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# GoddardView

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## J. Plunky Branch Educates GSFC on Music History

Edited by Debbie McCallum and Alana Little



*Caption: J. Plunky Branch demonstrating his musicianship for GSFC employees.*

In honor of Black History Month and at the invitation of Merle Robbins and members of Goddard's African American Advisory Committee (AAAC), J. Plunky Branch entertained employees with his music and diverse perspectives on music history. Branch showed various instruments such as the saxophone, drums, and tambourine, and included the audience by having them participate in a sing-a-long.



*Caption: J. Plunky Branch*

"All About Jazz," a Web site dedicated to Jazz music, depicts Plunky as a "an experienced performer, songwriter, and music and film producer, and president of N.A.M.E. Brand Records, through which he has released 21 albums. At one time, Plunky was a studio musician for television's top-rated sitcom, "The Cosby Show." His song "Every Way But Loose" was a top-10 soul music chart hit in London. He has appeared on avant-garde jazz albums by Pharaoh Sanders, Hamiett Bluiett and others. Nowadays, Plunky spends his time leading his bandmates onstage playing rousing funk, R&B, jazz, African, reggae, gospel, and rap, and making music in his recording studio." ■

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*Cover Caption: Galileo made two passes by Earth and its Moon to build up enough velocity to reach Jupiter. The flybys in October 1990 and December 1992 provided a chance to study our home planet from a unique perspective—and gave scientists another chance to test out the instruments before the main event at Jupiter.*

## GoddardView Info

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**Deadlines:** News items and brief announcements for publication in the *Goddard View* must be received by noon of the 1st and 3rd Wednesday of the month. You may submit contributions to the editor via e-mail at [alittle@pop100.gsfc.nasa.gov](mailto:alittle@pop100.gsfc.nasa.gov). Ideas for new stories are welcome, but will be published as space allows. All submissions are subject to editing.

# Returning to the Moon: Goddard Team Presents Lunar Lander Concepts to All-Star Panel

By Lori Keeseey

Although the Goddard Space Flight Center is better known for developing and managing science missions, a handful of employees recently tried their hand at developing a concept for landing astronauts and cargo on the lunar surface.

The 25-member Goddard-led team, which included some members from Glenn Research Center and Johnson Space Center, presented their ideas to a panel of former and current NASA officials, including former astronauts John Young and Joe Engle, and Owen Morris, who headed the Apollo Lunar Lander program in the 1960s.

## Exposure to Apollo Veterans

“For many of the Goddard team members, the most rewarding part of this study effort was the deeper exposure it provided to the concepts, accomplishments, and—most importantly—some of the still active veterans of the Apollo program,” said Lloyd Purves, a system engineer on the concept study. “What made the lunar lander particularly interesting is that, in some ways, it can be seen as the supreme engineering challenge on Apollo. The Apollo lander module had no precedent. Nothing before had taken humans to and from the lunar surface, and nothing has since.”

The Exploration Systems Mission Directorate is expected to use and refine some of the ideas in further studies. The images here—some created by intern students who participated in Goddard’s “skunkworks” effort—show a few of the ideas that the Goddard team presented.

## Lander Concept: Minimum Ascent Module

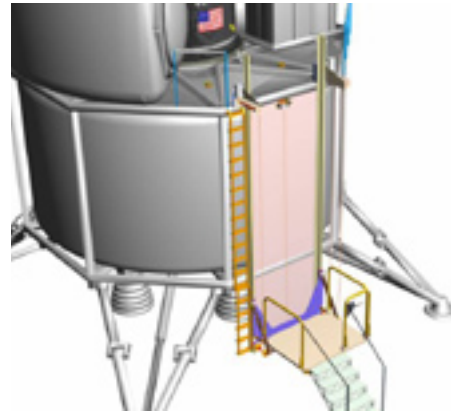


Caption: Computer generated image of the Lander Phase II

Unlike previous concepts that combined an ascent vehicle with a habitat, the Goddard team proposed a vehicle for only transporting crew and cargo to the surface. This way, the crew could ferry more cargo. The proposed vehicle would weigh 3,300 kg (2,315 lb) and contain 11.1 m<sup>3</sup> (392 ft) of pressurized volume, capable of taxiing up to four astronauts wearing Mark III spacesuits. It also features an external cargo area, inside storage space, windows, multiple exit points, including a full-size door, and a dust-collection system. Lunar samples that are to be returned to Earth avionic, and life-support equipment are all stored beneath the floor.

