OSGC Students Visit the Nation’s Capital and Present their SIERRA Project at the 2013 National Space Grant Directors’ Spring Meeting

OSGC Students Go to Washington
Ohio students from the University of Cincinnati, Bryan Brown, Kevin Davis, and Andrew Puterbaugh, under the direction of Dr. Kelly Cohen, presented their research “Surveillance for Intelligent Emergency Response Robotic Aircraft (SIERRA)” at the 2013 National Space Grant Directors’ Spring Meeting in Crystal City, Virginia. The SIERRA project is a student managed project, and focuses on providing a tactical Unmanned Aerial Systems (UAS) for the benefit of emergency response organizations. The team's current mission is directed toward the area of wildland (forest) fire UAS applications. The University of Cincinnati, in collaboration with the West Virginia Department of Forestry, the State of Ohio, Marcus UAV Corporation, NASA, and the Ohio Space Grant Consortium (OSGC) has acquired a fully functional UAS for technological development. The goal of the current program is to lay the groundwork to integrate UAS technology with State Fire Agencies in a cost-effective manner, through collaboration with customers, researchers, manufacturing, and industry experts. It is expected that through practical application this technology will be able to decrease response time, decrease uncertainty, and increase safety which will result in fewer lives lost due to fires, better use of resources, and a potential cost savings.

Commentary by Bryan Brown, Kevin Davis, and Andrew Puterbaugh:
When the three of us were first invited to speak the Space Grant Director’s National Meeting in Washington, D.C., we were ecstatic. We knew our research for Dr. Kelly Cohen’s SIERRA fire-fighting UAV at the University of Cincinnati was generating quite a lot of buzz in the industry media, but we had no idea that we would be invited to something as prestigious as the National Space Grant Directors’ meeting, much less be able to speak about our research.

We arrived in D.C. a day before the conference to meet with Ohio’s legislative government officials. We had a full day of meetings on Capitol Hill, and it was quite an experience. The day we were having these meetings happened to be the day before the sequestration bill was due to take effect, so all the Congress/Senate offices were hurriedly trying to make last-minute deals to avert it. Because of this, our meetings were obviously rearranged so that we could meet with staffers instead. It was a very different experience to lobby for an organization. It was quite different than anything any of us had done before. It was an amazing experience to speak on behalf of such a great organization. Since we split up to cover more ground, we were able to speak to both Senate Offices and all 16 Congressional Offices for the State of Ohio. We were able to share our experiences with the incredible research that we were working on at the University of Cincinnati, and share how it would not have been possible without the support of a seed grant from the Ohio Space Grant Consortium.

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**Director’s Corner**

My “Director Column” normally talks about Space Grant issues and some of our goals and aspirations of our Ohio program. Here I want to start out by talking about a different, much more personal journey I have taken. In May, I was privileged to travel to Russia and Kazakhstan to view the Soyuz launch of three astronauts/cosmonauts to the International Space Station. I was invited to attend not because of my high profile in the aerospace community, but because I am the father of a daughter who is a very good friend and colleague of the American Astronaut Karen Nyberg, who launched on Expedition 36 to the ISS on May 29, along with Italian astronaut Luca Parmitano and Russian Cosmonaut Fyodor Yurchikhin. Every astronaut that launches into space can invite a number of guests to attend and participate in the launch activities. My aerospace engineer daughter was one of the invitees, and I was lucky to be able to accompany her on this fantastic trip. For someone like myself who has spent their entire professional life in the aerospace arena, this was clearly one of those checkmarks on my life “bucket list”!

There are several subplots I can talk about that are interesting and important to the aerospace community and to aerospace education in particular. To begin, in addition to the launch activities themselves, our group had an opportunity to visit and tour Moscow and the launch site in Baikonur, Kazakhstan. Outside of Moscow we visited Star City, the Russian equivalent of the NASA Johnson Space Center. It is here that the Russian space program was, and still is, created and managed. It is also where now NASA has a permanent presence as part of our cooperative ventures in space and where several NASA engineers and management staff reside, generally on a multi-year assignment. The guests of Karen constituted what we quickly termed the “Nyberg Team”, and we viewed both Russian and US facilities in Star City, space museums in Baikonur, as well as more mundane tourist activities around Moscow.

