

Proposing Organization	Friends of Saturday Academy, dba, Saturday Academy-Addendum
Proposal Title:	Apprenticeships in Science and Engineering (ASE)
Proposal Date:	September 30, 2009 – Addendum 10/09/09
Project Abstract: <i>(Provide a short description of project using no more than the space provided here.)</i>	The ASE program began in 1990 to address a growing concern over the quantity, quality and diversity of our nation’s future technical and scientific work force. Through collaborations with universities, private industry, and research organizations, ASE provides full-time, eight-week summer apprenticeships to high school freshmen, sophomores, and juniors in science and engineering disciplines. ASE is designed to encourage motivated, high-achieving, high school students to engage in STEM (science, technology, engineering and mathematics) education and to pursue advanced education and careers in those fields. The ASE Program changes students’ lives by providing real life scientific professional career experiences to high school students that are unavailable to them anywhere else. The ASE program has placed more than 2,900 students from throughout Oregon and SW Washington in these one-of-a-kind apprenticeships in the past 20 years.
Amount Requested:	\$65,000 over two years
Project Contact:	Andrea Raven
Title:	ASE Program Director
Address:	830 SW 10th Avenue, Suite 200 Portland, OR 97205
Phone and Email:	503-200-5860, andrea@saturdayacademy.org
Accounting Contact:	Nell Whitman
Title:	Director of Finance and Administration
Address:	830 SW 10th Avenue, Suite 200 Portland, OR 97205
Phone and Email:	503-200-5863, nell@saturdayacademy.org

Clarifications to the Summative Evaluation

IV. b. Summative Evaluation

Saturday Academy will report on the demographics of the 15 ETIC-funded interns in their yearly reports. Student information to be reported to ETIC will include, but not be limited to: gender, age, ethnicity, income status, whether or not the student is a first generation college student, whether or not the student speaks a second language at home, and school.

Andrea Raven, ASE Program Director, will meet with the OPAS OST Committee at least once per calendar quarter to report on and receive feedback from the Committee in their advisory and oversight role.

Proposing Organization	Friends of Saturday Academy, dba, Saturday Academy
Proposal Title:	Apprenticeships in Science and Engineering (ASE)
Proposal Date:	September 30, 2009
Project Abstract: <i>(Provide a short description of project using no more than the space provided here.)</i>	The ASE program began in 1990 to address a growing concern over the quantity, quality and diversity of our nation's future technical and scientific work force. Through collaborations with universities, private industry, and research organizations, ASE provides full-time, eight-week summer apprenticeships to high school freshmen, sophomores, and juniors in science and engineering disciplines. ASE is designed to encourage motivated, high-achieving, high school students to engage in STEM (science, technology, engineering and mathematics) education and to pursue advanced education and careers in those fields. The ASE Program changes students' lives by providing real life scientific professional career experiences to high school students that are unavailable to them anywhere else. The ASE program has placed more than 2,900 students from throughout Oregon and SW Washington in these one-of-a-kind apprenticeships in the past 20 years.
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I. Assumptions.

Throughout human civilization people have found new and better ways to solve the challenges of their day. Engineering has allowed us to replace human labor with machines for many of our daily tasks, build railroads, highways, and bridges, and design sanitation systems that have improved the health of humans worldwide. The National Academy of Engineering recently identified a new set of engineering challenges for our generation titled *Grand Challenges for Engineering*. These challenges address some of the most pressing issues of our time: how do we make solar energy economical, provide impoverished villages with access to clean water, prevent nuclear terror, or manufacture better medicines. To solve these problems and become the inventors and discoverers of the future, the coming generation must develop skills in and an appreciation of innovation, critical thinking, collaboration and life-long learning.