## EVAator

To keep astronauts from descending directly into the lunar dust, which can be as sharp as razor blades, the Goddard team created an elevator or “EVAator” system that would lower two astronauts and equipment from the top of the 6-m tall (20 ft) module to the



Caption: Drawing of the EVAator

surface. Equipped with a control panel, platform, fixed rails, cable supports, and handrails, the EVAator also would include a set of steps that would deploy directly to the surface.

Image credit: Courtesy of The Lunar Lander Study Team



Caption: Computer generated image of the Cargo Offload

Image credit: Courtesy of The Lunar Lander Study Team

The team considered a range of options, including a scissors lift, a rappelling device, and even a Ferris Wheel-like rotary lift, but settled on the elevator system after consulting with astronauts who preferred the elevator system.

## Cargo Offload

To offload up to 21 metric tons (46,000 lb) of cargo to the lunar surface, the Goddard team examined a single crane and a direct-to-surface (D2S) method. Although the team determined that both would meet NASA requirements, it found that the D2S system was more efficient and less risky under certain conditions. The system works simply by tilting the cargo and allowing the cushioned shipping containers to fall directly onto the surface. Because of the Moon’s low gravitational pull, the impact would be no more severe than if someone pushed a padded container off a kitchen table. ■

# The Dust Busters: Scientists Hope to Gather Measurements of the Moon's Dusty Environment

By Lori Keesey

It won't be easy living and working on the Moon. On certain days each month, a veritable "dusty sleet" made up of irregularly shaped, razor-sharp dust grains traveling at hurricane-like speeds could pelt the astronauts, possibly damaging their spacesuits and the robotic machinery they will use to establish their permanent outposts.

These ultra-tiny dust grains—formed by millions of years of meteorite impacts that repeatedly melted rocks into glass and then broke the glassy rocks into powder—are highly electrostatic. Because of these issues, NASA has ranked lunar dust as among the top hazards to mitigate before sending human astronauts to the Moon for extended stays. However, before engineers can design a detailed dust-mitigation strategy, many dust experts believe scientists need to better understand the physics that drive the phenomenon.

Goddard scientist Bill Farrell is one of them.

He and his colleagues would like to develop a follow-on instrument to the Lunar Ejecta and Meteorites (LEAM) instrument, which Goddard dust pioneer Otto Berg developed for the Apollo 17 mission in 1972. Using Goddard and Headquarters funding, Farrell is investigating the development of a new, higher-precision instrument that would help identify the processes that create the dusty environment and accelerate the movement of dust grains on and above the surface.

"It's not about just dust," he says. "It's an environmental system question. If you understand the system, you can do predictions and develop ways to better alleviate, mitigate, or simply avoid the dust hazard."

## Electrostatic Clinging

Scientists now know that lunar dust clings because of its varying shapes and jagged edges that hook into objects like microscopic burrs. However, another reason for the tenacious clinging is the dust's electrostatic charge.

"Dust is going to be the environmental problem for future missions, both inside and outside habitats."

— Harrison "Jack" Schmitt, geologist and  
*Apollo 17* astronaut.

On the Moon, harsh, unshielded ultraviolet radiation from the Sun kick electrons out of the upper layers of the lunar regolith or soil, giving the surface of each dust particle a net positive charge.

This positive charge builds up until a small fraction of the looser grains measuring one micrometer or smaller are repelled and lofted from meters to kilometers high—a phenomenon observed by the Apollo astronauts and Lunar Surveyor missions.

They eventually fall back, but the process repeats itself all over again, creating an atmosphere of vertically moving dust particles.

On the dark side of the Moon, the situation is a little different. Plasma currents from the Sun also charge the lunar surface, but negatively. The situation gets interesting where the two sides meet at the terminator—the moving line between lunar day and night. The transition between the two could create more complex and stronger electric fields, further accelerating the grains.

## Strong Electric Fields

And, indeed, that's what Berg's LEAM found in the mid-1970s. Although designed to measure hypervelocity micrometeorite impacts to the Moon, the instrument mostly detected charged dust traveling many hundreds of miles per hour primarily at the terminator. While scientists suspect that strong electric fields form at the terminator and are believed to accelerate the dust, they have not yet obtained critical correlated measurements in the active regions. Knowing this measurement is even more relevant now that NASA has selected Shackleton Crater as a site for a lunar base. The crater is aligned with the terminator, and is potentially exposed to this high-energy, highly variable dust for extended periods of time.

