

CUR Campus-wide Award for Undergraduate Research Accomplishments (AURA)
APPLICATION FORM

Name of institution: George Mason University

Address: 4400 University Drive, MSN 1E2, Fairfax, VA 22030

Undergraduate enrollment: 21,990

Carnegie institutional classification: Research University, High Activity University

Individual to contact for further information: Dr. Bethany M. Usher

Position: Director, Students as Scholars

Telephone: 703-993-3794

Email address: busher@gmu.edu, OSCAR@gmu.edu

Number of undergraduate research students in the exemplary program: 8672

Percentage of institutional students impacted by the exemplary program: 39%

Please provide a 200-word summary of your program and its commitment to undergraduate research. This summary will be used for public distribution if the institution is awarded. (attach)

Provide the most relevant website for your undergraduate research program:
OSCAR.gmu.edu

I certify, as the senior academic officer responsible for campus wide undergraduate research activities, that this application accurately portrays our undergraduate research program.

Title: Dr. Kimberly Eby, Associate Provost for Faculty Development

Without disclosing institutional identity, CUR may gather the quantitative data provided in this submission to create a quantitative framework of excellence in undergraduate research programs. If you do not want your information be used by CUR, please check the box: .

Attach: a) A description (up to 2500 words) of the institution's overall undergraduate research efforts including assessment information on up to 5 of the 12 characteristics of excellence highlighted in the COEUR document (http://www.cur.org/assets/1/23/COEUR_final.pdf); b) A description (up to 2000 words) of a specific exemplary institutional program, including evidence that it has been effective. Please provide evidence that demonstrates your program's impact on undergraduates, faculty, the institution, and/or the undergraduate research endeavor in general; c) Supplementary materials that support your application (up to 15 pages).

Submit a pdf document containing your completed application as an e-mail attachment to Elizabeth Ambos, CUR Executive Officer, eambos@cur.org.

Student as Scholars at George Mason University

George Mason University's *Students as Scholars* initiative is a university-wide initiative administered through the Provost's Office of Student Scholarship, Creative Activities, and Research (OSCAR). In 2009, the Mason community united to improve student success through undergraduate research and creative activities. The *Students as Scholars* initiative works across disciplines to build a culture of inquiry and authentic scholarship for undergraduates. With campus-wide support, *Students as Scholars* has been transforming undergraduate education to address essential learning outcomes at three developmental levels: Discovery, Scholarly Inquiry, and Creation of Scholarship. Through research courses, experiential learning, and faculty-mentored independent research, we have introduced over 18,000 students to research, with well over 1,000 participating in the creation of original scholarship. Over one-fourth of our tenured or tenure-track faculty have been involved in the initiative, either as mentors, teachers, or members of steering committees. We are proud of our students' research presentations: hundreds have displayed their research and creative works at conferences and performances worldwide, include strong representation at NCUR in the past few years. Our faculty are engaged in the national conversation about undergraduate research by presenting and publishing about their efforts, as well as serving as CUR Councilors and in other national roles.



Contact Information:

Dr. Bethany M. Usher

Director, *Students as Scholars* initiative

busher@gmu.edu

Dr. Stephanie Hazel

Acting Director, Office of Institutional Assessment

shazel@gmu.edu

Office of Student Scholarship, Creative Activities, and Research

Johnson Center Room 246, Mailstop 1E2

4400 University Drive

Fairfax, Virginia 22030

703-993-3794

oscar.gmu.edu oscar@gmu.edu



Description of the institution's over undergraduate research efforts (2500 words)

George Mason University is a public research university (high research activity) located in the metropolitan DC area of Fairfax, Virginia. More than 198 degree programs serve a diverse population of almost 34,000 students (21,990 undergraduate). In 2010, Mason adopted a university-wide initiative to improve student success through increased participation in and celebration of undergraduate research and creative activities. *Students as Scholars* is transforming undergraduate education to foster learning outcomes at three developmental levels: Discovery, Scholarly Inquiry, and Creation of Scholarship (Appendix 1). Through courses and experiential learning opportunities, more than 8,600 students each year learn about the processes of discovery, including how to develop scholarly questions, use appropriate research methods, engage in ethical practice, and situate scholarly work in a broader context. More than 1,000 students annually who receive intensive faculty mentoring in Research and Scholarship Intensive (RS) courses and in the Undergraduate Research Scholars Program (URSP) conduct original scholarly or creative projects. Last year, *Students as Scholars* funded travel grants for over 125 students to present results of their projects at national and international conferences (including strong representation at NCUR), and more than 450 students presented or performed at one of Mason's on-campus research symposia, conferences, or the annual *Students as Scholars* Celebration of Student Scholarship.

Students as Scholars has quickly become an established pillar of the undergraduate experience at Mason. Its core strength stems from a collaborative, multi-disciplinary group of faculty, administrators, and staff (Appendix 2) who developed and sustain it. Since the inception of the program in 2011, we have introduced over 18,000 students to research and creative work in their field, with almost 3,000 participating in the highest level—the creation of original scholarship. Over one-fourth of our tenure-stream faculty have been involved in the initiative, either as mentors, teachers, or members of steering committees. Our faculty are engaged in the national conversation about undergraduate research by presenting and publishing about their efforts, as well as serving as CUR Councilors and in other national roles.

Through substantial faculty and administrative involvement and institutional support, we have built a robust program that is growing in size, complexity, and approach to student-faculty partnerships. We have already established our expertise in many areas that support student and faculty learning. *Student as Scholars* exemplifies many of CUR's Characteristics of Excellence in Undergraduate Research, and our initiative can serve as a model particularly in the areas of Campus Mission and Culture, Curriculum, Summer Research Program, and Assessment Activities. This application demonstrates the many ways that *Students as Scholars* is preparing students for a lifetime of success through inquiry and creative endeavors. We will be highlighting our popular RS course initiative as an illustration of how our efforts are building a culture of student scholarship at Mason.

Campus Mission and Culture

The mission of Students as Scholars is to foster a culture of student scholarship through increased participation in, and celebration of, scholarly activities. Student learning is enhanced through a process of scholarly inquiry, where scholarship is valued as a core practice of the Mason student experience. (Usher, Eby, et al, 2011, p. 1).

When *Students as Scholars* was conceived, the campus embraced it because its strengthening of Mason's mission to "Provide innovative and interdisciplinary undergraduate, graduate, and professional courses of study that enable students to exercise analytical and imaginative thinking and make well-founded ethical decisions" (George Mason University, 2011, p. 6). With new institutional leadership in 2012, Mason reinforced its commitment to student scholarship through a vision of the Mason Graduate as a "well-

rounded scholar” (Mason Strategic Plan, 2014, p. 6), and in the first of twelve institutional strategic goals: “(to) provide opportunities for experiential and integrative learning in all programs” (p. 12).

Mason has demonstrated its commitment to undergraduate research through considerable financial investment and personnel support. In 2011, *Students as Scholars* launched with a budget of \$500,000, and now operates with over \$750,000 annually. The institution has allocated over \$4 million to the initiative for the first five years. These funds supported the creation of the Office of Student Scholarship, Creative Activities and Research (OSCAR), and continues to fund OSCAR personnel and programming. The majority of the budget pays for student projects, student travel, faculty development, curricular initiatives, assessment, and undergraduate research events.

OSCAR supports student scholarship and is home to *Students as Scholars*. OSCAR transforms the undergraduate experience by connecting students to the research and creative mission of the university, and to our faculty. Our core values include collaboration, innovation, inclusiveness, transparency, and an orientation towards supporting the student and faculty experience in research. OSCAR focuses on fostering the *Students as Scholars* universal learning outcome - “Students will discover how they can engage in the process of scholarship”- primarily through promoting visibility and accessibility of student scholarship.

Visibility. OSCAR promotes student scholarship through collaboration with academic and student affairs offices and campus organizations. *OSCAR Fellows* are experienced undergraduate researchers who serve as ambassadors at admissions and orientation events, give class presentations, and act as student peer advisors. Student research is displayed around campus, and all students are invited (or persuaded) to attend student symposium and events. Academic programs are expected to teach students about opportunities for research and creative projects, and faculty share how they are engaged in the scholarly work of their discipline. New students are introduced to OSCAR during a full-class period in their “University 100” seminar, and all students take Advanced Composition, where discovery and inquiry learning outcomes are reinforced. Finally, all students are invited to the various research symposia and celebrations of student projects around campus.