Seeing all this close-up makes one keenly aware that the Russian space program was, and still is, very competent and professional. I grew up in the early days of the “space race” when the Russian program had numerous firsts in space, including the first artificial satellite, Sputnik, the first man in space, Yuri Gargarin, the first woman in space, Valentina Tereshkova, and the first space station, Mir. While we in the US have been first to the moon and have created the International Space Station, the Russians are justly proud of their accomplishments. While in today's environment we are partners in many space projects, there is still a competitive component in our mutual programs. This is clearly indicated to us travelers by our need to travel to Russia to launch an American astronaut to the International Space Station (ISS) which we commonly think of as an American program, but one in which many other countries also participate. Evidence of this is in the passenger list of the rather tiny Soyuz capsule that contained astronauts from the Russian, European, and American space programs. It seems undoubtedly true that future space ventures and exploration will increasingly be international efforts with numerous players. From an educational point of view it is important to recognize this and develop an understanding of world cultures and attitudes to complement your technical skills.

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Director’s Corner  (Continued from Page 2)

A second issue is clearly more relevant to the Space Grant mission of education. In a previous column I discussed our need in the US to support STEM education and to engage more women and minorities in these technical fields. The American Karen Nyberg, who was part of this mission to the ISS is an example of what we seek to achieve. Karen's background is from a more or less “typical” middle class family in Minnesota. She attended engineering school in North Dakota, was a Co-op student at NASA Johnson, and attended graduate school at the University of Texas. She had a goal in life to be involved in the space program and worked very hard at achieving that goal. She is also a wife and mother of a three-year old son, who will be communicating with his mother for the next six months via a video link from space. None of this will be easy, and as always the case, some pain and sacrifice must be made as she strives to integrate her professional and personal life. The same can be said for all of us who work in a serious technical career. The key here is that any goal will mean hard work to achieve that goal, and some compromises to integrate professional and personal aspirations. This is true whether you are male or female, or a member of any represented or underrepresented ethnic group. But for all, a technical career in an aerospace-oriented technical area can be rewarding and satisfying, and can be achieved without sacrificing other personal goals. Finally, while we frequently recognize the work and professionalism exhibited by the astronauts, we should not fail to recognize the comparable work ethic and professionalism of the many people who remain on the ground and are also a critical part of the space program. During my days in Moscow and Baikonur, Kazakhstan, I was honored to meet numerous members of the NASA team that support the launch efforts and various aspects of the space program. Some of these individuals are stationed in Star City, some come specifically for the launch from NASA centers back here in the states. While these individuals are not going to go into space, they exhibit the same dedication and hard work required of the astronaut crew. NASA can be proud of the individuals that all worked to make Karen's launch successful.

I hope that our many students and faculty who enjoy Ohio Space Grant support will have an opportunity at some future time to enjoy some comparable future mission—either in person or as a contributor to the program. In the meantime, consider following Karen's mission in space on her Twitter feed, [www.twitter.com/Astro KarenN](http://www.twitter.com/Astro KarenN)

Disclaimer: My trip was personally funded and was not supported by Space Grant!

Sincerely,

Prof. Gary L. Slater
Director
Ohio Space Grant Consortium
Email: gary.slater@uc.edu
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New OSGC Faces
Dr. P. Ruby Mawasha Named Associate Director

The OSGC is pleased to announce Dr. P. Ruby Mawasha as its new Associate Director. Dr. Mawasha is currently the Assistant Dean and Director of Lake Campus Engineering in the College of Engineering and Computer Science at Wright State University.

