecological and environmental research program that has taken him and his students to four continents and has been externally funded to the tune of almost \$6 million. He studies how human alterations of the environment impact wildlife and, in turn, how these changes affect human society. In a rapidly changing world, these multi- and interdisciplinary questions are increasingly important. Prof. Swaddle seamlessly integrates undergraduates into this high-profile research program, and his students have published dozens of peer-reviewed articles and presented their work on 60 occasions at international conferences. His work is widely cited (approximately 4,500 times) across many disciplines in the life sciences, and he is by far the most cited scientist in his department, which includes three previous SCHEV OFA winners. In formal recognition of his research achievements, Prof. Swaddle has received the highest research honors from his international academic societies, such as the Young Investigator Prize by the American Society of Naturalists (leading international society of ecologists), and the Most Outstanding New Investigator Prize by the Association for the Study of Animal Behavior (leading international society of behaviorists).

Prof. Swaddle teaches courses in introductory biology, evolution, and environmental science. These courses consistently garner the highest praise from students and often have wait lists that could fill them twice over. Even though many of these courses are large (often ranging from 75 to 170 students) he is renowned for integrating research into his courses, through research assignments and extensive discussion of primary literature. He endeavors to help students feel the excitement of current science and ignite their own critical thinking and creativity. Due to his prowess in the classroom and as a mentor for young researchers at W&M, Prof. Swaddle has been awarded the Plumeri Award for Faculty Excellence, the Phi Beta Kappa Faculty Award for the Advancement of Scholarship, a Reves Center International Faculty Fellowship, and the William & Mary Alumni Fellowship Award for Outstanding Teaching.

Prof. Swaddle has also held key administrative positions at W&M. He served as the Dean of Graduate Studies and Research, was the Director (Chair) of the interdisciplinary Environmental Science & Policy program, and chaired the College's primary strategic planning committee. Externally, Prof. Swaddle has organized and hosted international conferences, was an elected officer of his primary international academic society, and was nominated to serve as President of the Animal Behavior Society. Prof. Swaddle excels in all dimensions of teaching, discovery, knowledge integration, and service – achievements so extensive that some colleagues refer to them as "**surreal.**" According to Prof. Jeanne Altmann, Fellow of the US National Academy of Sciences, and Professor of Biology at Princeton University, "**Prof. Swaddle is one of the major reasons that Virginia has in William & Mary a national, even international, stellar primarily undergraduate institution of higher education, especially rare in the sciences.**"

Teaching

Prof. Swaddle is one of the most innovative and effective instructors at W&M. He has developed and taught a stunning variety of courses (14 new courses since 2001, spanning introductory and upper-level ecological and evolutionary biology, mathematics, environmental science and policy, and even business) and always attains stellar student evaluations, averaging a score of 4.8 out of 5 for Instructor Effectiveness over the past decade. Key to his success is that Prof. Swaddle is extraordinarily student-centered in his teaching. He designs courses with student learning and

achievement goals as the central axis of all course materials, activities, assignments, and out-of-class experiences.

Prof. Swaddle employs a combination of the latest pedagogical tools, including interactive games, multimedia clips, online activities, and group and individual primary literature discussions, to enliven and enrich every class, no matter the size. As Dr. Emilie Snell-Rood '02, PhD, Assoc. Prof. at the University of Minnesota, recalls, "**Dr. Swaddle is clearly ahead of the pedagogy game. His teaching influenced me in deep and long-lasting ways – it shaped my own critical thinking abilities and influenced how I teach my own classes today.**" As an example of Prof. Swaddle's teaching innovation, in his 80-student *Evolution of Organisms* course, he has participants read a paper before class and respond to online prompts. He uses pre-class student responses to structure in-class discussion, which usually results in over 75% of the students participating in class. He then turns the literature discussion into an exercise where students break into groups and generate new research questions, hypotheses, and study designs that extend the paper they have read and analyzed. This type of experience is usually only available in small classes in the sciences, but with the innovative use of technology, structured guidance to dissect the primary literature, and highly interactive and personalized discussions in the classroom, Prof. Swaddle engenders a contagious passion and love of science. In the words of Dr. Saji Pererra '08, MD, Boston Children's Hospital "**His vast knowledge, unending curiosity, and genuine love for his discipline made science the most vibrant and exciting realm to explore. Going to class everyday was unbelievably fun, because Prof. Swaddle brought theories alive through tangible examples students could manipulate in their minds.**"

Undergraduates in this same large *Evolution of Organisms* class also engage with primary literature research outside of the classroom. For example, they write an in-depth critique of Richard Dawkins' classic text *The Selfish Gene*. As this book was written in the late 1970s, students can find plenty of new scientific literature that both reinforce and refute Dawkins' arguments and conclusions. For many, this is the first scientific paper they have written in college, as science writing is often limited to small seminar courses. Many students reflect back on this experience as one of the most important in their scientific training (see later quotes).

Prof. Swaddle recently led the complete revision of the first introductory biology course, one of the largest on campus (486 undergraduates), to great success. The new version of this course is broken down into smaller sections and is more focused on teaching students how to think and analyze information like scientists. Objective assessment of the revised course indicated improved student learning outcomes and greater retention of students, especially those traditionally under-represented in science, into the next level of the biology curriculum at W&M. Prof. Swaddle is currently writing an article for a leading education journal as this revision could be used as a model at other institutions.

In his research laboratory and in the field, Prof. Swaddle has mentored a tremendous number of students across a vast range of interdisciplinary projects – from fire ecology in Australia, to mercury pollution in Virginia, to how to keep birds away from commercial crops and airports using nets of sound. Since 2001, he has worked with more than 100 undergraduates, 24 Masters students, 3 PhD students, and 6 postdoctoral scholars. These students and colleagues have presented 60 talks or posters at national and international academic conferences, with several winning "best presentation" awards. Since 2001 alone, 37 of his mentees published a combined 32 peer-reviewed articles in top-flight academic journals.

Prof. Swaddle's students leave his courses and research program as deep analytic thinkers who have a true love for science and often continue their education and practice of science. His intention is to inspire students at the very beginning of their career. According to one former

student, Dr. Laura Page '05, MD, Pediatric Endocrinologist, Vanderbilt University, "**Dr. Swaddle went beyond having undergraduates simply execute projects. He encouraged us to ask questions, apply for grants, make posters, give presentations, and publish our research and gave us the tools to do so... My research culminated in a Senior Honors Project, which Dr. Swaddle supported me through while still allowing me to have a great deal of autonomy. To have such an experience as an undergraduate was truly exceptional and would not have occurred without Dr. Swaddle's dedication to students. The experience and confidence I gained in his lab has helped carry me through medical school and pediatrics residency.**"

Prof. Swaddle's students go on to do great things, with most either entering graduate school or medical programs. Many directly credit the mentorship they received from John as one of the primary reasons for their success. As Dr. Doug Ruff '04, PhD, Postdoctoral Scholar, University of Pittsburgh says: "**I received a master class on how to be a scientist, a mentor, and an upstanding member of an academic community... No single skill has been more valuable to me in my career than the ability to independently solve problems that I began to develop while working in John's lab.**"

John's reputation for excellent student mentorship extends beyond W&M – colleagues at other institutions hold his achievements in very high regard (see later quotes). He has mentored numerous non-W&M students through a National Science Foundation (NSF) Research Experience for Undergraduates (REU) site program, which he co-lead; through a NSF Bio-Math program that transitioned community college students to 4-year schools (with almost 100% transfer success); and a long-term NSF International REU program that he co-leads in Australia studying fire ecology (see later montage).