For astronauts, the situation will be made worse by the fact that they carry their own charge and will attract dust as they rove about the Moon. Because the grit is so adhesive, it doesn't simply brush off like commonplace house dust. It embeds itself into material, which means that it's easily tracked into living habitats.

In some sense, Farrell and his colleagues are acting as lunar "weather men," trying to understand, model, and predict the character of the dusty lunar exosphere. "Our knowledge of the lunar electrostatic environment is still limited," Farrell says. "An updated LEAM to answer some of these questions is what we need before we return astronauts on the Moon for long-duration stays."

For more information please contact: Contact: [William.M.Farrell@nasa.gov](mailto:William.M.Farrell@nasa.gov) or 301.286.4446 ■



## Goddard Scientist Inducted Into National Inventors Hall of Fame

By Dewayne Washington



Photo credit: Chris Gunn

*Caption: (left to right) Mr. Frank Cepollina, Mr. Chappelle, and Judy Bruner, Assistant Center Director for Safety and Security.*

NASA's Goddard Space Flight Center retired research scientist, Emmett Chappelle, has been named one of 16 2007 inductees into the National Inventors Hall of Fame. The honorees will be officially inducted during ceremonies on May 4–5, at the National Inventors Hall of Fame in Akron, Ohio.

The Hall of Fame is the nation's preeminent center for the recognition of men and women who have worked to change the world. The recognition honors these prestigious innovators who have changed society and improve the way we live.

Chappelle, joining three other living inductees at the official announcement, was chosen for his work with Lyophilized Reaction Mixtures. His work revealed that a specific combination of chemicals caused all living organisms to emit light. Through his discovery, Chappelle facilitated important findings within the fields of biology and chemistry. In the mid-1960s, Chappelle's work assisted in the development of instruments used to scrape Martian soil during NASA's Viking probe mission.

Born in Phoenix, Ariz., Chappelle received his bachelor's of science degree in biochemistry from the University of California at Berkley in 1950. After school he briefly worked as an instructor in biochemistry at Meharry Medical College in Nashville, Tenn., but left to study biochemistry at the University of Washington in Seattle. With a master's degree, Chappelle

returned to California where he served as a research associate and scientist for the Research Institute of Advanced Studies at Stanford University in Palo Alto, Calif. He began working with NASA in 1966 in support of NASA's manned space flight initiatives. Chappelle later relocated to Goddard Space Center to work as a remote sensing scientist.

"I really enjoyed my time at Goddard," Chappelle stated just after the official inductees list was announced. "The people made it a great place for me to do my research and I really appreciated that NASA recognized the importance of my work." When asked what he missed the most about working at Goddard he simply responded, "The people."

During his 34-year Goddard career, Chappelle's innovative research led to 14 United States patents, as well as external recognition as one of the top 100 African-American scientists and engineers of the twentieth century, which has been documented in the Museum of Black Innovations & Inventions. He received many awards for his work including the NASA Exceptional Scientific Achievement Award. Chappelle produced more than 35 peer-reviewed scientific or technical publications, nearly 50 conference papers, and co-authored or edited numerous publications.

The non-profit National Inventors Hall of Fame was founded in 1973 to honor the men and women who have promoted the progress of science, technology, and the economy. The foundation started with a simple goal of making national heroes of the men and women whose life's work has truly changed the world.

The formal announcement ceremony was attended by past inductees, members of Capitol Hill and well wishers in the Longworth House Office Building on Feb. 8. "The United States can continue to compete in the future world market with our great ideas," said Congressman Ralph Regula of Ohio's 16th District to the inductees. "It is people like you that help us reach that goal."

Chappelle retired from Goddard in January 2001 and lives with his daughter and son-in-law in Baltimore. ■

## Goddard Gives Howard Community College Students Hands-On Assessment Experience

By Lee Ann Obringer

Beginning with the Fall 2007 semester, students at Howard Community College (HCC) in Columbia, Md., will have the opportunity to attend a new Technology Assessment Program (TAP) course supported in part by technologies and innovators from NASA Goddard Space Flight Center. During the course, entitled "Technology Transfer from Invention to Marketplace," students will be assessing technologies from Goddard as well as the United States Department of Agriculture (USDA) and The Johns Hopkins University Applied Physics Laboratory (JHU/APL). Future semesters will also include technologies from the Naval Research Laboratory (NRL) and the Army Research Laboratory (ARL).

