**Washington & Jefferson College On-campus Student Research**

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Strategies</th>
<th>Outputs</th>
<th>Outcomes</th>
<th>Impacts</th>
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</thead>
<tbody>
<tr>
<td><strong>Funding</strong></td>
<td>HMI funds, other funding from departmental sources, academic affairs, and grants if appropriate</td>
<td>Research project information: Name of project, department(s), and mentor name</td>
<td>Students value their research experience (primarily through student, peer, and mentor perceptions and attitudes)—use of SURE survey (Survey of Undergraduate Research Experience)</td>
<td>&lt;The comments below may, or may not, be applicable. You can pick and choose and should make these relevant to your specific research project. Keep in mind that we are expecting students to take something away from the research experience besides the production of a report or presentation—they should be gaining useful experience and something that will help them understand the nature of science. We also want something that we can assess, if not now, then later&gt;</td>
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<td><strong>Individuals involved in the project</strong></td>
<td>faculty mentors/supervisors, students (in what capacity—summer interns, independent study researchers (500-501), etc.); you should also list Short-term Mentors/Supervisors and Long-term Mentors/Supervisors (if appropriate), On-campus Research Directors (Will you work with/report to one of the directors?)</td>
<td>Number and demographics of HMI-supported on-campus research students who are engaged in natural sciences and mathematics</td>
<td>Students earn science graduate degrees (M.S., Ph.D., M.D.-Ph.D., M.D., etc.) and are practicing in science and/or research</td>
<td>Students who value scientific research and understand how science and the research enterprise works</td>
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<td><strong>Research Equipment and Supplies</strong></td>
<td>include equipment/supplies purchased with HMI funds or already available in the dept or on-campus</td>
<td>Number and demographics of HHMI-supported on-campus research students who were affected by HHMI research support for this project (e.g., attended science seminars, or decided to engage in research without HHMI support)</td>
<td>Students are in fellowships (postdoc and medical) positions and plan to continue in science or academia</td>
<td>Graduates who are engaged in science-related professions</td>
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<td><strong>Research Infrastructure</strong></td>
<td>laboratories, classrooms, and housing for summer interns</td>
<td>Number and demographics of mentors associated with this project (undergraduate peers, faculty, and others)</td>
<td>Peer and postgraduate mentors are rewarded for their mentoring activities (good grad school acceptances, postdoc positions, faculty appointments)</td>
<td>Increasing the number of faculty who mentor undergraduate students who contribute to the research enterprise</td>
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<td>List any collaborating institutions or personnel (on- or off-campus)</td>
<td>Are there components of a supportive &quot;research environment&quot; present on-campus?—how are the dept and the college (and colleagues/students) supporting the research? Not necessarily monetary support but anything that will help students successfully complete the research</td>
<td>Number and characteristics of faculty associated with this on-campus research project</td>
<td>Faculty continue to be involved in providing research experiences to undergraduates with less or no HHMI support</td>
<td>Institutions place a high value on providing significant undergraduate research as part of the institution’s culture</td>
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<td>Student success associated with research project: publications, awards, and poster/presentations at meetings (on- and off-campus)</td>
<td>Student research results in greater institutional or external sources of support for undergraduate research experiences</td>
<td>Long-term successes aid in recruiting students and faculty to the college</td>
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<td>Students continuing in science through other avenues (postbac, research lab tech, etc.)</td>
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<td>Mentors have enhanced mentoring skills</td>
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<td>Mentors develop new project ideas to engage students</td>
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<td>An increasing number of faculty continue their involvement in providing research experiences to undergraduates</td>
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<td>New institutional or other sources of support for undergraduate research experiences are created or found</td>
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### Evaluation Questions for OUTCOMES

You will modify the evaluation questions below so they more closely address possible outcomes for your specific project—all may not apply. What do you want faculty and students to come away with at the conclusion of the project? Feel free to add any “evaluation questions” that aren’t represented below.

1. Was the research experience valuable or not valuable for the students both short term and long term? What are the perspectives of the students, mentors, and supervisors on the students’ experiences?

2. What do students do after they graduate from their colleges/universities? How do students continue to be involved in science after they graduate from their colleges/universities?

3. How are students contributing to science and/or research after the experience?

4. How are mentors (at all levels) affected by their mentorship experiences?

5. How are the faculty and the grantee institution affected by HHMI support for student research?

6. Were the research objectives met by the students?

7. Did the research provide data, methods, and/or other information that could be used by future students engaging in continued work?

### Possible Indicators/Measures

<table>
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<tr>
<th>Possible Data Collection Methods and Information Sources</th>
<th>Rank/Priority (include brief rationale)</th>
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<td>&lt;Going back to the first column on this page, rank the Evaluation Questions in order, from those questions that have the greatest priority to those with the least priority. You should also provide a rationale for the ranking&gt;</td>
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1. a) Student Exit Questionnaire  
   b) Interview  
   c) Supervisor, Mentor, Summer Program Director, and Selector Feedback  
   d) Focus Group  
   e) SURE

2. a) Tracking Questionnaire  
   b) Contacting Undergraduate Institution and Selector  
   c) Alumni search  
   d) National Surveys (NSF, AAMC, etc.)  
   e) Grants, honors, and awards  
   f) Publication searches

3. a) Tracking Questionnaire  
   b) Alumni search  
   c) Interview  
   d) Focus Group  
   e) Peer review through panels, awards, etc. gauging research and mentoring contributions

4. a) Student, faculty, and administration surveys and interviews  
   b) Increase in support for undergraduate student research activities

5. a) Tracking of number and quality of undergraduate student research experiences at a given institution  
   b) External awards/funding for undergraduate student  
   c) Institutional funding for undergraduate research  
   d) Faculty research grants

6. a) Numbers of presentations given by students  
   b) Numbers of papers submitted  
   c) Peer reviews of papers, presentations, and other data

7. a) Ongoing numbers of students involved in project  
   b) Analysis of methods and revisions applied

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   b) Graduate with science degree  
   c) Pursue additional research experiences before graduation  
   d) Expect to continue in research post-research experience  
   e) Value summer research experience—satisfaction surveys (SURE)  
   f) Express student-specified gains

2. a) Pursue science and research-related activities after graduation, particularly through their job/education (post-graduation surveys—1, 5, and 10 years)  
   b) Pursue science and research-related activities five years after graduation, particularly through their job/education (post-graduation surveys—5 years)  
   c) Pursue science and research-related activities ten years after graduation, particularly through their job/education (post-graduation survey—10 years)

3. a) Applied, received, and accepted academic faculty positions, including type of faculty positions (e.g. tenure-track)  
   b) Employed in research or science jobs (e.g. academic research, industry, government, NGO’s, associations, and societies)  
   c) Institutional funding for undergraduate research  
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