Discovery

The overall goal of Prof. Swaddle's international research program is to understand how and why changes in the environment, most often caused by humans, affects wildlife and society. In his recent work he has studied mercury pollution and the rapidly increasing amount of human-caused noise in the environment. These forms of pollution adversely affect populations of wildlife and have direct societal impacts, which helps Prof. Swaddle simultaneously inform conservation and public policy. One of his most cited recent papers, written in collaboration with a W&M undergraduate, demonstrates that decreasing bird species diversity (driven by human changes of the landscape) increases the spread of West Nile virus, an avian-borne disease that infects people. This research suggests that maintaining bird diversity would improve public health. In these integrative ways, Prof. Swaddle continually crosses disciplinary boundaries and addresses societal issues.

Of special note, John is taking his research from the laboratory and field into the commercial sector. Sponsored by the Bill & Melinda Gates Foundation, and in collaboration with an acoustic engineer and many students, he developed ways to deter pest birds from eating valuable crops at farms and preventing birds from colliding with aircraft at airports by using "nets" of sound that jam birds' vocal communication. When such nets are deployed, birds move to other areas – thereby protecting the birds from hazard and increasing crop yields. Prof. Swaddle has filed his first patent and the project has been commercialized. Prof. Swaddle has thus taken the boundary-crossing vision of W&M and traversed from ecological theory to practical invention that could help world hunger, aviation safety, and bird conservation. In the words of Fellow of the American Association for the Advancement of Science (AAAS), Prof. Jeff Lucas from Purdue University: "**The sonic net is an impressive advance in the ability to keep birds away from aircraft and other sensitive areas. The sonic net idea is truly new and extremely forward thinking. What is impressive about John's record is that he started with a very firm grounding in the basic aspects of behavior and sensory physiology, and**

then used this terrific knowledge base to offer well-conceived solutions to some of the critical problems that we face today.”

Because individuals can be affected in many ways by the rapid environmental change that Prof. Swaddle studies (physiology, behavior, communication, mechanical functioning, reproduction, ecology), his research projects cut across multiple areas of the biological, environmental, and physical sciences. He is an international leader in many fields: sexual selection, behavioral ecology, animal communication, bird biomechanics, conservation, noise pollution, and heavy metal (mercury) contamination. Prof. Robert Seyfarth, University of Pennsylvania, AAAS Fellow, and former President of the Animal Behavior Society states, ***“Prof. Swaddle is an internationally recognized leader in research on behavior and ecology of animals. He has made particularly notable contributions in the areas of sexual selection, mating systems, communication, and noise pollution”***. He has also been described as ***“one of the outstanding young research scientists of his generation”*** by Prof. David Houston, University of Glasgow, UK. This high regard from the international research community is also reflected in his position at W&M. Prof. Daniel Cristol, W&M Biology Department and previous SCHEV OFA recipient says, ***“John Swaddle is the best scholar in the biology department at the College of William & Mary, in my opinion... Not only does John write great papers for great journals, but he does it in several fields – human biology, evolution and sexual selection, disease ecology, and biological conservation – and with lots of student coauthors!”***

Prof. Swaddle’s unusually diverse research program has been extremely successful. He has published 78 peer-reviewed articles in top-tier journals such as *Nature*, *Science*, *Proceedings of the Royal Society of London*, and *PLoS ONE*, and many with student co-authors. He is perhaps most well-known for publishing the premier book on “fluctuating asymmetry” (how bodily symmetry reveals stress during development) in Oxford University Press’s prestigious *Ecology and Evolution* series. Such a publication is usually the domain of senior scientists toward the end of their careers, but he wrote this book fresh out of graduate school. In all, Prof. Swaddle’s publications have been cited approximately 4,500 times. His *h*-index is 33 (33 of his publications have each been cited at least 33 times). This is higher than most members of Editorial Boards for top-tier journals in ecology and evolution subjects (Kelly & Jennions, 2006, *Trends in Ecol & Evol* 21, 167-170). In the words of former President of the Animal Behavior Society, Prof. George Uetz, University of Cincinnati: ***“Dr. Swaddle’s research program is an excellent example of modern, cutting-edge behavioral ecology, using an approach that integrates theory and empirical hypothesis testing, from proximate mechanisms to ultimate evolutionary causes of behavior. He is among the ‘major players’ in the fields of avian behavior, communication, and sexual selection... His level of productivity has been exceptional... Most of the publications cited are in important, high-impact “front-line” journals... whose standards for acceptance are among the highest.”*** This praise is echoed by Prof. Mike Ryan, University of Texas at Austin, AAAS Fellow, and former President of the Animal Behavior Society: ***“Dr. Swaddle is an incredibly productive researcher in both quantity and quality. There is no question that in the fields of visual communication and sexual selection Dr. Swaddle is a major contributor.”*** Prof. Swaddle not only performs world-class research, but he does this in collaboration with students. He has developed a research program that is the envy of a research intensive R-1 university while making this research highly accessible to students in a liberal arts institution.

Prof. Swaddle has been unusually successful in attracting external, nationally-competed funds for his research. He has been continuously externally funded for 25 years. In total, he has been awarded almost \$6 million, which is a very large amount for his form of scholarship. Of these grants, Prof. Swaddle was awarded a prestigious and highly-competitive NSF CAREER grant, and prior to that a Royal Society of London University Research Fellowship – considered the

most prestigious research award to young scientists in the UK. With NSF funding rates below 5%, it is remarkable that Prof. Swaddle currently holds four active NSF grants.

In formal recognition of his research excellence, Prof. Swaddle has received some of the most prestigious awards from his international academic societies such as the Young Investigator Prize of the American Society of Naturalists, and the Most Outstanding New Investigator Prize of the Association for the Study of Animal Behavior.

