

National Aeronautics and Space Administration



THE GLENN GAZETTE

Riding the NASA Educational pipeline

LERCIP HIGH SCHOOL

Glenn high school interns recognize the achievements of senior management



THE GLENN GAZETTE

THE 2008 GLENN HIGH SCHOOL INTERNSHIP NEWSLETTER

BACK TO THE MOON BY 2020:
NASA's vision for the future and how Glenn's high school interns are contributing



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2008 LERCIP interns take a moment to pose with Dr. Whitlow.

NEWSLETTER STAFF



Idaliz Báez, Editor-in-Chief of the Glenn Gazette, has had a memorable experience working as a Lewis' Educational and Research Collaborative Internship Program (LERCIP) summer intern. She diligently worked on many different components of the up and coming Materials International

Space Station Experiment (MISSE) 7, including designing and building an Atomic Oxygen Scattering Chamber and Atomic Oxygen Pinhole Camera, as well as working with polymer thin film samples. Idaliz is a member of many clubs and organizations at St. Joseph Academy, where she will be a senior in the fall, including Math Club, Drama Club, Student Council, National Honor Society, Campus Ministry, and even a 12-girl a cappella group called Cecilia's Song. She performs in about three shows a year, dances, and has played the piano for 11 years. Idaliz looks to her future with excitement and anticipation for what is to come.



Breonna N. Slocum is an I.B. (International Baccalaureate) senior at Firestone High School. Her extracurricular activities include marching band, symphonic band, Mock trial, Spanish club, Global scholars, peer mediation, and National Honor Society. She also loves to read, write, figure skate,

and play tennis. She is a volunteer at Robinson Memorial hospital and hopes to pursue a career in the medical field. She interned in the Environmental Management Branch where she designed recycling posters, performed water analysis, analyzed slides under a microscope, and served anyone who needed help. Breonna would love to return to NASA one day.



Vinit Parikh is a rising senior at Lake Ridge Academy and plans to pursue an engineering degree either in mechanical or industrial engineering. His NASA experience has given him more than just an idea of what his future has in store

for him. Vinit was able to work on various projects in mechanical and electrical engineering, such as the space simulation chambers as well as the solar simulator. Being part of the Engineering Technology Program (ETP), he has been able to fabricate wooden and plastic pens as well as construct and program robots.



Adwoa Boakye is a writer and layout editor for The Glenn Gazette. She wanted to take this time to welcome you to the magazine's 2008 edition. This summer each intern had different experiences. Adwoa has been in the Materials and Structures Laboratory. Her official job has been to assist in

the development of GRANTA MI, a materials database. She has also met new people whose accomplishments astound her, learned about new concepts as she attended presentations at the Learning Center, and created a tutorial for high school students on superalloys. As Adwoa heads into her senior year at Magnificat High School, and looks to her future, she will take these experiences with her. She hopes to help improve the world by making innovations. Adwoa would love to attend Dartmouth College and continue her participation in dance.



Here at NASA **Elizabeth (Liz) O'Malley** is working in the instruments lab. Her mentor is an electronics technician who works specifically on circuits and antennas. They work with engineers who design and test the antennas that Liz and her mentor draw up and fabricate. Liz wants to

become an engineer. She was leaning towards mechanical engineering before she entered the LERCIP. