WV Space Connections

West Virginia Space Grant Consortium

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Letter from the Director

Dear Friends,

I am happy to announce that we've had a great fall semester here at the NASA WVSGC. I am also pleased to welcome Glenville State College and Dr. John Peek, Provost, to our Board of Directors. We look forward to a long and productive partnership. I would also like to take this time to remind all our friends that grant proposals for the 2011-2012 year are due on March 10, 2011. Please visit our website for further instruction and to apply.

Majid Jaraiedi

Dr. Majid Jaraiedi (center) with Melinda Varney (right) Graduate Researcher of the Year and William Kelly, Undergraduate Researcher of the Year

Inside This Issue

NASA WV Space Grant Scholar Wins Prestigious Award

Submitted by: Amy Diznoff

Marshall University student researchers and WVSGC Scholars captured first place in both categories of a competition held earlier this year in Huntington in conjunction with the third statewide STaR (Science, Technology and Research) Symposium. I had a chance to interview Melinda Varney, Graduate Researcher of the Year, about how NASA WVSGC has impacted her education and career.

Question: *How has receiving a NASA WVSGC Fellowship inspired your research?*
Response: Receiving these fellowships has allowed me to complete my research. It took the weight of financial need off of my shoulders to allow me to concentrate on more creative thinking for my project. It also allowed for me to attend a national meeting in which I was able to share my work and ideas with leading researchers in the field.

Q: *Have you authored or co-authored any articles/books as a result of your Space Grant research? How many? What are their titles?*
R: My grants partially supported the work for 2 publications thus far:

"Omega 3 fatty acids reduce myeloid progenitor cell frequency in the bone marrow of mice and promote progenitor cell differentiation."
Varney ME, Hardman WE, Sollars VE.
Lipids Health Dis. 2009 Mar 18;8:9.

"Omega 3 fatty acids reduce myeloid progenitor cell frequency in the bone marrow of mice and promote progenitor cell differentiation."
Melinda E Varney, W Elaine Hardman and Vincent E Sollars
Lipics 2010 [In press]

Q: *Have you presented or co-authored talks as a result of your Space Grant research?*
R: I have presented my work at poster presentations at national conferences for the American Society of Human

Continued on page 2

Genetics and the American Institute for Cancer Research where I was named a Campbell's Scholar. I have also presented my work at the state level at the STaR symposium here in West Virginia.

Q: *Has your fellowship led to employment?*
R: I am currently job searching, and I am certain that addressing my fellowship awards on my CV is of great value.

Q: *Have you won any other awards as a result of your Space Grant Research?*
R: I was awarded a Campbell's Scholar at the AICR meeting as well as 2010 West Virginia Graduate Researcher of the Year at the STaR symposium.

Q: *Have you done any outreach or mentoring activities about your research?*
R: I'm not really sure what you are looking for here. I have not done any outreach specifically involving my research. I am an active member and past president of the Biomedical Sciences Graduate Student Organization at Marshall University. We have served to participate in charitable events for raising funding and awareness for research for various health related issues. None of these events were specifically leukemia related however. I also mentored a high school student during a summer. He has since attended Marshall University and is pursuing research.

Q: *What do you think are the most valuable aspects of our program?*
R: I think the most valuable aspect comes from genuinely caring people that do all they can to help students like me fuel their passion for research. You all have been flexible with budget changes to allow me to attend national meetings. You have responded well to my ideas, which is very encouraging for a young scientist. Your support, financial and otherwise, has been a key to my success.

Q: *Tell me about an incident or event that you remember most during the course of your grant period.*
R: One of the most memorable events throughout my grant funding, was a trip that I was able to take to Hawaii for the annual American Society of Human Genetics meeting. It was an unforgettable experience to meet with fellow scientists in the field and share ideas in one of the most beautiful places in the world.

Robotics Sessions Set for WVSTA

Submitted by: Margie Cooke/Meri Cummings

Educators at the annual conference of the West Virginia Science Teachers Association can learn how robotics can help them achieve their goals in teaching students in the STEM areas of science, technology, engineering, and mathematics.

Dr. Meri Cummings, science resource teacher and lab manager at the Center for Educational Technologies® and director of the West Virginia FIRST LEGO League statewide tournament, presented two hands-on workshops called NXT Robots in Real STEM Education at the conference on Oct. 22. at Oglebay Resort in Wheeling who hosted the conference.

Participants in Cummings' sessions had a chance to work with the same programmable robots that students do at the annual statewide robotics competition, which was held, Dec. 11 at Wheeling Jesuit University.

Cummings presentations along with the robotics tournament are sponsored by the West Virginia Space Grant Consortium.

The FIRST LEGO League competition asks teams of children ages 9-14 to demonstrate problem-solving and research skills, creative thinking, teamwork, competitive play, sportsmanship, and sense of community as they build robots that can perform the functions required in the competition.

Polyhedron Learning Media Receives Two-Year NASA Grant

Submitted by: Jeanne Finstein

Polyhedron Learning Media (PLM) is partnering with Total Learning Research Institute (TLRI) on a two-year NASA K12 grant. The content areas are high school physics, engineering, and math, all focusing on possible balloon missions on Mars. A simulated Mars City base will be the primary design interface. Students will be exposed to general Mars information and will use that knowledge to plan a balloon launch from the base.

Three high schools will be involved in the design, development, and testing of the web-based program - one in Wheeling, WV, one in Dallas, TX, and one in Washington, DC. As part of the grant, PLM and TLRI will engage students from the three schools using social media.