Accessibility. OSCAR promotes access to research and creative activities for all undergraduate students, regardless of income. Three innovative funding programs have been created to address student needs: The Undergraduate Student Travel Fund (USTF); the Undergraduate Research Scholars Program (URSP); and the Federal Work-Study Research Assistantship (OSCAR RA). The *USTF* gives all students the opportunity to present at academic and professional conferences by funding their travel. Through collaboration with the appropriate financial offices, we have created a system to pre-pay travel costs for students without the means to wait for reimbursement. Additionally, with the help of generous university donors, OSCAR pays for all travel costs for student presenters to attend the National Conference on Undergraduate Research (approximately 40 annually). The *URSP* supports accessibility by providing a \$4000 stipend during the summer, so that students who would otherwise have to work have the opportunity to participate. In addition, OSCAR negotiated zero-credit individualized research courses so that students who wish to continue their research after completion of the URSP requirements may do so without incurring additional tuition costs.

OSCAR’s creative collaboration with the Office of Financial Aid established research assistantships through the Federal Work-Study program (FWS). Using FWS funds, the *OSCAR RA* program has expanded opportunities for students to be involved with scholarship, to learn the research or scholarly methods in their field, and to keep them engaged on campus (targeted at the Discovery and Inquiry levels). OSCAR RAs are paired with faculty to work on faculty research projects. Faculty are given “free” research assistance in

exchange for providing an enriching education experience. A total of 121 students have participated in this program as of June 2015. The OSCAR RA program not only benefits economically disadvantaged undergraduate students, but is also offering disproportionate opportunities for women, minority, and first generation students at a level higher than both the URSP program and the overall population of Mason undergraduates (Appendix 3). Assessment data suggest that these students feel that participation in our program has improved their capacity for research. Faculty assessments of these students indicate that they are learning at levels that exceed our program goals.

Faculty. Faculty are central to the success of *Students as Scholars*. To give students opportunities in and beyond the classroom, they need to feel that their time and effort is personally and professionally rewarding. Faculty at Mason are evaluated based on their role at the university. Tenure-stream faculty, who make up 909 of our 2613 faculty, can be evaluated for tenure and promotion on the basis of their “genuine excellence” in either research or teaching, but in practice, the majority of promotions are made on the basis of their scholarly activity (George Mason University 2014a). Term and part-time instructional faculty are evaluated on the quality of their teaching. Since we are creating a culture of student scholarship, it was important to the *Students as Scholars* Leadership Council to ensure that undergraduate research be supported through the faculty evaluation process. We developed a set of guidelines, *Fostering a Culture of Undergraduate Student Scholarship*, supported by the Provost, (Appendix 4, regularly updated at <http://oscar.gmu.edu/fac-staff/Faculty-Get-involved.cfm>) that is shared with chairs and deans to help them determine how to “count” faculty participation.

Students as Scholars is designed to involve all students and faculty from all disciplines. Our Leadership Council and Committees are chosen to represent all colleges and schools, and collaborative offices across campus (Appendix 2). Our faculty participation has come from all schools with undergraduate programs. Participation is roughly proportional to the number of total faculty and the number of undergraduate degree programs, although schools vary as to the degree of participation.

Curriculum

Students as Scholars is transforming curricula across the disciplines to build a culture of inquiry and authentic scholarship. Building upon an already robust practice of faculty development at Mason, *Students as Scholars* engages faculty in a variety of supportive learning communities to promote inquiry-based teaching across the disciplines. In just four years, over 300 faculty members from nearly every undergraduate-serving academic department have worked with *Students as Scholars* through faculty development workshops, learning communities, individual consultations, or special projects.

The primary path through which *Students as Scholars* works with faculty is through the Scholarship Development Grant (SDG). The SDG provides faculty development workshops, one-on-one consultations, and funding in three areas:

- Course SDG: course design or redesign to create RS courses
- Curriculum SDG: scaffolded learning experiences for students as they progress through an academic program
- Project SDG: Interdisciplinary or co-curricular projects, or pedagogical research.

This collaborative work has resulted in the creation or enhancement of at least 78 courses across 31 departments. More than 328 unique faculty members have taught these new or enhanced courses that address essential learning outcomes at one of three developmental levels: Discovery of Scholarship, Scholarly Inquiry, and Creation of Scholarship (see Appendix 1).

Faculty find these curriculum development activities invaluable opportunities for thinking critically about their undergraduate curricula and developing consensus on the outcomes they want for their graduates. After completing the two-year workshop series and putting their new courses into action, many have submitted additional project proposals. In a 2014 survey of department chairs, all but four reported that providing opportunities for undergraduate scholarship was a priority in their departments (Office of Institutional Assessment, 2014). One department chair noted, "I love OSCAR. It's the best thing that's happening at GMU right now" (p. 5).

Summer Research Program

The Undergraduate Research Scholars Program (URSP) is a competitive academic year and summer funding source which supports 150 student-mentor teams. While a part-time experience during the academic year, URSP expands in the summer months to specifically support full-time intensive projects. The summer intensive program requires 40 hours of work per week over 9 weeks, while the traditional program requires 12 hours per week. Students and mentors receive stipends to support their work, and the summer URSP includes a specific budget for supplies. Discounted housing is available to students who would like to live on campus, although it is not included in the program.

OSCAR provides interdisciplinary OSCAR Summer Seminars that include professional development activities and create a community of scholars; summer URSP researchers are required to attend, and all other summer research students (including NSF-REUs) are invited (over 40 students each summer). The students gain an understanding of the breadth of scholarship occurring at Mason as well as strategies for ethical scholarship, overcoming obstacles, and conducting inquiry. Summer activities culminate with a Celebration of Student Scholarship, at which the students present their posters or displays to the Mason community.

Assessment Activities

Assessment is a foundational element in the *Students as Scholars* initiative, focusing on program and student learning outcomes to guide the program's development, and providing support to faculty and curricular development activities. From the outset, *Students as Scholars* has partnered with the Office of Institutional Assessment, funding dedicated staff and a graduate assistantship to supply expertise in instrument development, data collection, analysis, and reporting. Additional data support is provided by the Office of Institutional Research and Reporting, the Registrar, University Life, and the Office of Sponsored Programs. These partnerships contribute to a robust assessment approach that fits with Mason's culture of innovation and faculty learning.

The integrated program assessment strategy is guided by a set of six program outcomes and five student learning outcomes developed by the planning committee (Appendix 1) which are intended to be inclusive of the diverse academic disciplines at Mason, and supportive of student development. The learning outcomes are organized to promote increasing levels of engagement with the process of scholarship, as students develop competence as scholars in their fields. A comprehensive set of metrics and benchmarks were developed to measure progress toward these outcomes. Metrics are used for various reports and applications (such as the AURA), and an annual report is prepared and distributed to the Mason community each fall (<https://assessment.gmu.edu/student-as-scholars/>).

A distinguishing strength of *Students as Scholars* is the locally-developed Program Rubric (see Appendix 5). Our rubric develops the five foundational student learning outcomes, and identifies target levels of competency for each, reflecting the developmental nature of collegiate learning. The rubric guides program development at both the institutional and degree program level, measures student achievement of learning

outcomes across learning experiences, and contributes to the improvement of teaching and learning through faculty development activities. We developed all assessment strategies and tools (faculty course portfolios, faculty mentor surveys and focus groups, reviews of student work, and a longitudinal student survey) with reference to the rubric. Rubrics to evaluate student products (posters, presentations) have been created from the program rubric, allowing us to compare different kinds of student work across disciplines.

The *Students as Scholars* assessment strategy has been developed by a strong partnership among OSCAR staff, institutional assessment staff, and the Assessment and Program Design committee (Appendix 2). Together, we collect data on program activities and review student products and presentations, survey results, and qualitative studies of student or faculty experience. Assessment results are shared widely, and used immediately to make program improvements and respond to student and faculty needs. Mason's approach to assessment helps keep faculty focused on the institution's commitment to high-impact educational practices while encouraging them to design courses and educational activities that are relevant to their own academic and professional fields.

Specific Exemplary Institutional Program: Research and Scholarship Intensive Courses

George Mason University has chosen our Research and Scholarship intensive (RS) courses as our “exemplary institutional program” because they demonstrate how Mason’s program meets the COUER expectations of supporting through innovative undergraduate research initiatives: Campus Mission and Culture, Administrative Support, Professional Development Opportunities, Faculty Recognition, Dissemination, Student-Centered Issues, and Curriculum.



The *Students as Scholars* initiative assists faculty in teaching students about scholarship by helping them incorporate research and creative activities into their curriculum (Appendix 1). In RS courses, students are doing authentic scholarly work, that the work is a significant portion of the class, and students have the opportunity to disseminate the results beyond the classroom. RS courses are generally upper-division, are department are encouraged to designate both "classroom"-type classes as well as individualized scholarly activity courses ("independent research"). RS courses are identified by the registrar with an RS attribute, and appear on a student’s transcript (Appendix 6). The RS designation is applied to entire courses (not just individual sections) and thus represent departmental and college commitment to undergraduate research.

