

NAME: W&M HHMI Undergraduate Science Education Program

INSTITUTION: College of William and Mary

SCIENCE TRANSITION PROGRAM - Preparing for Life as a Science Student (PLUS-S)

Inputs	Strategies	Outputs	Outcomes		Impacts (Long Term-Conditions)
			(Short Term-Learning)	(Medium Term-Action)	
<p>W&M admitted students from disadvantaged or diverse backgrounds-all students in this category</p> <p>W&M faculty mentors for summer transition program</p> <p>Resources for summer pre-matriculation program - labs, administrative support</p> <p>Tuition from W&M (cost share)</p> <p>Equipment and facilities</p> <p>Lab Supplies</p> <p>Instructor for How Students Learn course</p> <p>Undergraduate students as peer mentors in the lab</p>	<p>Residential one week "Preparing for Life as a Science Student" program</p> <p>Offer first part of How Students Learn course; course will continue throughout fall semester when students will apply their techniques to introductory science courses</p> <p>Provide in depth freshmen advising with two advisors for each student</p> <p>Recruit students to participate in freshmen research lab that engage students in year-long project</p> <p>Add quantitative and math components for students</p> <p>Provide laboratory research experience and assign students to faculty mentor/advisor to introduce students to culture or research and community of science researchers</p> <p>Hold daily lunch meetings with students and advisors to discuss common concerns and viable solutions; have introductory science course instructors give talks and discuss concerns</p>	<p>Number of all participants who are from underrepresented groups and disadvantaged backgrounds</p> <p>Number of students who enroll in subsequent science courses</p> <p>Number of research experiences conducted during the summer by participating students</p>	<p>Students are excited about scientific research and plan to pursue their interest in science in college</p> <p>Students continue contact with faculty mentors</p> <p>Students continue research in labs of faculty mentors</p> <p>Students enroll in introductory science courses and use skills</p>	<p>Students are prepared to pursue college level science classes; show confidence</p> <p>Students succeed in introductory science courses and labs; show strong performance</p> <p>Students continue to major in science or math</p> <p>Students serve as mentors for the following year's class</p> <p>Students have successful research experiences in faculty labs</p>	<p>Attract and prepare more students from underrepresented groups and disadvantaged backgrounds to pursue science in college</p> <p>Students complete science majors</p> <p>Participating students pursue post-graduate science careers</p> <p>Students serve as role models and leaders in effort to attract members of underrepresented groups into science</p>

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Evaluation Questions for OUTCOMES	Possible Indicators/Measures	Possible Data Collection Methods and Information Sources	Rank/Priority (include brief rationale)
<ol style="list-style-type: none"> 1. Is the program successful in attracting and retaining students from underrepresented groups and disadvantaged backgrounds in the sciences through freshmen courses? 2. Does the program prepare students for college level science courses? 3. Does this program help retain students in the sciences longer term? 	<ol style="list-style-type: none"> 1 <ol style="list-style-type: none"> a. Students gain confidence in ability to transition to college life and to college-level academic work b. Students learn academic strategies for handling college-level demands for reading comprehension, writing, study skills, and a time management c. Students successfully complete one-credit laboratory experience c. Concerns and viable solutions are discussed at weekly lunch meetings with students and advisors d. Students are enthusiastic about studying science 2 <ol style="list-style-type: none"> a. Students learn transferable laboratory and research skills b. Students enroll in new freshmen research lab that engage students in year-long project c. Retention through freshmen biology is increased 3 <ol style="list-style-type: none"> a. Students major in science b. Students participate in other co-curricular science activities c. Students go on to sophomore year courses; eventually declare STEM majors and graduate in STEM majors 	<ol style="list-style-type: none"> 1. <ol style="list-style-type: none"> a. Quarterly questionnaires b. Focus group c. Transcripts d. Mentor/advisor observations e. Course evaluations 2. <ol style="list-style-type: none"> a. Laboratory assignments b. Course evaluations b. Self evaluations c. Transcripts d. Registrar records e. Pre and post questionnaire 3. <ol style="list-style-type: none"> a. W&M student surveys; quarterly surveys b. Comparative Registrar records c. Student tracking d. Transcript analysis 	<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>