Knowledge Integration

“Dr. Swaddle seamlessly integrates his research with classroom material, allowing him to draw from personal experiences when teaching classes on evolution and sexual selection, making the subject matter more real and accessible to his students.” – as recalled by Jessica Benson '14, 2nd year Virginia Tech Veterinary School student. As an example of this knowledge integration, in his Sexual Selection course, Prof. Swaddle has ingeniously used NSF's grant review process as the structure for an assignment for the course. Students, after reading and analyzing extensive primary literature, formulate their own research ideas and construct a NSF-style grant proposal, with several drafts. In place of a final exam, Prof. Swaddle plays the role of a NSF “program manager” and transforms the students into the grant review panel. Prof. Swaddle jerry-rigged Blackboard (W&M's online teaching platform) to mimic the NSF online review system so that students review grants ahead of the meeting and write collaboratively to review each other's work. He then assesses each student based on the quality of their reviews. Students unanimously love this experience. It gives them a whole new understanding of how science works in the US and enables them to learn actively from each other's ideas. In the judgment of Prof. George Uetz, former President of the Animal Behavior Society: ***“[Dr. Swaddle]... is actively engaged in development of pedagogy and analysis of learning experiences for students. I visited William & Mary, gave a guest lecture in his class and met with his students, and it is clear that he is both an excellent teacher and mentor.”***

Prof. Swaddle has been awarded several grants that integrate teaching and research, such as his NSF CAREER award, two iterations of a NSF REU program, a NSF Undergrad Bio-Math training program, and a NSF International REU program in Australia. All of these programs use research as the primary pedagogical tool and blend his research and teaching activities. In the words of Prof. Mike Webster of Cornell University, Fellow of the Animal Behavior Society: ***“John has done an outstanding job of seamlessly integrating his research and his teaching, creating a single program where the two are synergistically interdependent... he serves as an excellent role model for others in academia.”***

Prof. Swaddle has also contributed greatly to the integration of research and teaching more broadly at W&M and has published in the formal educational literature. For example, he was the primary author of two successful grant proposals to the Andrew W. Mellon Foundation that redesigned an integrative curriculum for the Environmental Science & Policy program, started a Center for Geospatial Analysis that has become a central hub for cross-disciplinary teaching and research (and played a crucial role in W&M winning a \$25 million grant from USAID), and launched a postdoctoral teacher-scholar program where teams of faculty mentor a postdoc in interdisciplinary teaching and research. These postdocs are taught to mentor undergraduates in research, furthering knowledge integration to a new generation of teacher-scholars.

His research often addresses societal issues. For example, the sonic net project (described above) employs his expertise in bird ecology, behavior, and communication to solve the problems that birds cause at airports (striking planes) and farms (eating crops). Similarly, Prof. Swaddle's extensive knowledge of community ecology led to a much-cited analysis that linked decreasing bird species diversity with increased contagious disease risk for humans.

Accordingly, Prof. Swaddle was selected by W&M's Provost to give the first Tack Faculty Lecture, which is the university's premier public-facing event to showcase its teacher-scholars. Michael Halleran, W&M Provost, states that: "**Three years ago, when the university established the Tack Faculty Lecture series to showcase its faculty talent and for a combined campus and community audience, it was our considerable good fortune to select John Swaddle as the inaugural speaker. His combination of deep knowledge on an important subject and enviable ability to engage a diverse audience set a high bar for what has now become a much-anticipated semi-annual event.**"

Service

Prof. Swaddle is a leader at W&M and in his international academic societies. As Dean of Graduate Studies and Research he led the development and management of all graduate programs in Arts & Sciences and represented the institution to numerous external research bodies. He championed graduate studies and helped to raise substantial new funds for graduate student stipends and financial aid, launched new collaborations with Career Services targeted at bringing new employment opportunities, and helped develop an initiative for electronic thesis and dissertations with W&M's central library.

Prof. Swaddle also directed W&M's Environmental Science & Policy (ENSP) program. During his years as program Director, he led substantial curricula revision and oversaw a huge growth in both faculty participation and student enrollments in the most interdisciplinary program at W&M. The ENSP program now involves participation from almost every department in Arts & Sciences, plus contributions from the Schools of Marine Science, Business and Law. During these years the number of majors grew impressively from 20 to almost 100. To implement change and sustain growth, Prof. Swaddle was the lead author on grants awarded from the Mellon Foundation that stimulated curricula revision, seeded new tenure-eligible faculty lines, launched W&M's Center for Geospatial Analysis, and helped him design an innovative postdoctoral teacher-scholar training program. It is no small claim to say that Prof. Swaddle was the linchpin in transforming the ENSP program at W&M.

Prof. Swaddle has served on the College's Planning Steering Committee for several years and chaired its primary subcommittee. He was also selected by the Provost to be one of six people that revised W&M's vision statement. Provost Michael Halleran writes: "**Within its strategic planning goals, the most important is for W&M to be a leading liberal arts university. John was asked to assume the leadership of the vital committee responsible for this area. The fact he was asked to lead it shows the high regard in which he is held by all on campus; the committee's thoughtful ideas, questions and recommendations have shown that this high regard is justified.**"

Prof. Swaddle has further showed his dedication to William & Mary by carving out the time to coach W&M's rugby clubs to state and regional championships.

Outside of W&M, Prof. Swaddle is deeply engaged in leadership roles with his international academic communities. He has reviewed hundreds of articles and grant applications for dozens of international journals and grant awarding agencies, served on numerous review panels, and advised federal agencies on policy issues. He also organized and hosted two international research conferences at W&M. As an elected officer of the Animal Behavior Society he ran grant programs and helped to establish new strategic initiatives. In the words of former President of that society and AAAS Fellow, Prof. Robert Seyfarth: "**Prof. Swaddle is one of a small number of academic leaders who make this society function as well as it does.**"

In short, Prof. Swaddle is a committed leader within and outside W&M, and has made numerous positive differences to his institution and his larger academic communities.

Personal Statement

I am unusually lucky to have fallen in love with biology, and animal behavior in particular, at a very young age, and that passionate focus has stayed with me ever since. The roots of this obsession started with one particular formative moment in my youth. I grew up in west London, and on my walk to elementary school each day I walked past Sir David Attenborough's house. I should explain that Attenborough nature documentaries were and still are prime time viewing in the UK. Even though I was just six years old, I knew who he was and imagined him as an all-knowing person who lived with a menagerie jammed in to his three-story house. On my walk to school one day, I found a rather unfortunate sparrow that must have flown into a wall. It lay, almost lifeless, on the sidewalk and clearly was in need of rescue. I scooped it up, ran home, found a shoe box and then wondered what to do. My plan was less than half-baked, and my mother was not particularly happy to see that I wasn't at school already, let alone carrying a flea-ridden and mostly dead bird. But then I thought of Sir David. "He can make friends with gorillas so surely he can heal a hurt sparrow."