Student learning outcomes. Students in RS courses are at the “Creation of Scholarship” level of our scaffolded learning outcomes. RS courses must meet the student learning outcomes:

- Students will create an original scholarly or creative project
- Students will communicate knowledge from an original scholarly or creative project.

In the process of working on the project, students do *at least three* of the following:

- Articulate and refine a scholarly question.
- Follow ethical principles.
- Choose an appropriate discovery process for scholarly inquiry.
- Gather evidence appropriate to the question.
- Apply appropriate scholarly conventions during scholarly inquiry.
- Apply appropriate scholarly conventions when reporting or performing.
- Assess the validity of key assumptions and evidence.
- Situate the scholarly inquiry within a broader context.

Additionally, all *Students as Scholars* courses highlight how faculty and other undergraduates are engaged in scholarly work, and situate the course as part of the larger initiative (including additional opportunities available through OSCAR).

Applications. Applications for RS designation are accepted twice a year. Appendix 7 shows a sample RS course cycle. All individuals interested in proposing an RS course participate in a hands-on course development workshop. Afterwards, the department prepares an application for RS designation that includes a syllabus, curriculum map, letter of support from the chair, and answers to the following questions:

- What is the rationale for designating this course as Research & Scholarship (RS) intensive?
- What is the authentic scholarly work or project in this course that meets the learning outcome, “Students will create an original scholarly or creative project”? Please provide specific examples, especially if the topics can vary.
- How will student have the opportunity to disseminate the results of their project beyond the classroom, meeting the learning outcome, “Students will communicate knowledge from an original scholarly or creative project”?
- Which three Inquiry student learning outcomes will this course emphasize, and how do your course activities or assignments (as shown in your curriculum map, #3), help students meet these?

- How will the course be supported by the appropriate subject area librarian? We suggest contacting the appropriate librarian before submitting the proposal for her/his input.

Applications are reviewed by the Faculty and Curricular Activities (FCA) Committee (Appendix 2). The FCA evaluates RS course applications in two ways. The first criterion has come to be called (informally) the “RS-ness” of the course: Is it the intention of the course to have students have an authentic research or creative project that could be considered scholarship in their field? The second criterion is the completeness and quality of the materials. Even if a course appears to have the best intention to support student scholarly projects, poorly developed materials or courses without the support of the department chair struggle to be successful in the first iteration.

At a review meeting, the FCA makes a recommendation to the chair, which can fall into one of four categories:

- To accept the application and designate the course as RS
- To accept pending minor revisions that can be submitted to OSCAR for approval and designation.
- To delay decision pending major revisions, which are reviewed by the FCA again (usually the same semester)
- Decline to designate (many of these courses are later approved at the Inquiry-level)

Faculty are given a clear explanation of what changes are needed before the course can be designated.

Faculty development. OSCAR and the Center for Teaching and Faculty Excellence provide faculty support before, during, and after a professor teaches an RS course. Figuring out how to incorporate original inquiry while still meeting the other expectations for the course can be difficult, as can changing the structure so that much of the class structure is flexible and based around the challenges of designing, obtaining, analyzing, and reporting on authentic research.

OSCAR holds RS workshops to help faculty design the courses and submit the applications, using tools including the RS curriculum map (Appendix 8) and course planning guide (Appendix 9). The curriculum map serves as consistent tool for planning through assessment. Before the semester begins, all first-time RS faculty attend an RS orientation. All RS faculty receive a detailed email that reinforces expectations and highlights important dates and resources. OSCAR and CTFE hold two additional faculty meetings during the semester. The second is to help faculty refine and troubleshoot course projects, and the third is focused on tools to assess students and the course.

After the course has been taught for the first time, instructors are required to turn in a course portfolio. The portfolio consists of the syllabus, the curriculum map (including the number of students who have met or exceeded the student learning outcomes), 3 samples of student work (students who exceeded, met, and did not meet the expectations), and a reflective statement. The FCA and Assessment and Program Design Committees (Appendix 2) review the portfolios during a day-long meeting in June. OSCAR gives feedback to faculty based on the portfolios by late summer. Appendix 10 shows that the courses were generally perceived as meeting the RS goals, but would benefit by continued faculty development.

Portfolio reviews not only benefit the instructors, but having OSCAR and FCA members see the products of the class helps us to continue to refine the criteria for RS courses. Additionally, the successful (and struggling) courses give us models to help new faculty design their RS courses. We have also seen features of the most successful RS courses that we didn’t appreciate in the beginning:

- A single project, introduced early in the course and regularly supported through the semester, is more successful than several disconnected assignments that individually meet the learning objectives but don't form a cohesive experience for the students.
- Courses need to intentionally identify their targeted learning objectives while planning the class, and have the students spend the majority of the time. The professor can be more proscriptive on other areas. For example, the goal of the Social Work Capstone was a community research project, but the first time it was taught, the faculty didn't identify the method of dissemination. Students focused too much on that choice rather than collecting data in the community. Since then, instructors plan a presentation event and invite community partners, and the projects themselves have improved.
- It is essential that RS students meet the learning outcome, "Demonstrate awareness of broader implications." Ensuring that the students are situating their project in an intellectual context helps pull together disparate disciplines. For instance, we have two courses, Advanced Choreography (DANC362) and Marketing in the Non-Profit Sector (MRKT481) that caused some consternation amongst some faculty because of the applied nature of their products, but because the students are also required to demonstrate how their project fits in a larger scholarly context, they have been approved and successful.

Impact of RS courses. As of June 2015, there are 51 approved RS courses and 12 proposed (Appendix 11), spanning 7 schools. The on-going process of deciding what counts as an RS course has started a conversation about what we, as the Mason community define as "student scholarship, research, and creative activities" – the "what counts" question. By engaging a diverse group of faculty and students in the initial definition, and in the continuous process of developing, designating, and assessing these courses, we have been able to clarify our view: "work that would count towards faculty scholarship in promotion in tenure, scoped at an appropriate level for undergraduates" counts, and is inclusive to the entire faculty.

For students, it is clear that the courses have an impact on their learning and their approach to research. Results from the OSCAR student survey in RS courses show that students have positive attitudes towards research (Appendix 12). They also felt intellectually challenged by the courses and felt encouraged to take responsibility for their own learning. The RS courses contributed to their understanding current issues in their field. However, students' answers were more widely distributed on the how much the courses helped them analyze data, articulate the "big picture," and write clearly, which is different than we see in the URSP participants. This data summarizes the first two years of the RS courses; we plan to analyze the data over time to see if our additional faculty development can help fill strengthen the classes in these areas.

Faculty evaluation (Appendix 13) of student learning demonstrates that students regularly meet or exceed the expected level of student competence. However, a significant number of students fail to meet expectations, especially the first time that an RS course is taught. Faculty have used these data to restructure their courses to concentrate on the outcomes, and, to re-align their goals with the student's abilities. Some programs have also used these results as impetus to re-design their entire curriculum with an SDG to build research skills earlier in the curriculum.

Beyond Mason, our RS classes are serving as model that other campuses are emulating. We began presenting our curriculum model at the 2012 CUR Conference (Usher 2012), and there have been multiple publications and presentations by Mason faculty since then (e.g., Eyman, 2013; Jones and Davis, 2014; Rudes, et. al., 2013; Sklarew and Wingfield, 2014). Bethany Usher has served as a formal and informal consultant to other universities, including the University of Minnesota- Morris and Florida Atlantic

University. Additionally, she has served as a reviewer for undergraduate research Quality Enhancement Plans for institutions undergoing re-accreditation from the Southern Association of Colleges and Schools.

Challenges. Our two largest challenges have been recruiting RS courses from a broad range of disciplines, and maintaining the quality of RS courses over time.

Breadth: Surprisingly, we have had fewer RS applications from classes in the College of Science than other schools. Departments like History and English have embraced the RS designation and have remodeled their curricula to include RS courses for all their students. The sciences have a less developed undergraduate curriculum, based more heavily on adjunct and term faculty. Their college culture also has less emphasis on shared syllabi or learning outcomes, allowing more autonomy to each faculty member than other colleges. However, our GIS program has recently received a Scholarship Development Grant to scaffold their entire minor program around *SaS* courses, culminating in an RS course. The Geology program also got an SDG to include an RS course.

