

**Spring 2009 NMSGC Scholarship Students
Service Report**

Student Name	# Hours	Service Report	What has participating in SG done for you?
Karen Hutchins	2.5	Darwin Days at UNM	The Space Grant Scholarship enabled me to attend the Lunar and Planetary Science conference in Houston, TX so that I could present my research (in the form of a poster presentation) and interact with people that work in my field. It's a great way to make people aware of the research that I'm doing and also to network. Making contacts could help me later when it comes time to find a post-doc position.
Cecil Richard Compeau	13	UNM ECE Open Houses - Meet with the ECE Department Chair, Undergraduate Chair, and other members of the Recruiting Committee to plan and organize the Open Houses. At the Open Houses I assisted with setting up refreshments and informative brochures, I was one of the speakers during the opening remarks giving a powerpoint presentation about engineering careers, and then I conducted lab tours of the Plasma & Fusion Sciences Lab. These efforts were directed towards interested middle- and high-school students in engineering careers	The Space Grant Scholarship enabled me to work on the design and simulation of a plasma diagnostic for the Plasma & Fusion Sciences Lab in ECE at UNM. Although such a diagnostic has been previously built (as will be described in the literature survey of my NMSGC end-of-year report), my design provides both superior accuracy and easier construction compared to existing implementations. Plasma diagnostics are important because plasma measurement is central to applications such as the generation of clean energy from nuclear fusion. This research would not have been possible without funding from the Space Grant.
Cecil Richard Compeau	24	UNM ECE Senior Design Projects – Mentored a senior design team consisting of five ECE seniors, to assist them on their senior design project that was presented May 5 th . This consisted of hosting them at my home for technical orientation and instruction, and meeting with them on campus and in the lab. Their project was to construct and characterize the signal conditioning electronics for the swept heterodyne interferometers to be used on the HELCAT plasma machine. They learned basics of electronics design and fabrication, and how to present their work to the community	

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Sonja Stiefel	45	<p>Sandia High School Student Environmental Club – For my community service, I assisted with the Student Environmental Club at Sandia High School. I was present for all the clubs meetings. I was a chaperone on their field trip to the waste water treatment plant, the Rio Chama drinking water treatment plant and a PNM power generating plant. I was one of the faculty sponsors during the week they sold pizza for fundraising for their club. I provided an adult role model and discussion partner to support students in developing their own environmental ethic and philosophy. The stewardship project was a valuable experience in that I got to see another side of the students. I would gladly sponsor student clubs in the future. I can imagine enjoying a wide variety of club topics, not just environmental. It is really fun to see students forming social relationships and practicing life skills like discussion, persuasion, independent research and activism in a low-stress club environment. I have learned how to sit back and let students lead, even when I can see what I think are problems in their approach. I think students in the environmental club learned as much from ideas that didn't work as they did from ideas that worked. Growing up means taking risks and learning from mistakes, student clubs allow this to happen in a safe environment.</p>	<p>Education/research benefit: I enjoyed using the lunar biosphere curriculum developed by NASA. Since this was the first time I used it, I did not deviate much from the way it was written. Next year there are some changes I will make. One of the things that did not work so well for my students was the introductory activity of building mobiles to explore relationships between soil, water, sunlight, plants and animals. My 9th graders felt like I was treating them like little kids, and the activity was also too time consuming. Next year I will use concept mapping instead, to explore the same relationships. It was great for me to do background research on space colonization and learn more about current research being done on growing food in space. My students enjoyed the unit and learned a lot too.</p> <p>Prestige/self-esteem benefits: Having received this grant is a wonderful thing for me to tell future employers. It has also helped me feel like the competent and professional teacher that I am becoming. I am grateful to the Space Grant Consortium for giving me the opportunity to develop further as a professional educator. I feel that offering this grant to pre-service teachers makes a great deal of sense. We are at the point in our teaching careers, when this grant can make a huge difference in our teaching practice. We are starting from scratch without the benefit of years of collected tools, materials, lesson plans and experience. Participating in the Space Grant has given me a head start collecting and creating great hands-on, real-life curriculum.</p> <p>Monetary Benefit: Because of the money I received, I was able to do the NASA unit Lunar Biospheres with my biology students. It is a hands-on discovery-style lesson that is materials and tools intensive. I was able to purchase both consumable materials such as seeds, soils, fertilizers, and construction paper, as well as reusable</p>