Outside of the class, students will be working both with the technology innovators and with local business mentors. They will assess the commercial viability of the new inventions, develop a written assessment report of the invention, and present findings and recommendations at an open event attended by students, researchers, prospective entrepreneurs, local business representatives, and technology transfer experts. The experience will introduce them to career options in science, technology, research, and business, as well as teach them the skills necessary to work in an innovative enterprise.

### Benefits

- The agreement will enhance NASA's strategic technology objectives, providing Goddard with information about potential applications and licensing opportunities for possible technology transfer efforts.
- NASA researchers will collaborate with future academic, law, and business leaders who may be well positioned to work on future technology licensing efforts.
- HCC students will gain hands-on experience interacting with innovators, assessing technologies, and developing marketing recommendations.
- HCC will benefit from the recognition and prestige NASA's participation in its program may yield.
- Future consumers of products that may result from technologies the students assess will benefit from the collaboration between the HCC and Goddard.

### About HCC's Technology Transfer Program

Howard Community College established the TAP program under a National Science Foundation "Partnerships for Innovation" grant in collaboration with Goddard Space Flight Center, The Johns Hopkins University Applied Physics Laboratory, Howard County Economic Development Authority, Howard County Public School System, and the business community.

As part of the "Technology Transfer from Invention to Marketplace" course, teams of high school, community college, and continuing education students will evaluate a technology, perform market research, and analyze the potential for commercialization. Their findings will be disclosed to U.S. Government technology transfer offices.

The program offers a comprehensive strategy to expand the region's innovation infrastructure and speed transfer of knowledge from the national research enterprise to the private sector. Participating partners like Goddard will enhance entrepreneurial education through a continuum of coursework and teamwork, teach the fundamentals of innovation and technology assessment, and facilitate access to technologies by a growing pool of entrepreneurs.

### The Transfer Process

A non-reimbursable Space Act Agreement (SAA) between NASA Goddard and HCC was signed on August 26, 2006. Efforts to establish HCC's technology assessment program were led by Wayne Swann, director of the technology transfer program at JHU/APL and part-time professor at HCC. Mr. Swann recognized that technology transfer personnel are in short supply and that technology transfer programs are unable to keep pace with assessing and marketing promising innovations. He was familiar with the strengths of Goddard's technology transfer program through JHU/APL's past technology collaborations with Goddard as well as Goddard personnel who had spoken at past JHU/APL tech transfer events. In April of 2006, he approached Goddard about participating in the TAP program.

The Innovative Partnerships Program (IPP) Office was excited about a program that would not only assess some of Goddard's technologies but also accomplish the goal of engaging students and professionals in the innovation enterprise and teach them the fundamentals of technology transfer.

### Looking Ahead

The SAA is a three-year agreement. Each semester through June of 2009, Goddard will provide several patented or patent-pending technologies for selection by the class instructor. The student teams will assess the chosen technology, providing valuable insights and ideas for potential markets and applications. ■

# Goddard Is the Place for Awards This Season

By Rob Gutro

There's been a lot of activity in space lately—at least in the area of receiving awards in space science at NASA's Goddard Space Flight Center in Greenbelt, Md.

## Swift Team Awarded AAS Prize

The team of scientists on the Swift satellite mission, led by Dr. Neil Gehrels, Goddard scientist and a resident of Berwyn Heights, Md., was awarded the Bruno Rossi Prize from the AAS for their discoveries. This is an annual award given by the High Energy Astrophysics Division of the AAS.

The Rossi Prize is in recognition of significant contributions as well as recent and original work in high-energy astrophysics. The prize is in honor of Professor Bruno Rossi, an authority on cosmic-ray physics and a pioneer in the field of x-ray astronomy. Bruno Rossi died in 1993.

The Swift satellite, launched November 20, 2004, was named for a bird, which catches its prey "on the fly." Swift's "prey" are gamma-ray bursts (GRBs), powerful cosmic explosions which astronomers think mark the birth black holes. Swift was designed to rapidly detect, locate, and observe them. So far, Swift has detected over 200 GRBs. GRBs were first observed in the 1960s, and remained mysterious until the mid-1990s.

"This is a great recognition of all the wonderful science coming from Swift and the years of hard work that the team has done to make it possible," said Neil Gehrels, the Principal Investigator for the Swift mission. "Swift is a remarkable machine which is still going strong. We expect even more great things from it over the coming years."