A recent survey by the Bayer Corporation found that 95 percent of top Fortune 1000 executives are concerned that the U.S. is in danger of losing its global leadership position in science and technology due to a shortage of science, technology, engineering, and mathematics (STEM) talent and almost half say that they are already experiencing that shortage. Two-thirds of executives are concerned that other countries' increased access to STEM talent is impacting competitiveness and more than half feel that our nation's public pre-college education system is failing to engage girls and minorities in the STEM subjects. As the premier pre-college science, math, engineering, and technology educational enrichment organization in the Portland metropolitan area, Saturday Academy has extensive experience engaging our community's young people in STEM education. Our Apprenticeships in Science & Engineering Program (ASE) allows students to experience professional life as a scientist, engineer, or entrepreneur and introduces underserved populations to STEM education and careers. In 2009, 57 percent of ASE students were female, 12 percent were non-Asian minorities, 38 percent spoke a second language at home, 21 percent qualified for the government's free and reduced lunch program, and 18 percent did not have a college graduate in their immediate family.

According to the National Academy of Engineering's recent report, *Engineering in K-12 Education: Understanding the Status and Improving the Prospects*, good engineering education experiences have been shown to encourage mathematical thinking, increase awareness of the field, boost youth interest in pursuing engineering education and careers, and improve students' ability to explain, analyze, predict, or reason about science, math and technology. Saturday Academy's data shows that ASE interns' work with professional engineers on real design problems fits this definition. These interns participate in an intensive application process and represent Oregon's best and brightest high school students. For 20 years, the ASE Program has demonstrated that our youth are developmentally ready for the challenges of the real world. They have worked on engineering projects such as fabricating, calibrating, field testing and deploying sensors for monitoring the biogeochemical process in the Columbia River; increasing energy efficiency and reliability of electronics cooling through use of thin liquid layers; assessing the availability and quality of solar energy in Oregon; and contributing to the on-going evolution of the Linux kernel. Saturday Academy interns engage with real engineers in solving real problems. Students learn by doing and experience engineering "habits of mind" such as how to approach problems, build prototypes, test and measure results, articulate their work to others, and accept professional critique.

Finally, according to the *Journal of Engineering Education*, recent research shows that, contrary to common belief, engineering does not have a higher drop-out rate than other fields of study, nor do women drop out at higher rates than men. However, the numbers of students starting college as engineering majors are significantly lower than those in non-engineering fields, particularly among women. The journal also found that a full 93 percent of engineers began engineering as freshmen. "This last bit of data shows that next to no one decides to become an engineer once they reach the collegiate level, indicating

that the low numbers of entry level engineers is not one of retention, but one of recruitment.”¹ The message is clear: We must interest our young people in engineering BEFORE they enter college.

II. Project Plan

- a. **Resources** - Over the past 20 years, ASE has built a strong history and solid reputation in our community. Saturday Academy was awarded one of the first ever Presidential Awards for Excellence in Science, Mathematics, and Engineering Mentoring. In 2006, the Jack Kent Cooke Foundation in the Washington, DC area recognized ASE with a two-year \$150,000 grant to provide ASE experiences to low- and middle-income students. The ASE Program was one of only five programs in the US selected for this investment. ASE has served over 2,900 aspiring scientists and engineers over the past 20 years. Our own research on ASE shows that:
- 99% of ASE interns go on to college.
 - 75% of ASE interns declare freshman majors in the same field they interned in.
 - 67% graduate college with a STEM degree.
 - Of those attending Oregon universities, 82% graduate with STEM degrees.
 - Over 80% of ASE interns feel their Saturday Academy experience was influential or highly influential in their choice of college major or career.

Saturday Academy partners with local universities, research labs, government agencies, non-profit organizations, and industry to provide full-time summer internships to our state’s highly motivated high school students. In service of this grant, we will make strategic placements at Oregon Universities, agencies, research facilities and small companies that focus on engineering as defined in footnote 1 of the Scope of Work. Saturday Academy has a vast network of dedicated professionals willing to serve as mentors. We have developed relationships over the past 26 years with all of the major universities in Oregon and local industry. ASE’s network taps into Oregon’s culture of volunteerism and involves the community in nurturing its young people in a unique and meaningful way. As evidence, in 2009 ASE had 10 mentors who had been volunteering with the program between five and nine years and 19 mentors who had been volunteering with the program for 10 years or longer.

Joyce Cresswell, Saturday Academy Executive Director, has been with the organization for ten years. Ms. Cresswell supervises the ASE Program Director and directly recruits mentors. Ms. Cresswell has a Bachelor of Science and a Juris Doctorate from the University of Oregon. Prior to her career at Saturday Academy Ms. Cresswell spent ten years as a litigator. She served in three legislative sessions and spent seven years as a public school volunteer.

ASE Program Director, Andrea Raven, oversees day-to-day operations, recruits mentors, supervises ASE Program staff, and manages grant deliverables. Ms. Raven was a 14-year ASE mentor before accepting a position as Student Support Coordinator with ASE in 2009. She moved into the position of ASE director in July of 2009. Ms. Raven has a Bachelor’s degree in Biology from St. Olaf College and worked as a researcher and scientist for over 20 years.

ASE Program Coordinator, Amy Hesse, coordinates ASE information sessions for students, oversees and assists mentors and students with the application process, coordinates the program conferences, updates the ASE website and social media, and performs daily administrative duties. Ms. Hesse has been with the ASE Program since March of 2008. She has a B.A. in biology from Reed College.

¹ Ford, Matt. “Do Engineering Majors have the Highest Dropout Rate?” 6 Aug. 2009 <
<http://arstechnica.com/science/news/2009/08/do-engineering-majors-have-the-highest-dropout-rate.ars>>

b. Budget and Narrative

Proposal Budget			
Oct. 1, 2009 - Sep. 30, 2011			
	10/1/09 - 9/30/10	10/1/10 - 9/30/11	10/1/09 - 9/30/11
Salary Expenses (for those to be assigned to project)			
<i>ASE Program Director 0.15 FTE</i>	8,884	8,884	17,768
<i>ASE Coordinator 0.15 FTE</i>	6,699	6,699	13,398
<i>Executive Director</i>	1,910	1,910	3,820
Subtotal	\$ 17,493	\$ 17,493	\$ 34,986
Supplies (to be consumed during project period)			
Student stipends	15,000	15,000	30,000
Office supplies	7	7	14
Subtotal	\$ 15,007	\$ 15,007	\$ 30,014
Grand Total	\$ 32,500	\$ 32,500	\$ 65,000

- Saturday Academy respectfully requests funding for a minimum of 30 ASE students over the biennium. The program typically serves 100 students per year, so we have calculated 15 students to represent 15 percent of program expenses each year. As described in the proposal narrative, core program expenses include direct program staff, SA's Executive Director, who spends significant time recruiting mentors for the ASE program, and student stipends. The budget figures represent 15 percent of the salary, benefits, and taxes for the direct program staff, and 15 percent of the portion of the Executive Director's ASE-allocated time. Each of the ETIC-funded ASE positions will have a stipend of \$1,000 to signify the serious commitment required of the intern as well as to encourage participation of low income students. The remainder of the budget is a small portion (less than 15 percent) of the program's annual office supply expense.