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			materials for that unit such as scissors, markers, and tools. I would not have been able to do this unit without the grant money I received. Now that I have a classroom set of the tools and materials needed to repeat to lesson in future years, I will be able to offer this wonderful lesson to my students again. I was also able to purchase books related to the unit for my students to use as reference materials.
Alba Chavez	8	Biosymposium - Setting up event and judging	Space Grant Scholarship has given me the determination to continue my PhD studies focusing on microbial physiology, thanks to your support I have been enthusiastic about my experiments. I have had an impressive advancement in my results, since I received this scholarships I did not have to work as a teaching assistant saving me more time to focus only on my project. I hope to continue advancing in the rest of the year with great improvements.
Alba Chavez	3	Graduate Research and Arts Symposium – Judging presentation	
Tobias Hartman	8	State Science Fair - I was a judge at the 2009 New Mexico State science fair. It was a great opportunity to interact with future scientists and encourage their scientific learning.	The Space Grant has been a real eye opener for myself! It has been a great opportunity to explore a completely new field of study. The grant gave me the ability to challenge myself and think outside of the box when it came to aero design. There are just so many fascinating laws to help understand the complexities of travel, and the grant allowed me to study some of those. The research that I got to partake on because of the Space Grant has really started a new passion of interest for myself. I know the research will drive me to continue to learn more about aero research and hopefully lead me to a career in rocket propulsion someday. Thank you for this great opportunity!
Tobias Hartman	3	Mid-Night Breakfast - This is a NMT tradition the night before finals start, faculty serves breakfast. I will be tutoring at the Midnight breakfast for all Mechanical Engineering classes as well as intro to physics and calculus.	
Nina Lanza	10	Visiting Scholar at St. Mark's School - I spoke with several 7 th grade classes and one 5 th grade class about the upcoming Mars Science Laboratory (MSL) rover mission, and specifically about one instrument onboard the	The NM Space Grant has helped me to defray the costs associated with a month-long trip to the Johnson Space Center in Houston, TX. This trip allowed me to work closely with NASA scientists on my PhD research project, and also provided me with access to a variety of laboratory

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		rover, ChemCam, on which I am a collaborator. Topics discussed included the rock samples the students sent to me the previous semester and the background needed to become a planetary scientist.	equipment that is not accessible at my home institution.
Jullian Bornak	5	Sky Safari – In partnership with the LC Museum of Natural History, our department participates in the monthly Sky Safari program. We bring telescopes and laser pointers on site, either to La Llorona State Park or Leasburg Dam State Park, and show off the night sky. We also hand out monthly sky maps and instruct people on their use and how to get fee copies each moth.	At his point in my graduate program, I am finished with classes and devoting my time to research. I will be taking my orals in May and presenting my thesis topic during the summer. Pending the approval of a proposal to the VLA, I plan to devote my thesis to quantitative characterizing the behavior of relativistic jets in binaries with black holes or neutron stars accreting matter from their binary partner. I plan a series of simultaneous/ contemporaneous multi-wavelength observations of a series of X-ray binaries suspected of launching jets, including the first IR survey of X-ray binary jet systems. This summer I will attend the EVLA workshop on stars on and off the main sequence, and there are several promising conferences in South America I would like to attend. I also have a first author paper in the process of being reviewed by the Astrophysical Journal as a Letter. NM Space Grant makes all this work possible.
Jullian Bornak	4	SEA Share Fare – The fair was a gathering of local groups whose activities would be of interest for families with children. The NMSU Astronomy Department had two tables, one inside and one outside. I manned the outside table, including handing out and explaining night time sky maps, explaining the solar cycle, and showing off the solar telescopes.	
Jullian Bornak	1.5	University Hills Daytime Astronomy – We presented a brief overview of all the things which can be found in the solar system. I helped in explaining the phases of the moon and eclipses to a surprisingly science-literate group of 4 th grade students, then we showed them the sun through our solar telescopes.	
Jullian Bornak	4	Alameda Elementary Science Week – We presented a brief overview of all the things which can be found in the solar system. As a fun activity we had the students make comets using dry ice, then we showed them the sun through our solar telescopes.	