Among Swift's notable observations have been: the first detection of an afterglow of a short burst, thought to be caused by the collision of two ultra-dense neutron stars; the detection of the most distant GRB ever seen, some 13 billion light years from Earth; the discovery of the nearby GRB that was coincident with a supernova explosion; x-ray observations of NASA's Deep Impact probe when it smashed into Comet 9/P Tempel 1 in July 2005, helping solar system scientists determine how much debris was ejected by the impact; and a powerful flare from a nearby magnetar, a tremendously magnetic neutron star, which was so bright it saturated Swift's detectors and actually physically impacted the Earth's magnetic field in December 2004.

Swift is managed by NASA Goddard and operated by Penn State University, using a ground station of the Italian Space Agency in Kenya.

## Graduate Student Wins AAS Award

Amber Straughn was a summer student working at Goddard in 2006. During the recent AAS annual meeting in Seattle, Amber won the Chambliss medal for a poster at a meeting by a graduate student.

"I am honored to have received the Chambliss Award," Straughn said. "In addition to my research, I have a passion for outreach and education, and I hope that I am always able to effectively convey my science to others, which I believe is what this award is about."

Amber is a NASA Jenkins Predoctoral Fellow, which supports grad students who are women or underrepresented minorities. She is a student at Arizona State University, working with Arizona State University Professor Rogier Windhorst. Dr. Jonathan Gardner was her NASA advisor and a co-author on the poster.

Straughn plans to complete her Ph.D. in May 2008, and take a postdoc position in observational cosmology. In the future, she would like to continue with her research in cosmology, with an emphasis on education and outreach.

## AAS Award for Astronomers Presented

Dr. Ann Hornschemeier (Cardiff), scientist at NASA Goddard, and adjunct faculty member at The Johns Hopkins University, Baltimore, Md., was recently awarded the Annie Jump Cannon Award for her research in astronomy and astrophysics. Her hometown is Georgetown, Ohio, and currently resides in Odenton, Md.

The Annie Jump Cannon Award is given to a North American female astronomer within five years of receiving her Ph.D. in the year designated for the award. It is given for outstanding research and promise for future research by a postdoctoral woman researcher.

Hornschemeier's award was for her research on x-ray emission from normal galaxies. This x-ray emission arises from several phenomena, including binary star systems that are composed of black holes, neutron stars and normal stars. X-ray emission from normal galaxies also includes contributions from hot gas that often fills a large fraction of the galaxies.

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## Goddard Is the Place for Awards This Season

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She uses the *Chandra* and *XMM-Newton* spacecrafts in her research, as well as data from the *Hubble Space Telescope*, *GALEX*, *Spitzer*, and ground-based facilities. The award citation reads: "She is a leader in her field as demonstrated by her energetic advocacy of x-ray astronomy and her important role in defining the scientific rationale for the Constellation-X mission.

Hornschemeir will be awarded the prize and will be giving a prize lecture at the May 27–31, 2007 meeting of the American Astronomical Society in Honolulu, HI.

### Robinson Prize in Cosmology Awarded to Dr. Mather

Nobel Prize winner and NASA Goddard Astrophysicist, John Mather was selected for the Robinson Prize given by the University of Newcastle in England.

The Robinson Prize in Cosmology, worth 10,000 pounds in British currency, is awarded in alternate years. The purpose of the prize is to allow Newcastle University to honor a scholar of distinction in cosmology. The recipient gives a public lecture and seminars to students. Mather's prize lecture is scheduled for the Fall of 2008.

Mather said, "I am delighted that the work of the COBE team has been recognized by the Robinson Prize, and I look forward to future amazing discoveries about the Big Bang." Mather resides in Hyattsville, Md., and grew up near Sussex, New Jersey.

The Robinson Prize was instituted in 1990 through the generosity of Philip Robinson, who had a particular interest in cosmology and in making cosmology accessible to lay audiences.

Robinson, the Tyneside, England-born bookseller, gained an international reputation during his lifetime as a bibliographical scholar. The main Newcastle University library was named in his honor in 1989.

### Alumni Recognition Award for Work in X-ray Astronomy

Dr. Kimberly Weaver will receive an Alumni Recognition Award from the Eberly College of Arts and Sciences at West Virginia University on Feb. 3, 2007.

