

**THE 2008-2009 VERMONT SPACE GRANT
UNDERGRADUATE SCHOLARSHIP RECIPIENTS**

MATTHEW ALEXANDER - A first year recipient, and a resident of Richmond, Vermont. Matthew is a third year biology student at St. Michael's College. He is interested in the human health aspect of the Exploration Systems Mission Directorate (ESMD) and would like to study the cellular and molecular mechanisms of human cells and apply this knowledge to the maintenance of proper human cell function in space. He says his learning experiences have inspired him to attend graduate school, obtain a Ph.D. in cellular and/or molecular biology, and pursue a career in biomedical research.

BARBARA DEWEY - A third year recipient, and a resident of Highgate, Vermont. Barbara is a third year mathematics student at University of Vermont. She is a UVM Honors College student, a resident advisor in the Honors College and is a well respected tutor in math, statistics and physics classes. She says at some point in her career she would like to work for the government. This summer she has an internship with a government body. She will be part of the Director's Summer Program at the National Security Agency. She will be working on real problems using higher-level mathematics. She is very excited about the internship and also the possibilities that it brings for the future.

KATHERINE GALLO - A first year recipient, and a resident of Richmond, Vermont. Katherine is a third year electrical engineering student at University of Vermont. She currently works for UVM as a TechCat. She trains professors and students in multimedia software, webct/blackboard, blogging and web design. She also worked as an intern for the company Hunt Construction Group. She is working on an undergraduate research project with a CS graduate student at UVM on wireless sensors. This project is a starting point to learning more about the same technology that NASA uses in Mars Robot and the Hubble Space Craft. She is an active IEEE member. She is working on the AERO (Alternative Energy Racing Organization) project with undergraduate students on designing the microcontroller for the car. She is a member of Society of Women Engineers.

GRAHAM HAGEN-PETER - A first year recipient, and a resident of Underhill, Vermont. Graham is a second year geology student at University of Vermont. This summer he will be doing research in a limestone cave system in Italy which is actively forming mostly due to the activity of microbes that neither photosynthesize nor oxidize organic material, but instead oxidize sulfur to produce energy. He also works as an operating room assistant at Fletcher Allen Health Care for the past two and a half years. He has developed an acute interest in the medical profession. He says this field is also directly relevant to NASA's goals. He also says advanced technology in aeronautics and engineering along with an increased understanding of the processes of the Earth and life are vital to these goals.

CAITLIN HILL - A first year recipient, and a resident of Ludlow, Vermont. Caitlin is a third year mechanical engineering student at University of Vermont. In the middle of her junior year, an opportunity arose for a six month internship with General Electric Aviation in Rutland, VT. Her curiosity in aeronautics and aviation had grown and the internship would allow her to learn and gain first-hand experience in the industry. She was offered a position and gladly accepted. She also decided to apply for a three month summer internship with GE Aviation in Cincinnati, Ohio, where she would be able to be more involved with research and design of the aircraft engines. She hopes to be able to experiment more with robotics. During her internship, she built a robotic airfoil production cell. She also worked with materials in her internship. She learned with a profound impact materials science can have for NASA and the aerospace industry. She hopes that her work with General Electric Aviation will allow her to make an impact on the aerospace industry. Her career intentions follow her interests in aerospace technology. She will return to GE Aviation after graduation.

PAIGE LEENSTRA - A first year recipient, and a resident of Hinesburg, Vermont. Paige is a third year biochemistry student at University of Vermont. She has been working in a biochemistry lab with Dr. Christopher Francklyn since May 2007. Her project involves the strategic mutation of an enzyme that usually adds the amino acid histidine to tRNA, in order to coax the enzyme into adding a non-natural amino acid instead. She says participating in research has taught her much about biochemistry, but additionally it has taught her about thinking outside the box, as the strategies and techniques for what she has accomplished and what she will accomplish require innovative ideas. She plans to attend graduate school and gain the knowledge and skills she needs to become an expert in her field, in the form of a Ph.D. in biochemistry, or an M.D./Ph.D. program. She says she finds it interesting that through the quest for outer space, NASA has been able to significantly change medical technology to improve people's health.