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Jullian Bornak	1	Graduate Research and Arts Symposium – The Graduate School Council sponsored GRAS even as a showcase of the graduate research going on at NMSU. This year I gave a presentation summarizing the results of my research and laying out the plans for my thesis project.	
Chris Arrigo	10	Alexis McIntosh SEMAA Program – Help aid the first grade teacher in instructing the first grade after-school program about space. The topics include Introductory Space Flight, Phases of the moon, Intro on planets and laws of gravity	On a personal note, Space Grant has helped with tuition and has allowed me to focus more on school and less on money. Since Space Grant my GPA has been a 4.0. It has also let me spend more time in the lab which has aided in more results for the MFC project. This grant has prepared me for the professional world in which I soon will be attending graduate school in the fall.
Chris Arrigo	4	ISPCS – Helped conduct surveys for the symposium on how to make the symposium for attractive for guests and to get feedback for next years.	
Paul Smith	10	Eubank Elementary Science Night +other events. Worked with kids from the school that my children attend on science based projects at science night. At math night we go from room to room learning and administering math games.	
Ann Ollila	5	Cosmic Carnival- Explained meteorites to public. Identification, description and upcoming NASA missions.	The Space Grant has allowed me to focus and expand on my research into mars exploration.
Mark Seger	2	Sonoma Elementary Science Fair- Engaged and discussed science projects with students of	The process of applying for the receiving the NMSG scholarship has allowed me to discover a new

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		5 th grade class that presented their via poster presentations. We judged the students and critiqued their posters.	perspective of how my project can impact the scientific community. I was also able to discover other options for possible future career goals working with NASA, particularly in the area of astrobiology. This scholarship has greatly assisted me in being able to continue my research and education here at NMSU. Moverover, these past couple of years I would find myself very focused on my research and trying to keep up with my personal life. The community service part of the scholarships is great. I enjoyed helping teachers with their students' science projects and the time I had with the students made me eager to participate in more functions.
Megan Duncan	2.5	Darwin Days- Answered questions about meteorites and explained meteorite identification to the public.	The Space Grant Scholarship allowed me to attend the AGU conference and the LPSC, which allowed me to represent my research to other scientist in my field.
Megan Duncan	4	Cosmic Carnival- Explained meteorites (where they came from, what they were and upcoming NASA missions) to the public.	The Space Grant Scholarship allowed me to attend the AGU conference and the LPSC, which allowed me to represent my research to other scientist in my field.
Douglas Hoffman	3	Sky Safari- Showed several sky objects to the general public through telescopes and answered their questions.	Space Grant has helped to fund my salary and has allowed me to go to a conference in Santa Fe in June, which will be instrumental in meeting contacts and obtaining a job prior to graduation.
Douglas Hoffman	7.5	Campus Observatory Volunteer- On three occasions I helped in the campus observatory activities in showing ASTR 110 students and some of the public the sky.	Space Grant has helped to fund my salary and has allowed me to go to a conference in Santa Fe in June, which will be instrumental in meeting contacts and obtaining a job prior to graduation.
Thanhvu Nguyen	5	James Monroe Middle School Science Fair- Scoring science projects for middle school students. Task including judging posters asking students questions ect.	Overall I am very grateful for the Space Grant Scholarship. It provides the incentives as well as the funds for my research projects. The grand allows me to quickly purchase some of the hardware needed for my research as well as allowing me to attend several related conferences in the field. The volunteer hours used for the scholarship are also very helpful and enjoyable. For example, I volunteered to be a judge for a middle school science fair in 2009 and greatly enjoyed the event. In

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			summary, I greatly appreciate the scholarship and hope to have a chance working at NASA some day.
Thanhvu Nguyen	5	UNM Darwin Symposium day- Volunteered to help the symposium by presenting posters and talking to others about applying Darwin's Evolution ideas to evolve software repairs. It was a great chance to promote bio-inspired techniques to students and others of different backgrounds.	

Space Grant scholars provided over 202 hours of service to the following organizations:

- Service to pre-college students: 108.5
 - UNMECE Eubank Elementary School
 - Sandia High School Sonoma Elementary
 - State Science Fair James Monroe Middle School
 - St. Marks School Alameda Elementary
 - University Hills SEMAA

- Service to general public: 40.5
 - Sky Safari Cosmic Carnival
 - SEA Share Fare Campus Observatory
 - Apache Point Observatory

- Service to college students: 37
 - Darwin Days
 - UNMECE Senior Design Project
 - Mid-night Breakfast

- Service at academic conferences: 16
 - Graduate Research and Arts Symposium
 - Biosymposium
 - ISPCS