The Alumni Recognition award, established in 1998, acknowledges college alumni who have made important contributions to their field, who demonstrate the value of lifelong learning, and whose lives reflect the diversity of a liberal arts and sciences education. The college Dean, Mary Ellen Mazey, said of Dr. Weaver:

"Your work in spreading the wonders of x-ray astronomy reflects a career that is predicated on life long learning. You have demonstrated—in so many ways, the value of an arts and sciences education to our society."

Weaver will accept the award on the campus in Morgantown, W.V., her hometown, in February and will be giving a keynote address. She currently resides in Silver Spring, Md.

### Did You Know?

#### Structural Fabrics:

Lightweight, durable fabrics made of Teflon-coated fiberglass came from materials formulated by NASA in 1967 to make space suits. The fabrics are now used for roofing in structures like shopping malls, stadiums, and airports.

Nicholas White, Director of the Astrophysics Science Division at NASA Goddard said, "This has been an outstanding year of recognition for ASD scientists and they are to be congratulated. These awards also testify to the quality of scientists we have at GSFC!" ■



## Family Science Night Promotes Leapfrogging

By Amy Pruett



Photo credit: Pat Izzo

*Caption: Glen Newman and Kyle Newman, putting together the motor for a solar car.*

Family Science Night at GSFC's Visitor Center inspires discovery and generates enthusiasm in the wide variety of science and engineering research conducted at Goddard. During two hours of exciting hands-on activities, NASA EPO professionals, scientists, and engineers work with local middle school students and their families as they explore various science, technology, engineering, and mathematical (STEM) themes.

The goal of Family Science Night is to raise awareness in middle school students and their families of the importance of science in their daily lives. By encouraging parents' active involvement in the evening programs, the importance of STEM fields is enforced as children often share the same passions as their parents. For instance, it is not uncommon for more than one member of a generation of a family to work at NASA at the same time.

"Through Family Science Night, we can improve attitudes toward science. We're working with parents to encourage their children, and to build a strong foundation in science that will serve them through high school, college, and on into working life," said Emile Drobnes, Solar Dynamics Observatory (SDO) Education and Public Outreach Manager and co-organizer of Family Science Night. "We want to inspire these kids to take science classes, become science-literate adults, and hopefully even pursue STEM career paths. We're also strengthening parent-child relationships."

Educational research shows that parental involvement is key to a student's success. Children who have parents involved in their education consistently perform at higher levels than children whose parents are not involved. Family Science Night is one way to promote a connection between parents, children, and learning.

"While my granddaughter already enjoys science and math more than her other school subjects, Family Science Night increases her enthusiasm for them and fills in gaps in knowledge she may have," said Patricia Ellis, a two-time Family Science Night participant who attends the events with her 13-year-old granddaughter.

"She is not the only one learning because I also get a lot from the program and enjoy the time we spend together."



Photo credit: Pat Izzo

*Caption: Mother and daughter Sherina and Carlisha Garner work together on assembling the solar panel for the solar car.*

Family Science Night also seeks to inspire underserved groups. Beginning on March 15, a new series of evenings will kick off that are devoted to the local Hispanic population, a group served by few local programs and underrepresented in STEM career fields.

Working with the Goddard Hispanic Heritage Club, the organizers of Family Science Night developed a program that addresses these needs.

Dr. Maria Sol Colina-Trujillo, SDO EPO Coordinator, is certain of the positive impact a bilingual Family Science Night will have on Goddard's Hispanic community.

"The Family Science Night for the Hispanic Community reaches out to local, low income families that are not often exposed to science," said Dr. Colina-Trujillo.

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## Family Science Night Promotes Leapfrogging

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Photo credit: Pat Izzo

*Caption: Sara Mitchell and Emilie Drobnes powered solar cars with another energy source: light bulbs, while the kids observed the result of the solar car race.*

“By featuring both languages, the children that are familiar with the science terms in English, as well as the parents that are more familiar with the terms in Spanish, will both benefit from the new approach to science that Family Science Night provides.”

In addition, CASA de Maryland, Inc. will support the Family Science Night designed especially for the Hispanic Community.

Goddard's Family Science Night origins can be traced to a successful family science program run by Dr. Jacob Noel-Storr, head of the Insight Lab for Science Outreach and Learning Research at the Rochester Institute of Technology Center for Imaging Science.

Inspired by Dr. Noel-Storr's model, Goddard's program premiered on November 9, 2006 with an attendance of 10 families. The program has expanded to include 15 families per event and public interest always exceeds the program's capacity.