- c. **Other collaborators** – We will be collaborating with Cori Hall, Director of Saturday Academy’s charter organization at Oregon State University, and Dr. Skip Rochefort, Director of Oregon State University’s Precollege Programs, to place ETIC funded students in engineering-related internships at Oregon State University. Additionally, we will be working with Karen Wegner, Director of K-12 Education at the Center for Coastal Margin Observation and Prediction (CMOP) through OHSU, to place ETIC funded students in biotechnology positions at CMOP. In addition to the aforementioned mentors, engineers and scientists from the community will lead the students in hands-on workshops at the Mid-Summer Conference, and will proctor intern’s presentations at the ASE Symposium.
- d. **Project Activities** –
- **Mentor Recruitment.** Saturday Academy will recruit volunteer mentors from the engineering disciplines defined in footnote 1 of the Scope of Work.
 - **Application Process.** Students will undergo a rigorous application process. All applicants will be provided the opportunity to attend free hands-on interview skills and essay-writing workshops to increase their competitiveness in the program. Through the ASE application process students gain insight into formal application processes they will need for college applications and learn valuable life-long skills.
 - **The Internship.** Students will experience an 8-week paid internship with a practicing engineer or research faculty engaged in engineering pursuits. Students will do real engineering or research projects and contribute in significant ways to the research and work of the mentoring organization. The philosophy of Saturday Academy is that whenever possible, a stipend is awarded to signify the serious commitment required of the intern, and to make it possible for low income students to participate. Stipends of \$1000 will be awarded under this grant to **all** students.
 - **Supervision.** Close monitoring and management of the mentor-intern relationship, consisting of regular site visits and progress reviews, will be provided by certified teachers hired by Saturday Academy. This support system contributes to the success of the mentoring experience and provides an on-call resource person for mentors. These “teacher monitors” evaluate the quality of the internships for educational value, safety, and overall effectiveness. They are in close communication with ASE staff at all times and, should problems arise, bring valuable expertise in “communicating with teens.”
 - **Student Conferences.** A one-day “Mid-Summer Conference” will be held at an area university, likely Oregon State University. At this conference, over 50 local scientists and engineers will lead students in career exploration and hands-on projects of a wide variety of science and engineering professions. This conference acquaints students with college life, allows them to create a network of like-minded peers from throughout the state, and provides them with exposure to scientific and engineering careers outside of their internship. At the end of summer, a professional Symposium will be held at which interns present their summer projects to their peers, mentors, educators, parents, and the community. They will gain experience in defending and explaining their work through a poster session as well as a required 12-minute power point presentation.
 - **High School Credit.** ASE provides documentation of student accomplishments for elective science credit from their respective high schools. This additional credit from their schools benefits students as they compete for scholarships and college admissions. Because ASE encourages and supports students from all economic levels, this additional competitiveness can significantly benefit students who do not have access to other types of advantages.

e. Schedule

Quarter Ending	Planned Activity and Measurable Outputs	Responsible persons by title	Milestones with target dates
Dec. 2009	<ul style="list-style-type: none"> Recruitment of mentoring organizations and students. Implementation of online searchable postings. 	Joyce Cresswell, Executive Director, Andrea Raven, ASE Program Director, Amy Hesse, ASE Program Coordinator	<ul style="list-style-type: none"> 30 engineering professionals approached for mentoring opportunities. Dec. 2009 10 ASE information sessions held at local high schools and community organizations. Dec. 2009
Mar. 2010	<ul style="list-style-type: none"> Implementation of online applications for students. Implement increased support/training for low-income and underserved students. Student applications completed. 	Andrea Raven, ASE Program Director, Amy Hesse, ASE Program Coordinator	<ul style="list-style-type: none"> Student applications available online. Jan. 2010 Over 450 preliminary applications completed. Jan. 2010 Over 300 final applications completed. March 2010 8 interview skills/essay writing workshops held at local high schools and community organizations. March 2010
Jun. 2010	<ul style="list-style-type: none"> Implementation of mentor-student matching processes (application review by mentors, student selection, interviews, etc). Students begin working directly with mentors in labs. 	Andrea Raven, ASE Program Director, Amy Hesse, ASE Program Coordinator	<ul style="list-style-type: none"> Minimum of 100 internships for overall program secured. June 2010 Min. 15 students begin working in ETIC funded internships in engineering related fields. June 2010
Sep. 2010	<ul style="list-style-type: none"> Mid-Summer Conference ASE Symposium Completion of student internships. 	Joyce Cresswell, Executive Director, Andrea Raven, ASE Program Director, Amy Hesse, ASE Program Coordinator	<ul style="list-style-type: none"> Completion of program outcomes (see section 3.b.) Aug. 2010
Dec. 2010	<ul style="list-style-type: none"> Evaluation of program by mentors, teacher monitors, students, and ASE staff. Recruitment of mentoring organizations and students. Implementation of online searchable postings. 	Joyce Cresswell, Executive Director, Andrea Raven, ASE Program Director, Amy Hesse, ASE Program Coordinator	<ul style="list-style-type: none"> Year one ETIC evaluation completed. Oct. 2010 30 engineering professionals approached for mentoring opportunities. Dec. 2010 10 ASE information sessions held at local high schools and community organizations. Dec. 2010
Mar. 2011	<ul style="list-style-type: none"> Implementation of online applications for students. Implement increased support/training for low-income and underserved students. Student applications completed. 	Andrea Raven, ASE Program Director, Amy Hesse, ASE Program Coordinator	<ul style="list-style-type: none"> Student applications available online. Jan. 2011 Over 450 preliminary applications completed. Jan. 2011 Over 300 final applications completed. March 2011 8 interview skills/essay writing workshops held at local high schools and community organizations. March 2011
Jun. 2011	<ul style="list-style-type: none"> Implementation of mentor-student matching processes (application review by mentors, students selection, interviews, etc). Students begin working directly with mentors in labs. 	Andrea Raven, ASE Program Director, Amy Hesse, ASE Program Coordinator	<ul style="list-style-type: none"> Minimum of 100 internships secured for overall program. June 2011 Min. 15 students begin working in ETIC funded internships in engineering related fields. June 2011
Sep. 2011	<ul style="list-style-type: none"> Mid-Summer Conference ASE Symposium Completion of student internships. 	Joyce Cresswell, Executive Director, Andrea Raven, ASE Program Director, Amy Hesse, ASE Program Coordinator	<ul style="list-style-type: none"> Completion of program outcomes (see section 3.b.) Aug. 2011
30 days after project completion	Final report including summative evaluation	Joyce Cresswell, Executive Director, Andrea Raven, ASE Program Director, Amy Hesse, ASE Program Coordinator	<ul style="list-style-type: none"> Final ETIC evaluation completed. Oct. 2011