Somehow I convinced my mother this was a good plan, and she agreed to come with me to David Attenborough's house. With more bravery and gall than I would have now, I knocked on his front door and to my surprise Sir David answered the door himself. I proudly presented the paralyzed passerine (please excuse the avian alliteration), which my hero generously and humbly received, much to my mother's apologetic surprise. We then beat a hasty retreat. I felt as though I had saved the world because David Attenborough could do anything! From that day on I consumed everything Attenborough. TV documentaries, books, magazine articles, anything I could find. I now loved animals and wanted to be "like David" one day.

Through all my K-12 schooling, I wanted to turn every project and assignment into something about animal behavior and ecology. I even successfully petitioned my teachers to let me break the holy trinity of the science A-level exams (end of UK High School, college entrance exams where you focus on just three subjects) from Biology-Chemistry-Physics to Biology-Geography-Physics because I felt Geography would give me a better understanding of the physical world that animals inhabited. This combination put me in good stead to enter the top Behavioral Ecology undergraduate program in the UK, at the University of Bristol.

It was at Bristol that I truly blossomed and discovered I could make a career out of animal behavior and ecology. My dedication and passion paid off. I completed a double major in both Zoology and Psychology, with the intent of merging these two to understand various dimensions of animal psychology and how animal behavior is explained in terms of evolutionary, ecological, and developmental mechanisms. I graduated at the very top of my class, attaining the highest grades in both Zoology and Psychology, and was recruited straight into a PhD program by a Professor who was leaving Oxford University to strengthen further Bristol's Behavioral Ecology program. My partnership with my PhD advisor, Prof. Innes Cuthill, changed my life forever. He was a perfect role model: someone who was extraordinarily smart yet incredibly accessible, humble, and trusting of his junior colleagues. Innes gently steered me in directions that he knew would be fruitful yet challenging and then had the confidence in me to let me forge my own path. He would occasionally give me gentle nudges, and while he always knew what I was doing, I had full responsibility. I could not have asked for a more generous mentor. In 2005 a group of his previous students, myself included, successfully nominated him for *Nature's* Science Mentor of the Year. An award he richly deserved. I walk in his footsteps.

It is in this same vein that I try to mentor and support all the students I interact with at William & Mary. I want to light a fire of curiosity, steer them in directions that match their passions, and then let them forge their own way while always being available, supportive, and helpful. I've achieved the greatest success with my research students – many have published or presented their work at conferences – and I carry this same approach into the classroom. I don't see much distinction between my research program, my teaching, and my service. All are

intimately entwined and focused on helping various audiences critically appraise science and form a new level of understanding – by collecting and analyzing primary data, by helping students develop their own plans or critique the work of others, or by creating new programming at William & Mary to enable further teaching and research, especially programs that strengthen the ties between students and faculty. Ultimately, I want to help students learn how to think critically, using the tools of science, but also to be creative enough to use approaches from other areas of academia. This is in part why William & Mary is an excellent fit for me. I want to continue to perform world class research, open this research program to students so they engage in real science, and also help students see how biology fits in to a larger view of the world so they can go on to be critical thinkers and contribute positively to society. Furthermore, my service performed at W&M and elsewhere facilitates this critical thinking, beyond the classroom and research projects.

My mentorship of my first undergraduate researcher at W&M – Gillian Reiersen – illustrates these points nicely. Gillian was matched with me through our Howard Hughes Medical Institute freshman research program. On her application to the program, Gillian indicated that she was interested in human cognition and neuroscience, but we didn't have anyone with that expertise so she was assigned to the "bird behavior guy" as the apparent closest match. In our first meeting, Gillian vividly relayed how she had read several books about how hormones shape the human brain and how these hormonal cascades change whom people find attractive, and asked, "can we do some research like that?" Well, I had been at William & Mary for just a couple of weeks, had just landed a NSF CAREER grant and thought I could take on anything, even if this was not exactly in my usual scope of work. Over the following weeks, we consumed article upon article and discussed many alternative studies. Together we devised an experiment where we would use CGI graphics to alter the shape of young men's faces to simulate different levels of circulating testosterone during puberty. Testosterone affects the growth of facial bones, and the accepted wisdom was that women had selected for mates with high testosterone and found those individuals more attractive. Gillian and I were quite skeptical. After many hours of self-tutored computer graphics sessions, we completed an experiment where we showed, pretty convincingly, that the accepted wisdom was wrong. Young women did not prefer the faces displaying the highest testosterone – those were perceived as too aggressive and dominant. Neither did they prefer "baby-faced boys," as a competing hypothesis stated. The women preferred an intermediate, which is what our grounding in evolutionary theory predicted.

Such was the success of Gillian's freshman research project that we published the work immediately in a highly prestigious journal – *Proceedings of the Royal Society of London B* (a journal just a small notch down from *Nature* and *Science*). The study was received very favorably; it has now been cited more than a hundred times, and is used as a case study in the major Animal Behavior textbook (by Alcock). We had turned a pre-College passion into a textbook example in under two years. Additionally, Gillian had the full experience of generating her own ideas, designing a study, executing her design, analyzing the data, presenting it to the world, and then seeing people pay attention to her work. Gillian is now a chief neuroscience resident at UC Berkeley, after completing her MD/PhD at the University of Miami. I am enormously proud of her and, as she tells me herself, this initial research experience helped launch her career.

I always adopt a caring and compassionate interest in students' academic development, while also involving them deeply in a research program that will lead to high impact science and a world of opportunity. As a faculty member, I will always enrich students' lives with the ability to think critically and analytically, to forge new connections and cross boundaries of disciplines and dogma, while also helping them find their passion and contribute positively to their communities. I found my passion early and was lucky enough to have some excellent role models and mentors. I strive to continue to emulate similar experiences with all my students.

Abbreviated Curriculum Vitae

Education

- 1994 Ph.D. University of Bristol UK, School of Biological Sciences. Thesis title: *The Role of Fluctuating Asymmetry in Sexual Selection*. Advisor: Prof. Innes Cuthill.
- 1991 First Class B.Sc. (Hons) University of Bristol UK, School of Biological Sciences. Joint Honors in Psychology and Zoology. UK equivalent to *summa cum laude*.

Select Awards

- 2010 Plumeri Award for Faculty Excellence, W&M (20 prizes annually)
- 2009 Phi Beta Kappa (alpha chapter, W&M) Faculty Award for the Advancement of Scholarship (1 prize annually)
- 2004 Alumni Fellowship Award for Outstanding Teaching, W&M (5 prizes annually)
- 1998 Awarded Most Outstanding New Investigator Prize by the Association for the Study of Animal Behavior (1 international prize annually)
- 1996 Awarded Young Investigator Prize by the American Society of Naturalists (4 international prizes annually)

Select Peer-Reviewed Publications (*graduate or undergraduate student)

As of 09/14/2015 78 peer-reviewed articles, number of times cited = 4,472 *h*-index = 33 (33 papers each cited at least 33 times), data from Google Scholar.