He received his B.E. Degree in Mechanical Engineering from the City University of New York at City College in 1990; M.S. and Ph.D. Degrees in Mechanical Engineering in 1993 and 1998, respectively, from The University of Akron. As the Associate Director, Dr. Mawasha will work on engineering education and other Science, Technology, Engineering, and Mathematics (STEM) development programs that promote a diverse workforce through NASA-related collaborations. Dr. Mawasha is a Fellow of the American Society of Mechanical Engineers, Registered Professional Engineer (PE) in the State of Ohio, and a PE Examiner under the National Council of Examiners for Engineering and Surveying. Also, Dr. Mawasha will continue his role of OSGC Campus Representative at Wright State University.

Mr. Clark Fuller – New Central State University (CSU) Representative

In April, 2012, Mr. Clark Fuller, Central State University, was appointed to be the Campus Representative for the Ohio Space Grant Consortium. (Mr. Fuller’s appointment served to replace Dr. Gerald T. Noel, Sr., a longtime OSGC affiliate who suddenly passed away in Spring, 2012).

As the Associate Director (and previous Acting Director) of Sponsored Programs and Research at Central State University since 1990, Mr. Fuller has served in positions to oversee Central State’s federal and state supported grants, contracts and research programs. As the individual principal investigator for many programs, he has implemented and managed various international economic development projects, renewable energy research partnerships and educational outreach opportunities. Mr. Fuller received his Bachelor’s and Master’s Degrees in geography and geology while attending Eastern Kentucky University and Ohio University, and is a graduate of the U.S. Army Command and General Staff College. After 23 years of active military service, Mr. Fuller retired from the U.S. Army following a myriad of duty assignments that included positions at the National Security Agency, the U.S. Military Academy at West Point, and various military engineering positions in Vietnam, Germany, Honduras, South Korea, and several locations in Africa. Mr. Fuller is currently utilizing his skills and experience at Central State University to mentor science and engineering students performing studies and research under the auspices of the Ohio Space Grant Scholars Program.

Kent State University – New OSCG Affiliate Member

Kent State University (KSU) was recently awarded membership to the Ohio Space Grant Consortium (OSGC), with Dr. Gerald O. Thompkins, Ph.D. serving as the Campus Representative. Dr. Thompkins, was appointed in 2012 as the first director of KSU’s newly created STEM Research and Education Center. Dr. Thompkins is the former Associate Dean for Student Affairs and Diversity Programs in the College of Engineering at Wayne State University where he also served as a member of the Michigan Space Grant Consortium working with Director Alec Gallimore and Program Manager Bonnie Bryant. During the 2011-2012 academic year, KSU launched a new initiative by appointing a director for the newly created STEM Research and Education Center. The Center is a joint collaboration between the Colleges of Arts and Sciences and Education, Health and Human Services and is designed to create new STEM initiatives for both colleges and for the university. The key focus will be to form collaborative partnerships between other offices and departments on campus and with external constituents in the effort to advance STEM programs and activities. But more importantly, to develop programs for both undergraduate and graduate students, as well as for K-12 students. The STEM Center is designed to promote STEM initiatives in four strategic areas: K-12 precollege outreach programs, with a particular interest in underrepresented minorities and women; programs for undergraduate and graduate students designed to encourage them to pursue STEM disciplines and career opportunities; help to facilitate STEM-related research activities for faculty and staff; and develop new collaborative partnerships with other universities, non-profit agencies, and with business and industry.

“Becoming part of the Ohio Space Grant Consortium is a major victory for KSU and for the STEM Center,” says Dr. Thompkins. “Kent State’s affiliation with the OSGC will result in research funding opportunities for faculty, particularly for junior faculty, and funds for students, both undergraduate and graduate, to pursue research as well. It also means scholarship and fellowship dollars for our STEM students. It really is a win-win for Kent State and for our faculty and students. And, we believe that our affiliation with the OSGC will attract additional students into our STEM programs, particularly underrepresented minorities and women. We also have keen interest in developing pre-college STEM programs for students in grades K-12. It is critical that our young people are academically prepared to compete in globally competitive workforce.”
OSGC Students Visit the Nation’s Capital and Present their SIERRA Project at the 2013 National Space Grant Directors’ Spring Meeting (Continued from Page 1)