III. Intended Results.

- a. **Outputs.** At least 200 high school freshman, sophomores, and juniors are expected to participate in full-time, eight-week science and engineering internships during summers 2010 and 2011. Of those, a minimum of 15 per year will be placed in engineering-related fields as defined in footnote 1 of the Scope of Work. Some will be in industry, others will be in agencies or research labs, but all will be related to engineering. Each student will receive approximately 296 internship hours, plus approximately 15 hours of science and engineering enrichment and career exploration at the Mid-Summer Conference and ASE Symposium, as well as an additional 10 hours prepping for their Symposium presentations. In addition to their own internship, interns will be exposed to multiple engineering and applied science disciplines over the course of the summer. Students will learn engineering content as well as how to make professional presentations.

Although student placement is ultimately the decision of the mentor, it is part of Saturday Academy's mission to make additional efforts to recruit and support underrepresented populations. ASE staff will specifically target recruitment efforts at high schools with a high percentage of minority students and/or a high percentage of students qualifying for the government's free and reduced lunch program. Staff will work closely with underserved populations to encourage them to apply to the program and provide additional support throughout the application process, internships and the Symposium preparation process.

Funds from this grant will provide engineering-related internships to a minimum of 30 students over the biennium. We intend to leverage this grant, if awarded, by encouraging mentoring organizations to contribute matching funds so that even more students will be able to participate. This is an approach that has worked successfully for us in the past.

- b. **Outcomes.**
- 95% of interns will report an increase of knowledge in the content area of their internship.
 - 95% of interns will report an increase in technical skills as a result of their internship.
 - 90% of interns will report they would recommend ASE to other students.
 - 75% of interns will maintain or increase their interest in engineering.
 - 75% of mentors will report that their intern's abilities would make him or her a suitable candidate for employment with the mentor's organization or others like it.
 - 75% of mentors will report they would recommend ASE to other professionals interested in mentoring.
- c. **Impact.** The ASE Program will result in a greater number of high school graduates who are motivated and prepared to pursue college majors in engineering and applied science. Through this program, students will explore potential careers in a hands-on and project-oriented way, become comfortable in university, scientific, and technical workplace environments, and work directly with engineers. Participation in the ASE program opens young people's minds to new educational and career possibilities through concrete experiences. Because of the knowledge they gain about themselves and their choices, these students are more realistic and better prepared for college and beyond. As they stay in touch with their mentors, meet their mentor's colleagues, and discuss their ongoing educational and work choices with their mentors, ASE students find that they have a professional network that can assist them throughout their careers. ASE gives high school students the opportunity to reflect on their successes, interests, and talents and how those may relate to their future opportunities. For low-income students, the ASE program brings the additional benefit of showing students that they can become successful professionals, breaking the cycle of poverty for them and their families.