TRAVIS ORR - A first year recipient, and a resident of Orwell, Vermont. Travis is a first year physics student at St. Michael's College. He currently works in the campus Media Services department and also participates in an Intervarsity Christian Fellowship group. He says that he is not only challenged by his science and math studies, but the curriculum requires him to take classes in a wide variety of subjects. This pursuit of knowledge adds to his view of the world, both philosophically and scientifically, and opens up his thinking to new ways of approaching issues. The opportunity to continue his studies in both physics and mathematics can lead him to many career opportunities in the future. However, the premiere leading scientific research institute is NASA, and the opportunity to be part of the team would be an amazing fulfillment of his academic endeavors.

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JANET SOLTAU - A first year recipient, and a resident of South Burlington, Vermont. Janet is a second year math and education student at University of Vermont. She says she wants to be a math and physics teacher. NASA is working towards uncovering some of the secrets of the universe, but without math and physics, the whole operation would be lost. By teaching students the basics of math and physics, I hope to inspire them to follow these paths as they decide on their careers. She says that she was offered a spot at NASA's Langley Research Center, but she had already accepted a position with the Center for Ultra-Cold Atoms through MIT and Harvard. There she will be teaching physics to middle and high school students in a program called Teaching Opportunities in Physical Science (TOPS). She is excited to participate in this program because it will allow her to work with students on a curriculum that she gets to design with a group of her peers. After graduation she plans to get a job in the Burlington area teaching high school and earn a Masters in education.

HOPE YU - A second year recipient, and a resident of South Burlington, Vermont. Hope is a second year molecular biology and biochemistry student at Middlebury College. She is a winner of the IBM Watson Scholarship 2007. She is a semi-finalist of the 2007 Presidential Scholar Program and a member of the National Honor Society. She was a Gold Medalist at the 2005 Vermont State Science and Mathematics Fair, and also a winner of the South Burlington Varsity Tennis Coach's Award. Hope studies the fields of science, technology, engineering and mathematics to prepare herself for a career in medical research. This past year she has decided to partake in the pre-medical program as well as continue her studies in mathematics. Her hope is that her education at Middlebury College will enable her to participate in many future research opportunities through NASA.

NATIVE AMERICAN AWARD RECIPIENTS

NYOKA BERTRAND - A first year recipient, and a resident of Swanton, Vermont. She is a senior student at Missisquoi Valley Union High School, as well as the Northwestern Technical Center. She has participated in the UVM/Abenaki Summer Happening Program, and also have been involved in the UVM/Abenaki Outreach Program for the last four years. She participates in community service and holds a part-time job. She says she will be attending the University of Vermont where she will study social work. She says that as a social worker, she could help to prepare astronauts for their long journey into space. Her knowledge within the social work field could help her to help in the development of the full potential of individuals working in space. She believes that she could improve the lives of many people who could be affected by an astronaut leaving for space. She could help prepare the astronauts emotionally for their journey, which would be very helpful to them. Her plans are to attend UVM to major in Human Services.

COREY BRACE - A fourth year recipient, and a resident of Highgate, Vermont. He is a third year student majoring in Nuclear Medicine Technology at University of Vermont. He was nominated for the National Honors Society for three years. He is also a volunteer for the Inter Residence Association (IRA). He also plans to take an EMT course when he returns in the fall. Corey would like to earn a degree in the field of radiology and has dreams of becoming a Radiographer. He recently has been researching breakthrough technology in space exploration. These studies show that a new concept shuttle has been designed to run off radiation once it has exited the earth's atmosphere and reached space. He says although this new shuttle design hasn't been finalized he believes that it could possibly be a breakthrough in space exploration.

ERIN MASKELL-FERLAND - A fourth year recipient, and a resident of Franklin, Vermont. She is a third year Communications student with a minor in Human Development and Family Science at University of Vermont. Erin is a member of the National Honor Society and part of the FCCLA: Family, Career, Community, Leaders of America. The summer before her junior year she was accepted in the McNair program. She did a summer internship where she wrote about her research. She did a summer symposium and presented another conference here at UVM. She has also submitted a proposal to present at a conference in Chicago. Erin holds a part-time job. She says being at UVM has made her more passionate about her career goals and has given her a thirst for knowledge that she thought she would never have.

ASHLEY SULLIVAN - A first year recipient, and a resident of Swanton, Vermont. She is a senior student at Missisquoi Valley Union High School. She participates in multiple athletic programs, Skit Night - a local thespian production. She has been on the honor roll and three years participation in the National Honor Society. She holds a part-time job. As a studio art major, she plans on intensively studying not only fine arts, but digital arts as well. She says when she graduates from the University of Vermont, she plans on teaching art in Vermont. Art allows for further understanding and demonstration, and supplies a method to effectively display important images and information. NASA itself utilizes art. Its website, for instance, has interactive features, and its anniversary logo, which incorporates images of a spiral galaxy and the Hubble Space Telescope. She says technology could not function without art. Art, in turn, cannot function with technology. Her plans are to attend UVM to major in Studio Art and Art Education.