Mahjoub G*, Hinders MH & **Swaddle JP** 2015. Using a “sonic net” to deter pest bird species: excluding European starlings from food sources by disrupting their acoustic communication. *Wildlife Soc Bull*, **39**, 326-333.

Varian-Ramos CW, **Swaddle JP** and Cristol DA 2014 Mercury reduces avian reproductive success and imposes selection: an experimental study with adult- or lifetime-exposure in zebra finch. *PLoS One*, **2014**, e95674.

Reding LP, **Swaddle JP** & Murphy HA 2013 Sexual selection hinders adaptation in experimental populations of yeast. *Biol Letters* **9**, 20121202.

Kight CR* & **Swaddle JP** 2011 How and why environmental noise impacts animals: an integrative, mechanistic review. *Ecol Letters* **14**, 1052-1061.

Gunderson AR*, Frame AM, Forsyth MH & **Swaddle JP** 2008 Resistance of melanized feathers to bacterial degradation: Is it really so black and white? *J Avian Biology* **39**, 539-545.

Swaddle JP & Calos SE 2008 Increased avian diversity is associated with lower incidence of human West Nile infection: observation of the dilution effect model. *PLoS One* **2008**, e2488.

Swaddle JP, Ruff DA, Page LC, Frame AM & Long VA 2008 A test of receiver perceptual performance: European starlings' abilities to detect asymmetry in a naturalistic trait. *Anim Behav* **76**, 487-495.

Swaddle JP, Cathey MG, Correll M & Hodkinson BP 2005 Socially transmitted mate preferences in a monogamous bird: a non-genetic mechanism of sexual selection. *Proc Roy Soc London B*, **272**, 1053-1058.

Swaddle JP 2003 Fluctuating asymmetry, animal behavior, and evolution. *Adv Study of Anim Behav*, **32**, 169-205.

Swaddle JP & Reiersen GW 2002 Testosterone increases perceived dominance but not attractiveness in human males. *Proc Roy Soc London B*, **269**, 2285-2289.

Swaddle JP & Biewener AA 2000 Physiology – Exercise and reduced muscle mass in starlings. *Nature*, **406**, 585-586.

Swaddle JP 1999 Limits to length asymmetry detection: implications for biological signaling. *Proc Roy Soc London B*, **266**, 1299-1303.

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Select External Funding (grants awarded in open competition). Continuously externally funded since 1991. **Selected from 26 separate awards totaling more than \$5.5 million.**

2013-16 NSF. Influence of mercury exposure on a songbird: An experimental test of the developmental stress hypothesis (PI with Dan Cristol) \$466,000

2012-14 Bill and Melinda Gates Foundation Grand Challenges Explorations. Employing sonic nets to protect crops from pest bird species (PI with Mark Hinders) \$100,000

2004-10 NSF. Undergraduate research in metapopulation ecology (co-PI with Dan Cristol, Sebastian Schreiber) \$647,000

2002-08 NSF Early CAREER Award. Perception of asymmetry and its role in evolutionary behavioral ecology (PI) \$527,478

Summary of Teaching and Mentoring

- Taught 14 different courses at W&M, at undergraduate and graduate levels, including BIOL220 Introduction to Organisms, Ecology and Evolution; BIOL312 Evolution of Organisms; BIOL460 Sexual Selection; ENSP249 International Pollution; MATH510 Metapopulation Ecology and Evolution; and ENSP249 Sustainable Business Practices
- Mentor to 6 postdoctoral scholars, 5 PhD students (3 non-W&M), 24 Masters students, and more than 100 undergraduate researchers
- Academic advisor to over 200 undergraduates from biology, environmental science and policy, and College first-years

Professional and Public Presentations

- 52 invited seminars and 20 additional presentations at national/international conferences
- 60 presentations by my student collaborators at national/international conferences
- Presented more than two dozen informal talks to naturalist and bird enthusiast groups
- Routinely interact with national and international media and regularly appear in newspapers, magazine articles, and in radio and TV interviews related to my work

Select Professional Service

2012-15 Chair, "Leading Liberal Arts University" Strategic Planning Subcommittee, addressing the largest over-arching goal of W&M's strategic plan

2012-15 Elected Member-at-Large, Animal Behavior Society Executive Committee

2012-13 Dean of Graduate Studies and Research, Arts & Sciences, W&M

2011-12 co-chair, Chairs and Program Directors' Training Workshop, W&M. Year-long training program for new department Chairs.

2010-11 Chair, Dean of Libraries Search Committee, W&M

2009-10 Host/Organizer of international Animal Behavior Society annual meeting, W&M

2008-10 Chair, Scientific and Technical Advisory Subcommittee of the Committee on Sustainability, W&M

2007-11 Originator and Director of Mellon Environmental Postdoctoral Teacher-Scholar program, W&M

2006-11 Director, Environmental Science and Policy Program, W&M

2003-06 Director of Graduate Studies, Biology Dept, W&M

Letters of Support (excerpted)

Colleagues at William & Mary

“John’s courses have ranged from the foundational to the highly sophisticated. His research has attracted significant funding and is cutting edge; it often has immediate, practical import (to pick one instance, his research to develop sonic nets as a means of protecting crops and airports from invasive birds without harming the feathered creatures). Dr. Swaddle has held major leadership positions on campus, and he is an important force in W&M’s initiatives in liberal-arts education. In short, John Swaddle is a highly productive scientist, a master teacher heavily engaged in undergraduates as well as graduate students, and a sterling citizen of the campus community. **I do wish we could clone him.**” – *W. Taylor Reveley, III, President, College of William & Mary*

“**John Swaddle’s unique contributions to the field of biology are numerous:** he has written the definitive book on the topic of “Fluctuating Asymmetry”, **one of the biggest innovations of the late 20th century in the field** of ecology and evolution; **he has been a major player in the interdisciplinary studies movement**, fusing human health and conservation biology, evolution and behavior, behavior and conservation, and now, funded by the Gates Foundation and others, ecology and pest bird control. **His contribution to W&M has been as a paragon of the teacher-scholar, publishing at a big university pace and mentoring with the compassion of a small liberal arts school professor**” – *Prof. Daniel Cristol, Biology Department, College of William & Mary, previous recipient of SCHEV Outstanding Faculty Award*

“His unique efforts to fuse teaching/research/service across disciplines are the quintessential reflection of the College’s educational mission. **John is so many standard deviations above the Biology Department mean** for paper productivity – most in prestigious journals, many with undergraduate and graduate co-authors – that I wonder how he finds the time. **I find his project and publication efforts almost surreal** – at the level of the most productive faculty at large research universities... He is a bona fide outstanding faculty member who excels in teaching, research and service.” – *Prof. Randy Chambers, Director of Keck Environmental Field Lab, College of William & Mary*