Family Science Night will be held nearly every month until the 2006-2007 school year.

Previous Family Science Nights have addressed scientific subjects under the titles, “Tis the Seasons,” “Batteries Not Included,” and “How Big? How Far? How Old?”

Goddard's current Family Science Night pilot program is co-organized by Emilie Drobnes of the Heliophysics Science Division and Sara Mitchell of the Astrophysics Science Division. The Solar Dynamics Observatory supports the program.

For additional information or to register your family for a future Family Science Night, please visit:

<http://sdoepo.gsfc.nasa.gov/family/family.shtml> ■

## NASA Solicitation and Proposal Integrated Review and Evaluation System (NSPIRES)

Supporting research in science and technology is an important part of NASA's overall mission. NASA solicits this research through the release of various research announcements in a wide range of science and technology disciplines. NASA uses a peer-review process to evaluate and select research proposals submitted in response to these research announcements. Researchers can help NASA achieve national research objectives by submitting research proposals and conducting awarded research. This site facilitates the search for NASA research opportunities.

For more information, please visit <https://nspires.nasaprs.com>

### Solicitations:

#### **Aerospace Education Service Project (AESP)**

Released: 2007-01-22

Proposal Due: 2007-03-30

#### **Ground-Based Studies in Space Radiation**

Released: 2007-01-05

Proposal Due: 2007-02-01

#### **NASA Aeronautics Research Mission Directorate (ARMD) Research Opportunities in Aeronautics (ROA) NRA**

Released: 2006-05-24

Proposal Due: See Announcement

#### **NASA Earth and Space Science Fellowship/07**

Released: 2006-11-01

Proposal Due: See Announcement

#### **Research Opportunities in Space and Earth Sciences - ROSES 2006**

Released: 2006-01-23

Proposal Due: See Announcement ■

# How Goddard Reaches Our Youth Through Education

By Natalie Simms



Photo credit: NASA/OM/Science Team

*Caption: Students work with NASA scientists, engineers, and educators.*

Black History Month is a time for all of us to reflect and learn from times past, to gain a better outlook for the future of our community as well as for personal development. Dewayne Washington, Minority Education Programs Specialist at Goddard, feels that Black History Month is the time to “reflect on what has happened before and what our responsibilities are, to strive for the betterment of all.” And because of multiculturalism, it is vital we understand and learn the role of all people in world history.

Youth today, particularly in high school, are swimming upstream when it comes to success. To have a career goal seems old-fashioned. The growing culture among high school students is to be satisfied with a high school diploma and a job. According to a report from the Bureau of Labor and Statistics, “Of the 2.7 million youth who graduated from high school between October 2004 and 2005, 1.8 million attended colleges in October 2005 (68.6 percent).” That turns out to be more than half, but this same report also stated that “Asians were more likely than whites, blacks, and Hispanics to be enrolled in college in the fall following their high school graduation.” This is an unpopular trend. As parents, teachers, mentors, and friends, we are challenged to be the lifeguards to save our youth from despondency that will drown their future.

And have we not all heard the African proverb “it takes a village to raise a child?” Whether this adage has any meaning to you is personal, but we all have a responsibility to be the best role model we can be. It is a known fact that youths emulate what they see. Goddard strives to be a good example by instituting education programs to motivate all students to pursue careers in science, technology, engineering, and mathematics (STEM) disciplines. They work to create an environment of appreciation and value, because it is the setting that plays a major role in how a youth accepts what is being taught or learned. Below are a selection of programs at Goddard that are inclusive to all races and ethnicities.

**SISTER** (Summer Institute in Science, Technology, Engineering, and Research)—provides opportunities for middle school girls to explore non-traditional career fields with women engineers, mathematicians, scientists, and researchers. The SISTER program rewards girls who have achieved good grades by fostering a commitment to excellence. This program is gender-targeted. Visit: <http://education.gsfc.nasa.gov/sister/> for program details.

**National Space Club Scholars Program**—provides opportunities for high school students to experience working with research and development organizations, such as space systems science, computer science, and engineers. This internship helps students make more informed decisions regarding their university-level studies and career focus.

Visit: <http://education.gsfc.nasa.gov/files/spaceclub.pdf> for program details.