The conference itself was excellent. We arrived early in the morning to listen to some incredible presentations about what the various Space Grants are currently doing, and what the organization plans to do in the future. It was then that we learned that our presentation would be streaming live over the NASA website. It turned out this presentation was an even bigger deal than we thought. When it was our turn to present, we went up on stage and looked across the packed room full of NASA officials, university professors, astronauts, and corporate executives. We all took a moment to take in how truly fortunately we were to be in this situation. The three of us gave (in my slightly biased opinion) an excellent speech about the incredible work being done by students and professors at the University of Cincinnati’s Aerospace Engineering Department for Dr. Cohen’s SIERRA program. It is not difficult to give a good presentation when you have such an interesting topic to talk about. After our talk, many people came up to us to ask us more about the project we were working on. It was great to see such interest in our work. The Space Grant Directors were very happy that such great work was coming out of the seed grant that the Ohio Space Grant Consortium generously gave us. Attending the conference overall was an amazing experience. We were able to talk about a topic we are passionate about and meet many truly incredible people. It was truly a memory that won’t soon be forgotten. With all the new experiences we had at the Space Grant Consortium’s National Meeting, it was truly an incredible trip.

Kevin, Bryan, and Andrew recently graduated from the University of Cincinnati (UC) with Bachelor’s Degrees in Aerospace Engineering. Kevin has taken a job with a local aerospace company and is pursuing his MBA in the evening. Andrew is pursuing a Master’s Degree in Aerospace Engineering at UC. Bryan is also pursuing his Master’s Degree in Systems Engineering at UC and is working to turn the SIERRA project into a commercially viable UAV company.

**Annual Pre-Service Teacher Workshop**

**Friday, February 5, 2013**

OSGC hosted their annual Education Workshop in cooperation with NASA Glenn Research Center at the Ohio Aerospace Institute in Cleveland this past February. Attendees included 16 undergraduate students studying to be K-12 teachers, professors and advisors from Cedarville University, Central State University, Kent State University, Miami University, Ohio Northern University, University of Cincinnati, University of Dayton, The University of Toledo, Wright State University, and Youngstown State University. Ms. Susan M. Kohler, NASA AESP Education Specialist, Aerospace Education Services Project, the group through a variety of hands-on lesson plans and brainstorming practices for a variety of K-12 STEM disciplines, including:

- *Getting In Shape: Rocket Tangram (Pre-K – Grade 1 – Math)*
- *Buzz Lightyear: Load the Shuttle (Pre-K – Grade 3 – Math)*
- *Simple Rocket Science (Grades 3-5 – Engineering Design)*

Presenters also included Ms. Monica Boyd, Educator Resource Center Coordinator from NASA Glenn Educational Programs Offices, who gave the students an overview of NASA Education resources, NASA CORE (Central Operation of Resources for Educators), and the Educator Resource Center. Dr. John Sankovic, Chief, Space Communications and Navigation (SCAN), also from Glenn, presented “Subject Matter Expert on SCAN”. Some workshop commentary from the participants include: “A great hands-on learning experience. Collaboration with other pre-service teachers was very rewarding. Can't wait to apply what I've learned.” “I got a lot of ideas for my project and learned more about what NASA offers teachers and students. There were many resources I didn't know about.” “Great presentations and ideas, and I am definitely going to use these in my classroom.” “Susan's activities were great, and I will definitely put them to use. Dr. John Sankovic was a great speaker with interesting things to say about NASA.”
Student Teams
Lorain County Community College Aerospace Club Team Orbit

Led by Professor Marlin Linger, Lorain County Community College (LCCC) Rocket Team Advisor and Team Leader Pete Buca, student aerospace club Team Orbit competed in the Great Midwest Regional Consortia Collegiate Rocket Competition held in April, 2013, in Milwaukee, Wisconsin, against colleges and universities from around the Midwest and as far away as Southern California. Results of the competition have not yet been released, but Team Orbit's rocket flight was good enough to place in the competition.