Quality maintenance. Originally, we anticipated that departments and faculty would follow a very linear path in developing and teaching RS courses. In this model, key faculty members would receive a Course Scholarship Development Grant. They would get a small stipend for course development and to buy whatever supplies to their class (software, digital recorders, computer chips, rat mazes have all be purchased). In return, these faculty would participate in faculty development meetings to help them as they developed, taught, and assessed the courses. While this plan looked lovely mapped out in diagrams, it rarely worked. In some cases, departments were already teaching courses that involved research or creative projects, so they wanted direct access to the RS designation without having to apply for a Course SDGs. In other cases, the professor who applied for the Course SDG or RS designation was teaching or assessing the course, either because of faculty turn-over or department cultures that used a disseminated model of course assignments. Many times, the person who taught these courses the first time are not the professor for the second or fifth iteration. The plan presented above is the result of three years of evolution from the original model. We now provide direct access to the RS application without requiring an SDG application first, and now offer this “rolling” model of professional and course development. Mason is committed to ensuring the success of RS courses and will use our strong assessment model to continue to refine and improve them.

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Student Learning Outcomes

Creation of Scholarship

Students will create an original scholarly project.
 Students will communicate knowledge from their original scholarly or creative project.

Scholarly Inquiry

Students will articulate a scholarly question, engage ethically in key elements of the scholarly process, and situate the concepts, practices, or results of the scholarship within a broader context.

Discovery of Scholarship

Students will understand how knowledge is generated and disseminated through scholarship.

Students as Scholars

Students will discover how they can engage in the practice of scholarship.

Program Outcomes

Student scholarship is pervasive on campus.

Undergraduate degree programs offer opportunities for student scholarly inquiry, creative activities, and research.

Faculty support undergraduate students in scholarly inquiry, creative activities, and research

Students participate in scholarship, creative activities, or research.

Students have opportunities to communicate the results of their research or creative activities.

Students who have participated in scholarly activities are prepared for their career goals and advanced study.

Appendix 2. *Students as Scholars* QEP Leadership Council and Committee Membership, 2011-2015*

Leadership Council

Kimberly Eby, Co-Chair, Associate Provost for Faculty Development, Director for Teaching & Faculty Excellence Center

Bethany Usher, Co-Chair, Director, *Students as Scholars*, OSCAR/Associate Director, Center for Teaching & Faculty Excellence

Kathy Alligood, Associate Dean, Honors College

Guilbert Brown, Chief Budget Officer

Jeannie Brown Leonard, Dean, Student Academic Affairs, Advising, and Retention

Lynn Constantine, Assistant Professor, Art

Shannon Davis, Associate Professor, Sociology

Rick Davis, Dean, College of Visual and Performing Arts

Maggie Daniels, Associate Professor, School of Recreation Health & Tourism

Douglas Eyman, Associate Professor, English

Greg Foster, Research Associate Dean, Chemistry & Biochemistry Professor

Mary Frances Forcier, Director, Communications, Office of University Advancement and Alumni Relations

Karen Gentemann, Associate Provost for Institutional Effectiveness

Stephanie Hazel, Acting/Associate Director, Office of Institutional Assessment

Rebecca Jones, Assistant Director, OSCAR

Meredith Lair, Associate Professor, History & Art History

David Long, Associate Vice President, Office of University Advancement and Alumni Relations

Laura Lukes, Assistant Director, Center for Teaching & Faculty Excellence

Anne Magro, Associate Professor of Accounting, Associate Dean for Undergraduates, School of Management

Michelle Marks, Vice Provost for Academic Affairs

David Moore, Interim Assistant Vice President & Chief Budget Officer

Janette Muir, Associate Provost for Undergraduate Education

George Oberle, History Librarian, Fenwick Research, University Libraries

Joe Pancrazio, Chair, Bioengineering

Shelley Reid, Associate Professor, English

Paul Rogers, Assistant Professor, English

Linda Schwartzstein, Professor of Higher Education and Law & Society

Ashley Sieman, Director, Assessment, University Life

Solon Simmons, Interim Vice President, Office of Global Strategy, Professor, School for Conflict Analysis and Resolution

Diane Smith, Associate University Librarian for Research and Education Services, University Libraries

Joy Taylor, Director, Learning Support Services

Cathy Tompkins, Assistant Dean for Undergraduate Studies, College of Health and Human Services

Amy Takayama-Perez, Dean, Admissions

Judith A. vanBever-Green, Executive Director, International Programs and Service

Lauren Wagner, Senior Assistant Director, Admissions

James Willis, Associate Professor, Criminology, Law and Society

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LaNitra Berger, Director of the Office of Fellowships, Honors College

Elizabeth Bernard, Assistant Dean, Transitional Resource Center

Rachel Bergman, Associate Professor, Music

Tim Born, Associate Dean, College of Science, Associate Professor, Chemistry

Xiaomei Cai, Associate Professor, Communication

Dax Cox, Graduate Program Director, Associate Professor, Krasnow, School of Systems Biology

Maggie Daniels, Associate Professor, School of Recreation Health and Tourism

Shannon Davis, Associate Professor, Sociology

Joya Crear, Associate Dean, University Life

Celso Ferreira, Assistant Professor, Civil, Environmental & Infrastructure Engineering

Greg Foster, Research Associate

Dean/Chemistry & Biochemistry Professor, College of Science

Donna Fox, Associate Dean, Student Affairs & Special Programs, College of Science

Jim Lepore, Professor, School of Dance

Dorothy Lockaby, Head, University Libraries Access Services

Duhita Mahatmya, Assistant Professor of Integrative Studies, New Century College

Brian Mark, Professor, Electrical & Computer Engineering

Joseph Marr, Computational Science & Informatics

Shelley Reid, Associate professor, English

Padmanabhan Seshaiyer, Associate Professor, Mathematical Sciences, Director, STEM Accelerator

Amarda Shehu, Associate Professor, Computer Sciences

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Karen Gentemann, Associate Provost for Institutional Effectiveness

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David Luther, Term Assistant Professor, Biology

Jessica Matthews, Acting Director of Composition, English

Huzefa Rangwala, Assistant Professor, Computer Science

Shelley Reid, Associate Professor, English

Ashley Sieman, Director, Assessment, University Life

Cathy Tompkins, Assistant Dean for Undergraduate Studies, College of Health and Human Services

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Steve White, Professor/Academic Program Development Associate Dean, College of Education and Human Development

Rosemarie Zagarrri, University Professor, History & Art History

Flo Smoczynski, Assistant Professor, School of Nursing, College of Health & Human Services

Pearl Wang, Associate Professor, Computer Science

Ali Weinstein, Associate Professor, Interim Director of the Center for Study of Chronic Illness and Disability, Global & Community Health

James Willis, Associate Professor, Criminology, Law and Society

Boris Willis, Associate Professor, Computer Game Design Program, College of Visual & Performing Arts

Adam Winsler, Professor, Psychology

Terry Zawacki, Associate Professor; Director, Writing Across the Curriculum

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Jesse Guessford, Assistant Professor, School of Music

Dorothy Lockaby, Head, University Libraries Access Services

Laura Lukes, Assistant Director, Center for Teaching & Faculty Excellence

Jessica Rosenberg, Associate Professor, School of Physics, Astronomy and Computational Sciences

Solon Simmons, Interim Vice President, Office of Global Strategy, Office of the Provost

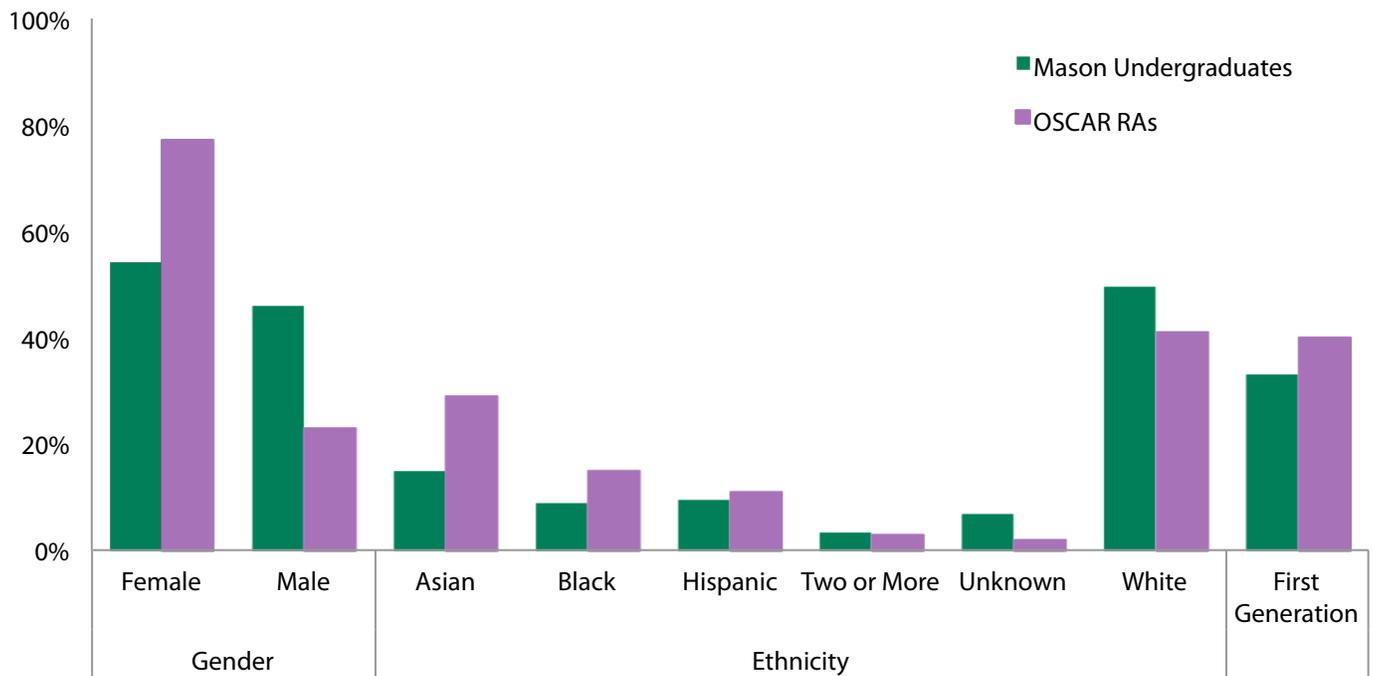
Pearl Wang, Associate Chair/Associate Professor, Computer Science