“John Swaddle’s enviable ability to engage a diverse audience has rendered him a superb classroom instructor. He is a path-breaking scholar in the field of ecology and evolution and is deeply committed to being of service, both within our community and beyond. He richly deserves the recognition that the Outstanding Faculty Award embodies.” – *Provost Michael Halleran, College of William & Mary*

External Experts

“I have been impressed by the extent that he (**John**) **continues to stand out**. John’s research directions have been influenced by and have influenced the W&M context as he has **focused more on real world impacts of behavioral ecology on biodiversity and conservation** in addition to continuing to contribute to fundamental ecological knowledge. He has done so without compromising quality, and while **deeply integrating students, particularly undergraduates**, into this research. John Swaddle undoubtedly deserves the Outstanding Faculty Award, and the award will be further enhanced having John as an honoree.” – *Prof. Jeanne Altmann, Princeton University, Fellow of the U.S. National Academy of Sciences*

“Professor Swaddle brought a highly-acclaimed, world-class research program broadly focused on sensory ecology, communication, and sexual selection and, after joining William and Mary, successfully incorporated undergraduates and MS students into it. **Professor Swaddle is a recognized innovator in the field of conservation behavior** – the interdisciplinary field that integrates fundamental insights from animal behavior and applies them to solve wildlife

conservation problems. Remarkably, his leadership in this field has been forged with close collaborations with undergraduate and MS students at William and Mary. I've met some of these students and been very, very impressed with their critical thinking skills, knowledge of the field, accomplishments, and future potential." – *Prof. Daniel Blumstein, Chair of Biology, UCLA*

"Dr. Swaddle has been exceptionally productive... Swaddle's most impressive work addresses the underlying cognition of mating preferences in birds... I think some of Swaddle's papers are among the best in addressing cognitive aspects of mate choice. Dr. Swaddle also **deserves great credit for organizing the meeting of the Animal Behavior Society at William and Mary a few years ago.** The meeting was superbly organized and introduced a large number of us to your campus." – *Prof. Mike Ryan, University of Texas at Austin, AAAS Fellow, former President of Animal Behavior Society*

"John is **one of the outstanding young research scientists of his generation.** Among his many research fellowships and grants he was awarded a personal Research Fellowship by the Royal Society of London. This is **the most prestigious research position available to a young researchers,** and across all scientific disciplines only about 40 such awards are made each year... His publication record is, I believe, most impressive. Without a single exception, his journal publications are all in major international journals, each requiring their contributors to meet the highest world standards." – *Prof. David Houston, University of Glasgow, UK*

Former students

"His class was phenomenal, establishing an academic foundation that has served me remarkably well. He presented complex information with such clarity that I was able to grasp and quickly begin applying the concepts we discussed. This was incredibly exciting to me as a student, and **I can't recall another professor whose teaching style so effectively challenged and empowered me.** Moreover, Dr. Swaddle's balance of thoughtful critique, academic rigor, and contagious curiosity fundamentally influenced the atmosphere I hope to establish in my own classroom. Earlier this year, as I started a position as an Assistant Professor, I asked Dr. Swaddle for his thoughts on course design and teaching techniques. Over a decade has passed since I sat in his class, yet he didn't hesitate to offer advice. The rarity of such commitment is not lost on me, and I hope it is not lost on the review committee. **Dr. Swaddle is truly one of those "once in a lifetime" professors,** and I'm immensely grateful to be among the students he has inspired." – *Prof. Catherine Markham MS '04, PhD, Assistant Professor, Stony Brook University*

"Simply put, there is no single person I have come across in the course of my education that has had a larger impact than John. At the conclusion of a somewhat aimless freshman year I was fortunate enough, upon the suggestion of my academic advisor, to meet John. John's enthusiasm for his research was infectious and it only took a few minutes of conversation before I realized that I needed to change my major and learn how to become a scientist. Despite being a complete neophyte, John took me under his wing and provided for me a newfound purpose and series of goals that have inexorably altered the path of my life. After leaving John's lab I went on to earn a PhD in Neurobiology from Harvard Medical School and am currently a Postdoctoral Scholar at the University of Pittsburgh... **As I begin to start my own search for a faculty job, I find myself thinking more and more of the example John has set for me as a model for which to aspire.** While John has set the bar exceedingly high, he has also managed to point me and many other students in the right direction. For that I am extremely grateful." – *Dr. Doug Ruff '04, PhD Harvard, Postdoctoral Scholar, University of Pittsburgh*

"I have always considered him to be as good a role model as I can think of. Because he is funny, calm, and relaxed, he is easy to talk to even when you go into his office bearing bad news. He provides encouragement, constructive criticism, and useful feedback, all in equal

measures. **He is brilliant, but uses that brilliance to inspire and educate rather than to condescend or dismiss.** He performs cutting edge research and publishes in journals with high impact factors, but does not hesitate to collaborate with inexperienced undergraduates. He has done all of this while engaging in a range of extracurricular activities, including green initiatives and W&M athletics.” – *Dr. Caitlin Kight MS '05, PhD '10, University of Exeter UK*

“As a result of his (sexual selection) course I became fascinated by the evolution of elaborate and presumably costly traits such as the peacock’s tail. It is a topic that continues to be the core of my research today, more than 10 years later. In fact, one of the papers we discussed, where researchers used robotic female bowerbirds (“fembots”) to study courtship signaling between males and females led me to get a doctorate in the lab that did that research... **He is someone that I see as a fantastic model for how to get undergraduates involved in research and I aspire to emulate him** in the future when I get my first tenure-track appointment... **I cannot emphasize how important John’s instruction, encouragement and advice has been to me.**” – *Dr. Jason Keagy '13, PhD Maryland, now postdoc in the Dept. of Zoology, Michigan State University*

“While I have had the privilege to be taught and guided by many gifted educators and mentors throughout my career in science and medicine, none have surpassed Dr. Swaddle in talent, dedication, and ability to inspire. His teaching, guidance and mentorship left an indelible mark in my education and importantly, in my way of learning and critical thinking. **I regard him as the best teacher and mentor I have had the honor of knowing thus far in my career.**” – *Dr. Saji Pererra '08, MD, Boston Children’s Hospital*

“His enthusiasm for science was infectious and made students want to learn and do well... Whether it was a potluck or an opportunity to make biology related holiday ornaments, these events served as an opportunity for Dr. Swaddle to get to know us even better. He made it clear that he truly cared about each of us and wanted us to achieve our goals... **Through the years, I have been fortunate to interact with many brilliant educators and role models. However, Dr. Swaddle has remained in the forefront of what I try to emulate as I teach medical students and residents and help guide them along their career paths.** Dr. Swaddle is a tremendous example of enthusiasm in teaching, passion for science, and dedication to students.” – *Dr. Laura Page '05, MD, Pediatric Endocrinologist, Vanderbilt Univ.*

