

Front Cover Art

The two word clouds shown are comprised of quotes from students and faculty respectively in our senior level LSAMP known as WAESO. Word clouds visually represent the most used words as the largest type and generate visual interest by placing words in geometrically interesting ways. The top word cloud is made from 209 student quotes comprised of 10,568 words. The bottom word cloud is made from 165 faculty quotes comprised of 11,347 words. The larger the word, the more frequently it appears in a particular collection of quotes.

The reader of this document is encouraged to view the cover art more closely and read the Appendix containing the “raw data” (see the section: Representative Samples From WAESO Final Project Reports and Analysis using Word Graphs) in order to learn more about the important relationship that forms the foundation of our LSAMP.

Also note that our students and faculty associate WAESO with the Louis Stokes Alliance for Minority Participation project funded by the NSF and use the acronym for the sake of brevity.

Part I: Economic Impact Statement

The design of the Western Alliance to Expand Student Opportunities Louis Stokes Alliances for Minority Participation project leads to the leveraging of *each dollar of NSF funding into \$7.91 of economic activity.*

Our WAESO-LSAMP

- Educates workforce for the knowledge-driven economy
- Builds capacity at our alliance institutions of higher education
- Educates administrators on effective activities outside the classroom
- Strengthens community institutions
- Attracts talent
- Attracts new businesses

By focusing on enhancing underrepresented student retention and graduation in science, technology, engineering, and mathematics (STEM) fields WAESO is a robust economic engine that fulfill the need for STEM graduates by our high technology industries who look for capable new employees in order to compete globally and operate in the United States.



This economic impact analysis is based on the focus of our alliance and the measured effectiveness provided by the Urban Institute's 2006 report. The three major conclusions of this report help describe the overall methodology used to calculate the economic impact of WAESO-LSAMP:

“Conclusions

1. *LSAMP met its stated goal of increasing the quality and quantity of students who successfully complete LSAMP-supported STEM baccalaureate programs.* As the program expanded, the share of national underrepresented minority (URM) undergraduate STEM degrees earned by LSAMP participants increased, coinciding with an increase nationally in the number of URM bachelor's degrees earned in STEM. On measures of undergraduate academic performance, LSAMP students were found to outperform national comparison samples.
2. *LSAMP exceeded its stated goal of increasing the number of students matriculating in programs of graduate study in STEM.* The LSAMP Program produced underrepresented minority students who enroll in and attain graduate degrees in STEM at a rate higher than that of both a national sample of URM students and a national sample of white and Asian STEM baccalaureate degree recipients.

LSAMP's strategies and approaches constitute a discrete and identifiable program model, grounded in research and theory, that can be tested and replicated. The identification and description of this successful model signifies a critical advance

in the knowledge base of intervention program models.”



Since 1991, VAESO-LSAMP has created the structure for intensive research and study activities as well as information/skill building and developed the faculty-student mentoring environment that has generated the type of outcomes in our alliance as described by the Urban Institute. Through the tireless dedication of hundreds of faculty and administrators at colleges and universities, there have been over 6,297 students intensively served in one or more activities (see Section Level 1 Activities for more information).

Because of our long-term commitment to the LSAMP program, our alliance has focused on the long-term dividends that the NSF investment has made in our students. Higher grade point averages, higher undergraduate retention, higher graduation rates, and higher graduate degree attendance and degree completion generates economic activity in four main categories:

1. More B.S. STEM graduates from underrepresented and traditionally underserved groups making higher salaries than workers without a college degree.
2. More M.S. and Ph.D. STEM graduates from underrepresented and traditionally underserved groups who elected to stay at the university and while delaying joining the workforce, began making higher salaries than B.S. STEM degree holders.
3. More higher education instructors/teaching assistants due to higher retention of underrepresented and traditionally underserved students staying in college.
4. Student advisors, graduate assistants, student workers employed using institutional infrastructure support as a result of success in the LSAMP program and a response to improve STEM education for all students.

Our specific methodology is based on the fact that we have intensively served over 6,297 students since the beginning of our alliance. We know through the extensive cohort analysis by the Urban Institute of our alliance as well as the other LSAMPs that “LSAMP participants outperformed, on average, national comparative samples of underrepresented minority and (to a lesser extent) white and Asian students” and that “LSAMP participants exceeded the national rate of graduate degree completion for both URM and non-URM national samples, and are more likely to complete a graduate degree in a STEM field than in a non-STEM field.” (Urban Institute, 2006 see Appendix). This means that with our alliance we conservatively estimate that we have at least an additional 1,000 STEM graduates. Further, we estimate based on Urban Institute data analysis that nearly half of them continued in school and obtained graduate degrees. These workforce increases generate economic activity since college and advanced STEM degree recipients make significantly more money than high school graduates.

Moreover, the enhancement in enrollment due to LSAMP is another element of economic activity. Conservatively estimating that \$200 per student credit hour costs applied to instructors and teaching assistants, the increased retention improves our alliance college and university infrastructure and creates economy and efficiencies of scale.

The final direct consequence of LSAMP activity we have included in this economic impact statement is the institutional support of student advisors and graduate assistants to maintain our network of activities throughout our regions. This is different from the classroom instructional economic impact and adds an additional dimension to the way that our alliance institutions respond to the challenge of expanding the STEM national workforce.

Taken together, over the course of our alliance, spanning from a junior alliance to a senior alliance with synergy to other programs funded by the NSF and other governmental and private foundations, the LSAMP has had a direct economic impact of \$7.91 for every dollar of NSF funding.

An overall summary of the economic activity is as follows.

Educates workforce for the knowledge-driven economy

Our region's economy is evolving from one that is resource-based and service-intensive, to one that is based on knowledge. The businesses most likely to produce the greatest wealth for our region's economy will increasingly utilize complex, technology-based systems and products. Accordingly, they need employees with "knowledge skills" to ensure their competitiveness. LSAMP's growing focus on applied, interdisciplinary scholarship and science and technology produces graduates who can fill these jobs. The nation's employers count on our alliance institutions to provide an appropriately skilled workforce for the knowledge-driven economy.

Builds capacity at our alliance institutions of higher education

For example, with more than 10,000 employees, our lead institution ASU is one of the State's largest employers. University enrollment currently exceeds 57,000, with another 22,500 attending summer sessions. ASU is one of the four largest universities in the country and awards more bachelors degrees each year than all the other Arizona institutions combined. The total employment impact of ASU, including University employees and all other jobs indirectly induced, is 39,900 jobs.

Educates administrators on effective activities outside the classroom

Our project team (housed in the Hispanic Research Center) researches, informs and advises our faculty and administrators through our governing board reviews conducted each year on choices and potential actions that will help our institutions of higher education more effectively engage faculty and retain all students in STEM, using underrepresented students paradigmatically in our activity structure. We collect and disseminate information about critical education trends and conditions that helps faculty and minority program administrators navigate in a complex, information-driven world.

Strengthens community institutions

Our alliance institutions are engaged and embedded in the Southern Rocky Mountain Region's fabric of social, cultural, artistic, intellectual, and educational institutions. For example, our lead institution ASU is working with the K-12 system, the business community, parents and others to improve Arizona's uneven high school graduation rate. Reducing the dropout rate will in turn lead to a stronger workforce.

Attracts talent

Our students continue to win awards at conferences and compete effectively for scholarship funding in all STEM fields. Their successes has helped our faculty recruit new students and get their siblings and friends interested in majoring in STEM fields. The ability to work closely with faculty, present their research, and network with other students attract these future STEM workers, who subsequently draw knowledge-driven businesses.

Attracts new businesses



In addition to our LSAMP institutions acting as a magnet for future creative and technology-savvy workers, WAESO contributes to business attraction in other ways. For example, when making site selection decisions, business prospects typically consider the extent to which local universities partner with industry, produce superior graduates, and are involved in the community. We work closely with student organizations like SACNAS, SHPE, NSBE, AISES, etc. to have their

members present at conferences and invite industry speakers to discuss new technology and research projects.

Appendix

Urban Institute

Beatriz Chu-Cohen, Clemencia Cosentino de Cohen, Nicole Deterding, Lisa Tsui, “Final Report on the Evaluation of the National Science Foundation Louis Stokes Alliances for Minority Participation” (2006) <http://www.urban.org/publications/411301.html>

Part II: Views of Faculty and Students on Impact of WAESO-LSAMP Activities



In our LSAMP, the building block is an effective, working partnership between a faculty/mentor and the STEM underrepresented student that is beneficial to both. In higher education, this is certainly challenging at times. Moreover, the high level of dedication by both student and faculty to finding a time to collaborate and learn outside the classroom environment is especially challenging given the high course load and complexity of STEM courses.

The following word clouds from our students and faculty provide a rich amount of information. We presented the information in a format normally done in the analysis of political speeches – word clouds. Word clouds visually represent the most used words as the largest type and generate visual interest by placing words in geometrically interesting ways:

The two clouds represent over 10,000 words each, and there are similarities in high frequency words. Perhaps more interesting, are the words not found to be of high usage in one cloud but are prominent in the other. "Graduate" is a word that seems to be very important to students, but less so to faculty. This does make sense in one regard, but it points to the continuing importance of keeping faculty mindful of this student outcome. Happily, the faculty very frequently use the word "student" or "students", which is very encouraging since we do see that our faculty mentors place the needs of the student paramount in their daily activities.

The reader of this document is encouraged to view the cover art more closely and read the following "raw data" in order to learn more about the important relationship that forms the foundation upon which our LSAMP continues to increase retention and graduation for underrepresented students as a paradigm that can be applied to help all students succeed in STEM fields.

Part III: Fast Impact Facts/Indicators for Assessing Impact of WAESO-LSAMP

Total Number of WAESO Participants 6,297			
	Percent*	Totals	
Number and Percent of LSAMP participants entering program	88%	5,550	
Number and percent of LSAMP participants graduating with STEM degree	88%	4,897	
Number and percent of LSAMP participants who go on into the STEM Workforce	58%	2,865	
Number and percent of LSAMP graduates who go on to a graduate program in STEM	39%	1,905	
Number and percent of LSAMP graduates who obtain a graduate degree in STEM (specify Master's or Ph.D)*	23%	Master's	435
	8%	Ph.D.	163
Number and percent of LSAMP graduates who enter the STEM workforce after obtaining a graduate degree in STEM	100%	598	

*Based on a sample of 194 students responding

At the national level the Urban Institute documented that 38% of LSAMP students pursued STEM graduate degrees. In comparison the percentages for white and Asian students are 22% and 18% respectively. Our percentages, namely: 39% vs 38% and 51% vs 25% follow the national LSAMP model.

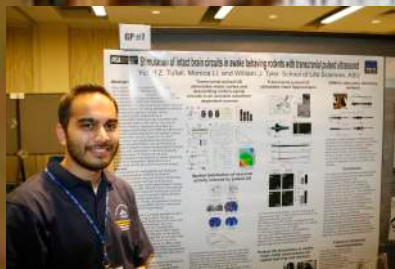
Part IV: Other Impacts of WAESO-LSAMP

Post Baccalaureate Activities

Our extensive WAESO-LSAMP experience with faculty-directed undergraduate research and graduate preparation summer bridge programs shows that many underrepresented minority students successfully complete STEM bachelor's degree programs with excellent research-oriented experiences. Like nearly all STEM graduate programs, we have drawn from this pool to recruit students for our Bridge to the Doctorate and affiliated AGEP program since these students demonstrate competitiveness in cognitive attributes as well as an orientation and experience with research. Moreover, we have used a well-established network of mentors to help guide these students in graduate programs and provided a series of programmatic activities such as research seminars, organizational and professional interpersonal skill training, opportunities to present at international conferences, and other experiences related to their research.



*Dr. Ariel Arndt
(WAESO BD Doctoral Graduate)
Postdoctoral Research Associate,
University of New Mexico*



*Dr. Yusuf Tufail
(WAESO BD Doctoral Graduate)
Postdoctoral Associate, Salk Institute
for Biological Sciences*

Of the 82 students in our Bridge to the Doctorate cohorts, as of this writing 50 successfully entered a doctoral program and thus far, 11 students have earned their doctoral degrees. This is in line with the Urban Institute report of LSAMP nationwide that participants in our program are 50 percent more likely to complete a graduate degree compared to minority or majority students who do not engage in LSAMP activities.

Nationally, the time to doctoral degree varies widely among disciplines, but the average for ALL students is over 8 years and our oldest cohort began graduate study only 7 years ago. Moreover, about 37% of ALL students in the U.S. drop out of a math or physical sciences doctoral program after 6 years of graduate study at a public university (Council of Graduate Schools, 2010), while our cohorts have seen only 29% of URM students in these fields not continue in a doctoral program after 6 years.



*Dr. Ricardo Cordero-Soto
(WAESO BD Doctoral Graduate)
Assistant Professor, California Baptist
University*



*Dr. Kevin Flores
(WAESO BD Doctoral Graduate)
Postdoctoral Research Associate,
Arizona State University*



*Dr. Alicia Urdapilleta
(WAESO BD Doctoral Graduate)
Assistant Professor, Ithaca College*



*Dr. Carlos Castillo-Garsow
(WAESO BD Doctoral Graduate)
Postdoctoral Fellow, Kansas State
University*


International Engagement

An important component of professional development for LSAMP students has been interaction with researchers from around the world. Our students, their graduate peer mentors, and their advisors have presented research or been involved in field studies in 41 countries and all 6 inhabited continents. Much of the activity has been a result of the global impact of research being conducted in our alliance, especially over the past decade. Of particular interest has been LSAMP students that have participated in mathematics, life sciences, and aerospace research.

Political map of the world with red pushpins indicating the locations of conferences or field work (outside of the U.S.A.) in order to illustrate the international impact of LSAMP students, their graduate peer mentors, and faculty research advisors.

Community College Efforts

Over 20 years of LSAMP, WAESO has consistently had 18% of its student participations in the community colleges within our alliance (1,673 out of a total of 9,331). By design this is nearly double the rate of community college student participation as the national LSAMP average. Our community college students have mostly engaged in peer study groups and summer bridge programs, but a reasonable number have also participated in research at four-year colleges and university while attending the community college. For all students, nationwide only 26% of students continue to a four-year college. With this fact in mind, WAESO has intensely focused on involvement of students at the community colleges. The overall impact of having over sixteen hundred students in summer bridge programs has also been very important to help students make this crucial transition.

A large group of people, likely students, are seated in a room, possibly a classroom or lecture hall. They are looking towards the front of the room, suggesting they are attending a lecture or presentation. The image is faded and serves as a background for the text.

An important development in our region that is worthy of note is that a number of our partner institutions underwent a transformation from two-year community college to four-year college or university. As a result, even though community college student participation rates have decreased to 15% in the past four years, the focus on summer bridge and student participation from community colleges has intensified in WAESO.

WAESO Economic Impact of Graduating more STEM students

	Grant Dollars	Year	Phase I			Phase II			Phase III			Phase IV				
			High School	Bachelors	Graduate	High School	Bachelors	Graduate	High School	Bachelors	Graduate	High School	Bachelors	Graduate		
Level 1	2394	\$1,000,000	1991													
Delta Degrees	431	\$1,000,000	1992													
Hourly Job	\$7.00	\$1,000,000	1993													
BS Salary	\$30,000	\$1,000,000	1994													
Graduate Salary	\$40,000	\$1,000,000	1995													

Louis Stokes Alliances for Minority Participation
Western Alliance to Expand Student Opportunities (WAESO)

Appendix A:
 WAESO Economic Impact of Graduating more STEM students

	Grant Dollars	Year	Phase I			Phase II			Phase III			Phase IV				
			High School	Bachelors	Graduate	High School	Bachelors	Graduate	High School	Bachelors	Graduate	High School	Bachelors	Graduate		
Level 1	2394	\$1,000,000	1991													
Delta Degrees	431	\$1,000,000	1992													
Hourly Job	\$7.00	\$1,000,000	1993													
BS Salary	\$30,000	\$1,000,000	1994													
Graduate Salary	\$40,000	\$1,000,000	1995													
Level 1	1755	\$950,000	1996	\$4,392,752	\$6,465,000											
Delta Degrees	316	\$900,000	1997	\$4,524,535	\$6,658,950											
Hourly Job	\$7.50	\$870,000	1998	\$4,660,271	\$6,858,719	\$4,310,000										
BS Salary	\$40,000	\$850,000	1999	\$4,800,079	\$7,064,480	\$4,439,300										
Graduate Salary	\$50,000	\$800,000	2000	\$4,944,081	\$7,276,414	\$4,572,479										
Level 1	1299	\$500,000	2001	\$5,092,404	\$7,494,707	\$4,709,653	\$3,450,720	\$6,320,000								
Delta Degrees	234	\$500,000	2002	\$5,245,176	\$7,719,548	\$4,850,943	\$3,554,242	\$6,509,600								
Hourly Job	\$8.00	\$500,000	2003	\$5,402,531	\$7,951,135	\$4,996,471	\$3,660,869	\$6,704,888	\$3,950,000							
BS Salary	\$50,000	\$500,000	2004	\$5,564,607	\$8,189,669	\$5,146,365	\$3,770,695	\$6,906,035	\$4,068,500							
Graduate Salary	\$60,000	\$500,000	2005	\$5,731,545	\$8,435,359	\$5,300,756	\$3,883,816	\$7,113,216	\$4,190,555							
Level 1	850	\$500,000	2006	\$5,903,491	\$8,688,419	\$5,459,779	\$4,000,330	\$7,326,612	\$4,316,272	\$2,725,632	\$5,850,000					
Delta Degrees	153	\$500,000	2007	\$6,080,596	\$8,949,072	\$5,623,572	\$4,120,340	\$7,546,411	\$4,445,760	\$2,807,401	\$6,025,500					
Hourly Job	\$9.00	\$500,000	2008	\$6,263,014	\$9,217,544	\$5,792,280	\$4,243,950	\$7,772,803	\$4,579,133	\$2,891,623	\$6,206,265	\$3,510,000				
BS Salary	\$60,000	\$500,000	2009	\$6,450,904	\$9,494,070	\$5,966,048	\$4,371,269	\$8,005,987	\$4,716,507	\$2,978,372	\$6,392,453	\$3,615,300				
Graduate Salary	\$70,000	\$500,000	2010	\$6,644,432	\$9,778,893	\$6,145,029	\$4,502,407	\$8,246,167	\$4,858,002	\$3,067,723	\$6,584,227	\$3,723,759	\$2,004,912	\$2,295,000	Not Yet	
Total Level 1	6297			\$88,544,181	\$130,314,238	\$73,642,057	\$44,196,117	\$80,945,269	\$40,128,469	\$17,630,505	\$37,840,198	\$14,684,531	\$2,004,912	\$2,295,000		
Total Degrees	1133				Total Economic Impact Phase I		Total Economic Impact Phase II		Total Economic Impact Phase III		Total Economic Impact Phase IV					
					\$115,412,114		\$76,877,621		\$34,894,224		\$290,088					
					TOTAL GRANT DOLLARS		Multiplier		NOTES							
					\$14,370,000		\$7.91		Delta Degrees = (Level 1 * (60%-42%))							
					\$113,737,023				High School Salary = (52 weeks * 40 hours * "hourly job" * "Delta Degrees") * 70%							
									Bachelor Salary = "BS Salary" * "Delta Degrees" * 50%							
									Graduate Salary = "Graduate Salary" * "Delta Degrees" * 25%							
									Total Economic Impact = Sum(I+II+III+IV) * 30%							
									Multiplier = "Total Economic Impact" / "Total Grant Dollars"							

Appendix B: REPRESENTATIVE SAMPLES FROM CIMD/WAESO FINAL PROJECT REPORTS (USED FOR WORD CLOUDS ON FRONT COVER)

Level 1	12	\$200,000	2002	\$2,402,251	\$3,251,153	\$4,096,471	\$3,680,889	\$6,704,228	\$3,920,000							
Delta Degrees	234	\$500,000	2003	\$5,564,607	\$8,189,669	\$5,146,365	\$3,770,695	\$6,905,033	\$4,068,500							
Hourly Job	\$8.00	\$500,000	2003	\$5,564,607	\$8,189,669	\$5,146,365	\$3,770,695	\$6,905,033	\$4,068,500							
BS Salary	\$30,000	\$500,000	2003	\$5,564,607	\$8,189,669	\$5,146,365	\$3,770,695	\$6,905,033	\$4,068,500							
Graduate Salary	\$50,000	\$500,000	2003	\$5,564,607	\$8,189,669	\$5,146,365	\$3,770,695	\$6,905,033	\$4,068,500							

The project helped students to comprehend the concept of modern control theory in designing a control system. Furthermore, it provided a learning environment for students to nurture their curiosity and ability in designing and controlling a complex system. All in all, this project not only provided hands-on experience for students but also prepared them for future graduate work.