Ali Weinstein, Associate Professor, Interim Director of the Center for Study of Chronic Illness and Disability, Global & Community Health

James Willis, Associate Professor, Criminology, Law and Society

*Note that this list includes past and current members

Appendix 3. Characteristics of OSCAR Federal Work Study Research Assistants (N=95) versus the 2014 Mason undergraduate population (N= 21,672, based Institutional data by Office of Institutional Research and Reporting.





Fostering a Culture of Undergraduate Student Scholarship *Students as Scholars* QEP Leadership Council 2012

George Mason University has a commitment to fostering a culture of student scholarship through the *Students as Scholars* initiative. Deans and Chairs have a pivotal role to play in creating this culture of student scholarship and setting the expectation that mentoring undergraduate research and creative activities is an important use of their faculty's time. The goal is for all departments to identify avenues for participation in the initiative.

Therefore, the *Students as Scholars* QEP Leadership Council recommends that Deans and Chairs, in collaboration with their faculty:

- Recognize and reward support for undergraduate student research and creative projects in annual faculty reviews and renewal, promotion and tenure decisions. The Faculty Handbook explicitly recognizes "genuine excellence in teaching" as one of two primary bases for tenure and promotion, and departments are encouraged to consider faculty support for undergraduate student research and creative projects as a component of demonstrating teaching effectiveness.
- Emphasize undergraduate student mentorship as an important faculty role in recruiting new faculty.
- Identify how adjunct and term faculty can support student scholarship in ways that are appropriate to their responsibilities.
- Create strategies that allow faculty to count mentoring undergraduates as part of their teaching load.
- Encourage faculty to request support for undergraduates in their grant applications.
- Invite OSCAR staff to speak at faculty meetings and share information about our programs.
- Nominate faculty for the OSCAR Outstanding Mentor Award.
- Initiate a fund for material or travel grants for faculty to help offset the costs of supporting an undergraduate student.
- Encourage community and industry partners to sponsor undergraduate student scholarly projects.
- Include measures of success in mentoring undergraduate scholarship when summarizing unit accomplishments (e.g. number of RS courses taught, the number of faculty who have supervised undergraduate research, number of publications and presentations with undergraduate co-authors).
- Feature faculty-undergraduate projects on websites, alumni news, and other publicity materials.

The impetus for this work continues to grow. In the recent Forum on the Future of Higher Education (fhe.gmu.edu), making the relationship between research and learning explicit by engaging students in inquiry-based courses emerged as a significant theme. On a national front, the National Endowment for the Humanities offers "Enduring Questions" grants that support research to develop undergraduate courses in which students "grapple with a fundamental concern of human life addressed by the humanities." (www.neh.gov/grants/education/enduring-questions). Moreover, the National Science Foundation included "Undergraduate Programs" as one its three Priority Goals in the 2013 Budget (www.nsf.gov/about/budget/fy2013), and has revised its Review Criteria to require a statement about the Broader Impacts, which includes undergraduate experiences. Therefore, Mason departments, schools, and colleges benefit by having faculty more engaged at all levels, with additional opportunities for scholarship, teaching, research, and grant support.

Our commitment to creating a culture of undergraduate student scholarship cannot be realized without our faculty. They are the drivers of this change. There are a myriad of ways that faculty can contribute to this goal, both large and small.

Mentoring and research activities include:

- Mentoring a student in an individualized scholarly or creative activity, either through the department, an outside grant, or the Undergraduate Research Scholars Program.
- Introducing undergraduate students to an experienced undergraduate scholar, either through your own work or by inviting an OSCAR fellow to present.
- Posting opportunities for undergraduate research or creative projects on HireMason.
- Attending a conference, meeting, presentation, performance or other scholarly event with an undergraduate student, including the CAA Undergraduate Research Conference, the National Conference on Undergraduate Research, or discipline-specific event.
- Publishing in the Council on Undergraduate Research's *CUR Quarterly* journal or other peer-reviewed journal on the process of supporting undergraduate scholarship.
- Co-authoring a paper or presentation with an undergraduate student.
- Applying for outside research funding that includes funding for undergraduate students to participate in the research process.

Classroom and curricular activities include:

- Talking about your research and career path, including your own undergraduate experience, in an introductory class.
- Teaching a class that has been identified as meeting the *Students as Scholars* criteria at the Discovery or Inquiry Level.
- Applying for a Research and Scholarship intensive (RS) designation for a class in your department.
- Teaching a course identified as Research and Scholarship intensive (RS).
- Applying for a Scholarship Development Grant as a part of a team from your department to design your curriculum to include any of the three levels of student scholarship.

Community activities include:

- Participating in the annual Celebration of Student Scholarship.
- Serving as a reviewer at the College's Undergraduate Research Symposium.
- Serving on the *Students as Scholars* Leadership Council or on a *Students as Scholars* subcommittee.
- Attending an OSCAR workshop to learn more about student scholarship at Mason.
- Sharing information about OSCAR in classes, including showing the website, videos, and student-designed promotional materials.
- Mentoring other faculty members in undergraduate research.
- Attending a Council on Undergraduate Research national meeting or workshop.
- Serving as the OSCAR contact for students in your department.
- Becoming a member of the Council for Undergraduate Research (which is free with Mason's institutional membership).
- Being nominated for or awarded an OSCAR Mentor Award.

Office of Student Scholarship, Creative Activities, and Research (OSCAR)

Johnson Center Room 246, Mailstop 1E2, 4400 University Drive, Fairfax, Virginia 22030
703-993-3794; oscar.gmu.edu; oscar@gmu.edu; Twitter: @Mason_OSCAR

Appendix 4. Fostering a culture of student scholarship document for deans and chairs.