“As a student in John’s class and a graduate student in his lab, I learned how to be a better scientist. He taught me how to be critical of published papers, to design experiments to test hypotheses, and to communicate my findings. **Both in and out of the classroom, John is an excellent educator.**” – *Dr. Joanna Hubbard MS '08, PhD, Postdoc, U of Nebraska, Lincoln*

“Dr. John Swaddle’s unique and integrated teaching style, illustrious research career and continued dedication to innovation, and commitment to service on both a small and large scale make him the perfect recipient of the Virginia’s Outstanding Faculty Award. Through careful mentorship, **Dr. Swaddle has fostered in me a love of research and has made me the scientist I am today.**” – *Jessica Benson '14, 2nd year Virginia Tech Veterinary School*

“He generated a laboratory environment in which the process of scientific discovery was taught as opposed to simply the retention of facts. Curiosity was encouraged, and in that vein, he allowed his students to explore ideas and develop projects that they found compelling and that motivated them... **Dr. Swaddle not only built a culture of scientific excellence in his lab, but also made it clear through his personal interactions that he was extremely invested in his students...** This openness to engage students lead to a very positive learning environment, and one in which I often felt more like a colleague than a student.” – *Dr. Alex Gunderson MS '07, PhD, Postdoc at University of Berkeley*

Additional Documentation

Students studying fire ecology in tropical Northern Territory, Australia



Fieldwork in Virginia



A signature of Prof. Swaddle's work is the opportunity for students to have life-changing research experiences. The top photographs show students studying birds' responses to wildfires in Northern Territory, Australia.

The photos to the left show students working with birds at field sites near Williamsburg, VA.

Prof. Swaddle has garnered numerous high profile grants, perhaps the most important of which is his Grand Challenges Exploration grant from the Bill & Melinda Gates Foundation. This was the first such grant ever attained by a William & Mary researcher. This allowed Prof Swaddle to develop a way to deter pest birds from farms and airports, helping to solve large societal problems of crop loss and aircraft safety.

SONIC NET

Detering pest birds from farms and airports

Costs of birdstrike

\$1.9 BILLION

Experts estimate that pest birds cause \$1.9 billion dollars of damage annually

Birdstrike has resulted in the loss of more than 68 aircraft and 23 lives

CONTROLLING PEST BIRDS

The sonic net uses speakers that emit sounds of the same frequency that birds communicate in. This sound, which overlaps in acoustic pitch with bird vocalizations, prevents them from being able to communicate and hear alarm calls.

When birds can't communicate with others of their species, they lose contact and tend to move from the location where their communication is blocked.

This technology is used to decrease presence of birds in a specific location, such as a food patch or airfield.

SCIENCE OF THE SONIC NET

The sonic net uses directional speakers to impede bird communication and thus reduce bird presence in a particular location.

Normal speakers emit sound in a non-directional manner, much like the rays of a light bulb. The sound is scattered and covers a broad area.

The speaker used in the sonic net produce a highly directional beam of sound, through the use of a directional horn. The sound produced is like the beam of a flashlight, covering only a very specific area.

DATA / RESULTS

Percent reduction in bird presence

Location	Percent Reduction
Airway testing	48
Field testing	80

When tested in the William & Mary airway, large outdoor space, the sonic net reduced bird presence by 48%.

When tested in real-world settings where predators were present, the sonic net reduced bird presence by 80%.

REFERENCES

Mahjoub, G., Henders, M. H., and Swaddle, J. P. 2016. Using a sonic net to deter pest birds: evidence for deterring European starlings from food sources by disrupting their social communication. *Wildlife Society Bulletin*, in press.

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April 2015
Rachel Merriman-Golding

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William & Mary receives Grand Challenges Explorations grant

Sonic nets William & Mary scientists Mark Hinders (left) and John Swaddle are collaborating on a portable device designed to prevent birds from eating crops by temporarily disrupting their communication. *Photo by Steve Salpukas*

RELATED LINKS

John Swaddle kicks off Faculty Lecture Series

Gates scholarship paves way for Norfolk student

A more vivid PLAID

The table shows Prof. Swaddle's mean score (highest score = 5) for **Instructor Effectiveness rating**. All scores are far above department or program averages. **All medians = 5 out of 5.**

Year	Semester	Course	Mean
2005	Spring	BIOL448 Evolutionary Biology	4.9
		BIOL404/MATH510 Ecol and Evol of Metapopulations	4.7
2006	Spring	BIOL448 Evolutionary Biology	4.8
		ENSP250 Seminar on Climate Change	4.9
	Fall	BIOL449 Sexual Selection	4.8
2007	Spring	BIOL649 Sexual Selection	5.0
		BIOL448 Evolutionary Biology	4.8
		BIOL648 Evolutionary Biology	5.0
		ENSP250 Seminar on Sustainable Business Practices	5.0
2008	Fall	BIOL449 Sexual Selection	4.9
		BIOL649 Sexual Selection	5.0
2009	Spring	BIOL448 and 648 (combined) Evolutionary Biology	4.7
		BIOL404 Population Modeling in Ecology and Evolution	4.6
		ENSP250 Seminar on Heavy Metal Contamination	5.0
2010	Fall	BIOL449 and 649 (combined) Sexual Selection	4.7
2011	Spring	BIOL312 and 680 (combined) Evolution of Organisms	4.7
	Fall	BIOL449 Sexual Selection	4.7
2012	Spring	BIOL312 Evolution of Organisms	4.8
2013	Fall	BIOL449 and 649 (combined) Sexual Selection	4.8
2014	Spring	BIOL312 Evolution of Organisms	4.6
2014	Fall	BIOL220 Intro Ecology, Evolution, Organisms, section 1	4.5
		BIOL220 Intro Ecology, Evolution, Organisms, section 2	4.7
2015	Spring	BIOL312 Evolution of Organisms	4.5
		BIOL440 Sexual Selection	4.8
AVERAGE OF ALL SWADDLE'S COURSES SINCE 2005			4.8

Further comments from external experts, former students, and colleagues

External experts

"(John) is **one of the brightest young behavioral/evolutionary biologists in the country**. He has published his research in the very best journals, and given his fairly high teaching load at W&M, the number of papers he has produced is very impressive. John has **made very significant contributions** to the study of behavioral/evolutionary ecology." – *Prof. Lee Dugatkin, Distinguished University Scholar, University of Louisville*

"Swaddle has developed an impressive research program investigating the role of environmental stressors, especially anthropogenic landscape modification, noise pollution, and toxic chemical pollution, on wildlife populations. This conservation focus taps into the passionate applied interests of the current generation of students, and enables Swaddle to engage, inspire, and teach them scientific principles in a highly interactive and effective way – a key mission of the College of William and Mary. **His excellent funding success, teaching and mentoring awards, and administrative service are a testament to his intellectual brilliance and dedication.**" – *Prof. Sandra Vehrencamp, Emerita, Cornell Lab of Ornithology & Department of Neurobiology and Behavior, Cornell University*