Dr. Hamid Allamehzadeh, Assistant Professor
 Eastern New Mexico University

Level 1	850	\$500,000	2006	\$6,080,596	\$8,949,072	\$5,623,572	\$4,120,340	\$7,546,411	\$4,445,760	\$2,807,401	\$6,025,500					
Delta Degrees	153	\$500,000	2007	\$6,263,014	\$9,217,544	\$5,792,280	\$4,243,950	\$7,772,803	\$4,579,133	\$2,891,623	\$6,206,265	\$3,510,000				
Hourly Job	\$9.00	\$500,000	2008	\$6,450,904	\$9,494,070	\$5,966,048	\$4,371,269	\$8,005,987	\$4,716,507	\$2,978,372	\$6,392,453	\$3,615,300				
BS Salary	\$60,000	\$500,000	2009	\$6,644,432	\$9,778,893	\$6,145,029	\$4,502,407	\$8,246,167	\$4,858,002	\$3,067,723	\$6,584,227	\$3,723,759	\$2,004,912	\$2,295,000	Not Yet	
Graduate Salary	\$70,000	\$500,000	2010	\$6,843,764	\$10,072,259	\$6,329,380	\$4,637,479	\$8,493,552	\$5,003,742	\$3,159,755	\$6,781,753	\$3,835,472	\$2,004,912	\$2,295,000	Not Yet	
Total Level 1	6297			\$88,544,181	\$130,314,238	\$73,642,057	\$44,196,117	\$80,945,269	\$40,128,469	\$17,630,505	\$37,840,198	\$14,684,531	\$2,004,912	\$2,295,000		
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									Multiplier = "Total Economic Impact" / "Total Grant Dollars"							

The two undergraduate researchers were key to assembling the Discovery map and at the same time received a great deal of experience and personal fulfillment through the process.

Level 1	850	\$500,000	2006	\$6,080,596	\$8,949,072	\$5,623,572	\$4,120,340	\$7,546,411	\$4,445,760	\$2,807,401	\$6,025,500					
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Michelle Hall-Wallace, Assistant Professor
University of Arizona

“I believe their participation in experiment setup, dealing with experiment problems, such as coolant leak or instrument inconsistency, and setup, with data gathering and reporting, especially spreadsheet preparation, gave them experience with and appreciation for the scope of a project and the need for observations relative to consistency of experimental procedures. They show promise for becoming excellent researchers.”

Dr. Dennis L. Larson, Associate Professor
University of Arizona

“Accomplishments of underrepresented undergraduate students in my lab this semester: One Hispanic female graduated and plans to attend graduate school or medical school, one Hispanic female obtained an internship in the Computer Science program, one Hispanic male obtained an internship with fishery program, one Hispanic female (Jennifer Salaz) was accepted to UMEEB program which will continue her funding, and one Asian male graduated with a B.S. in biology.”

Dr. Diane L. Marshall, Professor
University of New Mexico

“...I think the project was a success, and both Luis and Juan have learned skills they would not have learned without participating in the WAESO project. I also believe that giving bright students an extra ‘pat-on-the-back’ and encouraging them to do something extra, is a good way to help them believe in themselves (and believe in what they are capable of accomplishing).”

Dr. Joanne V. Peeples, Instructor of Math
El Paso Community College

“The joy of the study was the interest perseverance, and patience that Paola Tovar showed throughout the investigation.”

Dr. Terry D. Schwaner, Associate Professor
Southern Utah University

“Two underrepresented undergrad students, who otherwise would not have research experience, were provided with an opportunity to obtain valuable research experience...” “This WAESO funding allowed them to participate in a scholarly research project and contribute their share.”

Dr. Rajeswari Sundararajan, Associate Professor
Arizona State University

“The students generally enjoyed discussing word problems, and felt better about their ability to translate word problems into mathematical language.”

Dr. Alireza Arasteh, Professor of Mathematics

Western New Mexico University

“There were several students who clearly were under prepared for the rigors of the class. Peer study with instructor mediation proved to be extremely helpful in enabling these students to learn the necessary logical reasoning skills necessary to be successful.”

Allison I. Bruce, Physics Instructor
El Paso Community College

“During study sessions, students posed questions related to: material that would occur on the upcoming Bio 181 exam, material from other science & math classes that students didn’t understand, student advising for future courses at the college, scholarship and internship application information, and for two of the peer study students they completed applications and were accepted into Honor Society.”

Dr. Marshall Logvin, Professor of Biology
South Mountain Community College

“The students that participated in the peer-study sessions, found them to be highly informative and helpful to those interested. When asked, the students felt that the study sessions were an excellent arena for open discussion and academic growth.”

Dr. Rolando M. Rael, Associate Professor of Biology
New Mexico Highlands University

“It was felt by all that the peer-study sessions combined with regular class sessions lead to a better understanding of the subject matter by students overall. Overall it appeared that the students greatly benefited from the peer-study group.”

Dr. Rolando M. Rael, Associate Professor of Biology
New Mexico Highlands University

“...as a consequence of regular participation in “Elements of General Chemistry Peer Study and Support Group five students obtain one letter grade higher than they would have if they did not participate.”

Dr. Kamala Devi Sharma, Assistant Professor
University of New Mexico, Gallup

“I sincerely thank WAESO and the NSF for your support. It has been wonderful to see Raymond develop.”

Dr. David Allred, Professor of Physics and Astronomy
Brigham Young University

“An underrepresented undergrad student, who otherwise would not have research experience was provided with an excellent opportunity to obtain valuable research experience by working closely with the PI and two grad research assistants.” “The WAESO funding allowed him to participate in a scholarly research project and contribute his share.”

Dr. Rajeswari Sundararajan, Associate Professor
Arizona State University

“All SROP (WAESO) participants were provided ample opportunity to learn more about graduate school and to discover graduate programs available in Utah.”

Karen Kwan, Director of Summer Research Opportunity Program
University of Utah

“The Project Director believes that the participating students learned cooperative learning, how to study in-groups and how to help one another. Students were asked to solve some homework problems by discussing among themselves. So they learned how to explain various topics to their own classmates and in turn became better at those.”

Dr. Kamala Devi Sharma, Assistant Professor
University of New Mexico, Gallup

“Students who participated in this project were both majored in Electronic Engineering Technology (EET). The both outperformed other students who were only taking my Linear Systems course and not involved in this project. Furthermore, they were highly motivated to participate in my future EET projects and very determined to go to graduate school and continue their education in the Electrical Engineering area.”

Dr. Hamid Allamehzadeh, Assistant Professor
Eastern New Mexico University

“In addition to the progress that he made in his own learning, Mr. Long became a valued leader in the research group. His understanding, not only of his own project, but of the projects of the other students, was at least equal to that of the best graduate student in the group.”

Dr. Douglas F. Dyckes, Professor of Chemistry
University of Colorado

“Michelle has benefited by interacting with fellow researchers in the laboratory. She has been able to work with physicians, basic-science faculty, physician-residents, research fellows, graduate, undergraduate, and high school students. These interactions give her perspectives into possible future career and school choices after graduation.”

Dr. Marlys Witte, MD, Professor of Surgery
University of Arizona

“Funding through WAESO has been instrumental in providing David with a significant research experience. He and I have greatly benefited from the program and we thank WAESO for the support.”

Dr. Judith Ulreich, Professor of Surgery
University of Arizona

“Adam’s experience will concretely help him in his goal of pursuing a PhD in astrophysics and becoming a minority member of the professional astronomical community. In particular, the research involvement will significantly bolster his graduate school applications.”

Dr. Jeremy King, Assistant Professor
University of Nevada

“For most student it will take a semester to get used to the lab environment before being able to perform accurate chemistry. Opposed to the lab courses that I took as an Undergraduate, I ran reactions at a much larger scale, I worked with much more volatile, chemicals, and I had much more responsibility.”

Doug Medina, Chemistry Student
University of Colorado

“Undergraduate research in an essential moiety of my application to graduate school. With research under my belt I have a much greater chance of acceptance to the school of my choice especially in a program that is research intensive.”

Charles Olea Jr., Chemistry Student
Arizona State University

“By taking part in this research class I gained a greater understanding of science than I had previously possessed. Because of this class I now have a broader view of the genetic field. I now have the background interest in case I decide to choose a career in genetic research when I finish my education in medicine.”

Paola Tovar, Veterinary Student
Southern Utah University

“This research class has given me confidence to tackle any problem that gets in my way. And to look down the road to see where my goals are at.”

Joseph Mondragon, Engineering Student
University of Southern Colorado

“WAESO’s display of confidence in me, both through funding my participation in this project and inviting me to attend the Graduate School Fair in Phoenix on March, 27, 2002 has caused me to begin believing that graduate school may be viable path for me.”

Nievita Bueno Hartness, Geo-Science Student
University of Arizona

“In doing this research I will gain useful experience that will help prepare me for graduate school. It will help me to improve both my laboratory and field techniques. I will be well prepared to conduct research at graduate level after I receive my Bachelor’s degree.”

Jennifer Salaz, Life & Biological Science Student
University of New Mexico

“My participation in these projects is of great importance to me because I am gaining first hand knowledge and experience in the field of Neuroscience. I am learning to critically examine questions through information gathering and data analysis. Through the practice of these valuable problem-solving techniques I am better prepared to overcome future academic and other intellectual challenges.”

Vanessa Lopez, Biochemistry Student
University of Arizona

“The opportunity of this research will be beneficial in the future of our higher education as both being biology majors.” “This research has given us the chance to visualize what actual lab technicians and researcher carry out for experiments on observations and ideas that they question. This research will be of great use to us for future graduate or doctorate programs.”

Karmen Billey & Julie Benally, Life & Biological Students
New Mexico Highlands University

“The ‘*WAESO Faculty-Directed Undergraduate Research*’ has provided me the first opportunity to conduct scientific research, and it has prepared me to become familiar for the type of work environment I expect in the future. In addition, the project has enabled me to acquire new skills and knowledge that will be very useful for my professional future.”

Cynthia Badilla, Chemical Engineering Student
University of Arizona

“I learned a great deal from my professor, my partner, and through experience. It was an excellent opportunity to expand my mind and become a better scientist. I have taken a step in the right direction and the newfound knowledge will be helpful in future research projects.”

Win Chung, Psychology Student
University of Nevada

“We thank you once again for the opportunity given, and on behalf of the Hispanic population we encourage you to keep supporting the minority students in the United States.”

Luis A. Vargas, Computer & Information Science Student
and Juan C. Muñoz, Industrial Engineer Student
El Paso Community College

“...the knowledge and experience I gained will never end. I will use this experience along with future opportunities to help develop myself into a superior student, a student that has determination, knowledge, and scientific methodology to span across the ever-changing world of science.”

Lorenzo L Nichols II, Life & Biological Science Student
University of Nevada

“Whatever type of graduate studies I choose to devote myself to, this will be a valuable experience for me. I had never been exposed to the process of biological research, and it has proved to be an interesting one, full of surprises and constant learning.”

Yadira Caraveo, Life & Biological Science Student
Regis University

“The most valuable lesson which was learned was how to perform research. This project was a good beginning for graduate level research work, because it exposes the researcher to some of the basic steps and challenges of research work.”

Tesla Hall, Industrial Engineering Student
University of Southern Colorado

“I planned on going to graduate school upon receiving my B.S., but was always a worried about the research part. I think this is why Dr. Fraser picked me to help with this project, because she knew I was interested in graduate school. After doing this research I am very excited about graduate school.”

Shayne P Castro, Veterinary Sciences Student
University of Southern Colorado

“I would like to thank WAESO for supporting me financially in this project. It has been a long-term desire of mine to participate in research of this sort, and the experience under the supervision of Dr. Ho has been rewarding both academically and personally.”

Daniel V. Garcia, Biochemistry Student
University of New Mexico

“The experience that we have gained from participating in this project has allowed both of us to understand how important graduate school can be.”

Juan Weaver and Leonard Huizar, Agriculture & Bio-systems Students
University of Arizona

“I have taken this project and gained valuable lab experience working with theory, computer simulation, hardware implementation, and research.”

Jeremiah Mullen, Engineering & Applied Sciences Student
Eastern New Mexico University

“I feel this experience has given me an advantage for graduate studies. Without this experience I would be just another college graduate not knowing what it takes to make it in graduate school.”

Jason Long, Chemistry Student
University of Colorado

“Once again I’d like to thank WAESO for giving me the opportunity to assist in the Autonomous Robotics project. I strongly feel this is the kind of experience students should acquire if they are interested in pursuing a Computer Science or Engineering degree. With research projects like the one I was involved with, students not only learn a great deal amongst each other, but from their mentor as well. Everyone involved in a research project gains, since a little or a lot is learned from each individual.”

Adrian Romero, Computer Science Student
New Mexico Highlands University

“I now have some actual hands on experience, which will assist me in further courses. Due to my participation in this project I have also gained lots of discipline, better time management, problem solving skills, and better understanding of how to work as a team. I believe that this experience will play a big part of my success for my degree in Computer Science.”

Ben Santos, Computer Science Student
New Mexico Highlands University

“This WAESO funding has enabled me to conduct research at a level that most undergraduates aren’t exposed to. As I pursue a BS degree in Biochemistry, I feel that this project along with WAESO’s support has furthered my understanding of basic science research and increased my chances of matriculation to graduate school.”

David Caretto, Biochemistry Student
University of Arizona

“The both of us are biology majors with an interest in acquiring a graduate degree in microbiology. The opportunity to conduct research was both educational and rewarding to the both of us. Attending lectures is a main tool in our education but the ability to perform the research ourselves allowed us to use the concepts we have studied and therefore have a better understanding of them We wish to thank you for offering us the ability to gain valuable lab experience which we will use in our professions.”

Jon Vigil and Robert Castillo, Biology Students
New Mexico Highlands University

“All of these activities were of great importance, not only because they contributed to research that has been carried out for many years, but also because they have provided me with skills that will help me to pursue and obtain a graduate degree in the future. My experience in the lab has helped me put to use critical thinking skills, problem solving techniques, and gained first hand knowledge of Biomedical research.”

Vanessa Lopez, Biochemistry Student
University of Arizona

“Currently I am pursuing my B.S. degree in Health Physics. After completion of this, I plan to attend either Graduate school or Medical school. This work was invaluable to me in either of these future plans because it provided me with excellent experience working in a professional lab setting, as well as assisting me in learning proper lab techniques, paper writing, and scientific terms that I previously have not been exposed to.”

Derek Stephenson, Health Physics Student
University of Nevada

" I believe the experience with seeking information, evaluating performance of the University of Arizona power unit, drawing the parts, reporting his project experiences and working with experienced researchers provided Johnny [Hordge] with a picture of research which will assist him with determining whether research is a desirable future activity and should help him in upper division courses requiring completion of independent projects."

Dr. Dennis L. Larson, Associate Professor
Dept. of Agricultural and Bio-systems Engineering
University of Arizona

"I found the experience working with undergraduate students to be personally rewarding and felt that the students gained an insight into the research process and more maturity because of the self-motivation required."

Dr. Bill Taylor, Associate Professor
New Mexico Highlands University

"This research project allowed me to gain insight on thermal energy and small solar engines. In addition, it also placed me in a situation where I am able to get one on one attention with Dr. Larson. I find this important at a major university. Since The University of Arizona is so big, I would not normally get the one on one attention."

Johnny Hordge, Undergraduate Assistant
University of Arizona

" This project provided me with an opportunity to see first-hand what the design process entailed. It showed me how a collaboration of efforts among different disciplines within engineering is useful, and often times, essential in design. It enabled me to gain insight into research methods and showed me what skills I still need to improve for a future in graduate school and, ultimately, the medical devices industry."

Marie L. Moralde, Undergraduate Assistant
Arizona State University-East

"Mr. Leyba has greatly contributed to the research project and has benefited greatly from the experience."

Dr. George W. Morgenthaler, Professor
University of Colorado at Boulder

"I think that Dalia and Victor did get a good review of Math 310, which will help them in the future. I have found from talking with them, they will look at a course differently now, in a manner that is more general, trying to understand what will be needed in further courses."

Dr. Joanne Peeples, Professor
El Paso Community College

"Jason Rodrigues worked with myself and Xiaowei Zhang on the preparation of a naturally occurring protease inhibitor. Their efforts in the submission of a manuscript to the *Journal of Organic Chemistry*. Jason also had the opportunity to perform some molecular modeling experiments to learn how the inhibitor fits within the active site of HIV-protease.

Dr. Michael R. Peña, Assistant Professor
Arizona State University

"The project is approved as my senior thesis. It is the final course to fulfill my educational requirements for a Bachelors of Science at the University of Utah. It has helped me realize how education applies towards real world applications and solutions."

Veronica De Hart, Science Student
University of Utah

" We received positive feedback from the students and all participants expressed interest in pursuing further research opportunities. One of the participants will enter the physical therapy program in fall of 97 and the other two are continuing on a premedical track and plan to apply to medical school or a graduate science program...."

Dr. Thomas Samuel Shoemaker, M.D., J.D., FCLM
Associate Dean for Curriculum & Minority Affairs
University of Utah School of Medicine

"The student made impressive progress and now that he has finished his final report for this project he has expressed an interest in planning the next project which will culminate in the development of a better initial strain gauge bonding system."

Dr. J.A Szivek, Ph.D., Research Professor and Director
Orthopedic Research Laboratory
University of Arizona

"Two undergraduate students participated in our controlled ecological life support systems (CELSS) research program with the support of WAESO. Both worked well with our interdisciplinary CELSS research team...."

Dr. Bill Taylor, Associate Professor
New Mexico Highlands University

"Tom gained valuable experience with flow injection analysis, thin layer electrochemical cell, electroanalysis and data manipulation...He constructed a superbly performing system that we are currently using in new experiments, demonstrating a talent for instrument design."

