

DRAFT: STUDENT RESEARCH – SUMMER FELLOWSHIP PROGRAM

Inputs	Strategies	Outputs	Outcomes		Impacts (Long Term-Conditions)
			(Short Term-Learning)	(Medium Term-Action)	
Students from W&M, HBCUs and TNCC Summer stipends for students (HHMI) Primary W&M faculty mentors and secondary mentors in related fields but from different levels of organization Faculty from HBCUs and TNCC to serve on faculty-student teams Salary support from institutions Salary support from external funding (HHMI) Departmental support Faculty Advisory Committee Website to publicize program, submit and review applications, and disseminate results of program Mechanisms for tracking and evaluation Laboratory space Equipment Research supplies Free housing for students (cost share from W&M)	Provide support for students from W&M, HBCUs and TNCC to engage full-time for ten weeks in collaborative research with faculty mentors Provide opportunity for students in the summer research program to serve as leaders for catalyzing a community of scholars Schedule informal meetings between students and co-advisors/secondary mentors to enhance integrative and collaborative nature of program, and make students feel like part of a larger team Organize weekly meetings and workshops on different topics relevant to research and expand access to ancillary support system activities to all science research students Structure application process to develop professional scientific writing skills Provide opportunities for weekly pizza lunches to discuss topics relevant to science research	Number of underrepresented students and faculty who participate in summer research experiences Number of all students involved in ancillary support system activities Number of all students and those from underrepresented groups who present at the summer research symposium List of collaborative research projects Scientific data generated from summer research	Students understand what is involved in conducting authentic research Students feel like part of a larger research team Students develop a comfort level in discussing science with professional colleagues outside of the immediate lab family Students learn how to organize a research symposium Faculty student teams accumulate preliminary and/or potentially publishable data Students develop communication skills and present data at lab meetings, local undergraduate research symposia Students and faculty continue with research during academic year Students value a community of scholars that engages students and faculty in collaborative scientific research	Students, especially those from underrepresented groups and disadvantaged backgrounds, have greater opportunities to engage in substantive research experiences Students continue their interest and involvement in scientific research Students and faculty publish results of their collaborative research and present at professional meetings Faculty submit joint grant proposals related to their collaborative work Students apply to graduate school	Students are engaged in science-related activities and professions Students are committed to the pursuit of collaborative scientific research Students value integration of scientific research across levels of a discipline Students and faculty contribute to the scientific community Faculty and students from underrepresented groups are engaged in scientific research Faculty engage in collaborative research with faculty from other institutions and across levels of biological organization Institutions cultivate synergistic partnerships to leverage resources and promote undergraduate research Institutions place a high value on providing significant undergraduate research as part of the institution's culture

DRAFT: STUDENT RESEARCH – SUMMER FELLOWSHIP PROGRAM EVALUATION FRAMEWORK EXAMPLE

Evaluation Questions for OUTCOMES	Possible Indicators/Measures	Possible Data Collection Methods and Information Sources	Rank/Priority (include brief rationale)
<p>1. Do the summer research experiences contribute to the ability of students to propose, present, and defend their work; develop their leadership skills; and heighten their enthusiasm for and understanding of scientific research?</p> <p>2. Has the program resulted in successful mentoring of students?</p> <p>3. Does the collaboration result in long term success of both the students and faculty members?</p> <p>4. Does the program serve as a good model for increasing diversity in the sciences? Has the program had an impact beyond the institution?</p>	<p>1 a. Students are able to outline the purpose of a proposed research project, describe steps in the projects, implement the project, present results to a broader scientific community, and field questions about their research</p> <p>b. Students organize a summer research symposium in which they and their colleagues present and defend their work</p> <p>c. Students continue to pursue opportunities to conduct scientific research</p> <p>d. Students are excited about their research and continue to pursue opportunities to conduct scientific research</p> <p>2 a. Student demand for faculty-mentored research opportunities increases</p> <p>b. Students demonstrate positive attitude toward research</p> <p>c. Students participate in science related activities</p> <p>d. Students continue in research during academic year</p> <p>e. Students express understanding of what it means to do scientific research</p> <p>3 a. Faculty-student teams acquire and prepare data for grants, presentations and publication</p> <p>b. Research is continued by teams during the academic year</p> <p>c. Faculty obtain external funding</p> <p>d. Students and faculty publish research results</p> <p>e. Students and faculty present talks at meetings</p> <p>f. Students pursue post-graduate work in science related fields</p> <p>g. Students excel in academic and professional pursuits</p> <p>4 a. Program becomes implemented in other departments and other universities</p> <p>b. Faculty outside of W&M ask for information/material about program</p> <p>c. Faculty become active in effort to diversify science</p> <p>d. Information about the program is shared in science education publications and presentation</p> <p>e. Science education funding; funding for increasing diversity in the sciences is awarded to participants</p>	<p>1. a. Application for Summer Fellowship program</p> <p>b. Poster presentations and talks at summer symposium</p> <p>c. End of program questionnaire</p> <p>d. Senior Survey</p> <p>e. Proposals to present at professional conferences</p> <p>f. Annual student updates</p> <p>g. SURE/CURE</p> <p>h. Annual mentor reviews</p> <p>i. Self evaluations</p> <p>2. a. Applications for HHMI and other experiences</p> <p>b. Exit questionnaire</p> <p>c. Interview</p> <p>d. Focus group interviews</p> <p>e. W&M tracking of undergraduate research</p> <p>f. Registrar records</p> <p>g. Tracking data from W&M HHMI online system</p> <p>h. Student and faculty descriptive narratives</p> <p>3. a. Exit questionnaire</p> <p>b. Faculty and student publications, presentations, grant funding</p> <p>d. Performance review</p> <p>f. CVs</p> <p>g. Funder's reports</p> <p>h. Student academic and professional awards</p> <p>4. a. Publications, grant funding</p> <p>b. Citations of publications</p> <p>c. Invited talks on both science and pedagogy</p> <p>d. Undergraduate long term tracking e.g. PhD programs entered</p> <p>e. Collaborations outside of W&M</p> <p>f. Activity on the W&M/HHMI website</p>	<p>Evaluation questions are ranked in order of how quickly an effect is expected to be seen. However data for all outcomes will be collected simultaneously.</p>