**VSGC AVIATION TECHNOLOGY SCHOLARSHIP AWARD
BURLINGTON TECHNICAL CENTER**

SKILLS U.S.A./2008 VERMONT STATE COMPETITION

WESLEY CARPENTER - A first year recipient of VSGC Aviation Technology Scholarship Award and a resident of Richmond, Vermont. Wesley is currently enrolled in the BTC Aviation Program pursuing an Airframe and Powerplant Certification. He was awarded the Gold **SKILLS USA** medal in the Secondary HS Program in the State and BTC Presidential Academic Award Recipient in Aviation Technology II for the 2007-2008 school year.

MICHAEL GRUPP - A second year recipient. He was awarded the **SKILLS USA** Gold medalist in the Post Secondary Program in the State.

JACOB KILPECK - A first year recipient of VSGC Aviation Technology Scholarship Award and a resident of Richmond, Vermont. Jacob is currently enrolled in the BTC Aviation Post Secondary Program.

***LEE RABIDOUX** - A first year recipient of VSGC Aviation Technology Scholarship Award and a resident of Winooski, Vermont. He was awarded the Bronze **SKILLS USA** medal in the Secondary Program in the State and BTC Outstanding Student in Aviation Technology II for the 2007-2008 school year. Lee also competed in the National **SKILLS USA** competition. He was awarded 4th place.

***This individual competed in the national "SKILLS USA" Competition.**

VSGC URECA! AWARD RECIPIENTS

CHRISTOPHER FARMER - Electrical Engineering, University of Vermont. Christopher's Research Topic is "**High Power, Light Weight, High Efficiency Energy Storage for Hybrid Vehicles**".

KAMERON HARRIS - Mathematics, University of Vermont. Kameron's Research Topic is "**Complex Systems Modeling of Climate Regime Change in Chaotic Convection**".

MAGGIE SAGER - Biology, University of Vermont. Maggie's Research Topic is "**The Effect of Pressure on Induction of the MAP Kinase Pathway on the Human Thoracic Aortic Wall**".

**EXPLORATION SYSTEMS MISSION DIRECTORATE (ESMD)
NASA STUDENT INTERNSHIP PROGRAM
NASA MARSHALL SPACE FLIGHT CENTER**

JENNY ERWIN - Middlebury College and a resident of Townsend, Tennessee. Jenny has received a NASA Student Internship at NASA Marshall Space Flight Center for the period of June 2, 2008 through August 8, 2008.

**EXPLORATION SYSTEMS MISSION DIRECTORATE (ESMD)
NASA STUDENT INTERNSHIP PROGRAM
NASA GLENN RESEARCH CENTER**

SHANTA KELLER - Civil Engineering, University of Vermont and a resident of Kennebunkport, Maine. Shanta has received a NASA Student Internship at NASA Glenn Research Center for the period of May 27, 2008 through August 1, 2008.

CHRISTOPHER E. SWANSON - Electrical Engineering, St. Michael's College and a resident of Uxbridge, Massachusetts. Christopher has received a NASA Student Internship at NASA Glenn Research Center for the period of May 24, 2008 through August 1, 2008.

**SUMMER AEROSPACE WORKFORCE DEVELOPMENT RESEARCH INTERNSHIP PROGRAM (SAWDRIP)
NASA STUDENT INTERNSHIP PROGRAM
NASA GODDARD SPACE FLIGHT CENTER**

BENJAMIN SCARALIA - Rennselaer Polytechnic Institute and a resident of West Rutland, Vermont. Benjamin has received a NASA Summer Aerospace Workforce Development Research Internship (SAWDRIP) at NASA Goddard Space Flight Center for the period of June 2, 2008 through August 8, 2008.

**UNDERGRADUATE STUDENT RESEARCH PROGRAM (USR)
NASA STUDENT INTERNSHIP PROGRAM
NASA MARSHALL SPACE FLIGHT CENTER**

BENJAMIN DIMIERO - Mechanical Engineering, Norwich University and a resident of Ware, Massachusetts. Benjamin has received a NASA Undergraduate Student Research Program Internship (USR) at NASA Marshall Space Flight Center for the period of June 2, 2008 through August 8, 2008.