Dr. Greg M. Swain, Assistant Professor
Utah State University

"When we got started...in May, we changed the focus of her [Ilima Willing] research from ion beams to pedagogy [Physics Education], specifically issues in the teaching of physics to beginning university students. I have been gaining more interest in this topic and was glad to have a student to help me research this."

Dr. David Allred, Professor
Brigham Young University

"...Even though we were not able to apply the more sophisticated techniques to our research this semester, the students were able to complete a study that was initiated last semester on the effects of cations on reversible inactivation of MS2 bacteria-phase. Part of this study was presented at the 97th National Meeting of the American Society for Microbiology...and one of the students was a co-author of the paper presented at the meeting."

Dr. María Álvarez, Program Coordinator
El Paso Community College

"During September - December 1997, we undertook 8 experiments. We compared Doppler ultrasonic and magnetic resonance flow measurements of human renal blood flow. Concurrently, we developed an abdominal aortic high flow rate phantom to simulate in vivo flow conditions. Results are given in the enclosed abstracts which will be presented at the 42 AIUM meeting in Boston in March 1998". Each student has learned the basics of medical imaging, acoustics, signal processing, and fluid mechanics. Both anticipate receiving BSE degrees in Spring 2000. WAESO support is greatly appreciated".

Dr. Dick Greene, Professor
New Mexico Highlands University

"The research conducted this term by the student researchers has contributed considerably to the ongoing research on the Tsaile Creek Water Shed, and to the research on the correlation of roughness coefficients with stream flow using Manning's Formula."

Carlton G. Ami, Physics/Geology
Navajo Community College

"Practical and scientific experience was gained from this research project and I thank WAESO and the University of Southern Colorado for this opportunity".

Brian Monroe, Chemical Engineering Student
University of Southern Colorado

"...Give students hands-on research experience that will inform them about the scientific process...Give students experiences that will increase their interest in attending graduate school. Through participation in our WAESO-sponsored research project, Rico is well on his way to accomplishing these goals".

Dr. José Nañez, Professor
Arizona State University

"The foundation gained through this research will allow for more complicated experiments to be conducted and refinement of a control algorithm, using Linear Stochastic Estimation LSE, for adaptive optics control."

C. Randall Truman, Mechanical Engineering
University of New Mexico

"The results of Jessica's work are of potential significance in expanding the pool of organ donors to include non-heart-beating donors."

Dr. Judith B. Ulreich, Professor -Molecular/Cellular Biology
University of Arizona

"Daniel Gerhart-Macias, who was supported in the past via CIMD funded projects, is attending graduate school full time at the University of Arizona."

Dr. Emmanuel Fernandez, Electrical Engineering
University of Arizona

"AMP-NET of WAESO is an excellent program giving minority undergraduate students the opportunity to work closely with faculty members and gain experience with computers as well as 'tutoring'."

Dr. Satya Harpalani, Mining and Geological Engineering
University of Arizona

"With the support provided by CIMD, two minority students, Manuel Gallegos and Gurupartap Davis, were employed for approximately ten weeks. Together, they were able to create more than fifty new problems for the AMP-NET system, and learned a good deal about what makes up a good problem and how to write solutions for people who don't already know the answer. They also gained a real appreciation for the amount of effort required to make good problem sets."

Dr. Colin Wightman, Electrical Engineering
New Mexico Institute of Mining & Technology

"Working on designing problems has given me a better understanding on the design and solution strategies. From designing and writing solutions for problems, I am now consciously aware of my thoughts when I am solving problems in my classes."

Manuel Gallegos, Electrical Engineering Student
New Mexico Institute of Mining & Technology

"I think the AMP-NET is a great idea. Students who don't have access to tutoring at their school could use the system to help with tricky homework problems, help study for tests, or just help understand some basic concepts that whizzed by in class. I think of it as sort of a USENET for students, with a generous population of experts in the subject constantly answering questions and providing helpful hints."

Gurupartap Davis, Electrical Engineering Student
New Mexico Institute of Mining & Technology

"On Wednesday, May 10, 1995 the group presented their methods of field analysis as well as their findings to an audience composed of faculty, students, administrators, and others in a public seminar held on the college campus. Each group member gave a ten minutes presentation, which was followed by two to three minutes of questions. We plan to present the project at the Annual Conference of the American Indian Science and Engineering Society in November of this year. Additionally, we hope to get the findings published by the Arizona Geological Survey and the Arizona Nevada Academy of Sciences."

Carlton G. Ami, Physics/Geology
Navajo Community College

"All the students who regularly attended the study group received a grade of either A or B."

Dr. Thomas Gruszka, Mathematics

Western New Mexico University

"Each of the students indicated that they really used the graphing calculator as a tool in their classes and it allowed for investigations they would not have undertaken on their own without the use of the graphing calculator."

Dr. Carl Kerns, Mathematics
Mesa State College

"We feel that the project was a success. All but one of the students completed the computer science courses they were enrolled in. Many of the students improved their performance significantly throughout the semester."

Dr. Wayne Summer, Curtis Sollohub, Computer Sciences
New Mexico Highlands University

"The CIMD-sponsored students were involved in an exciting and highly motivating research project, which exposed them to problems and solution techniques in a major emerging area of engineering research and development in the USA."

Dr. Emmanuel Fernandez, Electrical Engineering
University of Arizona

"After taking part in my research project, I have found myself taking a look at possibly attending graduate school for research that may not necessarily deal with this type of research. I am certain this experience will only be a stepping stone in my quest for continued education and I feel fortunate to be a part of a project of this importance."

Sergio Gonzales, Electrical Engineering Student
University of Arizona

"Students were lively and interested during the class meetings and were enthusiastic about the weekly group meetings. The sessions were enjoyable for instructor and students alike."

Dr. Frank Metzler, Mathematics
University of New Mexico

"The students were enthused about the project and both expressed interest in continuing work in this area next year. I feel that both caught some of the contagious taste of excitement involved in solving a 'real' problem as opposed to a text book problem."

Dr. George Cunningham, Electrical Engineering
New Mexico Institute of Mining & Technology

"Both students will be attending highly selective graduate schools. Results of the project were peer-reviewed and presented at the 36th Annual meeting of the American Institute of Ultrasound in Medicine".

E.R. Dick Greene, Biology
New Mexico Highlands University

"Overall he did an excellent job of determining the appropriate experimental conditions to conduct our measurements of thiazolidine dissociation. He is ready to tackle out target compounds first thing Winter quarter. In particular he presented his progress at two separate lab meetings in a coherent and organized fashion. He will be presenting his work in a poster format at the incoming 7th National Conference on Undergraduate Research to be held here at the University of Utah".

Jeanette Roberts, Chemistry
University of Utah

"After participating in this research project, I have found myself motivated towards pursuing a degree beyond the undergraduate level. Not only will the experience be of great importance but it will benefit me in my continued education."

Gabriel M. Gomez, Emmanuel Fernandez, Electrical Engineering Student
University of Arizona

"Through projects such as these that CIMD funds, we are able to help students reach inward for strength and use it to acquire knowledge. With funding of projects such as the El Paso Community College Math Peer Study Group Project, we can work towards increasing the number of minority students that can work towards acquiring this knowledge and use it to successfully obtain their degrees."

Lucy Hernandez Michael, Mathematics
El Paso Community College

"The help rendered by CIMD/WAESO is deeply appreciated."

Dr. Vama Robson, Biochemistry
Navajo Community College

"The response of students has been good. One of the students I have now told me last week, 'Hey, this research thing is fun. I may want to do more of this.' The CIMD goal of awareness of and interest in advanced degrees has increased. I also have the impression that the mentoring contact with the students may have increased their ability to excel in their current classes."

Dr. David Allred, Physics and Astronomy
Brigham Young University

"This experience will be useful and helpful as I proceed with my education into graduate school. I plan on obtaining my Master's degree in Physics, for which this project has been a great introduction."

Clief Castleton, Physics and Astronomy Student
Brigham Young University

"Having Sarah as an excited and dedicated student for our effort is not only beneficial for us in our pursuit of the project but also with respect to her successive integration into higher education."

Dr. Supapan Seraphin, Materials Science and Engineering
University of Arizona

"Working in the laboratory allowed the students to stop working at a desk in the library so that they could gain valuable experience. One of the students will be graduating in December of 1995. He hopes to obtain a position working on environmental problems. The other is a sophomore, and should complete her degree in May of 1996. She hopes to attend medical School.

Dr. Kimberly L. Ogden, Chemical/Environmental Engineering
University of Arizona

"I am very proud of the work accomplished by two undergraduate students and I feel that they did an excellent job with the research and with their project report."

Dr. Rolando M. Rael, Biology
New Mexico Highlands University

"We gratefully thank The CIMD organization out of Arizona State University for the funding necessary to perform this study."

A.A. Quintana, J.J. Gonzales: students of Rolando Rael, Biology
New Mexico Highlands University

"Thank you for your support of another year of the NASA/CIMD Summer Bridge Program. Thanks to your help more students were able to participate."

Carla Romero Buddenhagen, Engineering Student
University of New Mexico

"Thank you again for your continuing support of the SMART program. Your commitment to this program has enabled us to continue to offer outstanding minority undergraduates an opportunity to conduct research and learn about graduate education."

Rodney L. Taylor, Graduate School
University of Colorado at Boulder

"The experience that I have gained from working in the lab is priceless. I was able to develop my own techniques and learn skills that are not taught in lab class."

Nicole King, Chemistry Student
University of New Mexico

"Based upon research and experience, the instructors believe the collaborative learning (teaming) emphasis helped students to improve significantly (both academically and socially) because students played an active role in their new learning environment."

Marian G. Barchilon, Manufacturing and Industrial Technology
Arizona State University

"By utilizing collaborative learning teaching methods and principles, the students began developing the academic success strategies and study skills necessary to succeed as engineering and science students."

Dr. Isidro Rubi, Minority Engineering Program
University of Colorado at Boulder

"The main goal of the project-- to expose minorities to research and thereby heighten their interest in post baccalaureate education--was apparently achieved. Ms. Marin has completed her B.S. and has started her M. S. program. I strongly support this program and will probably participate again."

Dr. Larry Baker, Environmental engineering
Arizona State University

"The CIMD program encouraged me to apply and participate in other research programs because I was introduced to techniques and knowledge I was not aware of. I am grateful that I participated in the CIMD program which strives to close the gap that exist in education among the races and both sexes."

Valerie M. Hernandez, Physical/Chemistry Student
University of New Mexico

"Overall, I would rat CIMD as an excellent program giving undergraduate students the opportunity to gain experience working on research projects."

Dr. Satya Harpalani, Mining and Geology Engineering
University of Arizona

"The program Coalition to Increase Minority Degrees (CIMD) gives student the opportunity to increase their knowledge in their field of study. It gives an opportunity to receive hands-on-training in specific areas."

Jose Triana, Mining and Geology Engineering Student
University of Arizona

"I think it's worth noting that he has mentioned more frequently the possibility of postgraduate education. He is clearly aware of the subtleties involved in such research".

Dr. Edward D. French, Pharmacology
University of Arizona

"Marc presented some of his results at a recent meeting in Chicago on behalf of CIMD/WAESO. His poster was well received."

Dr. Bernard McNamara, Chemistry
New Mexico State University

"I appreciate the support provided to my group by CIMD/WAESO over the last several years, and it is my intent to apply for a new Peer Study Group grant this coming Fall. Thank you very much."

Dr. Steven C. Semken, Earth and Environmental Sciences
Navajo Community College

"Your support was extremely valuable to my research program, and especially so for Mr. Rubio. With this opportunity, he developed his interest in plant biology research and showed a deep commitment to continuing his education. Of the many undergraduates I have supervised in my laboratory, he shows the most zest towards research work."

Dr. David B. Wing, Biology
New Mexico Institute of Mining and Technology

"Participants were also encouraged to attend conferences which would provide them and opportunity to support research activities. As a result, one participant (Sam Kuhn) was able to attend a robotics conference in Seattle and other participants were able to attend an environmental conference in the Sundance Institute, near Provo, Utah."

Christopher Villa, Graduate School
University of Utah

"Mr. Lambeth continues to work with the Assistant Project Director during the current Fall semester, with his support transferring from the CIMD grant to one of several grants held by the Project Director and Assistant Project Director. It is expected that he will continue to play an important role in our research into improving atmospheric modeling in high latitudes."

Dr. Judith Curry, Atmospheric Sciences
University of Colorado

"I am grateful there are programs for minorities to be involved in the science field and I plan to take advantage of gaining as much experience as I can to be successful in the lab."

Mai-Ly Ramirez, Chemistry Student
Arizona State University

"Probably the most rewarding of my experiences was the hands-on training that I received in dissection techniques. I learned much about procedures and protocol and of the importance of teamwork and communication. I am also very grateful to CIMD for the funding that made this experience possible."

Crystina Maria Burgess, Biology Student
University of Arizona

"The success of the program can be easily measured by the fact that three of the students from the program gained great experience and were selected for a National level NSF-Undergraduate fellowship, which paid them well through the summer."

Dr. V. Chandrasekar, Electrical Engineering
Colorado State University

"The students enjoyed experimenting with the given exercises and came to understand the concepts thoroughly due to repeating the procedures. They also came away with some basic understanding of what a microbiology class investigates."

Dr. Judy Baros, Biology
Pikes Peak Community College

"One of the students obtained a CO-OP position at Los Alamos national Laboratory this spring. Another is progressing well, and learning the synthetic procedures for the project. Another student who participated last year, graduated last summer and is now a graduate student in our masters of sciences program".

Ronald D. Clark, Organic Chemistry
New Mexico Highlands University

"Progress on the design of a 'particle detector' has gone along well, and the design is finalized. The student has been involved for 2-3 hours each week of the Spring semester of 1992. The detector is able to monitor the polarization rates of the intermediate nuclear physics experiments."

Dr. Ricardo Alarcon, Physics
Arizona State University

"A real interest in science was beginning to develop in these students and I sincerely hope that this project can be continued."

Dr. Judy Baros, Biology
Pikes Peak Community College

"The computer drills proved to be particularly popular and many students asked to extend their practice beyond the scheduled time period."

Dr. Tom Cheavens, Chemistry
New Mexico Highlands University

"Although we did not submit a proposal for spring '93 we will continue with our project and continue to develop our research effort. We appreciate the support of CIMD through the past three semesters and one summer. During this time our research effort started from a collection of inexperienced individuals to a productive group at present".

Dr. David A. Pinnick, Department of Physics
Eastern New Mexico University

"In accomplishing the research objectives, Taschia gained mastery of a number of laboratory skills. This experience also honed her observational skills and her understanding of the scientific method and instilled in her some confidence about her research capability. She found the experience very enriching".

Dr. Emmanuel Akpoeiaye, Biology
University of Arizona

"One of our past CIMD students made a presentation at the NSF conference. This was well received. She was subsequently contacted by the University of Michigan, Chemistry Department and encouraged to apply to their summer minority student undergraduate program".

Dr. Bernard McNamara, Chemistry
New Mexico State University

"The students showed great enthusiasm for the project and seemed to be genuinely excited about working in a "real" research environment. In addition to the attached report, the students produced a poster representing their work, which was displayed at the 1992 CSSER Industrial Partnership Program meeting. It was viewed by many industrialists from companies throughout the U.S. It is now on permanent display in the CSSER. They were also co-authors of a paper to be presented at the 183rd Meeting of the Electrochemical Society in May of this year. Their contribution to the overall CEVE research project was invaluable".

Dr. Michael N. Kozicki, Chemistry

Arizona State University

"The results of the students' research was very unique and was considered an important contribution to the project. The report produced by the students was part of a paper presented in a conference at the Los Alamos National Laboratory on April 22, 1992. The title of the conference was 'WERC Technology Development Conference' and the name of the paper was 'Reclamation of Lead Contaminated Soils'."

Dr. Zohrab Samani, Agricultural Engineering
New Mexico State University

"The six Navajo students who participated in this peer study group benefited by gaining a more comprehensive view of the relationship of Geology with the natural sciences, and particularly by developing a quantitative understanding of several environmental problems that are of great interest: Global warming, ozone depletion, toxic-waste minimization and cleanup, and solid-waste management."

Dr. Steven C. Semken, Geology
Navajo Community College

"The results of the program are very exciting. Two of the students were placed well in summer internships and were able to gain lots of knowledge about scientific concepts. Also, two students were selected for the NSF REV Program."

Dr. V. Chandrasekar, Electrical Engineering
Colorado State University

"During April 9-11, Chris Gonzales, Ray Ruiz, and I participated in a Waste Management and Environmental Science conference in San Juan, Puerto Rico, where Chris prepared a poster presentation."

Dr. Gerald Z. Jacobi, Biology
New Mexico Highlands University

"With the continued support that CIMD recently approved, Chris will be able to continue to work with us, and to use the reactor he has helped to build to fabricate electrochromic coatings. Most importantly, the fact that Chris wants to stay and work on this is an indication of the success of the Program."

Dr. Brian Fabes, Electrical Engineering
University of Arizona

"The undergraduate research assistantship gave me the opportunity to get practical lab experience and gave me the incentive to pursue my higher education by going to graduate school. The financial support given by the CIMD is very important in helping people to obtain their dreams and make an impact on our environment and the world."

Chris Rodriguez, Civil Engineering Student
New Mexico State University

"The project at BYU is part of a project search that NASA has been pushing for a quality design for: a space based telescope. The area of concern in this part is the development of a window for the telescope to look into space with."

Dr. David Allred, Physics
Brigham Young University

"Based on the results of our productive semester we have submitted a paper that has been accepted at the International Weather Radar Conference to be held this summer. The student will be presenting this paper and an abstract".

Dr. V. Chandraskar, Electrical Engineering
Colorado State University

"Because of the demands of the community college student, peer networking skills outside of the group were difficult to develop, although students within each class did develop some of these skills. In particular, two students were receiving "F's" before joining the group. At the end of the semester these same students received "B's". Many of their career choices were initially in business/undecided, but after a semester in the peer study group, 44% have decided to pursue the calculus sequence and forego the business major. Since 88% of the group completed College Algebra, as compared to 71% for the department average, we have concluded that this peer study group was a success".

William A. Armstrong, Mathematics
Phoenix Community College

"I was particularly impressed with the students' creativity in regard to the design of the flexible membrane and how it would be deformed. The students obtained a good idea of what graduate laboratory work involves. It is known that one of the students is going to pursue a graduate degree in Mechanical Engineering. The CIMD-funded project is believed to have contributed to this decision."

Dr. Joseph C. Klewicki, Mechanical Engineering
University of Utah

"The students have achieved high levels of understanding through practical application of research skills. José Rodríguez for example has learned to use an extremely complex machine, an atomic absorption spectrophotometer."

Dr. Fernando Cadena, Civil Engineering
New Mexico State University

"Ms. Issaias received an academic achievement award from the Faculty of Science and Ms. Begay is being sent to the Society of Chicano and Native Americans in Sciences (SACNAS) meeting in San Antonio. Both look forward to continued work in the laboratory."