The University of Akron Zips Team STACEE Lunabotics

This past spring 18 intrepid explorers participated in the 4th NASA Lunar Robotic Mining Competition held at Kennedy Space Center in Florida. This year there were 700 participants from 50 universities from around the world.

The University of Akron (UA) team reached the podium by earning a 3rd place finish in the Technical Design Presentation, where they featured the modular design of the robot by taking it apart, putting it back together, and then running it, during the course of the presentation. Their robot, STACEE, finished 10th in the mining competition, and would have been higher had she not nearly disappeared into a crater on her first run. The team also received an Honorable Mention in the Autonomous Operation category. The final standings in each category will be released to the team during the next month, but the team expects to be in the top 10 in several categories as well as in the overall ranking.

The team was able to meet the Director of Kennedy Space Center, several astronauts, and also had the opportunity to watch a heavy lift Delta V rocket launch at dusk on the last night.

Participating students are listed below, and are shown in the photos.
Thank you for your continuing support of our robotics teams. Be sure to "like" us on the team facebook page: https://www.facebook.com/UAlunabotics

Prof. Tom Hartley
UA Robotics Advisor

*Andrew Balfour
*Frandy Cador
*Duncan Campbell
*Margaret Calder
*Ben Chaffee
*Cameron Clarke
*Nick Darash
*Rachael Innocenzi
*Richard Johnson
*Zac Kilburn
*Chris Lewis
*Keith Martin
*Deboshri Sadhukhan
*Anthony Snider
*Matthew Vandermeulen
*Tom Hartley, Advisor
*Greg Lewis, Advisor

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OSGC Celebrates Twenty First Annual Student Research Symposium
Friday, April 5, 2013

OSGC Director Dr. Gary Slater (featured on the left) welcomes attendees to the 21st Annual Student Research Symposium on Friday, April 5, at the Ohio Aerospace Institute (OAI) in Cleveland, Ohio. Students from colleges and universities across Ohio convened to discuss their research projects with university mentors, NASA personnel, OAI senior researchers, and fellow students. OSGC Junior, Education, and Community College Scholars presented posters and competed in a “Best Poster” competition. Senior Scholars and Fellows made oral presentations discussing progress made on their research projects. Mr. Gregory Robinson, Deputy Director at NASA was the keynote speaker, and spoke to the group during lunch about Engineering careers.

Senior and Fellow Oral Presentations

Erkai Watson, Senior Scholar (Cedarville University)
Robyn Bradford, Master’s Fellow (University of Dayton)
Nicholas Heeb, Doctoral Fellow (University of Cincinnati)
Andrew Dewald (Ohio University) (left) and Ibrahim Katampe (Central State) (right)
Donielle Brooks and Clark Fuller (Central State University)
Eric Onacila (Marietta College) (right) and Donald Majcher (OAI) (left)

“Best Poster” Winners featured below with OSGC Director Dr. Gary Slater

“Best Junior Poster”
Owen B. R. Macmann
(University of Cincinnati)

“Best Education Poster”
Allison M. Schafer
(Cedarville University)

“Best Community College Poster”
Joshua D. Compaleo
(Sinclair Community College)
Miami University - Project High Flight

Project High Flight is an educational initiative at Miami University involving more than 50 students from a variety of academic disciplines working to enhance their creative abilities in the context of exploring outer space. The students are working on systems to allow for long duration high altitude balloon missions eventually extending for as long as a year. Work started in the 1960s by the U.S. government in a program called GHOST Balloon, demonstrated the technical feasibility of flying longer duration high altitude balloon missions. Project High Flight team members are building on previous efforts to develop a capability to fly long duration missions by remote control. Last year, the team successfully demonstrated downlink capability by providing live video feed from a high altitude balloon payload. This coming year the team plans to extend that capability to include uplink capability as well, by demonstrating remote control pointing of the live feed camera. Then after that, the following year, the team plans to use the uplink/downlink capability to operate a pumping system to move helium in and out of the balloon to control its altitude, and extend mission durations.

