

Summary: Oregon Health & Science University’s Office of Science Education Opportunities is applying for the ODE STEM/STEAM Activity Grant to expand and enrich the ongoing efforts of the provost-supported outreach initiative called *On Track OHSU!*. The program is designed to increase students’ academic identity as STEM learners and to increase students’ motivational resilience in STEM fields. This program seeks to increase the number of underrepresented students in the health and sciences and in OHSU’s schools and programs by influencing and supporting a targeted group of students in grades 6-12, using OHSU’s students, professionals, and unique facilities to engage and inspire students. *On Track OHSU!* partners with Portland Public Schools, Woodburn School District, Portland Metro STEM Partnership, Self Enhancement Inc., Saturday Academy, and OHSU’s Let’s Get Healthy (Appendix A).

Rationale: OHSU is invested in strengthening the STEM academic pipeline for underrepresented students, as better health outcomes are achieved when patients visit healthcare providers with similar socio-economic and cultural backgrounds¹. During the current 2013-2014 school year, two high schools and their respective middle schools are participating in *On Track OHSU!* pilot, serving mostly economically disadvantaged and/or minority students (Table 1).

Table 1: On Track OHSU! Partnering Schools’ Demographics			
School	Demographics	Economically Disadvantaged	Graduation Rate
PPS: Jefferson High School Middle College for Advanced Studies	59% African American 12% Hispanic/Latino	82%	58%
Woodburn SD: Woodburn High School Wellness Business and Sports School (WeBSS)	77% Hispanic/Latino 4% African American	>95%	56%
Valor Middle School (Woodburn Feeder)	74% Hispanic/Latino	>95%	
French Prairie Middle School (Woodburn Feeder)	83% Hispanic/Latino	>95%	
Self Enhancement Inc. (SEI) Middle School (Jefferson Feeder)	84% African American 6% Hispanic/Latino	86%	

ODE Report Card, 2012-2013

¹(Institute of Medicine, March 2002)

On Track OHSU! is designed to impact 6-12th grade students by increasing and fostering students' academic identity as STEM learners and strengthening their motivational resilience (see section 4. Project Plan) as both academic identity and motivational resilience are considered central to student success². Given the graduation rates at both target high schools (Jefferson 58%, WeBSS 56%), we provide students in our target group with student mentors from various OHSU programs. The OHSU mentors guide in achievement of student goals, as it has been shown strong role models and mentors can greatly affect educational outcomes³. OHSU has significant resources and enthusiasm, particularly from OHSU's students and faculty, which will be used to help bolster the science education opportunities for underrepresented students in Portland.

Through a combination of mentored in-school visits facilitated by OHSU student mentors and day-long educational experiences at OHSU, *On Track OHSU!* students learn about the science, complexity, and variety of health science careers. These interactive visits are designed to educate, inspire, and motivate students to pursue health and science careers. This proposal seeks to extend the reach of the current program as describe above, so we can strengthen the impact of *On Track OHSU!* and provide students greater opportunities within the STEM fields.

The current program and proposed expansion strongly connect with Oregon Content Standards, NGSS Standards, Oregon Guidance and Counseling Standards, and Common Career Technical Core Standards (Appendix B).

Project Plan: *On Track OHSU!* has two primary objectives: 1) To increase students' academic identity as science learners and 2) to increase and foster students' motivational resilience so they are prepared to face the challenge of STEM coursework (see section 4. Project Plan). Our

² (Skinner, 2009)

³ (Downing, 2005)

preliminary work from our full pilot year includes a robust calendar of events that will be offered again in the coming school year. In direct connection with the ODE equity lens, *On Track OHSU!* provides students with the opportunity to access information about a broad array of career opportunities in health and science, and helps to show them multiple paths to employment yielding family wage incomes. OHSU students across all programs play an integral role as presenters and role models for the younger students. In focusing on increasing student academic identity and motivational resilience at a young age, we are also addressing Oregon's 40/40/20 goals of increasing college completion. We feel we can increase the impact and success of our program by expanding our ongoing efforts with additional enrichment programming, and increase our impact by extending the program to the Native American community. The specific aspects we are asking for in this grant are outlined below.

For middle school student participants, the program's kickoff event is a *Let's Get Healthy* fair at their middle school. [*Let's Get Healthy!*](#) uses information technology to engage the public to improve health awareness⁴. Through highly engaging modules about issues such as sleep habits, diet, and body composition, the program teaches individuals about their own health, opportunities to improve or maintain a healthy lifestyle and about the research process. The program provides age-appropriate interactive, scientifically-based educational and research experience in partnerships with schools, communities and workplaces. This grant would allow us to provide this opportunity to middle school students again during the 2014-2015 school year (the original opportunity was funded by a NIH grant).