Dr. Marc E. Tischler, Biochemistry
University of Arizona

"I have advised him on data analysis and interpretation, and guided him in the preparation of our results for publication. We submitted a manuscript entitled, " Thalamocortical Patches in Auditory Neocortex " to the journal Experimental Brain Research. He also traveled to Anaheim, California in October 1992 to present his latest developmental findings at the Society for Neuroscience Meeting. We also submitted an abstract to be presented in poster form at the annual meeting of the Association for Research in Otolaryngology to be held in Florida, February 1993. Finally, he had a successful meeting with his Dissertation Advisory Committee at which time the informed members of his progress to date and obtained their approval and advice on the direction of his research project. Members of his Advisory Committee were unanimous in their enthusiasm about his results and progress".

Nathaniel T. McMullen
University of Arizona

"Each Friday afternoons the students meet with several other research students and the instructors in a formal research class to coordinate activities, address problems, share information, gain confidence, gain new insights and fields of study and discussions of graduate and career opportunities".

Robert Mishler, Chemistry
New Mexico Highlands University

"Both students (Katrina Baca and Rhonda Saavdera-Chavez) learned to operate two major analytical research instruments and both experienced the exhilarating highs and discouraging lows of a typical research project in organic synthesis."

Dr. Tom H. Cheavens, Chemistry
New Mexico Highlands University

"I can certainly report that Nick Gonzalez has become very involved and very excited about the experiments he has done and is anxious to come back in the fall to continue. The stipend from CIMD paid \$600 to Nick, but he became so enthusiastic he worked so well and so much that I supplemented this from grant money. He is a star!"

Dr. Elizabeth A. Bernays, Entomology
University of Arizona

"Gregory Sauro, the participating student, thought that the project was challenging, and said that, 'I have gained a great deal of information and experience working on this research project for the CIFER Laboratory.' "

Dr. David Munoz, Mechanical Engineering
Colorado School Of Mines

"Jeffrey Leyva was a failing student in my introductory Organic Chemistry/Biochemistry course last fall and repeated the course in Spring 1992. His grades improved substantially during his participation in the CIMD program and he was sustaining a B average during the semester. The familiarization of students with the scientific research environment during this project has also changed negative attitudes of students towards science."

Dr. Sandra Bonetti, Chemistry
University of Southern Colorado

"The long range implication of this peer study group is helping the mathematics department develop students who are interested in its graduate program."

Dr. William Yslas Velez, Mathematics
University of Arizona

"The two students (Andrew Benjamin and Susan Caseday) are using state-of-the-art software for their experimentation. Susan, who is working on the development of a giant antenna structure, has generated some important real world applications."

Dr. V. Chandrasekar, Engineering
Colorado State University

"The participating student was required to produce a paper to show the level of competence that the student was able to achieve. This demonstrated to the professor that the student understood the information and demonstrated the actual scientific process to the student."

Dr. Fernando Cadena, Civil Engineering
New Mexico State University

"The impact of these peer study sessions on the students has been extremely positive. The P.I. began receiving computer generated graphics in general chemistry and students incorporated spreadsheet presentations and graphics in their physical chemistry reports."

Dr. James Giulianelli, Chemistry
Regis University

"Students expressed their appreciation for the Math Peer Study Group and even stated that they would have withdrawn had it not been for the existence of the group. Also, having a classroom

available enabled students to be able to go to the board and work problems, which seemed to help in building speed and confidence."

Professor Leonard Heath, Mathematics
Pikes Peak Community College

"The two students are excited and in conversations with me at least one of them has indicated that she plans on going on to graduate school."

Dr. Curtis Solohub, Computer Science
New Mexico Highlands University

"This spring, Erik Gómez gave his presentation in the Bio 487 course on the molecular genetics of embryogenesis in *Drosophila*, and Daniel Kinikini gave one on the biological roles of nitric oxide."

Dr. Patricia Renfranz, Biology
University of Utah

"As a result of the students' research, they will be giving a presentation at the Undergraduate Research Conference at the University of Utah".

Dr. Bill Taylor, Engineering
New Mexico highlands University

"The most remarkable success story was lived by a Peer Study student, who had an "F" in Physics at midterm and managed to fight his way to the top of the class, finally earning an "A" for his final grade. Also during the Fall 1992 semester, two of the students in the Peer Study Group visited elementary schools to give Space Science presentations for the Kindergarten through third grade. Several students are already looking for summer research positions; one has been offered a work-study position at NASA Ames Research Center. The students are looking forward to participating as judges in the Northeastern Regional Science and Engineering Fair and at the Mathematics, Engineering and Science Achievement competitions".

Dr. Bill Taylor, Engineering
New Mexico Highlands University

"One of the greatest accomplishments of the peer study group was its role as a social support system. The students were very shy about seeking help with their studies and were pleased to learn that other native American students required help. For most of the students, the large, fast-paced lecture classes were terrible intimidating. Accordingly, providing a safe place for students to get help and air concerns about their studies was important".

Steve D. Moore, Biology
University of Arizona

"I believe that by showing College Algebra students that advanced concepts in math are comprehensible, their confidence levels were increased."

Professor Barbara Krueger, Mathematics
Cochise Community College

"It was refreshing to work on the planning and design phases of this project. It helped bring together all the aspects of graduate student research which has made the idea of pursuing a master's degree more appealing to me."

Rosanna Leos, Civil Engineering Student
New Mexico State University

"His performance has been impressive. He learned valuable laboratory and analytical skills that helped to prepare him to work in a research laboratory in the biological science. During Spring quarter, he gave an excellent presentation to the class titled "Visual pathway of the Brain".

Dr. Patricia Rentranz, Biology
University of Utah

"The results which were obtained by the students, culminated in a poster presentation at the 69th Annual meeting of the Southwestern and Rocky Mountain Division of the American Association for the Advancement of Science meeting held in Albuquerque, NM on May 25, 1993. In addition, a draft of a manuscript is being developed and will be completed for publication by the end of the summer 1993".

Dr. Larry K. Sveum, Chemistry
New Mexico Highlands University

"Both students working on this projects have already graduated. One is a graduate student at the VLSI program another is very interested in entering our graduate program. I think working on this CIMD project played an important role in motivating them to enter graduate school".

Dr. Jaime Ramirez-Angulo, Engineering
New Mexico State University

"As the result of the research, one of the students will be co-author on two papers to be published in international journals. These are in early draft stage. The development and interest to the students has been excellent".

Dr. E.A. Bernays, Biology
University of Arizona

"His supporting work in this new field of "Atmospheric Pressure Ionization mass Spectrometry" lead to several research projects to which he contributed as a member of the research team. The

research has resulted in a publication "Adsorption and Desorption of Gaseous Impurities on Metallic and Polymeric Filters".

Dr. Stephen L. Gilbert, Electrical Engineering
University of Arizona

"Most of the students involved in this program, were committed to the program and reflected the enthusiasm of the faculty for their research. The CIMD participants have mentioned that this program helped them form friendships that became important for the survival during the freshmen year. Most of the CIMD students have applied for scholarships, summer research programs, and for the Minority Biomedical Research Program student stipends at USC".

Dr. Sandra Bonetti, Chemistry
University of Southern Colorado

"Lori Bachert and Adam Tanuz assisted in the experiments and were responsible for 'in vitro' calibration of the noninvasive Doppler flowimetry equipment and the development of the 'in vitro' flow model. The results of this completed study will be presented by the students at a regional meeting of the Instrument Society of Americans in December 1992."

Dr. E.R. Greene, Bioengineering
New Mexico Highlands University

"Brenda Van Keuren will co-author a presentation that will be delivered to The Entomological Society of America this summer."

Dr. James Hagler and Eric Erickson, Entomology
University of Arizona

"After reading several books about ecology in general, and seed ecology in particular, Debra decided to perform a research project focusing on how seed weight in the mustard *Lesquerella fendleri* effects subsequent germination and plant performance."

Dr. Diane Marshall, Biology
University of New Mexico

"The experience for the students was an excellent introduction to biomedical epidemiology."

Dr. Mark Bauer, Anthropology
Navajo Community College-Shiprock

"We have had some exciting observations and the student is co-authoring a research paper in a scientific conference to be held in Montreal during this summer. The student is planning to take one of the exams for the graduate program soon."

Dr. V. Chandrasekar, Electrical Engineering
Colorado State University

"The New Mexico Tech Electrical Engineering Peer Study Group unquestionably improved the work of several students from underrepresented groups. In fact, one student commented that he had gotten more good out of one of our sessions than he had out of two weeks of his math class."

Dr. George A. Cunningham III, Electrical Engineering
New Mexico Institute of Mining and Technology

"Both students made considerable progress, not only in their research projects, but also in their maturity as scientists. In fact results from Delissa Jiménez's work are to be incorporated into a paper that will be given at the Materials Research Society Meeting next fall. The support from CIMD, which has allowed two minority students to participate in real-world laboratory research, is critical in encouraging underrepresented men and women to pursue careers in science and engineering. I am confident that their experiences as undergraduates will encourage both of these students to go on to graduate school."

Dr. Brian D. Fabes, Electrical Engineering
University of Arizona

"There was a dramatic rise in the scores of the first test which covered classical genetics and Mendelian type crosses. Last year the class average on the first test was 68%. This year it was 85%. Overall grades for this semester as compared to last showed a definite improvement. Last year there were 2 A's, 6 B's, 10 C's, 1 D, 1F and this year there were 7 A's, 4 B's, 1 C, 1 D, and 1 F."

Dr. Nancy Kirkpatrick, Genetics
New Mexico Highlands University

"A highlight of the year occurred last weekend (4/11/92) when Arthur Gómez presented his research results at the Undergraduate Research Symposium sponsored by the Space Grant Program."

Dr. Lisa Graumlich, Molecular Biology
University of Arizona

"The project was a tremendous learning experience for the student. Having to design the procedures, order the materials interact with technical personnel at the suppliers, and perform the experiment gave him a taste of a real research experience. This experiment was an extension of many concepts that had been presented in a previous genetics class. The project allowed these concepts to be removed from the realm of abstraction and provided the student with valuable hands-on techniques in molecular biology that will prove useful in the long term."

Dr. Anthony Sena, Molecular Biology
Northern New Mexico Community College

"I think that George Dale has a better understanding of what it means to balance the many demands of what we call 'teaching' - i.e., teaching, writing, research - as well as the rewards which come from dealing with these divergent demands, rather than putting off the unpleasant things for later."

Dr. Brain Fabes, Electrical Engineering
University of Arizona

"The minority students who came to the Peer Study groups had an average grade that was almost a full letter grade higher than motivated students who did not attend the study groups."

Dr. Julian Blair, Chemistry
Colorado State University

"The students were very happy with the program and the results of their final exam scores. They have been asking our department for the continuation of the CIMD."

Dr. Valiollah Nooshabadi, Sociology
Navajo Community College

"In our study, we emphasized the true understanding of the theory and the pursuit of symbolic analyses. It paid dividends. We saw dramatic improvements in the students' train of thought."

Dr. Vincent Choo, Mechanical Engineering
New Mexico State University

"The results of this funded project include students Julia Geffroy and Monica Gurule, presentation of findings at the Southwestern Anthropological Association 63rd Annual Meeting in Berkeley, California, April 10, 1992."

Dr. Robert Mishler, Physical Anthropology
New Mexico Highlands University

"I am very happy to have David Deherrera in my laboratory. He is an enthusiastic, interested and hard-working individual and represents a model for any student, minority or otherwise. I commend the CIMD and I hope that future research in my laboratory by David or others will be favorably received."

Dr. Jeanette C. Roberts, Chemistry
University of Utah

"I was continually impressed with how these Peer Study Groups helped the students to understand basic genetics. Remarkable improvements were noted in performance of students who attended them. Even more rewarding was how students' attitudes regarding human hereditary diseases and biotechnology changed as their understanding of genetics increased."

Dr. Vama Robson, Genetics

Navajo Community College-Shiprock

"The financial support by the CIMD is greatly appreciated and this research assistantship gave me the opportunity to see first hand the type of work performed as a Master's or Doctorate candidate."

Charles Sanchez: student of Ricardo Jacquez, Civil Engineering,
New Mexico State University

"The mathematics department has been very impressed by the quality of these minority students and I believe that my proposal to integrate minority students into the academic life of this university has been successful."

Dr. William Velez, Mathematics
University of Arizona

"The students formed valuable relationships as a result of the Peer Study Group. The Senior student took on the role of tutor for those enrolled in the beginning Electrical Circuits course. The other students formed pairs for the purpose of visiting students at high schools to interest them in science and engineering careers."

Dr. Bill Taylor, Biomedical Engineering
New Mexico Highlands University

"As a consequence of the work this summer, we have submitted three abstracts for the Material Science Meeting to be held at North Carolina A&T State University at the end of October".

Ronald D. Clark, Physical Science
New Mexico Highlands University

"She learned the fundamental of hypothesis testing and the salient importance of quality control of experimental data. As with our other CIMD grantees, she will write an Abstract of her results and present it at a local meeting of the Instrument Society of America. These results will be combined with the previous results with normal simple waveforms and will be submitted for publication as a technical note to IEEE. She plans to attend NMSU this fall as a graduate student in electrical engineering. We have also found that the CIMD grantees make the best tutors which again is a major time commitment on them".

E.R. Greene
New Mexico Highlands University

"He was extremely enthusiastic and obtained excellent results, that will eventually become part of peer reviewed journal article. He was able to learn sterile, microbiological techniques and is now proficient at using fermentors, autoclaves, spectrophotometers, computer graphics programs, and high performance liquid chromatographs. The student has obtained a scholarship from Associated Western Universities to continue working on this project at Los Alamos National

Laboratory this summer. In addition, he will compete at the end summer for continued funding from Associated Western Universities".

Kimberly Ogden, Chemical Engineering
University of Arizona

"AEW's created an environment for trust, friendly competition, and support which served to help MEP students better compete in their lectures and the larger college environment. Workshop participants improved their confidence in their own abilities to work together and solve problems. Finally, the workshop participants developed a supportive peer network which they be able to utilize throughout their undergraduate career".

Isidro Rubi, Minority Engineering Program
University of Colorado

"In doing this he was able to apply in practice the knowledge he obtained from courses. The student is a very diligent worker. He was very motivated by the work on this project and he is intending to enter our graduate program in the Spring 1994".

Jaime Ramirez-Angulo, Electrical Engineering
New Mexico State University

"Students were involved in an active learning climate that would prepared them for academic success by fostering thinking and peer study. Students were involved in an intensive program that motivated and prepared students for success to pursue the baccalaureate degree". "During the program, SHPE distributed literature about scholarship and many students applied for these scholarships. Interestingly, 50% of the students who won SHPE scholarships were Sun Devil Bridge Program students. The program's survey results indicate that from the students' perspective, the program significantly motivated and prepared them for obtaining the baccalaureate degree".

Marion G. Barchilon, Engineering
Arizona State University

"One student was hired form general project funds to continue his work on this research for the summer, while another student returned to the Los Alamos National Laboratory for summer laboratory work. In February, 1993 one student presented a poster at a Department of Energy in Washington D.C. CIMD support in past years was responsible, in part, for his interest in this area of biological monitoring".

Dr. Gerald Z. Jacobi, Environmental Science
New Mexico Highlands University

"I have benefited by being involved in this project. I had the opportunity to do field collection and subsequently identify the species that I needed. I also had the opportunity to work on a Macintosh computer and have used both Excel 4.0 and Delta Graph to compile spreadsheets and histograms and Word 5.0 to write my research paper. This is a significant accomplishment since

I was basically computer illiterate prior to working on this project. This funding has benefited me in my long-term educational goal of a doctorate. It has given me the financial ability to participate in a line of work that greatly appeals to me. I have been able to get hands-on experience that has been more beneficial than any classroom could be. With the additional research experience I have obtained and the publication of my findings, this experience can only help to make my application for graduate school that much stronger".

Karl W. Flessa, Geology Student
University of Arizona

"I had the opportunity of conducting actual research for a graduate student working for her doctorate degree in materials science. I gained an on-hands view of how research is conducted and along the way I was able to acquire some of the necessary techniques. No doubt, I learned more about sol-gels than most undergraduate students. Besides sol-gels, I also gained much experience in spin-coating. I learned how to use a Dektak machine, which can measure height differences in a thin film. My research experience this past term is something that I am taking not only into my research this coming summer, but also throughout my college career and beyond'.

Dr. Brian Fabes (Manuel Manly-student)
University of Arizona

"This has been an extremely productive semester. The student published a paper at the International Radar Conference titled, "Polarimetric Radar Observation of Winter Storms". In addition, he also made a poster presentation at the same conference and was selected for the "Best Graduate Student Award" in Electrical Engineering".

Dr. V. Chandraskar, Electrical Engineering
Colorado State University

"Damen Sacoman, as well as other minority students who have worked in the lab, enjoy and seem very well suited to scientific research. I am satisfied with the quality of work performed and plan to sponsor other underrepresented students in the future."

Dr. John A. Szivek, Biomechanics
University of Arizona

"This project helped students to understand the concept of modern control theory in design and analysis of a control system. Furthermore, it provided a learning environment for students to nurture their curiosity and ability in controlling a complex control system."

Dr. Hamid Allamehzadeh, Assistant Professor
Eastern New Mexico University

"I sincerely thank WAESO and the NSF for your support. It has been wonderful to see Raymond develop." "...With WAESO encouragement we invited him to help us and he has made steady progress. He is a self-motivated researcher now producing good work."

David D. Allred, Professor

Brigham Young University

"Overall, it has been a positive experience for them and for me. With a little bit of opportunity, encouragement and challenges, I am confident that the minority students will continue to perform very well in the educational system."

Dr. J. Abiodun Elegbede, Assistant Professor
University of Nevada

"The WAESO funding allowed the student to participate in a scholarly research project and contribute his share...It is a worthwhile experience to work with undergraduate students and teach them sophisticated state-of-the-art industry standard techniques and enhance their quality of education and prepare them for advanced graduate studies."

Dr. Rajeswari Sundararajan, Associate Professor
Arizona State University-East

"This lab experience is a first for me, and I am thoroughly enjoying the experience. The activities that I have engaged in up to this point I can only equate to wetting my toes in a huge lake. Additional time would enable the experience necessary to ascertain appropriate knowledge of the rigors of required graduate school laboratory experience."

McQueen Suen, Life and Biological Studies Student
University of Arizona

"The knowledge and experience that I have gained has been very diverse. The project has enabled me to become familiar with general laboratory techniques, advanced analytical methods, and biological assays."

Cynthia Badilla, Chemical Engineering Student
University of Arizona

"In conclusion, I found this research to be wonderful experience." "I plan on going to graduate school upon receiving my B.S., but was always worried about the research part." "Now graduate school is a definite for me."

Shayne P. Castro, Industrial Engineering Student
University of Southern Colorado

"I have already made up my mind on pursuing my master's degree when I finish with my bachelors. This research project showed me how many possible solutions and the different directions one can go when doing research."

Joseph R. Robles, Engineering Student
University of Southern Colorado

"I have gained software experience in this project that will help and prepare me throughout my future education. This project has also given me experience in control system technologies and its implementation into a working project."

Adrian Tapia, Electronics Engineering Student
Eastern New Mexico University

"I would like to thank WAESO for supporting me financially in this project. It has been a long-term desire of mine to participate in research of this sort, and the experience under the supervision of Dr. Ho has been rewarding both academically and personally."

Daniel V. Garcia, Biochemistry Student
University of New Mexico

"The experience that we have gained from participating in this project has allowed both of us to understand how important graduate school can be. This importance exist partly in the fact that gradates and doctorate level scientists are needed in order to continue creating research projects and to continue researching."