Appendix 5: *Students as Scholars* Program Rubric

Discovery of Scholarship Rubric

QEP Student Learning Outcomes	Level of Competence			
	4 Advanced	3 Proficient	2 Emerging	1 Novice
Students will understand how knowledge is generated and disseminated through scholarship, and the importance of scholarship to society.				
1. Distinguish between personal beliefs and evidence.	Consistently make accurate distinctions among personal beliefs, opinions, claims and evidence-based understanding.	Usually make accurate distinctions among personal beliefs, opinions, claims and evidence-based understanding.	Occasionally make accurate distinctions among personal beliefs, opinions, claims and evidence-based understanding.	Unable to make distinctions among personal beliefs, opinions, claims and evidence-based understanding.
2. Articulate how scholarship influences society.	Explain multiple implications of new knowledge and societal impact.	Explain some of the implications of new knowledge and societal impact.	Explain a few of the implications of new knowledge and societal impact.	Explain none of the implications of new knowledge and societal impact.
3. Understand epistemological or historical perspectives of a specific body of knowledge.	Demonstrate understanding and professionally express the method, validity or scope of a specific body of knowledge.	Demonstrate some understanding and be able to express the method, validity or scope of a specific body of knowledge.	Demonstrate limited understanding of the method, validity or scope of a specific body of knowledge.	Demonstrate little or no understanding of the method, validity or scope of a specific body of knowledge.
4. Evaluate credibility of source information.	Use a wide range of criteria that are appropriate to the discipline to judge the quality and validity of the source information; distinguish among a wide range of different types of source information, including primary and secondary sources; and clearly demonstrate how each type of source information can be useful for scholarly inquiry.	Use some criteria that are appropriate to the discipline to judge the quality and validity of the source information; distinguish among some types of source information, including primary and secondary sources; and demonstrate the use of some types of source information in scholarly inquiry.	Use limited criteria that are appropriate to the discipline to judge the quality and validity of the source information; distinguish between primary and secondary sources.	Be unable to use criteria that are appropriate to the discipline to judge the quality and validity of the source information; be unable to distinguish between primary and secondary sources.
5. Understand research methods used in a discipline.	Consistently identify appropriate methodologies for exploring a range of research questions; explain the design of the methodologies used in previously conducted research in the field; and recognize advantages and limitations of different methodologies.	Generally identify appropriate methodologies used for research in the field; describe the methodologies used in previously conducted research in the field; and recognize some advantages and limitations of different methodologies.	Occasionally identify appropriate methodology used for research in the field; identify some key elements of the methodologies used in previously conducted research; and recognize some advantages and limitations of a particular methodology.	Demonstrate only a limited awareness of appropriate research methodologies used in the field; identify few elements of the methodologies used in previous conducted research.
6. Understand how knowledge is transmitted within a discipline, across disciplines, and to the public.	Explain various pathways for dissemination of scholarship; be able to make explicit connections between early scholarship and later work; and analyze the transition and adaptation of scholarship within and across a variety of contexts.	Explain some pathways for dissemination of scholarship; be able to make some connections between early scholarship and later work; and describe the transition and adaptation of scholarship within and across a variety of contexts.	Explain a few pathways for dissemination of scholarship; demonstrate awareness of early scholarship informing later work; and recognize some transitions and adaptations of scholarship within and across contexts.	Be unable to identify pathways for dissemination of scholarship; have minimum awareness of how early scholarship influences later work; and recognize few transitions and adaptations of scholarship within and across contexts.

 Appendix 5: *Students as Scholars* Program Rubric

Scholarly Inquiry Rubric

QEP Student Learning Outcomes	Level of Competence			
	4 Advanced	3 Proficient	2 Emerging	1 Novice
Students will articulate a scholarly question; ethically engage in the key elements of the scholarly process; and situate the concepts, practices, or results of scholarship within a broader context.				
1. Articulate and refine the question.	Articulate and refine a creative, focused, and manageable question that addresses potentially significant and previously less-explored aspects of the issue.	Articulate and refine a focused and manageable question that appropriately addresses key aspects of the issue.	Articulate a question that is too narrowly or too broadly focused to be addressed appropriately in a scholarly project.	Articulate a question that is far too narrow or too general to be addressed appropriately in scholarly project, or whose answer is already well-established.
2. Follow ethical principles.	Demonstrate detailed attention to ethical principles throughout the inquiry process.	Demonstrate attention to ethical principles at some points during the inquiry process.	Demonstrate only limited attention to ethical principles during the inquiry process.	Demonstrate no attention to ethical principles during the inquiry process.
3a. Choose an appropriate discovery process for scholarly inquiry.	Develop all elements of the methodology or theoretical framework; synthesize appropriate methodology or theoretical frameworks from across disciplines or from relevant sub-disciplines as necessary.	Develop critical elements of the methodology or theoretical framework in which some more subtle elements are ignored or unaccounted for.	Develop a methodology or theoretical framework in which some critical elements are missing, incorrectly developed, or unfocused.	Demonstrate a lack of understanding of the methodology or theoretical framework in the inquiry design.
3b. Gather evidence appropriate to the question.	Acquire information using effective, well-designed strategies and the most appropriate information sources; retrieve information about previous scholarship from credible sources that provide and enable comprehensive analysis and/or synthesis; effectively refine inquiry in response to evidence.	Acquire information using a variety of strategies and some credible information sources; retrieve information about previous scholarship from sources that provide and enable analysis and/or synthesis; demonstrate ability to refine inquiry in response to evidence.	Acquire information using simple strategies; retrieve information about previous scholarship from limited and narrow sources that may not provide or support analysis; demonstrate limited ability to refine inquiry in response to evidence.	Acquire information using rudimentary strategies; retrieve information that lacks relevance and quality; demonstrate no ability to refine inquiry.
3c. Apply appropriate scholarly conventions during scholarly inquiry.	Demonstrate detailed attention to successful execution of a wide range of conventions; make appropriate, highly effective and perhaps innovative choices throughout the inquiry process.	Demonstrate consistent use of appropriate scholarly conventions; make appropriate and effective choices throughout the inquiry process.	Attempt to follow appropriate scholarly conventions; make some appropriate and effective choices throughout the inquiry process.	Provide little evidence of following appropriate scholarly conventions.

Appendix 5: *Students as Scholars* Program Rubric

QEP Student Learning Outcomes	Level of Competence			
	4 Advanced	3 Proficient	2 Emerging	1 Novice
3d. Apply appropriate scholarly conventions when reporting or performing.	Consistently and successfully employ all key conventions appropriate to the audience and/or context; make appropriate, highly effective, and perhaps innovative choices in presenting or performing.	Successfully employ most conventions appropriate to the audience and/or context; make appropriate and effective choices in presenting or performing.	Employ some conventions appropriate to the audience and/or context; make some effective choices in presenting or performing.	Employ few or no appropriate scholarly conventions in presenting or performing.
4a. Assess the validity of key assumptions and evidence.	Identify significant premises from previous scholarship and critically question assumptions and evidence; question viewpoints of scholars thoroughly.	Identify several important premises from previous scholarship and does not rely on unfounded assumptions, irrelevant or inadequate evidence; sometimes question scholars' viewpoints.	Identify general themes from previous scholarship and may rely on unfounded assumptions and/or irrelevant evidence; provide few questions about scholars' viewpoints.	Identify few or no important themes from previous scholarship; provide no questions of scholars' viewpoints, taking them as fact.
4b. Situate the scholarly inquiry within a broader context.	Demonstrate consistent ability to place concepts, evidence, practices, perspectives, and/or conclusions within a broader context; acknowledge limitations and synthesize others' points of view.	Demonstrate some ability to place concepts, evidence, practices, perspectives, and/or conclusions within a broader context; acknowledge and summarize others' points of view.	Demonstrate limited ability to place concepts, evidence, practices, perspectives, and/or conclusions within a broader context; acknowledge few limitations or other views.	Largely fail to place concepts, evidence, practices, perspectives, and/or conclusions within a broader context or to acknowledge limitations or other views.

 Appendix 5: *Students as Scholars* Program Rubric

Creation of Scholarship Rubric (for Research & Scholarship Courses)

QEP Student Learning Outcomes	Level of Competence			
	4 Advanced	3 Proficient	2 Emerging	1 Novice
Students will create an original scholarly or creative project.				
1. Justify that the project intends to be engaging and novel to a particular audience.	Explain and provide in-depth analysis of the evidence that demonstrates the project's appeal to the intended audience or its potential importance in adding to existing knowledge.	Explain and provide an analysis of some evidence that demonstrates the project's appeal to the intended audience or its potential importance in adding to existing knowledge.	Present only a limited analysis of the evidence that demonstrates the project's appeal to the intended audience or its potential importance in adding to existing knowledge.	Provide no analysis of the evidence of the project's appeal to the intended audience or its potential importance in adding to existing knowledge.
2. Take responsibility for executing the project.	Design a project plan, successfully implement the plan, and evaluate and adapt research or design strategies as the project progresses, in consultation with faculty/mentors.	Design a plan, implement the plan, and evaluate and adapt some research or design strategies as the project progresses, in consultation with faculty/mentors.	Develop a plan, implement most of the plan, and evaluate and adapt the plan mostly as directed by the faculty/mentors.	Follow plan of the faculty/mentors, require frequent interventions from faculty mentors to evaluate, adapt, and execute the plan.
Students will communicate knowledge from an original scholarly or creative project.				
3. Present their understandings from a scholarly perspective for a specified audience.	Use appropriate evidence, presentation modes and/or argument strategies to skillfully communicate meaning to a specified audience; communicate with clarity and fluency and in a virtually error-free presentation.	Use mostly appropriate evidence, presentation modes, and/or argument strategies to communicate meaning to a specified audience; design a presentation that is clear and has few errors.	Use some appropriate evidence, presentation modes, and/or argument strategies to communicate meaning to a specified audience; design a presentation with limited clarity and/or some errors.	Use approaches or include errors that limit or obscure relevance and impede understanding.
4. Demonstrate awareness of broader implications.	Astutely identify and explain, in the project or in written/oral supplements, several likely consequences of and/or questions raised by the project; demonstrate a thorough and nuanced understanding of such implications for a range of audiences.	Identify and explain, in the project or in written/oral supplements, several likely consequences of and/or questions raised by the project; demonstrate an understanding of such implications for a range of audiences.	Identify and explain, in the project or in written/oral supplements, a few consequences of and/or questions raised by the project; demonstrate basic understanding of such implications for the primary audiences.	Identify some possible consequences of and/or questions raised by the project.