Developers along with teachers and students at the three schools will use iPod Touch and iPad devices to interact in a series of challenges requiring teamwork. The evaluation component of the grant will focus on content learning and the impact of social media on the teaming and learning processes.

Wesleyan Student at NASA-Goddard

Submitted by: Dr. Joseph Wiest

Devon Miller had a NASA summer internship at Goddard Space Flight Center. Devon is a fourth-year student in the Department of Physics and Engineering at West Virginia Wesleyan College. The Physics Department gratefully acknowledges the West Virginia Space Grant Consortium for funding this project.

Devon reports, "I participated in the NASA Lunar and Planetary Science Academy. I worked on a lunar dust mitigation project. To permit astronauts to spend more time in space, lunar dust needs to be better controlled. If too much dust enters the living areas, breathing becomes difficult. "Our method of controlling the dust problem uses a low-power electron beam in a vacuum and a small electric field that acts as a dust collector.

"We took a week-long trip to Racetrack Playa in Death Valley, California, to study the phenomena of the roving rocks. The rocks move around on the almost flat surface of a dried-up lake bed. The rocks leave behind trails that are hundreds of feet long.

"No one has ever witnessed this happening. We took measurements of the moving rocks to form a hypothesis on the mechanisms required to move rocks. National Geographic magazine wrote an article on this project, which included this photo of me."

Grant Funds Two New Girl Scout Robotics Teams

Submitted by: Meri Cummings

Two new Girl Scouts teams will join the field at the 2010 West Virginia FIRST LEGO League robotics tournament Dec. 11 at Wheeling Jesuit University. The tournament is sponsored by the West Virginia Space Grant Consortium.

The Motorola Foundation has provided the Girl Scouts of the U.S.A. and the local Black Diamond Council with a $4,500 grant to create two new teams. Troop 4609 from Moundsville and Troop 5977 from Sistersville will join the FIRST LEGO League thanks to the funding.

Dr. Meri Cummings of the Center for Educational Technologies, who directs the state tournament, is serving as a virtual mentor to the two teams. Assisting Cummings are Teresa Woerner of Morgantown, and three members of Cummings' own Girl Scouts Troop 4920 team, Deryn Martin, Caitlin Reasbeck, and Jasmine Shah of Wheeling.

The Moundsville team is led by Jody Goldsberry and assisted by Pam Mencer. Team members are Alex Blake, Amanda Gouldsberry, Linzay Gouldsberry, Kayla Holmes, Katie Mencer, Sammie Stewart, and Christina Wood.

The Sistersville troop is led by Sabrina Kyle and assisted by Heather Weekley. Team members are Tessa Boyd, Ellie Howell, Angel Kyle, Jasmine Kyle, Shyann Martinez, Caramia Southerly, Callie Taylor, and Brittany Weekley.

Founded by inventor Dean Kamen, FIRST (For Inspiration and Recognition of Science and Technology) was created to inspire young people's interest and participation in science and technology. FIRST LEGO League started in 1988 with a partnership between FIRST and the LEGO Company. More than 48,000 children ages 9-14 participate in the program.

The theme of this year's tournament is Body Forward—Engineering Meets Medicine. The event is open to the public and will be held at Troy Theater in Swint Hall and at the Center for Educational Technologies. Cummings said 37 teams of 3-10 members each have entered this year's tournament, more than doubling the number of teams from past years.

Helicopter Training

Submitted by: Kerri Phillips, MAE Graduate Student, WVU

On August 1-6, 2010, I attended the NASA Connecticut Space Grant Consortium Helicopter Training Experience in New Britain, Connecticut on the campus of Central Connecticut State University (CCSU). This camp was focused on introducing students from various disciplines on the basics of helicopter flight.

The training activities for this camp included working with a team to construct a vertical takeoff unmanned aerial vehicle, attending courses focused on the basics of helicopter aerodynamics, conducting wind tunnel tests and analysis of a helicopter model at the University of Hartford, and touring both Sikorsky and Kaman Aerospace. At Kaman, we had the opportunity to watch a K-Max helicopter takeoff and conduct an autonomous flight test.

Still, arguably the most exciting event for the students participating in this training was the chance to fly in a Schweizer 300 helicopter. Each student had a chance to fly with a certified instructor in this 2-seater, open-cockpit helicopter.

This experience was truly once in a lifetime. I had an amazing time learning about helicopter flight, touring the facilities, and flying a helicopter. I would like to thank the West Virginia Space Grant Consortium for allowing me to participate in this life-changing activity.

From the time I arrived at WVU, Dr. Majid Jaraiedi and Candy Cordwell have provided me with countless opportunities through the Space Grant, and they have had a significant impact on my educational experience. I would like to take this opportunity to let them both know how truly grateful I am for everything they have helped me achieve throughout the years and how much they have enriched my life not only professionally, but as great friends.

I hope they both know how truly touched I have been to have them support my endeavors and believe in me. The West Virginia Space Grant Consortium has touched so many students' lives, and I hope that incoming students see the benefits in and apply for scholarship, internship, and other program opportunities.

UPCOMING EVENTS:

December 11, 2010 - West Virginia FIRST LEGO League Robotics Tournament at Wheeling Jesuit University; Wheeling, WV

January 18, 2011— NASA Academy applications are due

January 25, 2011– Undergraduate Research Day at the Capitol ; Charleston, WV

March 10, 2011– Due date for proposals for WV Space Grant Consortium Fellowships and Grants

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