**Goddard Digital Learning Network (DLN)**—brings students in contact with the scientists, engineers, and technologists whose daily efforts keep us at the cutting edge of science, aeronautics, and spaceflight. Students participate in multimedia broadcasts through streaming web media or video conferencing technology. Each month brings new and exciting programs detailing the role that Goddard plays in NASA’s Exploration initiative, all focused on providing students with a deeper understanding of the exciting science, technology, engineering, and mathematics that Goddard personnel use everyday. Visit: <http://education.gsfc.nasa.gov/DLN> for more details.

Programs such as these, and also mentoring and job shadowing opportunities, are what engage our youth and create focus and energy that will drive their success. But it is our responsibility as mentors, tutors, and parents to show them the right path. Goddard’s Deputy Chief for Education, Dillard Menchan said “What is needed is for those who have conquered or been where our youth are going, to be visible.” We are the outreach vehicle that contributes to the success of today’s youth. We learn from each other, whether Black, Asian, American Indian, or European.

**Black History Month can help us all to remember to not sit and watch this future generation disappear. That is not an option. It will take action and fortitude from all of us. We must be a positive influence to our youth, determined in our efforts to build them up on a solid foundation.**

As we work together to incite them, whether to become involved in Goddard education programs or similar initiatives, race will become irrelevant to our contributions. We will be helping to build a stronger generation that is viable and valued; and ultimately, we will have done our very best work, inspiring the next generation to have a bright and fulfilling future. ■

**Employee Spotlight:**

**Mark Branch**

By Leslee Cork



Photo credit: Chris Gunn

*Caption: Mark Branch*

Growing up, Mark Branch of Code 549, knew he was different from the rest of his peers. While other kids his age fantasized about joining the NBA or becoming a successful lawyer or doctor, Mark dreamt of one day working for NASA. Although he was unclear in what capacity he wanted to serve, he knew that his interest in electricity and magnetism would lead him in the right direction.

Throughout his adolescent years, Mark's curiosity about protons and electrons, electrical currents and magnetic fields, and all things physics related continued. He went on to earn two bachelor's degrees in Physics and Engineering Physics from Morgan State University. In 1991, his childhood dream of working for NASA became a reality when he began his career as an Aerospace Engineer.

Mark currently serves as the acting Group Leader for the Electromagnetic Test Group. Mark and his team are responsible for ensuring that satellites perform as they are supposed to without interference from each other or other space elements. They do this by conducting specialized tests on various instruments and components to determine whether or not a satellite is able to sustain itself once it is exposed to the electromagnetic environments of space.

During his 16-year tenure at Goddard, Mark recalls his most memorable moment when he had the opportunity to meet Senator John Glenn, Jr.,

the first American astronaut who, in 1962, orbited the Earth aboard the Mercury-6 spacecraft, when he visited the building 7/10/29 complex. He still smiles thinking back on this day.

Mark has made some pretty remarkable strides himself. Outside of NASA, Mark is known in the entertainment industry as DJ Scientific. Because of his talents, Mark has been able to secure DJ'ing gigs at the annual NFL Player's Gala and Superbowl events across the United States for the past 8 years. Mark's turntable skills can also be seen and heard at the hottest nightclub in the District of Columbia, Club LOVE. Additionally, Mark produces tracks for local artists.

Through outreach, Mark hopes to "get at-risk kids interested in Science, Technology, Engineering, and Mathematics (STEM)-related disciplines by showing them the face of someone whom they probably wouldn't expect to work at NASA."

Mentoring is something Mark also feels is important to today's youth. Throughout his career, Mark has enlisted the guidance of mentors at various stages in his professional development. According to Mark, outreach and mentoring are influential in helping young adults figure out who they are and what they want to be in life.

Mark attributes his success to having a positive outlook on life, faith in his religious beliefs, and confidence in his abilities. "Positive Energy Activates Constant Elevation (PEACE)" is the mantra that Mark lives by.



**Long Time GEWA Employee Sandy Mooney Says Good Bye to Goddard**

By Alana Little



Photo credit: Chris Gunn

*Caption: Sandy Mooney*

Theada (Sandy) Mooney will be taking a well-deserved rest when she retires on March 30, 2007 after almost 20 years of service. When asked in a previous interview what she liked best about her job working in the Building 1 cafeteria she said, "The customers are what kept me here." Sandy gets emotional when talking about leaving her GSFC family but she did say,

"If I touched one person while I was here by action or deed, then I've done a good job."

Make sure to stop by before the end of the month and give Sandy your well wishes.