In addition to this, there are several student lead efforts taking place within Project High Flight. Bioengineering major Emily Krull is leading a team of students in developing scientific experiments to test the Exogenesis Hypothesis that life on Earth may have originated in outer space. Sir Fred Hoyle and Chandra Wickramasinghe were influential proponents of the Exogenesis Hypothesis. In 1974, they proposed that some of the dust in interstellar space was largely organic. This was later proven to be correct. The team is currently running experiments to demonstrate that certain very hardy forms of bacteria can survive in a near space environment. Later they plan to try and capture bacteria at the edge of space as evidence supporting the Exogenesis Hypothesis. In another student lead project, Teacher Education major, Jacqueline Vance is leading a team of students in an effort to develop and deliver a variety of space related creativity workshops for regional high school students. The purpose of these workshops is to help improve retention of STEM students.

The Ohio Space Grant Consortium (OSGC) has been instrumental in supporting all the efforts of Project High Flight. One of the important ways the OSGC has been helpful was by inviting students from Project High Flight to attend the recent annual Student Research Symposium. Project High Flight team members had an opportunity to meet other students and see what they have accomplished. The students were so inspired by the experience that they started development of a new effort in Project High Flight to pursue high powered rocketry. The energy they brought home from the Symposium is still running strong in the team, as they use their summer break to make strides on the new rocket project.

Prof. Bob Setlock
Project High Flight Advisor

Project High Flight Team Members:

Led by Prof. Bob Setlock
Former OSGC Scholars Return as Volunteers to the Symposium

Joshua E. Allen

Joshua E. Allen, Junior and Senior Scholar 2009-2011, received his B.S. in Computer Engineering from Wilberforce University in May, 2011. Joshua is currently a Computer Engineer at NASA Glenn Research Center. As a member of the Data Systems Branch in the Testing Division, he supports the facilities at NASA Glenn. NASA Glenn’s facilities help develop and verify cutting-edge technologies in the areas of aeronautics, aerospace, and space. They have testing capabilities like icing on airplane wings, flight simulation of full scale jet engines, aerodynamics of airplane wings, alternative fuels, and many more. Joshua develops interfaces, controls, timing, and data acquisition for existing subsystems to integrate with new or existing data systems. The subsystems collect data from the facilities test cell and the data gets displayed and/or calculated by the data system for NASA’s customers. Customers of the Glenn facilities include the Military, Boeing, Lockheed Martin, NASA, and many others.

Karin E. Bozak

Karin E. Bozak graduated from The University of Akron in May, 2011, with a B.S. in Electrical Engineering. Karin was a Junior and Senior Scholarship Recipient in 2008-2009 and 2010-2011. Currently, she is working as an Electrical Engineer in the Power Systems Development Branch at the NASA Glenn Research Center. In this role, she designs, integrates, and tests power system and energy storage technologies for future space missions. She enjoys participating in outreach activities, such as the annual OSGC Research Symposium, to encourage future generations of engineers and scientists to pursue aerospace research and career paths.

Danitra A. Donatelli

Danitra A. Donatelli, Community College Scholar 2006-2007, received an Associate’s Degree in Physics from Lakeland Community College. Danitra has volunteered as a Symposium reviewer for many years to assist her mentor, Dr. Jay Reynolds (featured with Danitra on the left), with the student poster session and PowerPoint presentations. This is what Danitra shared with us: “My name is Danitra Donatelli, and I am a natural healing teacher and practitioner. As a former OSGC student scholar, I greatly enjoy providing my assistance as a volunteer for the annual Student Research Symposium. I sincerely hope sharing my experience with younger people encourages them in their goals, and offers support to the science community.”