While ASE plays a significant role in the lives of these young people, our interns return to high school for at least one more year after their internship is complete. As a result we are not able to measure all of these objectives within a two year period. However, our historical research continues to show that over 80% of ASE interns feel their Saturday Academy experience was influential or highly influential in their choice of college major or career, and 75% of them declare freshman majors in the fields of their internships. Historical data also indicate that 67% of our ASE alumni graduate from college in a STEM field.

For mentors, working with an intern provides several benefits. First, structuring a project, training and supervising an intern, and serving as a mentor is an excellent form of professional development. One mentor's supervisor has said it was "the best" professional development opportunity he had ever offered one of his employees. Second, working with an excited, interested student is highly energizing and often will reconnect professionals to the interest and passion that initially brought them into their field. Finally, the interns perform concrete tasks and help the mentoring professional and hosting organization accomplish their commercial or research objectives.

Potential for scalability and replication is dependent upon availability of resources and industry participation in local communities. The ASE Program already serves students in the Portland Metropolitan area, Linn, Benton, Lane, and Jackson Counties. As new mentors are engaged in the program, a culture of mentoring high school students ideally will evolve in the engineering community, encouraging greater participation.

IV. Evaluation Plans

- a. **Formative Evaluation.** All participants in the ASE Program will complete program evaluations that were developed in collaboration with Portland State University's Office of Institutional Research and Planning. The ASE Teacher Monitors, who are in direct contact with interns and mentors throughout the summer, will interview interns and mentors mid-way through the internship and again at the end of the summer, helping Saturday Academy evaluate program effectiveness and participant satisfaction. All data will be analyzed by ASE staff. ASE Program Director, Andrea Raven, has over 20 years of experience in scientific project design and data collection and analysis. The formative data collected will include, but not be limited to: level of support experienced by the intern from mentor, teacher monitor, and ASE staff; level of support experienced by the mentor from the teacher monitor and ASE staff; types and professional level of tasks performed by the intern; the strengths of the program as well as the areas that can be improved; and whether or not interns and mentors would recommend the program to other students and colleagues interested in mentoring. Mid-Summer Conference presenters and students also will be asked to evaluate the career talk and workshop experience at the conference so that improvements can be made in format, topics, and speaker selection.

Formative evaluation as described by Michael Scriven, professor of evaluation at University of Auckland, "is typically conducted during the development of improvement of a program or product (or person, and so on) and it is conducted, often more than once, for in-house staff of the program with the intent to improve." Accordingly, the ASE Program Director and Saturday Academy's Executive Director will analyze the data from student, mentor, and teacher monitor evaluations to determine strengths and weaknesses of the program as well as future program implementation. Program management uses the results to evaluate the effectiveness of mentors and organizations in providing a substantial real-world work experience for students. Unsatisfactory results are dealt with through a variety of means, for example: problem solving with the mentor and teacher monitor; developing concrete plans for improvement in coming years; or not inviting the mentor to return.

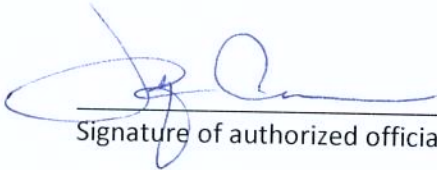
- b.* **Summative Evaluation.** Results from the evaluation process described above will be used to compare the forecasted outputs and outcomes to the actual outputs and outcomes. In addition, past interns will be contacted the summer after their senior year of high school for the purpose of long-term evaluation and asked how influential ASE has been in their pursuit of and interests in the STEM subjects. The summative data collected will include, but not be limited to: intern's level of understanding of the internship field; intern's intended college major; effect of internship on intern's interest in the profession/discipline; specific skills the intern learned over the summer; and whether or not the mentor feels the intern's abilities would make him or her a suitable candidate for future employment.

Proposing Organization Commitment Form

Legal Name of Organization: Friends of Saturday Academy

Our organization will commit to implement the project as described in this proposal if it is accepted and funded.