Juan Weaver, Chemical Engineering Student
University of Arizona

"This was a great experience to get hands on application of my engineering background that has been building up my past education and work experience." "I'm thankful that I had the opportunity to take part in such an experiment and the experience I have gained will play a part in my future carrier."

Anthony King, Electrical Engineering Student
Arizona State University

"My work in the lab has been rewarding. I have gained hands on experience and lab work knowledge."

Elster Jackson Jr., Electrical Engineering Student
Arizona State University

"Working this project provided me with the opportunity to experience life as a researcher and as an academic. I learned more biology, enhanced my critical thinking skills, and learned to work with other lab members and faculty."

Francisco J. Piña, Agricultural Science Student
University of Arizona

"The "WAESO Faculty-Directed Undergraduate Research" has provided me with my research experience...Working on this project has reaffirmed my desire to work in environmental research."

Ana Holfangle, Chemical Engineering Student
University of Arizona

"I know that without the support of my lab and the funding from this organization [WAESO], it would be very difficult me to have succeeded and benefited as I have from my research experience this semester."

Cynthia N. Perry, Life and Biological Studies Student
University of Arizona

"I want to thank the WAESO faculty, for helping me in my first experience conducting a scientific research. After I get my bachelors as a chemical engineer in two years, I will apply to graduate school in the University of New Mexico to do a MS in the area of environmental engineer."

Cynthia Badilla, Chemical Engineering Student
University of Arizona

"I would like to thank WAESO for giving me the opportunity to meet and network with professionals in geology and chemistry field. I also feel that I have benefited from this experiment."

Natasha Yazzie, Life and Biological Sciences Student
University of New Mexico, Gallup

"The research has helped me to learn new things and ideas, and has developed my research skills." "I have always been interested in graduate school in the future and this research is a way for me to start my future."

Deknesh Temesgen, Electrical Engineering Student

University of Colorado, Boulder

"Participating in this project has been very exciting and it has allowed me to learn and use vital lab techniques."
"Working in this lab group has also given me the opportunity to give a few presentations, as well as to observe other presenting."

Raúl Hernández, Chemistry Student
New Mexico Institute of Mining and Technology

"Two underrepresented undergrad students, who otherwise would not have research experience, were provided with an opportunity to obtain valuable research experience by working closely with the PI and a grad research assistants."
"WAESO funding allowed them to participate in a scholarly research project and contribute their share." "To conclude, it is a worthwhile experience to work with underrepresented undergrads and teach them sophisticated state-of-the-art industry standards techniques and enhance their quality of education and prepare them for advanced graduate studies."

Dr. Rajeswari Sundararajan, Associate Professor
Arizona State University-East

"Mike is a young student who is just starting to find his way into the world of science and research, and he has benefited greatly by participation in the WAESO program. His experience has "broke the ice" in working in the laboratory as well as learning the scientific process and precision necessary in research."

Dr. Marlys Witte, MD, Professor of Surgery
University of Arizona

"I am convinced that her participation in the WAESO Faculty-Directed Undergraduate program will provided her with experience and skills that will be invaluable for her professional future, among others by helping her find a teaching/research assistantship in a good graduate school."

Dr. Reyes Sierra-Alvárez, Professor
University of Arizona

"With generous support from WAESO, and with support from colleagues in academia and government agencies, our students have gained extremely valuable experience...I am also very grateful for the support and encouragement we have received from your organization [WAESO] over the last year."

Dr. Paula M. Watt, Assistant Professor
University of New Mexico

"In the case of all of the four WAESO students that I was privileged to mentor this Spring, 2003 semester, I am gratified that each of them is making active plans for graduate studies."

Dr. George W. Morgenthaler, Professor
University of Colorado at Boulder

"All students who were involved in this project had a better understanding of modern control system theory and its application in real life situation." "This project provided students with valuable insights into the process of designing, simulation, and implementing a real life control system design problem. All in all, by the end project, all students were looking forward to participating in the future control system projects."

Dr. Hamid Allamehzadeh, Assistant Professor
Eastern New Mexico University

"The Peer Study Group this semester was extraordinarily successful. This enthusiasm displayed by members of the group was very high and it showed in their progress."

Dr. Luis Perez, Instructor
El Paso Community College

"All of the students performed brilliantly, each of them is continuing to pursue their academic goals, many of them are involved in summer and continuing internships, and all of them received an A or B in the course. This was a terrific cohort and WAESO is in large part responsible for the successes we have seen this semester at SMCC. Thank you for your continued and valued support."

Dr. Marshall Logvin, Biology Faculty
South Mountain Community College

"Involvement with this project has been a very good experience and has increased our interest in pursuing our education in the science field. In addition, this project has given us insight into the fieldwork, laboratory work, and instrumental analyses involved in chemistry and geology."

Leonardo Tom, Civil Engineering Student
University of New Mexico, Gallup

"Completing this project allowed me to learn how to conduct proper research techniques, none of which I knew previously. Participating in this project enhanced my interest in doing research and reinforced my goal to pursue graduate school."

Ariel Jones, Life and Biological Sciences Student
University of New Mexico

"I am very thankful to the WAESO for giving me this opportunity to be working with a graduate student, it is helping me a lot in my career. I am getting the experience and practice I need to become a good chemical engineer."

Cynthia Badilla, Chemical Engineering Student
University of Arizona

"Working in the Lymphology Research Lab at the Arizona Health Sciences Center through the WAESO Program during the course of this semester has been a beneficial experience. The knowledge and skills that I have acquired has allowed me the opportunity to be exposed to the field of medical research as I continue my education at the University of Arizona." "I would like to thank WAESO for the research opportunities I've had this semester."

Angela Noon, Engineering Physics Student
University of Arizona

"Being a part of this research team has been a rewarding experience. I found this experiment to be a unique introduction to contemporary research techniques. I see micro-gravity research opening doors into a future of medical and technological breakthroughs."

Kimberly T. Cabbagestalk, Aerospace Student
University of Colorado, Boulder

"I would like to thank WAESO for the opportunities that it has made available to students at Regis University who have previously and/or are presently conducting research in the field of chemistry."

Faith Casias, Biochemistry Student
Regis University

"The goal of our Undergraduate Research Experience Project was for us to gain a wide range of skills in a micro biological technique and molecular biology. In addition to useful skills of working in the laboratory, we learned about the importance of the theoretical design and the troubleshooting of experiments."

Joyce A. Romero, Life and Biological Sciences Student
Northern New Mexico Community College

"Students were involved in brainstorming as well as helping one another. This activity helped them to solve homework problems and understand materials taught in the chemistry lecture."

Dr. Kamala D. Sharma, Assistant Professor
University of New Mexico, Gallup

"Angela is a very bright and enthusiastic student and a fine young woman who has benefited and continues to benefit greatly from the research in the WAESO program. Her ease at working in laboratory situations and with researchers at wall levels should be important factors that will enhance her future choices."

Dr. Marlys H. Witte, MD. Professor
University of Arizona

"...I will work with these two students to complete a professional paper detailing the results of their two WAESO-funded projects. It will be submitted to a professional journal prior to their graduation in May." "I also expect one of these students to do professional presentation of their work this July at the Health Physics Society Annual Meeting in Sand Diego."

Dr. William H. Johnson, Associate Professor
University of Nevada

"This was a highly successful class, due in part to the WAESO grant that encouraged me to provide extra study sessions with students that I have not done before." " This was definitely worth the extra time that the students and I put into the course."

Dr. Jean Revie, Faculty
South Mountain Community College

"The students have become excited and interested in our project and have expressed an interest in continuing with more activities. Both students were participants at the annual NMSU Amp research conference in September." "There has been a real effect on the students to motivate them into considering continuing as science students at a university."

Dr. Anthony P. Sena, Chair of Math and Sciences
Northern New Mexico Community College

"I believe that Keith [project student] benefited immensely form doing the AMP-NET process due to the increased preparation in taking MnE 415 Excavation, which he has registered for next year."

Dr. Sean Dessureault, Assistant Professor
University of Arizona

"This research project offered the undergraduate student hands on experience studying the microbial degradation of pollutants in laboratory assays. The student learned how to use advanced analytic equipment, such as the gas chromatograph, high performance liquid chromatography and ion chromatography." "The project provided the student with practical experience in environmental engineering. Such experience should be expected to help the student finding a job in an environmental science field. Active participation in the research activities of the department is also expected to catalyze the interest of WAESO students in pursuing graduate studies."

Dr. Reyes Sierra-Alvárez, Associate professor
University of Arizona

"Students that participated were found to do very well in the general biology courses. Of the students that participated, 95% passed the course, and 50% of those got As and Bs. Students that did not participate earned grades of C or below. For those that participated, when asked if the peer groups were beneficial, all of them agreed that the study groups help them to solidify the important concepts and allowed them to succeed in the courses."

Dr. Rolando M. Rael, Associate Professor of Biology
New Mexico Highlands University

"This research experience was highly positive for Abel [project student]. Abel has agreed to continue as an undergraduate researcher in our group next semester. This program has been very beneficial in encouraging a minority student in engineering research."

Dr. Jordan Peccia, Assistant Professor
Arizona State University

"This WAESO funding allowed him to participate in a scholarly research project and contribute his share. He had hands-on experience in repairing pumps, etc. and acquiring FTIR spectra etc. This experience gave him a chance to apply his knowledge from his coursework." "It is a worthwhile experience to work with underrepresented undergrads and teach them sophisticated state-of-the-art industry standard and enhance their quality of education and prepare them for advanced graduate studies."

Dr. Rajeswari Sundararajan, Associate Professor
Arizona State University-East

"This research has assisted with my decision to consider graduate school. In my experience, I was privileged to work with a graduate student who shared the details about her research and graduate school experience. Since working for this group, I have become more familiar with the steps I need to take in order to prepare to go to graduate school. I have also become interested in pursuing environmental aspects of chemical engineering."

Shana Lacrosse, Chemical Engineering Student
University of Arizona

"I was encouraged to give my input and any questions were answered to my satisfaction. I was treated with respect and I felt as important to the research as the graduate student in charge of the investigation. As a result of my ongoing experience working in a research lab, I have changed my attitude towards pursuing graduate studies. I am fascinated and amazed with the biology of microorganisms. My background is limited to the physical sciences, such as chemistry, mathematics, and physics. I have never taken a biology course. I avoided biology because I do not like to memorize names; little did I know that biology is more than a whole bunch of technical names. As a direct result of working in this research project, I am planning to take classes that are applicable to graduate level environmental engineering, which include Biology related courses."

David J. Camacho, Chemical Engineering Student
University of Arizona

"This project educated us by enabling us to actually enhance our knowledge on a wide range of biological and analytical aspects. Over a semester, we were able to determine the results as accurately as possible by repeatedly performing many of the tasks to insure that we obtained precise readings overall on the project's analysis. Because of this project, our research skills are broader as well as the knowledge that we gained. Since both us [students]...plan on pursuing a graduate degree, this research, and the skills we learned from it will help us with our own independent research in the future."

Robin Madrid, Life and Biological Sciences Student
New Mexico Highlands University

"The work has given me tremendous experience in the biological aspect of environmental engineering. In which I am pursuing an undergraduate degree."

Abel Ramarui, Civil, Environmental Engineering Student
Arizona State University

"It is no doubt in our minds that the research that we have done with Dr. Mahapatro will help us not only to be prepared for our future studies, but to be confident that we will succeed. His help and support not only helped us for the research, but also helped us in our lives."

Sheila Bernard, Chemistry Student
Regis University

"Working in the Potts' lab has given me invaluable insight into the processes of writing grants and papers, along with preparing me for the hardships that sometimes accompany the research fields. I think these two lessons are especially important for preparing undergraduates for graduate school and research, and they are particularly invaluable in that they cannot be learned in the classroom."

Leda Ramoz, Life and Biological Sciences Student
University of Utah

"This student did more than his call of duty. He spent hours and hours debugging the circuit, making it work, ordering the parts...and following it and some times paid himself to speed the process. To present the results in the conference, he has to work on very late most of the time."

Dr. Rajeswari Sundararajan, Associate Professor
Arizona State University-East

"The project provided the student with a practical experience in environmental engineering"

Reyes Sierra-Alvárez, Research, Associate Professor
University of Arizona

"Invariably, the students have all described the strong positive effects of this experience, not only with regard to the training which they received in the gathering, analysis and presentation of GIS data, but also with regard to their increased understanding (and concern) with respect to the public health effects on their own Navajo community resulting from the operations of the former uranium mining industry."

Dr. Edward R. Garrison, Faculty
Diné College

"The undergraduate minority students that are working in my laboratory are both very bright and highly motivated. They have been well accepted into the research group, and their hard work has earned them the respect of other group members. Both now play key roles in our research program. They have both viewed receiving a stipend from the WAESO program to be an honor, and the financial support has given them additional time to work in the laboratory. I have very high expectations for both of these students; they are definitely going to be important contributors to their respective fields."

Dr. Paul B. Savage, Associate Professor
Brigham Young University

"Both Carolina and Nick [project students] have exhibited an increased sense of responsibility, reliability, confidence, initiative, independence, and even search out constructive criticism hoping to improve their performances for future goals. They appear to have enlarged their view of the opportunities available to them."

Dr. Kate Grandison, Associate Professor and Chair
Southern Utah University

"Grant [project student] gained hands-on experience in performing organic reactions by actively participating in this research project. He also learned various experimental techniques to isolate and purify reaction products from the organic reactions."

Dr. Pradip K. Bhowmik, Assistant Professor
University of Nevada

"This was a very interesting project. It definitely gave me some new experience working with high frequency, and high voltage systems. This is most helpful toward my pursuit of a master's degree in power electronics with a concentration in alternative energy."

James M. Gonzales, Electrical Engineering Student
Arizona State University

"Because of my experience this summer, I have changed my view on pursuing a graduate degree. I feel obligated to increase my GPA." "This will increase my chances of being accepted to a reputable graduate school."

David J. Camacho, Chemical Engineering Student
University of Arizona

"The experience has solidified my desire to pursue graduate research in the field of chemical and environmental engineering" "After participating, I have a new drive to go beyond my masters and get my PhD."

Ana Hoffnagle, Chemical Engineering Student
University of Arizona

"This experience meant more than just teamwork, but it opened other doors for my career goals, guided me towards pursuing a graduate degree in other engineering fields." "I believe that going further in my education will not only extend my knowledge, but it will also enrich my experiences as a person."

Karola Maldonado, Industrial Engineering Student
University of Arizona

"The WAESO Faculty-Directed Undergraduate Research program has provided me with my first research experience. It has enabled me to acquire many new skills and knowledge that will be helpful in planning and performing in my future career."

Benjamin Palma, Chemical Engineering Student
University of Arizona

"I gained a lot of experience in terms of problem solving and in designing experiments." "From my experiences this summer I can say that I have gained a valuable lesson by participating in this project. It has allowed me the opportunity to understand how difficult and time consuming graduate school can be, but at the same time how extremely rewarding it is."

Leonard Huizar, Bio-Systems Engineering Student
University of Arizona

"This summer was very educational for me and I have enjoyed the time I have spent with the other students. What I have learn this summer about the mines will be past on to my children and other people, because this is part of our history. I was ignorant of my own backyard but now I have better understanding concerning the mining situations and I have learned more than I have anticipated. Also, this program helped me realize how much education is important and how to continue."

Nora Jeli, Computer Information Sciences Student
Diné College

"This semester has really allowed me to be involved in the lab and I have learned many new skills and lab techniques." "I feel very comfortable in the lab now, and I feel that my future labs and senior thesis should not give me any problem." "WAESO has allowed me to gain many invaluable skills and experience that I am positive will help me when I enter graduate school."

Randy Hernández, Chemistry Student
New Mexico Institute of Mining and Technology

"This project has given me the experience I will need in the future to pursue my goals in graduate school. I now know what it takes to be a member of a team of researchers as well as the trouble shooting techniques to obtain an experiment that can be successful in the future." "This valuable tool will allow my work to advance in a direction of progress. With these skills I shall have the experience to join any research team in the future."

Andrew Klinker, Chemical Engineering Student
University of Utah

"I am grateful I was sponsored as a participant in the WAESO Faculty-Directed Undergraduate Summer Research. Participation in this program, together with my academic training at Brigham Young University, has been an important experience in preparation for pursuing of a graduate degree in Microbiology." "It is evident to me that participating in this summer research program sponsored by WAESO had a positive impact in my life. I am now a graduate student at the University of Virginia and have already had the opportunity to use, in my first laboratory rotation, some of the techniques learned this past summer. Thanks to the WAESO Fellowship I feel a little more prepared for what lies ahead in my graduate training."

Sergio A. Sánchez, Microbiology Student
Brigham Young University

"One of the most important factors I feel I have acquired from this project would be my leadership skills I have been applying. Through the planning's of meetings, training sessions, and the working process for adequate funding, I have not only been given a better step in moving independently, but to encourage others and work with them as a leader."

Carolina Allende, Life and Biological Sciences Student
Southern Utah University

"I feel that the activities I am involved in right now are more like preparation for graduate school on becoming a physician's assistant and possibly even medical school in the future. This whole experience has been one of the most interesting accomplishments I have made here at SUU. I have been working on this project for over two years now, and it is amazing to see what we have accomplished."

Nicholas J. Ervin, Life and Biological Sciences Student
Southern Utah University

"The research that I have done over this past summer has been a terrific learning experience for me. Before this, I have never applied anything that I have learned in the classroom to the real world. This research gave me a better understanding of what engineering is like in the real world. This opportunity has also changed my perspective on engineering for the better. Not only have I realized that there is more to engineering than just school and homework, but this research opportunity has also helped me enjoy engineering more." "I have realized it might be useful to attend graduate school to focus more deeply on the theory and knowledge underlying the advanced hardware aspect of electronics. Then, with that specific knowledge, it might be easier for me to come across the perfect job that everyone dreams of."

Shannon Lahr, Electrical Engineering Student
University of Colorado at Boulder

"This summer project has very well prepared me for real world understanding of engineering work. The effort and time spent on the project was worth it all, and it helped to individually have goals to accomplish." "I now accept the decision of pursuing graduate school to do further research on engineering topics. I feel that attending graduate school will give me an opportunity to study as much as possible, and apply what I learn at a professional engineering job."

Aja Armstrong, Electrical Engineer Student
University of Colorado at Boulder

"This project helped students to comprehend the concept of modern control theory in designing a control system. Furthermore, it provided a learning environment for the students to nurture their curiosity and ability in designing and controlling a complex control system. All in all, this project not only provided hands-on experience for students but also prepared them for future graduate work."

Dr. Hamid Allamehzadeh, Assistant Professor of Electrical Engineering
Eastern New Mexico University

"This experience is a valuable asset for Charlie in his future pursue of an advanced degree in the biochemical field."

Dr. Wilson A. Francisco, Assistant Professor
Arizona State University

"I believe their participation on experiment setup, dealing with experiment problems, such as coolant leak or instrument inconsistency, and with data gathering and reporting, especially spreadsheet preparation, gave them experience with and appreciation for the scope of a project and the need for observations relative to consistency of experimental procedures. They show promise for becoming excellent researchers."

Dr. Dennis L. Larson, Associate Professor
University of Arizona

"All in all I think the project was a success, and both Luis and Juan have learned skills they would not have learned without participating in this WAESO project."