TOSS THE FACE OF THIS 8.5

SUBJ NO.	COURSE TITLE	CRED GRD	PTS R
Institution Information continued:			
Fall 2014			
IN PROGRESS WORK			
ECON 361	Econ Develpmt Latin Amer	3.00	IN PROGRESS
ECON 495	RS: Honors Thesis in Economics	3.00	IN PROGRESS
EVPP 110	Ecosphere: Environ Sci I	4.00	IN PROGRESS
FREN 370	Civ, Cult, and Lit to 1789	3.00	IN PROGRESS
STAT 435	Analysis Exper Data Using SPSS	3.00	IN PROGRESS
UNIV 496	RS: Continuing URSP	0.00	IN PROGRESS
In Progress Credits		16.00	
***** TRANSCRIPT TOTALS *****			
		Earned Hrs	GPA Hrs
		Points	GPA

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*Not calculated in grade point average (GPA).
** IN and IX grades are calculated as if they are grades of F.

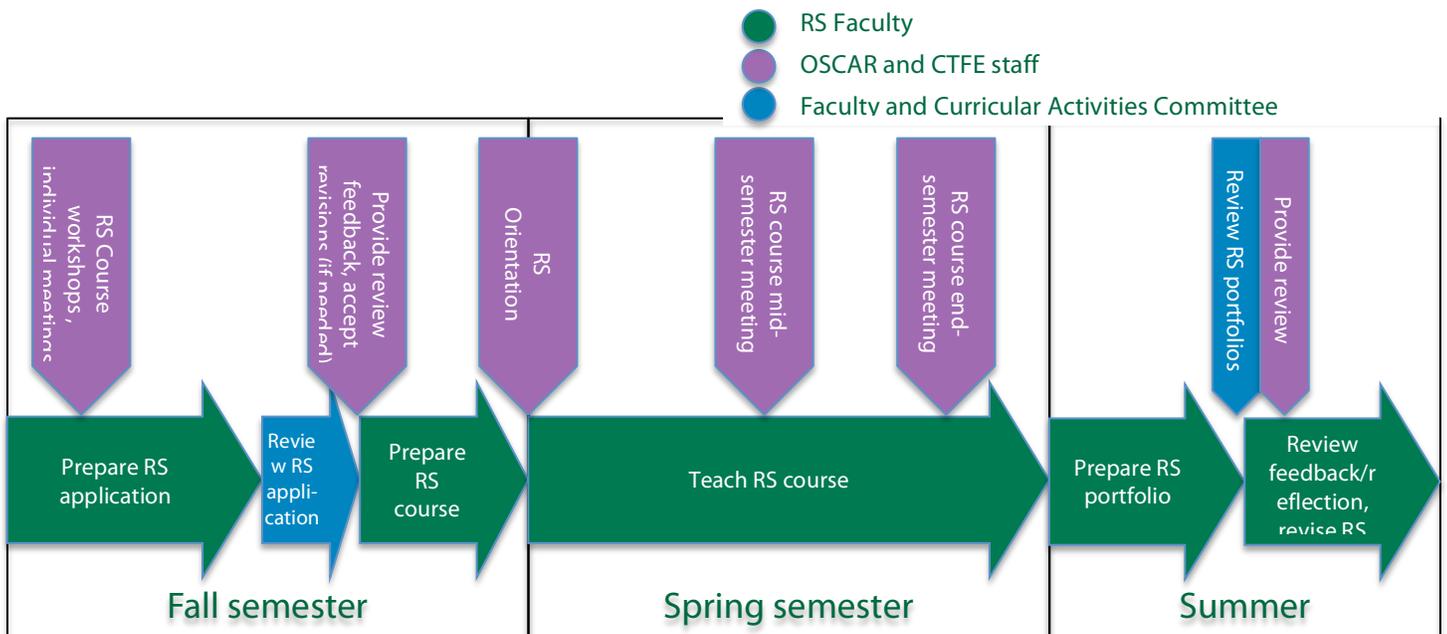
Course Numbering System
100-299 lower-level undergraduate courses
300-499 upper-level undergraduate courses
500-999 graduate courses

RS indicates a Research and Scholarship Intensive Course

Transfer Work -
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through the Cons
area.
More detailed aca
catalog.gmu.edu.

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Appendix 6. Sample transcript showing RS designated courses and description on the inverse.



Appendix 7. Timeline of RS course development and implementation.



Appendix 9: Research and Scholarship intensive Course Planner

Course and Student Outcomes

What should students know when they have completed this course (content)?	
What should students be able to do when they have completed this course (skills)?	
Which of the <i>Students as Scholars</i> learning outcomes will this course meet?	
How will you describe the “RS-ness” of the course on the syllabus?	

Student background

What relevant knowledge and skills will students bring to the course? How can you determine this – survey, test, pre-requisite course syllabi, work samples, etc.	
How much do students know about the process of research and inquiry in their discipline?	
At what levels on the <i>Students as Scholars</i> rubric are students when they begin the class?	
How might this course challenge students, in relation to their beliefs, their expectations about learning and teaching, self-confidence in ability to create knowledge, etc?	

Defining the question

What will be the stimulus for the research -an open question, faculty research area, known problem, an image, an artifact, a performance, a community action, an article, other?	
Who will determine the research question – the faculty, the students, someone else?	

Research scheduling

Will the students work independently or in groups? How will the groups, if used, be determined?	
How will the tasks be sequenced? Is there an established framework or model for the research process that you can use?	
What is the appropriate time needed to complete each aspect of the research project?	
Who will determine how to allot time to each part of the process? Will this be tightly or loosely structured by the faculty?	

Access to space and materials

How will students gather primary information?	
What partners will be needed – librarians, community organizations?	
Is there a need for a specific type of learning space for the course?	
How will students have access to specific materials beyond usual class meeting periods – space, instruments, technology?	

Course activities

What course activities will there be to engage students with the course content?	
What course activities will there be to develop research/inquiry skills?	
What course activities will there be devoted specifically to advancing the research project?	

Student Assessment

How will the assessment and grading be linked directly to the student learning outcomes?	
How will the <i>Students as Scholars</i> Rubric be used?	
Will the weight of grades be proportional to the balance between content and skills?	
What will be assessed/graded?	
How often will the faculty provide feedback to students?	
How will faculty differentiate between individual and group contributions?	

Dissemination

How will students disseminate the results of their projects beyond the classroom?	
What opportunities are there to join in campus, disciplinary, or national presentations or publications?	
Will these presentations be evaluated?	

Course Assessment

What tools will be used to gather information and use it to improve the experience the next time the course is taught?	
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Appendix 10. Results of 20 RS course portfolio reviews, covering academic years 2013 and 2014.

	Outstanding	Good	Fair	Poor	Not enough Information
To what extent is this course a model for other RS courses?	18%	58%	20%	0%	5%
Students have an opportunity to communicate knowledge from an original scholarly or creative project beyond the class*	36%	41%	5%	9%	9%
Students create an original scholarly or creative project*	64%	27%	9%	0%	0%
Overall effectiveness of the course in addressing <i>Students as Scholars</i> learning outcomes	28%	58%	10%	0%	5%
Student work samples demonstrate student learning in terms of the <i>Students as Scholars</i> outcomes	33%	50%	13%	0%	5%
Course structures and activities help students achieve the targeted <i>Students as Scholars</i> outcomes	43%	43%	10%	0%	5%
<i>Students as Scholars</i> learning outcomes are integrated into the course design	40%	45%	8%	0%	8%