Comments:



Signature of authorized official

9/29/09

Date

Print Name: Joyce Cresswell

Title: Executive Director Phone: 503-200-5850

Email Address: joyce.cresswell@saturdayacademy.org

Mailing Address: 830 SW 10th Avenue, Suite 200
Portland, OR 97205

RFP # 2009-08 Engineering & Technology Industry Council Grants

BIDDER/PROPOSER

**TAX LAWS AND NON-DISCRIMINATION CERTIFICATION
RFP #2009-08**

I, the undersigned, have read all of the terms and conditions of this Request for Proposals, and I understand that if awarded the grant, I and the firm represented herein shall be bound by its terms and conditions and representations made in this response. I certify that Proposer has not discriminated against minority, women or emerging small business enterprises in obtaining any required subcontracts.

Certified Minority, Women, and Emerging Small Business

For statistical purposes only, please indicate if your firm is an Oregon certified minority, women, or emerging small business: DBE MBE WBE ESB

Certificate of Compliance with Tax Laws

I, the undersigned, (Check one)

hereby certify under penalty of perjury that I am not in violation of any Oregon Tax laws,

hereby certify under penalty of perjury that I am authorized to act on behalf of Contractor and to the best of my knowledge; Contractor is not in violation of any Oregon tax laws.

For purposes of this certification, "Oregon Tax Laws" means a state tax imposed by ORS 401.792 to 401.816 and ORS chapters 118, 314, 316, 317, 318, 320, 321 and 323; the elderly rental assistance program under ORS 310.630 to 310.706; and local taxes administered by the Department of Revenue under ORS 305.620.

Business Designation (check one): Corporation Partnership Sole Proprietorship

Governmental/Non-Profit Limited Partnership Limited Liability Partnership

Limited Liability Company

Tax Identification Number: 20-3770321

Signature:  Date: 7/29/09

Name: Joyce Cresswell Title: Executive Director

Firm: Friends of Saturday Academy

Address: 830 SW 10th Ave. Suite 200

City/State/Zip: Portland, OR 97205 Phone: (503) 200-5850

e-mail: joyce.cresswell@satunday Fax: (503) 200-5899



September 29, 2009

I am writing to express my support of Saturday Academy's grant application to the ETIC/OPAS Initiative. Through my personal and professional nine year relationship with the Apprenticeships in Science and Engineering Program (ASE) I have witnessed how opportunities are made available and have resulted in a positive outcome for diverse student populations during the programs' 21 years of excellence. Through enhanced mentoring partnerships, student internships have had a successful impact on student experiences in our companies, and in our community.

Locally, IBM employees have participated regularly as mentors to high school students through this program, giving back to the community and enhancing the skills of our future workforce. As a company, IBM has a strong commitment to education, particularly in the STEM disciplines and involvement in the community. We have been impressed by the caliber of students who enter the ASE program and have interned at IBM. Because of this success, I have personally recommended the ASE Program to my peer leaders at other Oregon companies. At IBM we have seen a majority of our interns choose a focus in technology while they finish high school and as they move into college. Of the past 28 interns we have sponsored, 25 of them are on this track.

According to Saturday Academy, 99% of ASE students continue into college with 65% of them majoring in science or technology. This program's return on investment is evident, however only 1 in 3 applicants are placed in a position. With additional support from business, more positions can be offered that will improve the ratio of students who are able to participate and with support of additional funding we can continue to build a pipeline for highly qualified graduates and leaders in business. I challenge both businesses and higher education to get engaged in this stellar program. With low graduation numbers in Oregon, it is imperative that we keep this program in a progressive space so those students who are high achievers have a program to support their efforts to keep them on an accelerated path.

For research scientists or small businesses who cannot afford to sponsor their students, third party funding is essential. Please support IBM's effort and provide ETIC's support through this granting process is an important investment for Oregon's future. The benefits are numerous providing opportunities to motivated, high-achieving young people who might not otherwise have access to such experiences. I strongly encourage you to support Saturday Academy's ASE Program.

Sincerely,

A handwritten signature in black ink that reads "R. Warren".