Dr. Joanne V. Peeples, Discipline Coordinator for Math
El Paso Community College

"Two underrepresented undergrad students, who otherwise would not have research experience, were provided with an opportunity to obtain valuable research experience by working closely with the PI and two grad research assistants." "It gave them a chance to apply their knowledge from their course work and learn when it was new to them. They were able to work on their own once they were taught the use of equipment and they could also work in a team when needed. They will also have the opportunity to co-author conference papers if their results can be used for publication. It gave the PI a very good opportunity to work with two minority students, who were both capable students. This confirmed the fact that given the right opportunity every one can shine."

Dr. Rajeswari Sundararajan, Associate Professor
Arizona State University-East

"Michelle has benefited by interacting with fellow researchers in the laboratory. She has been able to work with physicians, basic-science faculty, physician-residents, research fellows, graduate, undergraduate, and high school students. These interactions give her perspectives into possible future career and school choices after graduation. She has been such an outstanding addition to our laboratory that we have hired her as a student undergraduate researcher while she finishes school. She is also exploring a summer/fall internship with one of our visiting scholars"

Dr. Marlys Witte, MD, Professor
University of Arizona

"This particular study...gave the student an opportunity to learn the steps involved in assessing the functionality and reproducibility of testing procedures. It provide insight into the time required to develop new test and the assumptions that need to be avoided at the beginning of a project which affect the time estimated for test development."

Dr. John A. Szivek, Research Professor of Orthopedic Surgery
University of Arizona

"Opposed to the lab courses that I took as an undergraduate, I ran reactions at a much larger scale, I worked with much more volatile chemicals, and I had much more responsibility."

Doug Medina, Chemistry Student
University of Colorado

"Not only did I learn how to work out a problem but I also learned to work with others better. In my pursuit of a graduate degree, I feel more confident about my abilities to work out problems and to continue to grow intellectually."

Jeremiah Mullen, Electronics Engineering Student
Eastern New Mexico University

"It helped me to understand the concept of the control theory and its application in real world situation. I am positive this information will help me in my future career. This project was an insight to how devices are designed and built."

Hector Rodríguez, Electronics Engineering Student
Eastern New Mexico University

"I learned the value of teamwork on this project and I have gained a wealth of information and experience that will follow me as I prepare for graduate work in the future."

Porfirio Delgado, Electronics Engineering Student
Eastern New Mexico University

"My time spent in lab has afforded me to go beyond the classroom an apply what was learned in it. Many of the topics brought up in the classroom can only be fully understood if one is exposed to the active field of the subject. In essence, my research has brought me closer to what will be expected when I pursue graduate studies."

Charlie Olea Jr., Chemistry Student
Arizona State University

"She [Project Director] has opened many doors and provided me with a great opportunities such as this one. If I were asked to do it all again, -yes, I definitely would, because the knowledge and experience that I gained has made it all worthwhile."

Rebecca S. Montoya, Chemistry Student
New Mexico Highlands University

"This research has given us the chance to visualize what actual lab technicians and researchers carry out for experiments on observations and ideas that they question. This research will be of great use to us for future graduate or doctorate programs."

Julie A. Bellamy, Life and Biological Sciences Student
New Mexico Highlands University

"In doing this I will gain useful experience that will help prepare me for graduate school. It will help me to improve both my laboratory and field techniques. I will be well prepared to conduct research at a graduate level after I receive my bachelor's degree. I will also be familiar with the techniques that will be required of me when I begin my career as a botanist after I have completed my formal education."

Jennifer Salaz, Life and Biological Sciences Student
University of New Mexico

"My participation in these projects is of great importance to me because I am gaining first hand knowledge and experience in the field of Neuroscience. I am learning to critically examine questions through information gathering and data analysis."

Vanessa López, Biochemistry Student
University of Arizona

"The knowledge and experience I gained will never end. I will use this experience along with future opportunities to help develop myself into a superior student, a student that has the determination, knowledge, and scientific methodology to span across the ever-changing world of science."

Lorenzo Nichols II, Life and Biological Sciences Student
University of Nevada

"This research has given me a great opportunity to explore the world of medical investigation, as well as influence my decision to attend medical school. I am currently finishing my application for acceptance in the fall of 2003. I would like to thank WAESO for the opportunity to join such an admirable medical lab."

Michelle Lynch, Life and Biological Sciences Student
University of Arizona

"Two undergraduate students, who otherwise would not have had research experience, were provided with an excellent opportunity to obtain valuable research experience by working closely with a PI and a graduate assistant. They were trained in the use of the industry standard state-of-the-art research procedures and software such as LabView, and FTIR spectroscopy. This WAESO funding allowed them to participate in a scholarly research project and contribute their share. They had hands-on experience in repairing pumps, and other hardware, and acquiring FTIR spectra etc. This experience gave them a chance to apply their knowledge from their course work. One of them is co-authoring a paper. It gave the PI again a very good opportunity to work with a minority BS student. This confirmed the fact that given the right opportunity any one can shine"

Dr. Raji Sundararajan, Associate Professor
Arizona State University

"Ira Racoma gained hands-on experience in carrying out both organic and polymerization reactions. Furthermore, she learned a lot on the thermal properties of polymers. She got involved in the characterization of thermotropic liquid-crystalline properties."

Dr. Lorraine Deck, Professor
University of New Mexico

“The Project Director believes that as a consequence of regular participation in “Elements of General Chemistry Peer Study Group II” six students obtained one letter grade higher than they would have if they did not participate.”

Dr. Kamala Devi Sharma, Assistant Professor
University of New Mexico

“The students took full advantage of the peer study group sessions to improve upon their learning and understanding of general concepts in organic chemistry and general chemistry. It was a rewarding experience for me to see the participating students striving so hard to learn organic chemistry.”

Dr. Kamala Devi Sharma, Assistant Professor
University of New Mexico

“The lab has been helpful to me; I am a transfer student and the transfer from a community college to a major university is sometimes difficult. But assisting in the lab has helped me to gain confidence and adapt to the new surroundings and environment. Working with others in the lab has helped me use and better my communication and people skills, which is a key skill to have. The lab has been a great learning block for future projects or labs I might encounter. The experience I received is a bonus and a great benefit for me now and later in life. I would like to thank Dr. Raji and the WAESO for the opportunity to work in the lab.”

Edwin Romero, Electrical Engineering Student
Arizona State University

“This semester of working in this lab I was able to develop my leadership skills while training new lab aids, apply knowledge and concepts relating to my program of study, and further develop my problem solving skills. I gained a lot of knowledge from a graduate student that I worked with who is getting her masters degree in the same field of my program of study. It is now more important that I pursue my master’ degree in the future.”

Elester Jackson, Jr. Electrical Engineering Student
Arizona State University

“The skills I acquired in the laboratory will give me an advantage when I go to graduate school because I will already be familiar with equipment and reaction set-ups needed to begin research. I will also be able to interact comfortably with graduate students who are at all levels of their education.”

Lorian Griego, Biochemistry Student
University of New Mexico

“As a result of my ongoing experience working in a research lab, I have decided to pursue a double major in chemistry and chemical engineering. I have experienced first hand the important role that chemistry and chemical analysis play in dictating the overall result in any

investigation. I want to thank WAESO faculty for the opportunity given to me to be involved in the research project and for inviting me to last spring's conference held at ASU. The conference served as an excellent source of information regarding different fields of research and graduate studies opportunity."

David J. Camacho, Chemical Engineering Student
University of Arizona

"The research process, I quickly learned, is nothing like chemistry lab in school, where instructions, supplies, and expected results are given to us before we begin an experiment. The research process is more than just carrying out an experiment; there is a lot of planning, evaluating, and learning in each step." "This experience has been very valuable to my education; it has allowed me to see first-hand what is involved in research and what kind of skills are necessary to be successful."

Melanie Skievaski, Biology Student
University of Arizona

"We feel that this project was very valuable for us as engineers, especially as, minorities in engineering. This helped give us a good idea about how doing research projects works, which helped to open our eyes to attending graduate school. Since minorities are underrepresented at the graduate level, we overlooked attending it ourselves because it is not highly encouraged and we do not often see our friends continuing on with a graduate degree. Through this project, however, we were able to get an idea of what graduate school and research entails, and we were shown how valuable both are to becoming successful engineers. So not only did this project give us valuable skills with which to enter graduate school, it also gave us the idea and confidence to attend graduate school."

Juan Lopez, Civil Engineering Student
Ramon Moreno, Mechanical Engineering Student
University of Arizona

"Being part of this team has made me feel I contributed to the world of research and I hope that one day my contribution to research will help the development of treatment for patients with osteoarthritis."

Omar A Contreras, Chemistry Student
University of Arizona

"This research has assisted me with my decision to consider graduate school. In my experience, I was privileged to work with a graduate student who shared the details about her research and graduate school experience. Since working for this group, I have become more familiar with the steps I need to take in order to prepare to go to graduate school. I have also become interested in pursuing environmental aspects of chemical engineering."

Shana LaCrosse, Chemical Engineering Student

University of Arizona

“The only type of laboratory experience I’ve ever had before this experience were laboratory courses through the University of Arizona such as chemistry labs and biology labs. It was nothing too exciting. It was these types of courses that steered me away from ever wanting to have a career in a laboratory because I wasn’t too well informed of other labs such as research laboratories like Dr. Witte’s.”

Janelle Jensen, Molecular and Cellular Biology Student
University of Arizona

“Attending the conference was a great experience and provided information that I, myself, would not be able to encounter. It helped me better understand the processes of continuing onto graduate school, also how important it is for minority students to continue as well. I will use the information that I was given to help me continue onto graduate school. As well as pass that information onto those who don’t know.”

Reylynne Williams, Environmental Science Student
University of Arizona

“The experience I have gained has been and will prove to be advantageous in my schooling. I have learned so much this past semester, increased my desire to continue my education, and have found a field that I love working in and learning about.”

Sarah Barton, Physics Student
Brigham Young University

“I am grateful to WAESO for supporting me in this continuing research. This is an educational experience that truly brings together all that I have learned in the classroom.”

Mark Adams, Physics Student
Brigham Young University

“Many medical schools emphasize the importance of research and this experience has helped me better prepare for the rigorous practice of medicine. I now see how valuable research is in that it involves critical thinking and hands on experience, something I hope to continue doing as a physician.”

Brian Godinez, Microbiology Student
Brigham Young University

“This experience was important to me because I realized that I wanted to work in a lab after receiving my degree. The experiments I have conducted have been very helpful to me because I have gained a lot of experience as well as knowledge of working in a lab. I learned to work as a team with my lab partner as well as help him as much as I could.”

Alvena Largo, Biology Student
New Mexico Highlands University

“This research opportunity has been an extremely important and beneficial aspect in expanding my knowledge in life sciences. It has allowed me the chance to obtain a better grasp on many scientific concepts and techniques in the laboratory, and also has increased my passion in research. This opportunity and research experience has reassured my goals of continuing in with my education, and therefore obtaining my masters degree and PhD. Research and acquired knowledge are after all, a golden key to discovering novel therapeutics and techniques in treating, curing, or even testing for many diseases. I strongly feel that all students should be given an opportunity such as this one in whatsoever their curiosities may be, for this research was rewarding and has greatly impacted my knowledge in many biological aspects.”

Mariquita Vigil, Biology Student
New Mexico Highlands University

“The most beneficial part of working in the Potts’ lab over the past few months is the experience I attained presenting my research and learning how to write grants. About a month ago I presented my work at the National Behavior Society meeting, which was held in Oaxaca, Mexico. It helped me thoroughly learn intimate details about my research as well as increased my understanding of how to relate my work to the world outside the laboratory. Attending such a large meeting enabled me to interact with a broad range of people including my peers as well as potential mentors for graduate school. It also gave me the opportunity to experience new research firsthand.” “I think these lessons are particularly invaluable for preparing undergraduates for graduate school and research in that they cannot be learned in the classroom.

Leda Ramoz, Biology Student
University of Utah

“I gained a wealth of practical knowledge, and I am eager to learn and apply more of it. Ultimately, this research experience has taught me more than I could learn in a classroom through practical application.”

Dario B Cabrera, Biochemistry Student
Arizona State University

“This opportunity has reinforced my desire to pursue a graduate education, and it gave me a first hand look at what could be expected as I progress through the path towards a doctorate degree.

Dario B Cabrera, Biochemistry Student
Arizona State University

“Working in a research environment, corresponding with both graduate and other undergraduate students has given me an appreciation toward the problem solving approach. Being involved with the Environmental Department research, has given me exposure to other research being

done within the field of Chemical and Environmental engineering, due to these advantages, my decision to pursue a graduate admission will be one that is more well informed.”

Victor Palma, Biochemistry Student
University of Arizona

“Exposure to this type of research has opened up my mind to many ways in which to improve environmental conditions by using chemistry and microbiology together. Participating within the Chemical Engineering department at the University of Arizona has allowed me to appreciate the importance of chemistry within our daily lives. Conducting research has also increased my motivation to consider applying to a master’s degree graduate program. Being in a research lab has also lead me to meet significant graduate students who teach valuable lessons on how research should be conducted, and also what to expect within a graduate study.”

Crystal A. Vargas, Microbiology Student
University of Arizona

“I have enjoyed the experience. Part of the knowledge and skills that I have obtained have already proven useful to my academic performance.”

Benjamin Palma, Chemistry Student
University of Arizona

“The focus of this Research has opened my eyes to an environmental problem and solution faced in everyday life. I have learned terminology, the methods and analytical skills that one must acquire when introduced into one of these experiments. The experiments I took part in enlightened me to the current technologies used in the industries. Working in the lab has shown me how to conduct research for any issue. This research has contributed to my decision to further my education in the biological sciences. I have also developed interest in the environmental aspects of chemical engineering. I had never considered graduate school as part of my future until I was privileged to work with a graduate student. I found great interest in the topic of research and have realized that I would like to in the area of research. This research program has given me the chance to obtain hands-on experience in the areas that are related to the degree I am pursuing. Working with a graduate student has made me aware of the expectations in graduate school. The research I was part of has helped me choose what areas of study to focus on in my future.”

Brittany Varela, Chemical Engineering Student
University of Arizona

“The lab has been a helpful resource; I am in my second semester at Arizona State University and assisting in the lab has been a great experience for school and life. The confidents it has given me to try new and different challenges is one skill that I will appreciate and help me for the rest of my school career and life to come.”

Edwin Romero, Electrical Engineering Student

Arizona State University

“The time I spent working in a research lab was important to my future education because it gave me a chance to practice things I had learned about in class. It also gave me experience in carrying out reactions that actually led somewhere. It gave me a better idea of what research entails, which is important because it is something I would do in pursuing a graduate degree.”

Lisa Chavez, Biochemistry Student
Brigham Young University

“Because I have done this research, I have been able to increase my research skills as well as my communication and writing skills. This project has helped me gain valuable experience outside school. It has also caused me to consider pursuing graduate studies sometime in the future.”

Denknesch Temesgan, Electrical Engineering Student
University of Colorado, Boulder

“The fieldwork we do here is all hands on; to tell you the truth it is a constant learning environment. There is always one underlying factor to doing research of this sort, which is that, everyone must be dedicated to whatever little piece of the puzzle they make up.”

Nicholas J. Ervin, Biology Student
Southern Utah University

“The activities I am involved in right now are more like training for graduate school or becoming a Physician’s Assistant and possibly even medical school in the future. This whole experience has been one of the most interesting accomplishments I have made here at Southern Utah University.”

Nicholas J. Ervin, Biology Student
Southern Utah University

“The project provided the student with practical experience in environmental engineering. Such experience should be expected to help the student finding a job in an environmental science field.”

Dr. Reyes Sierra, Associate Professor
University of Arizona

“Many research and career opportunities in Mining and Geological Engineering are in Latin American countries. As a professor of a highly diversified department, I am grateful for the opportunity provided by WAESO to fund research that benefits both myself, and the underrepresented students. Our department has a legacy of supporting these deserving students through WAESO AMP-Net funding.”

Dr. Sean Dessureault, Assistant Professor

University of Arizona

“She was a senior student in Chemical and Environmental Engineering during the Spring 2004 semester and has recently graduated. She succeeded in getting a job as a project engineer at a national environmental engineering company in Houston, Texas. It was her WAESO undergraduate experience that awoke her interest in environmental aspects of chemical engineering.”

Dr. James A. Field, Associate Professor
University of Arizona

“This experience has given her a real-world look at working in the laboratory as well as learning the scientific process and precision necessary in research. Janelle is close to graduation and I believe she has benefited greatly by participating in the WAESO program this semester”

Dr. Marlys Witte, Professor
University of Arizona

“The undergraduate minority students that are working in my laboratory are both very bright and highly motivated. They have been well accepted into the research group, and their hard work has earned them the respect of other group members. Both now play key roles in our research program. They have both viewed receiving a stipend from WAESO program to be an honor, and the financial support has given them additional time to work in the laboratory. I have very high expectations for both of these students; they are definitely going to be important contributors to their respective fields.”

Dr. Paul B. Savage, Associate Professor
Brigham Young University

“It has been a privilege to work with these students in the laboratory and to observe them as they master challenging techniques. I greatly appreciate this opportunity to mentor students.”

Dr. Sandra Bonetti, Professor
Colorado State University-Pueblo

“We felt that our objectives and goals in better preparing our students for success in our biology program was met, and we hope to continue this successful project in the years to come. Thank you WAESO for funding this worthwhile endeavor here at NMHU.”

Dr. Rolando M. Rael, Associate Professor
New Mexico Highlands University

“As one result of student involvement in this project, the five students got hands on experience with computational methods for modeling chemical systems. All the students also got some training in analyzing and presenting scientific results at the local level. Two of the students were exposed to the excitement and challenge of participating at an international conference in

Montreal, Canada. Three of them have plans for attending graduate school: Mr. Terrazas in Physics, Ms. Velarde in Mechanical Engineering, and Ms. Valdez in Computer Science. One important result of the involvement of these students in this project is to open their eyes to the possibilities of careers as dedicated and highly eminent scientists and engineers at national research laboratories, both inside and outside New Mexico.”

Dr. Ajit Hira, Associate Professor
Northern New Mexico University

“This was a terrific cohort and WAESO is in large part responsible for the successes we have seen this semester at SMCC. Thank you for your continued and valued support”

Dr. Marshall Logvin, Associate Professor
South Mountain Community College

“As part of this project, he has learned basic biochemical techniques, as well as techniques required for the study of proteins and enzymes. This experience is a valuable asset for Dario in his future pursue of an advance degree in the biochemical field”

Dr. Wilson A. Francisco, Assistant Professor
Arizona State University

“The former participants that work for MSHP introduce the new students to University life. These former participants work with students daily, and talk to them about different majors, programs, and instructors on campus. This interaction creates a web of stability for the incoming freshmen.”

Katherine Sisulak, Assistant Director
Arizona State University

“Students were given a very realistic view of University life; they were also introduced to several current students, programs and organizations on campus. This introduction will make it easier for students to successfully enter ASU in the fall of 2004. These participants have credits, knowledge of the campus, confidence, and a network of students.”