College of Health and Human Services			
Community Health Capstone (GCH465)	Proposed	Clinical Research Internship (RHBS490)	Spring 2013
Internship in Clinical Research (HHS492)	Spring 2015	Integrative Methods in Social Action and Social Change (SOCW417)	Spring 2013
Nutrition Assessment (NUTR4XX)	Proposed		
College of Humanities and Social Sciences			
Forensic Anthropology (ANTH391)	Proposed	Honors Thesis in Economics (ECON495)	Fall 2013
Applied Anthropology (ANTH440)	Proposed	Honors Thesis Writing Seminar (ENGH401)	Spring 2014
Capstone in Anthropology (ANTH4XX)	Proposed	Topics in Literary Research (ENGH458)	Spring 2015
Advanced Studies in Renaissance and Baroque Art (ARTH440)	Spring 2015	Topics in Film History (ENGH470)	Fall 2013
Latin American Art: Mexican Muralism or (catalog title) Advanced Studies in 20th-Century European Art (ARTH460)	Spring 2013	Writing Nonfiction for Publication (ENGH486)	Spring 2014
Latin American Art: Transatlantic Art or (Catalog Title) Advanced Studies in 20th-Century Latin American Art (ARTH472)	Spring 2013	Honors Research Project in Global Affairs (GLOA492)	Fall 2015
Advanced Studies in Asian Art (ARTH482)	Fall 2015	Senior Seminar in History (HIST499)	Fall 2012
Objects and Archives in Art History (ARTH495)	Spring 2013	Research in the Public Sphere (HNRS312)	Fall 2013
Senior Capstone Project (BIS490)	Fall 2012	Honors Thesis (HNRS411)	Fall 2014
Honors Research Project in Communication (COMM491)	Fall 2015	Laboratory Methods in Behavioral Neuroscience (NEUR395)	Fall 2014
Research Projects in Communication (COMM498)	Fall 2015	Research Methods in Psychology (PSYC301)	Proposed
Integrated Conservation Strategies (CONS490)	Spring 2015	Psychology Honors III (PSYC492)	Fall 2015
Comprehensive Conservation Planning (CONS491)	Fall 2014	Honors Seminar in Sociology II (SOCI481)	Fall 2015
Honors Seminar II (CRIM492)	Fall 2012	Sociological Analysis and Practice (SOCI485)	Fall 2015
Capstone in Criminology, Law and Society (CRIM495)	Fall 2012	Feminist Research Practice (WMST411)	Spring 2015
College of Science			
Methods of Observational Astronomy (ASTR402)	Fall 2013	Ecological Sustainability (EVPP378)	Spring 2013
Research in Biology (BIOL499)	Fall 2014	Geological Research (GEOL411)	Proposed
Ecological Sustainability (BIOL379)	Spring 2013	Honors Thesis in Mathematics II (MATH406)	Fall 2015
Animal Behavior (BIOL473)	Spring 2015	Discipline-Based Education Research (STEM/COS401)	Spring 2015
Atmospheric Chemistry II: Air Analysis Techniques (CHEM439)	Spring 2015		
College of Visual and Performing Arts			
Art & Interactive Media (AVT483)	Fall 2013	Storytelling for Games (GAME332)	Fall 2013
Directed Choreography (DANC362)	Fall 2013	Music Communication in Context (MUSI490)	Fall 2014
Provost			
Students as Scholars Individualized Scholarly Experience (UNIV491)	Fall 2012	URSP Continuation (UNIV496)	Fall 2012
URSP Seminar (UNIV495)	Fall 2012		
School of Business			
Diversity in Organizations (MGMT412)	Proposed	Negotiations in Organizations (MGMT463)	Proposed
Organizational Development and Management Consulting (MGMT413)	Proposed	Advanced Business Models (MGMT498)	Proposed
Advanced Human Resource Management (MGMT421)	Proposed	Marketing in the Nonprofit Sector (MKTG481)	Spring 2015
School of Conflict Analysis and Resolution			
Integration (CONF490)	Fall 2013		
Volgenau School of Engineering			
Senior Advanced Design Project II (BENG493)	Spring 2015	Inova Biomedical Internship in Neuroscience (BENG499)	Spring 2015
Mentored Research (BENG395)	Fall 2013	Senior Design Project (ECE493)	Spring 2014

Appendix 12: Students in RS courses are asked to take the OSCAR Student Survey. These are the compiled results from Spring 2013-Fall 2014 in 27 courses. 1653 students were surveyed, and 536 responded (not evenly distributed across courses), for a 32% response rate. Numbers in parenthesis are the number of respondents for that item.

Please rate your level of agreement with each of the following statements:

	Strongly Agree	Agree	Disagree	Strongly Disagree
I enjoy learning about people and experiences that are different from my own (511)	60%	36%	3%	1%
Laws and policy decisions should be based on research findings (477)	34%	56%	9%	1%
Advances in research can solve real-life problems (477)	52%	44%	3%	1%
Most research focuses on problems that are too insignificant to really mean anything (511)	7%	16%	57%	20%
Learning about proper research methods and techniques is a valuable use of time (510)	45%	48%	6%	1%
Participating in the creation or discovery of new knowledge is personally rewarding (510)	55%	41%	3%	1%
Helping a professor with her/his research would be a waste of my time (476)	5%	8%	51%	36%
Learning about research or creative works makes me more curious about the world (507)	40%	50%	9%	1%
It is fun to work on problems that cannot be easily solved, or that take a long time to solve (507)	28%	52%	18%	2%
I take pleasure in learning about a subject in-depth (507)	44%	52%	4%	1%
Participating in research or creative activities improves the academic experience (507)	45%	48%	5%	2%
Being involved in research or creative activities can help me become a better professional in my field (507)	55%	40%	4%	1%
Professors who do their own research or creative works make better teachers (472)	34%	50%	14%	2%

In your experience as a student in this course, how often did you . . .

	All the time	Most of the time	Some of the time	None of the time	Not Applicable
Face questions/problems with more than one possible answer (485)	31%	43%	20%	4%	1%
Feel encouraged to take responsibility for your own learning (485)	46%	38%	12%	3%	1%
Understand why you were studying what you were studying (485)	40%	37%	17%	4%	1%
Think about how you were learning, and not just the subject matter (454)	33%	35%	23%	7%	2%
Engage in learning how to solve problems (485)	37%	33%	21%	6%	3%
Discuss ideas/issues from the course with others outside of class (485)	35%	26%	26%	11%	2%
Feel intellectually challenged (485)	43%	31%	20%	5%	1%
Question your own opinions, assumptions, or beliefs (485)	30%	28%	31%	8%	3%

Appendix 12 continued

To what extent has this experience contributed to your personal development?

	Very Much	Quite a bit	Some	Very Little	None/ Not Applicable
Confidence in your ability to do well in future courses in your major (454)	42%	30%	18%	6%	5%
Relating well to people of different races, nations, and religions (454)	36%	22%	23%	10%	9%
Comfort in working collaboratively with others (454)	36%	27%	21%	10%	6%
Being patient with the pace of research or creative discovery (454)	36%	31%	19%	10%	4%
Confidence in your ability to contribute to your field (454)	41%	30%	20%	6%	3%
Managing your time effectively (454)	36%	31%	20%	10%	3%
Maintaining a curious attitude (454)	43%	31%	16%	7%	3%

To what extent has this experience contributed to your learning?

	Very Much	Quite a bit	Some	Very Little	None/ Not Applicable
Understanding current issues in your major or field of study (467)	40%	28%	22%	7%	3%
Judging the quality of research studies or creative works (467)	30%	36%	22%	9%	3%
Explaining the advantages and limitations of different methods to approaching a question or problem in your field	33%	35%	22%	7%	3%
Understanding how to add to a scholarly or professional conversation through research and writing (467)	38%	32%	19%	8%	3%
Understanding the research or creative process in your field (467)	40%	35%	17%	6%	3%
Understanding the difference between personal beliefs and evidence in supporting a position or drawing conclusions (467)	39%	33%	17%	6%	5%
Understanding how research is relevant to what you are learning in your classes (462)	42%	33%	17%	6%	2%
Career- or work-related knowledge and skills (462)	33%	32%	22%	10%	3%
Understanding terminology that is specific to your field (459)	33%	35%	20%	11%	2%
Matching a scholarly question to the appropriate theories and methods (459)	32%	37%	19%	7%	4%
Learning ethical conduct in your field (459)	33%	33%	18%	11%	6%
Collecting appropriate data or evidence for the research question or creative purpose (459)	45%	36%	12%	4%	3%
Dealing with obstacles faced in the research or creative process (458)	45%	33%	12%	7%	2%
Analyzing data and information relevant to the project (454)	22%	24%	23%	30%	2%
Writing clearly and effectively (454)	21%	23%	24%	30%	3%
Evaluating scholars' positions or statements to determine how well-supported by evidence they are (454)	18%	26%	25%	27%	4%
Communicating well orally in a presentation, performance, or discussion of your work (454)	20%	24%	25%	27%	3%
Articulating the broad implications or "big picture" of what you learned in the course or project (454)	19%	27%	23%	29%	2%
Creating new ideas, solutions, or creative works based on what you learned in the course or experience (454)	19%	26%	26%	28%	2%

Appendix 13. Percent of students who met or exceeded the expectations of each RS course student learning outcome, based on the Students as Scholars rubric. Note that not all courses meet all outcomes.