Brian J. Tomko

Brian J. Tomko, graduated with a B.S. in Computer Engineering from Ohio Northern University in May, 2009. Brian was an OSGC Junior and Senior Scholar in 2006-2007 and 2007-2008, respectively. Brian is currently a software developer at NASA Glenn Research Center. In this role, Brian is responsible for writing software for graphics and visualization projects. He also provides programming support for the NASA Glenn Flywheel program as well as the Delay Tolerant Networking program. Brian has also helped in writing 3D interactive applications such as the Virtual Stirling and the Virtual Fuel Cell.

Brian shared this with us: “Returning as a volunteer for the OSGC has always been an exciting time as I get to see all the new research students are working on as well as meet the OSGC recipients from my university and see some of my past professors.”
NASA Deputy Speaks at the Twenty First Annual Student Research Symposium

Mr. Gregory L. Robinson, Deputy Director at NASA, was the keynote speaker at the annual OSGC Student Research Symposium. Mr. Robinson spoke about NASA achievements and future goals. He also spoke about STEM achievement and how to succeed as a scientist or engineer.

Mr. Robinson serves as the Deputy Director at the NASA Glenn Research Center. He was selected for his post on January 14, 2013. He shares with the Center Director responsibility for planning, organizing and managing the programs and projects assigned to the Center. The Glenn staff consists of approximately 1,600 Federal employees and 1,600 supporting contractors.

Since November, 2005, Mr. Robinson served as the NASA Deputy Chief Engineer at NASA Headquarters in Washington, D.C., where he was responsible for developing and implementing NASA's Engineering Excellence and Engineering Technical Authority, and improving program and project management and systems engineering across the Agency.

From May, 2011, until June, 2012, he was detailed to the National Environmental Satellite, Data, and Information Service serving as the Acting Deputy Assistant Administrator for Systems. In this role he was responsible for the overall policy direction, coordination and management of the National Oceanic and Atmospheric Administration's (NOAA) satellite acquisitions, including ground systems. He also coordinated NOAA's system engineering, mission assurance and acquisition activities with NASA, the Department of Defense, other Federal agencies, the private sector and international meteorological agencies.

Mr. Robinson also served as the NASA's Deputy Chief Engineer for Engineering Policy and Requirements. In this position he served as the primary liaison with the engineering organizations at NASA's field centers and four Mission Directorates. Prior to his assignment to NASA Headquarters in 1999, Robinson spent 11 years in various leadership posts at NASA's Goddard Space Flight Center in Greenbelt, Md. In addition, he served as the Systems Assurance Manager for the Earth Observing System (Aqua) Project, which was launched in 2002; the Aura spacecraft, launched in 2004; and the Global Geospace Science project, which included the Wind and Polar spacecrafts, launched in 1994 and 1996, respectively. Robinson received a Bachelor's Degree in math from Virginia Union University; a Bachelor's Degree in electrical engineering from Howard University; and a Master of Business Administration from Averett College. He also attended Harvard University's Senior Executive Fellow Program at the Kennedy School of Government; and the Federal Executive Institute (Leadership for a Democratic Society). Robinson has received numerous individual and group performance awards, including the Presidential Rank, Meritorious Senior Professionals and Executives Award. Mr. Robinson and his wife of 30 years have three adult daughters.

Ohio Space Grant Consortium Membership

Affiliate Members:
- Air Force Institute of Technology
- Case Western Reserve University
- Cedarville University
- Central State University
- Cleveland State University
- Miami University
- Ohio Northern University
- The Ohio State University
- Ohio University
- The University of Akron
- University of Cincinnati
- University of Dayton
- The University of Toledo
- Wilberforce University
- Wright State University

Participating Institutions:
- Kent State University
- Marietta College
- Youngstown State University

Community Colleges:
- Columbus State Community College
- Cuyahoga Community College
- Lakeland Community College
- Lorain Community College
- Owens Community College
- Sinclair Community College
- Terra Community College

Education Outreach Partners:
- Cincinnati Observatory Center
- Drake Planetarium and Science Center
- iSPACE, Inc.

Government Partners:
- NASA Glenn Research Center
- Air Force Research Laboratory

Lead Institution:
- Ohio Aerospace Institute

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