Dr. Katherine Sisulak, Assistant Director
Arizona State University

“The PI has benefited from the opportunity to advise the student and involve him in an ongoing project. His contribution has facilitated the work of a graduate student and allowed him to make additional progress in his research. On the other hand, participation on this project has offered the undergraduate student hands on experience studying the microbial degradation of pollutants in laboratory assays. The student has learned how to use advanced analytic equipment, such as the gas chromatograph, high performance liquid chromatography.”

Dr. Reyes Sierra, Associate Professor

University of Arizona

“Her performance and motivation have been outstanding and I am looking forward to having her work in my laboratory during Fall 2004 semester.”

Dr. Reyes Sierra, Associate Professor
University of Arizona

“Two undergraduate students, who otherwise would not have had research experience, were provided with an excellent opportunity to obtain valuable research experience by working closely with a PI and a graduate assistant. They were trained in the use of the industry standard state-of-the-art research procedures and software such as LabView, and FTIR spectroscopy. This WAESO funding allowed them to participate in a scholarly research project and contribute their share. They had hands-on experience in repairing pumps, and other hardware, and acquiring FTIR spectra etc. This experience gave them a chance to apply their knowledge from their coursework. It gave the PI again a very good opportunity to work with a minority BS student. This confirmed the fact that given the right opportunity any one can shine”

Dr. Rajeswari Sundararajan, Associate Professor
Arizona State University

“This project has given Lisa a better view of the research aspect of chemistry.”

Dr. Roger G. Harrison, Associate Professor
Brigham Young University

“An Underrepresented undergrad student, who otherwise would not have had research experience, used the excellent opportunity to obtain valuable research experience by working closely with the PI and graduate student.” “This WAESO funding allowed him to participate in a scholarly research project and contribute.”

Dr. Rajeswari Sundarajan, Associate Professor
Arizona State University-East

“Some of the other important results of this experiment have been in helping myself gain understanding and experience in a lab setting.” “All of these skills can be used in further pursuing graduate scholarly research.”

Antonio Gutierrez, Electronics Engineering Student.
Arizona State University-East

“My experiences working on these projects have given me a taste of what it takes to be an engineer, and no doubt will prove valuable in the future.”

Philip Trinidad, Electrical Engineering Student
Arizona State University-East

“I believe Zack benefited from doing the AMP-NET process due to the increased preparation in taking Engineering Economics, mine valuation, mineral processing, and design course, will be taken next semester.”

Dr. Sean Dessureault, Assistant Professor
University of Arizona

“I would like to thank WAESO for giving me the opportunity to work on this interesting project to help other students understand the basis of engineering and fundamentals of financial management. I was very enthusiastic in working on this project...”

Zachary Sparksman, Mining Engineering Student
University of Arizona

“I really appreciate the opportunity that WAESO program gave me this semester. It opened a whole new world of research and opportunities for underrepresented minorities. WAESO also gave the opportunity to put in practice my knowledge and to gain experience in the lab and chemical field. ““Also, going to the WAESO conference made me rethink my future plans, it made me consider graduate school as a great option.”

Analucia Canizales, Chemical Engineering Student
University of Arizona

“The Time that I spent in Dr. Szivek’s laboratory was undoubtedly a time of learning and expansion for me because of my exposure to research process, the gain of skills otherwise never obtained, and the interactive with knowledgeable academics...”

Arturo Guzman, Molecular and Cellular Biology Student”
University of Arizona

“Funding through WAESO has been instrumental in providing Amanda with a significant research experience. She and I have greatly benefited from the program and we thank WAESO for the support.”

Judith B. Ulerich, Research Associate Professor
University of Arizona

“ I would like to thank WAESO Undergraduate Research program and Dr. Reyes Sierra for funding me and for given me opportunity to participate in this research. This project has helped me realize the importance and real-world benefits this type of environmental research can have.”

Kanisha Saunders, Industrial Engineering Student
University of Arizona

“Many has benefited greatly by participating in the WAESO program this semester and he will continue to work with us because of this experience.”

Dr. Marlys H. Witte, MD, Professor of Surgery
University of Arizona

“As a professor of a highly diversified department, I am grateful for the opportunity provided by WAESO to fund research that benefits both myself and the underrepresented students. Our department has a legacy of supporting these deserving students through WEOS AMP-NET funding.”

Dr. Sean Dessureault, Assistant Professor
University of Arizona

“The research project provided me with exposure to the areas of planning, design new technologies, and management. As a result, I have decided to seek a masters Degree in Business Administration or computer Science upon completion of my undergraduate program.”

Joseph McCable, Computer Science Student
University of Colorado, Boulder

“I am very glad I participated in the Poser competition held at ASU; It was there where I learned that it is very important to find the right mentor/advisor in order to continue on to a higher degree.”

Alejandro Reiman-Moreno, Engineering Student
University of Colorado, Boulder

“The WAESO program was something very new to me and I found it an enjoyable and education experience.” “ This experience will help me in the future because I hope to be a doctor one day and I will be able to take what I have learned into the next level of my education.”

Monica Marthell, Life and Biological Sciences Student
New Mexico Highlands University

“I would like to thank WAESO and Dr. Rael for giving me the opportunity to experience the work and attempt to solve our own problems as they arose.”

Vincent Vigil, Life and Biological Sciences Student
New Mexico Highlands University

“I want to give special thanks to all the people at the WAESO office for their support in helping me follow my dreams.”

Michelle Sanchez, Chemistry Student
Regis University

“I feel that the activities I am involved in right now are more like training for graduate school or becoming a Physician’s Assistant and possibly even medical school in the future.” “I would like to thank WAESO for financially helping me take advantage of this unique educational research opportunity.”

Nicholas J. Ervin, Life and Biological Sciences Student
Southern Utah University

“In the short term the data gathered here as well as the skills acquired with the equipment will allow for a better understanding of the *in situ* pressures of the menisco-femoral joint, and provides a basis for the development of a tissue engineered cartilage with the potential for successful femoral cartilage repair.”

Mara SantaMaria, Physiology Student
University of Arizona

“I would like to talk about the great opportunities that WAESO program gives for underrepresented minorities in the research field. WAESO also gave me the opportunity this Fall to understand and relate my knowledge of my chemical engineering classes to the research area. This experience made me consider the alternative of going to graduate school and continue with further education.

Analucia Canizales, Chemical Engineering Student
University of Arizona

“This project has been incredibly edifying, and it has certainly awakened my understanding of medicinal treatment as well as the importance of medical research.” “I am certain that all the skills I have acquired will continue to be of use in my future graduate years.”

Aaron Clark, Molecular Biology Student
University of Arizona

“Working on this project has opened my eyes to the hard work and intensive analysis that occurs behind the laboratory doors that the majority of people will never see.” “This research has brought together many of the biological and biochemical concepts that I have learned in the classroom into a practical application.”

Justin Ledesma, Physiological Science Student
University of Arizona

“I first started this project very hesitant and feeling as if I couldn’t complete the project. Now after I’ve completed each session with Dr. Mahapatro I come home and sit here for hours thinking about the project and trying to figure out the structures of the chemicals that I will be using for the next step in the process.” “This opportunity has been an opportunity of a lifetime.

I never thought that I would have the chance to participate in an independent research project. Also it has helped me see that science is the field that I would like to major in.”

Victoria Ybarra, Life and Biological Sciences Student
Regis University

“Projects like these are important to minorities because it can show that graduate work is rewarding and that a graduate degree is definitely attainable.”

Felipe Ayala, Mining Engineering Student and
Zachary Sparksman, Engineering Student
University of Arizona

“In learning how to use the Extend simulator and Microsoft SQL Server we not only learned to very important tools that will help us in our future studies, but we also learned how to “teach ourselves to learn” by looking for and finding information that helped us overcome some technical problems”.

Dr. Sean Dessureault, Assistant Professor
University of Arizona

“This project has helped us realize how demanding and time-intensive a graduate program can be. Similarly, we realized that with proper time management and realistic goal setting, this demanding process could be very rewarding as well.” “Projects like these are important to minorities because it can show that graduate work is rewarding and that a graduate degree is definitely attainable.”

Dr. Sean Dessureault, Assistant Professor
University of Arizona

“He (student) was able to set up a diamethylene blue assay which will be critical in future experiments since it will allow us to determine whether cells are producing large quantities proteoglycan which indicate the viability of cells.

Dr. John A, Szivek, Professor
University of Arizona

“Funding through WAESO has been instrumental in providing Aaron and Justin with significant research experiences. They and I have greatly benefited form the program and we thank WAESO for the support.”

Dr. Judith B. Ulreich, Research Associate Professor
University of Arizona

“The peer study group accomplished its goal to help the minority students in alleviating the fear of chemistry in some of the students. The peer study group sessions also helped the students to study in groups and to brainstorm when solving a homework problem.”

Dr. Kamala Sharma, Associate Professor
University of New Mexico

“We found these students to be much more responsible and resourceful learners after completing this program.”

Marshall Logvin, Project Director
South Mountain Community College

“Students unanimously stated on a posttest survey that the Rio Solado project was the most worthwhile part of this class and many said it was the best thing they had done in their entire lives. The experience of doing research with scientists, crafting a technical paper and delivering a carefully prepared presentation they found nerve-racking, but very gratifying.” “Class grades increased over 50% after the Rio Solado Project”

Marshall Logvin, Biology Faculty
South Mountain Community College

“Students overwhelmingly said that the materials available over blackboard as well as the extra hours of test review helped them to do better in class than they would have normally been able to do.”

Jean Revie, Instructor
South Mountain Community College

“As the student participants were involved in research for the first-time, they spent considerable amount of time researching on literature on diazonium ion chemistry/biochemistry.”

Surendra N. Mahapatro, Professor and Chair
Regis University

“It is heartening that students, who started out with lots of initial hesitation and apprehension, at the end of the semester, started excelling in the class.”

Surendra N. Mahapatro, Professor and Chair
Regis University

“Although I covered the topics in the classroom, this project provided students with an opportunity to see the applications of filter theory and Fourier series in signal analysis and synthesis. They work hard on this project and gained good experience in the filter theory and signal processing.”

Dr. Hamid Allamehzadeh, Assistant Professor

Western New Mexico University

“The success rate for the students who participated was above average this semester.” “One of the most important factors leading to student success is the amount of time students spend with the material. By providing an instructor facilitated study session, the amount of quality time the student spends with the material can be increased dramatically.” “When this program works to its potential, students will raise their confidence with the material and take ownership of their education, resulting in increased student success rates, hence higher student retention in educational programs.”

Dr. Allison Bruce, Coordinator
El Paso Community College

“Debra received very good grades this semester. She attributes this improvement to the WAESO scholarship that allowed her to participate in research on campus.”

Dr. Jacimaria R. Batista, Associate Professor
University of Nevada

“The students in the peer study session received a better grade than if they had not attended the study sessions. Almost all of them received an A and those that did not, received a better grade than that if they had not attended”

Luis G. Perez, Instructor
El Paso Community College

“This summer I had the opportunity to continue working on the project involving sensate scaffolds I initially started during the 2004 summer semester. I have acquired new skills working such as machining, soldering, basic circuitry, and data analysis. I received training in scientific writing and presentation. I took part in this summers UBRP poster presentation here at the University of Arizona.” “Thanks to the WAESO grant I received the past 4 semesters, I feel better prepared to conduct scientific research and feel motivated to seek out additional research opportunities. “

Corina Fuentes, Molecular and Cellular Biology Student
University of Arizona

“I have been able to greatly refine my DNA manipulation techniques and can produce an ample amount of product efficiently. I have also learned that research is a very gradual process that presents many opportunities to problem solve. Through problem solving I have learned much more about actual reactions taking place for each procedure and have become much more knowledgeable about the use of plasmids in biochemistry.”

Renee Rodriguez, Biochemistry Student
Arizona State University

“Although I did not have a strong background in physics or mechanics, I worked to better understand the DIC technology used in the project. I began by researching some of the terms of mechanics such as the numerous ways of describing force. Once I had a good idea of what types of forces were involved, I began to research reference values from previous researchers that might be helpful comparisons to our tests.” “It served as a very good lesson in physics and mechanics and helped me realize the application of these areas in biological fields.” “I had the opportunity to see what research is all about – the goals were serious, and the problems were dynamic.” “In sum, working in the laboratory this summer provided me with the opportunity to gain research experience, and a start at being a part of the scientific community.”

Anthony Pena, Molecular and Cellular Biology Student
University of Arizona

“I really appreciate the opportunity that the WAESO program gave me this summer. It opened a whole new world of research and opportunities for underrepresented minorities. WAESO also gave me the opportunity to put in practice my knowledge and to gain experience in the lab and chemical engineering field.”

Analucia Canizales, Chemical Engineering Student
University of Arizona

“By participating in this research I have learned a great deal about how to prepare for experiments and interpret results. This research has been interesting because I can relate it to my everyday life.”

Amanda Valles, Biochemistry Student
University of Arizona

“I definitely plan to attend graduate school, but I do not know exactly which Master’s Degree program I should pursue. Although this research project has certainly influenced me to look into a career in Aerospace, I would like to explore other territories as well before making a definite decision. The decisions in my life, I believe, are important and critical to one’s success if the intent of pursuing the path is deeply fixed in my heart.

Kelly Kaveny, Computer Science Student
University of Colorado, Boulder

“This organic chemistry research has been a very rewarding experience. I have had extensive training on instrumentation including the NMR, and I have used the GC/MS many times. I have seen techniques like TLC and column chromatography in class, but this is the first that I needed to use them to get an end result, making the understanding of the technique much more important than just studying it for a class grade.”

Ryan Jimenez, Chemistry Student
Colorado State University-Pueblo

“Renee Rodriguez gained an understanding of the dynamics of photosynthesis. She stacked each experiment with a great deal of excitement and enthusiasm,”

Dr. Robert E. Blankenship, Professor and Chair
Arizona State University

“Overall instructors, staff, and the program received above average ratings. According to data, SIMES was successful in accomplishing its goal and the staff met the expectations of the student.” “Students will be tracked throughout the duration of their study at UNM. Data will be used for research purposes and may be presented at selected conferences.”

Carlton Ami, Physics/Geology
University of New Mexico

“Rick investigated the synthesis of a potent inhibitor. He discovered some important aspects of the synthesis of the compound as well as synthesizing a new compound. The data will be used in a future publication. The compounds he investigated and synthesized are new to the literature.

Dr. Lorraine Deck, Professor
University of New Mexico

“In this study Aaron worked out a technique to prevent the pH from rising so high that it killed the cells.” “Future students will use this technique to allow the loading of cells and progress toward the understanding of the way in which loads align chondrocytes. Developing a scaffold, with an appropriately ordered matrix, will allow us to mimic native tissues and deliver a more functional tissue into the patient.”

Aaron Ho, Molecular and Cellular Biology Student
University of Arizona

“Funding through WAESO has been instrumental in providing Amanda with a significant research experience. She and I have greatly benefited from the program and we thank WAESO for the support.”

Dr. Judith B. Ulreich, Professor
University of Arizona

“Encouragement is key.” “The amount of work and effort that the students put in should be recognized. The importance of recognition is that it encourages the students with positive reinforcement. If these students were motivated to do the research, this Congress is certainly a good time for the students to get the additional encouragement they need to succeed in their graduate studies and careers.”

Dr. George W. Morgenthaler, Professor
University of Colorado, Boulder

“Funding through WAESO has been instrumental in providing Justin and Jessica with significant research experiences. They and I have greatly benefited from the program and we thank WAESO for the support”

Dr. Judith B. Ulreich, Director of Research Labs
University of Arizona

“Rhonda Trujillo, an Environmental Geology major, was served by this WAESO award... Lindline regularly assigned questions to Rhonda that would focus her readings and advance her understanding of igneous rocks, structural analysis, and the geology of northern New Mexico.... Dr. Lindline has gained invaluable experience working with Rhonda...Her participation has allowed Dr. Lindline to explore an area of research that has interested her for several years... Both Rhonda and Dr. Lindline are excited about presenting their research findings at the annual WAESO meeting and annual Spring Meeting of New Mexico Geological Society in April.”

Dr. Jennifer Lindline, Associate Professor of Geology
New Mexico Highlands University

“I would like to take this opportunity to thank WAESO for the support of this research project as it provides an excellent incentive to bring young minority students into an active research endeavor.”

Dr. Michael Petronis, Assistant Professor of Geology
New Mexico Highlands University

“WAESO is in large part responsible for the successes we have seen this semester at SMCC.”

Marshall Logvin, Residential Faculty Department of Biology
South Mountain Community College

“This WAESO funding allowed him to participate in a scholarly research project and contribute.”

Raji Sundararajan, Associate Professor
Arizona State University

“...It is a worthwhile experience to work with underrepresented undergrad students and teach them sophisticated, state-of-the-art industry standard techniques and enhance their quality of education and prepare them for advanced graduate studies.”

Raji Sundararajan, Associate Professor
Arizona State University

“In summary, this peer study group made very good use of this offering and made better grades for their efforts.”

Luis Perez, Mathematics Professor
El Paso Community College

“... My profound gratitude goes to the WAESO organization for providing me with the means for taking part in this study.”

Beshoy M. Latif, Chemical and Environmental Engineering Student
University of Arizona

“I truly saw how minds come together to share ideas in order to solve a problem, which I believe is the basis of research.”

Omar Silva, Mechanical Engineering Student
University of Arizona

“I gained a lot of experience from working in the lab and from viewing surgery and analyzing measurements. Working in a team and sharing ideas is one of the most important factors things that I learn.”

Omar Silva, Mechanical Engineering Student
University of Arizona

“I believe that this has furthered my insight and broadened my views as to what exactly I am hoping to achieve in science.”

Manuel McKenna, Chemistry Student
University of Arizona

“...My internship has not only opened doors for me in the interest of pursuing my education beyond the undergraduate level, but has given me the ability to realize my dreams of travel and being a good Samaritan overseas.”

Whitney Alli, Chemistry Student
University of Arizona

“I had never considered graduate school as a part of my future until I was privileged to work with a graduate student. I found great interest in the topic of research and have realized that I would like to continue in the area of research.”

Brittany Varela, Chemistry Student
University of Arizona

“I have contemplated pursuing a graduate degree before, but could not decide on a subject area. This project has opened up a new area of consideration.”

Keith Taylor, Engineering and Applied Sciences Student

University of Arizona

“It has affected my choices in courses and careers and will ultimately assist me in applying to institutions of higher learning that may not have considered me as an applicant before.”

Mara Santa Maria, Life and Biological Sciences Student
University of Arizona

“The project has turned out to be multidisciplinary because I was allowed to gain experience and have enhanced my research skills. Also, I have been able to become more knowledgeable with sampling, measurement, interpretation of chemical, physical, and biological data.”

Julie Trujillo, Life and Biological Sciences Student
New Mexico Highlands University

“This project has been an excellent learning experience and a positive step towards my educational endeavours.”

Melissa Calderon-Aragon, Biology Student
New Mexico Highlands University

“These two weeks spent on the chemistry floor have been very enriching. I am very thankful for this opportunity to step beyond the ordinary college experience. I have grown as a student in a short time and learned many things I was not sure I could.”

Regina Murrieta, Chemistry Student
Regis University

“I was able to apply my knowledge in the areas of physics, chemistry, and calculus while performing this research, and I would like to thank WAESO for making this possible.”

Liz Abeyta, Applied Physics Student
Northern New Mexico Community College

“The Western Alliance to Expand Student Opportunities has given me a foothold on the things that I truly want to pursue; and that is protecting the environment. Thank you WAESO.”