Former Students

"**My experience as a student in his evolutionary biology lecture was one that I consider myself privileged to have.** His class was challenging, but he presented the material in such an

engaging fashion that I looked forward to studying the material. Professor Swaddle is the only instructor I have ever had in both undergraduate and graduate studies to provide hands-on interactions during a lecture. "Playing" the Prisoner's Dilemma to learn about cooperative behavior is one of my favorite memories from class time. **I have used his materials from that class to teach my own advanced biology students with much success.**" – Rachel Biondollilo '10, M.Ed. W&M, Elementary science teacher

"I do not think that I realized just how much John had taught me until I became a lecturer myself, and found myself utilizing the same techniques – sometimes even repeating John's words verbatim – with my own students and tutees. **I learned from John how to think independently, question what I am told, and look for evidence to support every claim. Even my parents noticed my intellectual metamorphosis;** they often remarked on how I suddenly sounded much more thoughtful, knowledgeable, and generally mature in the months after embarking on my Master's project." – Dr. Caitlin Kight MS '05, PhD '10, NSF postdoctoral fellow, University of Exeter UK

"Dr. Swaddle taught me how to critically appraise research literature, design experiments, analyze data, write papers, and present my research findings. He encouraged me to apply for research grants, to develop my own ideas, and to establish my career path... As a result of his mentorship, I was accepted to the MD PhD program at The University of Miami School of Medicine, where I continued neuroscience research... To me, **Dr. Swaddle is a mentor who truly cares about helping his students become successful in their chosen career paths.** I feel so grateful to have had the opportunity to work with him." – Dr. Gillian Reiersen '04, MD-PhD University of Miami, Psychiatry Resident, Stanford University Hospital and Clinics

"No matter how stressed about my project I was before entering my meetings with John, I **always left with new inspiration or a fresh perspective** that we worked toward together." - Megan Kobiela MS '13, PhD student Ecology, Evolution & Behavior, Univ. of Minnesota.

"**John is exceptional at guiding his students' academic progress while supporting their development as independent scholars.** John holds his students to demanding expectations, but is a friendly and encouraging colleague." – Leah Wilson MS '12, PhD student at Department of Biology, University of Indiana

"Among W&M students, almost everyone is familiar with the name "John Swaddle." **John is somewhat of a campus-wide celebrity because he is an incredibly active and engaging member of the William & Mary community.** Whether it's the annual Raft Debate that comically showcased his abilities to convince a student audience to save him from the fate of being stranded on a deserted island, or a student-led fundraiser like "Bike to Uganda" where he cycled for hours to raise money for building schools in a third world country, John finds several ways to involve himself in the community." – Kelly O'Toole '14, now MS student in Department of Anthropology, University of Colorado at Boulder

Colleagues and External Experts who have experienced Prof Swaddle's teaching

"I just completed auditing his course on Evolutionary Biology and I have to say how impressed I was. The instructional program was beautifully organized and complemented with extensive documentation on Blackboard, down to a manageable roster of (very current) Extra Readings for Fun for every unit and topic. John's classroom manner is exceptional as well. **His capacity for constantly reframing his language and rephrasing essential perspectives makes tough material unusually accessible.** Students had constant support in person or by email, and proved their warm rapport: John was as sincerely interested in what they had to say in class as in his own views. I've spent a number of years working in teacher training and pedagogy, including writing my own college-level textbook and supervising candidates for secondary

school certification for W&M's School of Education. **John is clearly an unusually gifted teacher and a credit to his discipline and Department.**" – *Prof. George Greenia, Modern Languages and Literature, W&M*

"John is an outstanding teacher. One of the assignments in my College Science Teaching course is for the graduate students to observe **a master teacher at work.** I give them 3-4 choices, and John's classes are always on the list as he is particularly gifted at facilitating class discussions. My students always comment about the degree to which the students in John's class are actively involved in discussing the topic, and that John sets up the class so that it's the students who are talking to each other, questioning, responding, and focused on the topic." – *Prof. Heather Macdonald, Chancellor Professor of Geology, former SCHEV OFA winner*

"John has a particularly impressive record of mentoring graduate and undergraduate student research projects. I spent nearly two years at NSF as a program officer and read statements of broader impact in many proposals. But, **I don't think I ever saw someone who had more undergraduate coauthors on papers or presentations at meetings than John.**" – *Prof. Jerry Wilkinson, University of Maryland, former President of Animal Behavior Society*

Anonymous student written comments from course evaluation forms:

"Prof Swaddle is hands down the best professor I've ever had at W&M. Not only does he view courses in an original way, but he transcends grading in the traditional fashion in a way that encourages me to think and really try to be an informed scientist, and critique the work of myself and those around me in a positive way. I think I learned more in this course than I did all year."

"This has been my favorite Biology course that I have taken as a bio major here at the college. I think it should be made a general education requirement for all students at the college because it is so important to learn about."

"This is a phenomenal course. Prof. Swaddle is very conscious of explaining complex concepts slowly and in several ways (with lots of examples), catering to the fact that people have different learning styles. Prof. Swaddle is extremely approachable and an engaging lecturer, and easily one of the best and most effective professors I've had at W&M."

"Professor Swaddle is one of the most effectively organized professors I have had to pleasure to learn from at William and Mary. It is very easy to understand the big pictures conveyed throughout lecture, while at the same time getting to know the material at a more detailed level. I am also very impressed that he has taken the time to learn all of our names, and it makes coming up to speak to him about the class, or anything at all, that much easier. I also very much appreciated how he wants us to be able to critique other scientific studies, and form our own ideas and opinions. I know that what I take from his class I'll carry with me whatever career I end up pursuing in the future. I'll deeply miss my Tu and Th mornings with Prof Swaddle."

"Dr. Swaddle does an extraordinary job in all aspects of this course. I loved it. He covered such an extensive range of materials in such an integrative format that is flowed flawlessly. The readings, the class discussions, the exercises and games—they were all complementary to the wonderful lectures he would give. Dr. Swaddle is also a model professor being kind, approachable, friendly, and very helpful. I wish others had his skill."

"Dr. Swaddle is an amazing professor who keeps the class exciting and engaging through interactive games and activities that instill a better understanding of evolution compared to a typical lecture or simply reading about it... This course truly represents W&M's philosophy of research and generating new knowledge."

"Critiquing the Selfish Gene was one of the most challenging papers I've ever written, but I think that's exactly why all baby biologists and people in general should do it. Totally altered how I read scientific papers and view evolution in general... Overall fantastic class."