To address well-documented summer learning gaps⁵ and general lack of knowledge regarding educational pathways and processes, we are also proposing to provide opportunities

⁴ (Marriott, 2012)

⁵ (Alexander, 2007)

for *On Track OHSU!* students to engage in summer activities and learning opportunities. To do so, we plan to further enroll *On Track OHSU!* students in [Saturday Academy](#) programming.

According to research from the Wallace Foundation,⁶ students from low-income families who engaged in high-quality out-of-school educational experiences such as those provided by Saturday Academy are more likely to finish high school and attend college, more likely to achieve academic benchmarks in school, less likely to be held back in school, and less likely to become involved in crime in later years. By providing our targeted student groups with this opportunity, we are minimizing this disparity while increasing student likelihood of success in high school and beyond.

Additionally, as part of this proposal, we would enhance our program by offering four junior or senior students to participate in a paid summer research internship. Summer research experiences are shown to increase students' performance in advanced science courses, as well as support students' desire to pursue a career in science⁷. Additionally, we will offer six graduating *On Track OHSU!* seniors who are enrolled in a two or four year college/university with plans to study STEM, a \$500 one time scholarship to help offset the costs of books or tuition their freshman year.

Finally, to grow the potential impact of *On Track OHSU!*, we will provide specialized STEM-centered academic advising training to teachers and counselors at the participating schools. The US Department of Education has shown that the percentage of time that counselors spend on college readiness activities is positively related to first generation college students believing college was affordable⁸. Additionally, a family member talking to a teacher or counselor about post-secondary admission requirements is positively related to first generation

⁶ (Redd, 2012)

⁷ (Markowitz, 2004)

⁸ (National Center for Education Statistics, High School Longitudinal Study, 2009)

college students' plans to enroll in a bachelor's degree program⁷. A great need exists to increase the number of students that are having college talks with counselors or teachers, and by providing this professional development, we could create more opportunities for teachers and counselors to provide this resource.

In fall 2015, *On Track OHSU!* plans to expand to include Native American students. Staff will use the coming year to plan and connect with schools, communities, and agencies to determine the best collaboration with this demographic. In order to facilitate the expanded program, including planning with new partner organizations, summer research experiences, Saturday Academy classes, and student tracking, we need a part-time program coordinator to assist in the planning, execution, and evaluation of our program.

Evaluation Plan: OHSU's Assistant Vice Provost for Assessment and Evaluation, Dr. Tanya Ostrogorsky, and the Portland Metro STEM Partnership (PMSP) have collaborated on a logic model (Appendix C) with corresponding assessment tools (Appendix D) that measure the impact of this work. The baseline survey was developed by the PMSP and addresses the academic identity and motivational resilience constructs. All students take the survey before any interaction with our program and then again at the end of the academic year to measure change in the two constructs over the course of our programming. In addition to the pre/post surveys, students take additional surveys after each visit to provide feedback on specific aspects of the program.

Evaluation data will be analyzed by Dr. Ostrogorsky using descriptive statistical techniques such as mean and standard deviation. Inferential statistical analysis techniques may be applied such as ANOVA to determine which student groups may be seeing greater gains in the program. We will continue to analyze our data with the help of the PMSP to compare results

with those they receive from other partnering organizations and discuss modifications to our program to increase our impact.

As *On Track OHSU!* students graduate and move on to two and/or four year institutions, it will be crucial that we are able to track their progress and remain in contact with them. With this grant money, we would purchase access to the program developed by [*Beyond 12*](#), an organization with a robust alumni tracking platform, including data on student enrollment, courses, GPA, number of remediation programs, and the delivery of qualitative data. This tool would allow us both to measure the effectiveness of our program, and to remain in contact with students well past the 12th grade.

Sustainability Plan: The pilot year of *On Track OHSU!* is financially supported with funding from the OHSU provost's office (Appendix A.1), which has a continued investment in the program and the programs goals. This university support provides for basic program costs, however the ODE grant would allow us to provide crucial enrichment components that will dramatically increase our students' success. Throughout this grant period, we will work continuously to find other relevant funding opportunities and connect with potential donors from our community such as industry stakeholders and partners. We plan to apply for several other grants to sustain and grow our current program. We also are looking to further our partnership and collaboration with organizations such as Saturday Academy and the PMSP, and to find opportunities that exist to co-fund different aspects of our expansion. Other partners such as *Let's Get Healthy* have been able to use funds from their grants to work with our students, and we will continue to leverage opportunities such as these with our partner school districts, community colleges, and local universities. *On Track OHSU!* holds a tremendous potential for future collaboration with all of these organizations and institutions.