ShaToya Milteer, Biology Student
Phoenix College

“While working in the lab, I gained valuable experience that will help me in the future, especially as a continuing student within the Orthopedic Research Lab. Much of what I learned can be applied in many other labs, such as sterile techniques and cell culture procedures.... A primary reason for doing research here was to determine if research is a field of interest to me and now that I have gained experience with cell culture research I believe this field is of great interest.”

David Gonzales, Life and Biological Sciences Student
University of Arizona

“The project expanded my knowledge and experience in geology. I do plan on attending graduate school and the project really had a positive influence on me as a scientific researcher. Without the experience of performing scientific research that WAESO and Dr. Lindline has provided me with, graduate level research may have been an intimidating prospect.”

Rhonda Trujillo, Environmental Geology Student
New Mexico Highlands University

“This experience has helped Mr. Garcia enhance his research skills and promote interaction with other earth science professionals within the University of New Mexico and will continue to prove a valuable experience throughout his academic career. The WAESO program is an excellent avenue to foster hands on field and laboratory experience.”

Louis Garcia, Engineering and Environmental Geology Student
New Mexico Highlands University

“It has definitely nurtured her interest in scientific research as she is currently continuing working on the project without grant or payment.”

Dr. Pierre Herckes, Assistant Professor
Arizona State University

“Being apart of this project has helped me understand how things work and why certain procedures are chosen over other procedures. I think that my experience on this project will help make me more competitive in the job market and in applying to graduate school.”

Kandis Knight, Chemistry Student
Arizona State University

“I believe that having undergraduate research experience is crucial in preparing yourself for graduate school.”

Rebecca Omana, Student
Arizona State University

“While working in the lab, I gained valuable experience that will assist me in my current and future studies, especially as a student continuing to work at the Orthopedic Research Lab.”

David Gonzales, Life and Biological Sciences Student
University of Arizona

“It must be said that this experience was a very important part in progressing my understanding of Mining Engineering.”

Taiyou Smith, Mining Engineering Student
University of Arizona

“This experience has allowed me to utilize the knowledge I gained in the classroom and understand the full meaning of applied science.”

Katy Ruiz, Chemistry Student
University of Arizona

“As a Latina, Katy’s achievements will serve to draw more women and underrepresented students into chemistry and into the physical and biological sciences.”

Abrell Leif, Professor
University of Arizona

“I think doing this kind of research is a great chance for undergraduate students to have a taste of what research is, to meet with people that are working on their masters and Ph. D., and to do a little hands-on activities using information that is learned in the classrooms.”

Ana Cristina Forcada, Chemical Engineering Student
University of Arizona

“I am also proud to announce that the generosity that WAESO has gave me flowed over me like sap on tree that entrenched and enduring motif to bring others younger than I to discover the realm of the research world in my community.”

Androuw Carrasco, Life and Biological Sciences
University of Arizona

“The WAESO program has allowed him a wonderful opportunity to expand his horizons and he plans to participate in the program again with us.”

Dr. Marlys H. Witte, MD, Professor
University of Arizona

“I would like to take this opportunity to thank WAESO for the support of this research perfect as it provides an excellent incentive to bring young minority students into an active research endeavor.”

Dr. Michael Petronis, Assistant Professor
New Mexico Highlands University

“Taking Part of this research project gave me the inspiration to continue my education and pursue my Masters degree after I obtain my bachelors.”

Calvin Parson, Geo-Sciences Student
New Mexico Highlands University

“The project was successful at enhancing my knowledge of geology as well as improving my awareness of how to conduct a field study, collect data and samples, process rocks for laboratory analysis, make scientific observations, and plot structural data on a stereonet both by hand and by computer.”

Rhonda Trujillo, Geo-Sciences Student
New Mexico Highlands University

“This project has enhanced my research skills by making me study topics that are outside of my field.”

Isaac Sachs-Quintana, Mechanical Engineering Student
New Mexico Institute of Mining and Technology

“ ... I would like to say that this experience is one I will cherish for the rest of my educational journey.”

Zalalem Alemu, Civil Engineering Student
University of Nevada

“Most importantly, I feel that this research position has inspired me to continue on through school and one day find the cure for cancer.”

Randi Taniguchi-Fu, Biochemistry Student
University of Nevada

“The research experience and recognition associated with the grant are making a significant impact on the grantee, who has tremendous potential for personal success and for becoming a mentor to others.”

Barbara Luke, Ph.D., P.E., Associate Professor
University of Nevada

“I am confident that I will leave Arizona State University not only as a chemist, but also as a well rounded person. This experience has helped to shape me as a person and I know it will only increase my chances of obtaining that perfect job.”

Kandis Knight, Chemistry Student
Arizona State University

“The challenges and difficulties faced while working on this project has allowed me to learn how to clarify and analysis problems that I face in a more concise and organized manner.”

Nicolas Enriquez, Life and Biological Science Student
University of Arizona

“Through this research experience I now have a great deal of patience and understanding that it will be an asset to my academic work and to any future research project I enter.”

Maricon Pangilinan, Life and Biological Sciences Student
The University of Arizona

“These skills were enhanced during the time of this semester and will surely help me to grow and prepare me for my professional endeavors.”

Taiyou Smith, Mining Engineering Student
University of Arizona

“Overall, this experience had an impact and shined the path to a bright future of considering graduate school as an option.”

Getachew Melaku, Civil Engineering Student
University of Las Vegas

“I was exposed to the research environment and what is expected from graduate students and also the mentoring on career options and many opportunities for pursuing graduate degrees and careers for post-graduate students.”

Ramiro Adam Ballesteros, Engineering Student
University of Nevada

“Besides gaining fact-based knowledge of and learning mathematical methods in Physics and Chemistry, we got hands-on experience in the use of computer programs and the presentation of scientific results at professional conferences.”

Matilda Fernandez, Mathematics Student
Northern New Mexico Community College

“Taking part of this research project gave me the inspiration to continue my education and pursue my Masters degree after I obtain my Bachelor. I now have a better sense and appreciation for the importance of research, and know the benefits that the greater public can gain from research like this.”

Calvin Parson, Environmental Geology Student
New Mexico Highlands University

“I am confident that my Arizona State University experience has not only prepared me to be a chemist, but also a well rounded productive individual. This experience has helped to shape me as a person and has added me in being a marketable degree holder.”

Kandis Knight, Chemistry Student
Arizona State University

“While working in this lab, I have gained much experience on what I hope to be a vital aspect of my future career. Not only have I learned and mastered sterile technique and proper cell culture techniques, I have learned to be a better leader and instructor while demonstrating the proper lab techniques for other students.”

David Gonzales, Biological Sciences Student
University of Arizona

“I have learned many important skills during this project. First of all, the one I felt most important to have learned was an increased sense of team work.”

Taiyou Smith, Mining Engineering Student
University of Arizona

“This project was multi-faceted and provided an array of experiences for Calvin and Rhonda that strengthened their geologic skills and prepared them for graduate-level work.”

Jennifer Lindline, Associate Professor of Geology
New Mexico Highlands University

“Taking part of this research project gave me the inspiration to continue my education and pursue my masters degree after I obtain my bachelors. I now have a better sense and appreciation for the importance of research, and know the benefits that the greater public can gain from research like this.”

Calvin Parson, Geo-Sciences Student
New Mexico Highlands University

“Overall, this experience had an impact and shined the path to a bright future of considering graduate school as an option. During the study, I have learned that undergrad school is the first step to an educational career as well as knowledge.”

Getachew Melaku, Engineering and Applied Sciences Student
University of Nevada, Las Vegas

“I am confident that opportunities such as the WAESO program will prepare me well beyond for research and graduate school and allow me to apply my knowledge, analytical abilities, and leadership skills in order to make a significant contribution to the field of environmental engineering.”

Selisa Rollins, Chemical Engineering Student
Arizona State University

“The most interesting thing about working here is that I learned something new every day. It also made me be sure about my degree and the things I enjoy doing.”

Carolina Tostado, Bioengineering Student
Arizona State University

“Participating in this WAESO program has mainly helped me experience first hand how research is carried out and has, in turn, made me very interested in pursuing graduate school.”

Claudia Perez, Bioengineering Student
Arizona State University

“Overall this was the most challenging and most fun project I’ve worked with.”

Maricon Pangilinan, Biochemistry Student
University of Arizona

“Not only did I learn about other studies in this field, I also gained understanding of how a research laboratory functions and the importance of commitment to a project.”

Cheyenne Weeks-Galindo, Chemistry Student
University of Arizona

“The WAESO program has allowed him a wonderful opportunity to expand his horizons and obtain future research/scholarship positions that will help plan his future.”

Dr. Marlys H. Witte, Professor
University of Arizona

“It is through this experiment that I realized that I enjoyed doing the field experiment more than the lab aspect of the experiment. It helped me realize what type of research I would like to pursue in future endeavors.”

Nenad Dobra, Engineering and Applied Sciences Student
Northern New Mexico Community College

“I want to thank WAESO for funding yet another research project. The experience I have gotten throughout this third research is invaluable. Not only is it important as an engineering student, but also as a member of my community.”

Eduardo Gonzalez, Civil Engineering Student

University of Nevada, Las Vegas

“The planning and implementing phases of the project served as a thorough guide to putting together a research project. The GIS work will further benefit me in my future work as a graduate student, as my thesis will implement many of the approaches used in this study.

Jason Eli Martinez, Forestry Student
New Mexico Highlands University

“I would like to take this opportunity to thank WAESO for the support of this research project as it provides an excellent incentive to bring young minority students into an active research endeavor.”

Michael Petronis, Geo-Sciences Assistant Professor
New Mexico Highlands University

“This experience has helped enhance research skills and promote interaction with other earth science professionals within the University of New Mexico and will continue to prove a valuable experience throughout his academic career. The WAESO program is an excellent avenue to foster hand on field and laboratory experience.”

Louis Garcia, Environmental Geology Student
New Mexico Highlands University

“These two semesters participating in WAESO have been very valuable since they have provided me with actual practice and an insight in to how research is performed, from the basic but important laboratory safety guidelines to the use of lab notebooks that serve as a reference for future and existing lab members, and many other things.”

Claudia Perez, Bioengineering Student
Arizona State University

“The Western Alliance to Expand Student Opportunities program was very insightful. The program helped me understand the fundamentals of how to conduct and present research projects at the graduate level.”

Abdul Jabbar Momoh, Civil Engineering Student
University of Nevada, Las Vegas

“I am very thankful to Professor Mahapatro as well as WAESO for giving me this opportunity. I look forward to presenting the preliminary results of my research at the next WAESO Undergraduate research symposium and at the American Chemical Society regional and national meetings.”

Parion Neal, Biology Student
Regis University

“I am very thankful to WAESO for the opportunities throughout my college career that I otherwise would not have had. It was a chance to add much more experience to my education than I would have had in class laboratories alone. I am glad to have taken even a small glimpse into the important areas of research and find those of interest to me, giving me ideas about what I would want to be part of in the future, particularly in possible graduate research.”

Regina Murrieta, Honors Chemistry Student
Regis University

“Working in Dr. Witte’s lab has opened a whole new world for me. After having firsthand experience with lab animals and the polymerase chain reaction, I feel confident in my choice of majoring in molecular and cellular biology and I look forward to the future when I could possibly do research everyday for a living.”

Eduardo Bastidas, Molecular and Cellular Biology Student
The University of Arizona

“Thanks to WAESO funding my experience in Dr. Szivek’s lab has helped me learn a lot about cartilage tissue regeneration specifically and research in general.”

Robert Shatto, Physiology Student
The University of Arizona

“Working in Dr. Szivek’s lab and participating in a variety of studies throughout the semester has strengthened my knowledge in areas that are invaluable for my education. I have learned how to interpret data on a computer, the general procedures of a dissection, and also how to utilize tools in a lab to complete other tasks.”

Amanda Urbina, Physiology Student
The University of Arizona

“I am thankful to be introduced to research very early in my college education at UNG-Gallup. My involvement in this environmental science project and research with faculty mentor, Paula Watt, provided me with a much better sense of what scientists do, the value of scientific research to society, and the potential for personal, intellectual, and economic growth through a career in science.”

April Longhair, Biology Student
University of New Mexico – Gallup

“I am the only WAESO funded person that was working on this research. This research has made a huge impact on my life, and has allowed me to see that I can go to graduate school if I choose. Thank you for sponsoring me.”

Rachel Griess, Chemistry Student

Arizona State University

“In addition to clarifying my academic and career goals and interests, this project enabled me to develop skills in critical thinking, creativity, problem solving, and intellectual independence. Use of these skills assist in the creation of new knowledge and applying that knowledge to real-world problems.”

Selisa Rollins, Chemical Engineering Student
Arizona State University

“I strongly believe that due to the experiences and research skills that I gained while participating in WAESO has put me a step above my peers, allowing me to succeed inside and outside the classroom.”

Michael Garcia, Mechanical Engineering Student
Arizona State University

“Overall, I believe the abundance of wisdom I have gained from this yearlong experience serves as a useful asset in continuation of my undergraduate studies at The University of Arizona.”

Monique Adakai, Environmental Science Student
University of Arizona

“This experience has opened a new dimension for science to me. This summer I am doing a research internship through NM Tech University and I believe the WAESO opportunity was instrumental in getting me accepted into this program. Thank you very much for the funding that allowed me to participate in this project”

Joseph Torres, Chemistry Student
New Mexico Highlands University

“This experience showed me a side of academia I was unaware of that I knew existed yet I never knew what it all entailed. It showed me what long life learning is and how it can benefit society and how I can contribute to progress the quality of life of everyone around me.”

Edgar Hernandez, Civil Engineering Student
University of Nevada, Las Vegas

“My overall experience has raised my desire and expectations for further research, and a possible career in the medical field.”

Mobeen Ahmad, Life and Biological Sciences Student
University of Arizona

“Overall the opportunity was a good life experience, and as I try to finish my degree in Civil Engineering, this indeed is a lifelong knowledge I would be able to use in my future endeavors.”

Kathryn Leonardo, Civil Engineering Student
University of Nevada, Las Vegas

“This research has developed a preview of the graduate research and the process of researching, redeveloping ones hypothesis, and having ones work reviewed. This type of knowledge is indispensable and will later help me when I work towards my graduate degree and even extend and be beneficial in my career.”

Sean Robinson, Civil and Environmental Engineering Student
University of Nevada, Las Vegas

“I would like to take this opportunity to thank WAESO for the support of this research project as it provided an excellent incentive to conduct a research project at the undergraduate level.”

Amanda Aragon, Environmental Geology Student
New Mexico Highlands University

“Micah is also equally strong in the use of computational chemistry packages such as SPARTAN (Wave Function). I am happy to report that Micah has expressed his willingness to volunteer his time for completing the projects that he had initiated with WAESO support.”

Surendra Mahapatro, Professor and Chair
Regis University

“Towards the goal of serving underrepresented minority students, the undergraduate research student supported by this WAESO award, Jennifer Sepulveda was well integrated into our laboratory notebook.”

Dr. Leif Abrell, Professor
University of Arizona

“By participating in this research project, I gained understanding of the graduate research possibilities I could have once I graduate.”

Isaac Guzman, Civil Engineering Student
University of Nevada-Las Vegas

“Both students have prepared posters and will be participating in research conference. Most important outcome is that both Isaac and Robert are considering attending the graduate school.”

Dr. Sajjad Ahmad, Professor
University of Nevada-Las Vegas

“I am happy to report that Micah has express his willingness to volunteer his time for completing the projects that he had initiated with WAESO support.”

Dr. Surendra Mahapatro, Professor and Chair
Regis University

“Programs such as WAESO only ever inspire me to try my hardest to get to graduate school, to get a job where research is the main objective and to get a research grant myself to help others like this program helped me. This experience is very important to me and I am very grateful to have been able to have it and I look forward to both the conference and spring research.”

Alysse Rivera, Chemistry Student
Regis University

“The conference will be beneficial to my future career in Biology. This opportunity will be a strong point on my resume because it will show that I have experience with professional research and preparation of data for publication or presentation to the scientific community.”

Micah Fernandez, Chemistry Student
Regis University

“Since WAESO grant approval for the summer session of 2009, Allison has successfully carried out the complete synthesis pertinent to her project goals.”

Dr. Michael Heagy, Professor
New Mexico Institute of Mining and Technology

“This was Eddie’s third and final semester with WAESO funding and he has demonstrated his understanding of the lymphatic system and its disorders, worked on planning new projects, and has discovered things about himself and options for future opportunities that will shape his future pathway.”

Dr. Marlys H. Witte, MD, Professor of Surgery
University of Arizona College of Medicine

“As a result of the WAESO grant, the students played key roles in preparation for and conduct of a complex downhole seismic test in Stewart Valley.” “...I believe that this WAESO grant hit the intended target very well. Two appropriate candidates were served, they received significant responsible hands-on exposure to research, they interacted regularly with a faculty mentor and also with other authority figures, and the research benefited as a result. I am deeply appreciative of the WAESO program and the opportunities it brings”

Dr. Barbara Luke, Professor
University of Nevada-Las Vegas

“With generous support of the National Science Foundation through the Western Alliance to Expand Student Opportunities Program, I have had the opportunity and pleasure this past spring semester to participate in scientific research study.”

Dieremi Guerrero, Civil and Environmental Engineering Student
University of Nevada-Las Vegas

“This WAESO grant allowed me and Dieremi Guerrero to continue and finish the work of AGC colleagues in regards to acquiring the relevant permits for drilling and testing, going out to bid and finalizing a local drilling company and lastly perform seismic downhole testing on this borehole in Stewart Valley, Nevada.” “... This grant allowed me to continue research with Dr. Barbara Luke on the ESN project and gather insight on what it is like to be a graduate student.”

James Cordova, Civil Engineering Student
University of Nevada-Las Vegas

“WAESO has taught me a lot of valuable experiences and skills that are needed as a graduate student and it enhanced my researching skills.”

Aaron Mariano, Civil Engineering Student
University of Nevada-Las Vegas

“I am very thankful to have been awarded this scholarship and research opportunity. This project has allowed me to gain laboratory experiences as well as collaborate with researchers at the University of Nevada Las Vegas.”

Ariana J. Alaniz, Mechanical Engineering Student
University of Nevada-Las Vegas

“I have enjoyed this project and would like to continue to work with WAESO. This has been a great opportunity for me to get experience in the laboratory and better my knowledge in biology. I feel more prepared for graduate school now that I know a lot more about the laboratory and experiments that are conducted.”


Reyna Montano, Life and Biological Sciences Student
New Mexico Highlands University

“ The support provided by this WAESO project will serve as a stepping stone to Ms. Cedillo and Ms. Garcia future plans and will provide them with the training that will advance their understanding of implementing geologic research projects.”

Dr. Michael S. Petronis, Assistant Professor
New Mexico Highlands University

“The WAESO program is an excellent avenue to foster hands on field and laboratory experience.”

Dani Cedillo, Environmental Geology Student
New Mexico Highland University



“WAESO funding has allowed me to continue to involve undergraduates in my research. WAESO funding is great because the students felt like they had their own project that they were responsible for and were more focused on the final goal while being exposed to a variety of research techniques.”

Dr. Carol Linder, Associate Professor
New Mexico Highlands University