Richard Warren
VP, ISV Server Enablement,
Senior State Executive, IBM Oregon



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September 30, 2009

Dear OPAS Reviewers,

It gives me great pleasure to write a letter of support for the ETIC proposal by *Saturday Academy* for continued support of the *Apprenticeships in Science and Engineering (ASE)* program. I have worked with *Saturday Academy* for more than 15 years as a mentor of over 30 high school students, and as a presenter at their midsummer conference. This program is an important component of the “pipeline to college” work that we do at OSU. The program gives students an in-depth, summer-long experience which has lasting impact. Many of my ASE students have enrolled at OSU as a direct result, I believe, of their experience in the program. And many more have gone on to careers in science and engineering at other Universities throughout the country.

As anecdotal evidence of the programs potential and successes, I would like to recount the story of my very first ASE student from summer 1996, Jason Hower. Jason worked in my lab that summer after his sophomore year at Corvallis High School and for the rest of his time in high school (I like to keep my good students working with me!). He attended OSU in Chemical Engineering (having turned down Stanford and Cornell) and continued to work with me on research and K-12 outreach programs until his graduation. He then attended graduate school in Chemical Engineering at the University of Washington. He received his Ph.D. in Chemical Engineering in May 2009, and began his professional career as a faculty member in the ChE Dept. at South Dakota School of Mines and Technology in August 2009. He sent me an email after his first lecture, saying he was nervous but excited to be teaching his very first course. That is what I call a success story and that is just one example of what a summer internship for a 16 year old youth in the ASE program can do to affect their life. I have many more “success” stories of former ASE students, but the point is that these are life-changing experiences for these young people.

Having worked closely with the Saturday Academy program both at OSU and in Portland for many years, I can attest to its professionalism and efficient use of resources. They squeeze every dime and then some out of their grants, by offering the students extraordinary support, including supervision by certified teachers, insurance, two student conferences, and more. They also provide incredible support for mentors. It is great for folks like me, because they recruit the best and the brightest from the state of Oregon, and then we get to choose who we want to work with in our labs. It’s just a wonderful program.

Simply put, the Saturday Academy ASE program is a *model* for how high school internship programs should be organized, and it has been recognized as such on the national level. I look forward to have students from ASE working in my lab for many years to come, and for that reason I strongly encourage you to support their proposal. If you want to hear any more of my “student success stories”, please feel free to contact me!

Sincerely,

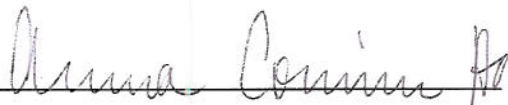
Willie E. (Skip) Rochefort, Ph.D.
Associate Professor and First Year Student Advisor
School of Chemical, Biological, and Environmental Engineering (CBEE)
Director, Oregon State University Precollege Programs
co-Director, Center for Outreach in Science and Engineering for Youth (COSEY)
Ph (541) 737-2408 Fax (541) 737-4600 email: skip.rochefort@oregonstate.edu

Collaborating Organization Commitment Form

Legal Name of Organization: Saturday Academy at Oregon State University

Our organization will commit to participating in the project described by this proposal if it is accepted and funded.

Comments:

Signature:  Date: 9/29/09

Print Name: A. Cori Hall

Title: Director, OSU Saturday Academy

Phone: 541-737-1822

Email Address: cori.hall@oregonstate.edu

Mailing Address:

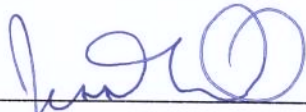
Saturday Academy
Oregon State University
247 Batcheller Hall
Corvallis, OR 97331

Collaborating Organization Commitment Form

Legal Name of Organization: Oregon Health & Science University

Our organization will commit to participating in the project described by this proposal if it is accepted and funded.

Comments:

Signature:  _____ Date: 9.30.09

Print Name: Jesse Null

Title: Manager, Research Grants & Contracts

Phone: 503-494-7784

Email Address: orserv@ohsu.edu

Mailing Address:

Oregon Health & Science University
3181 SW Sam Jackson Park Rd.
Mailcode L-106
Portland OR 97239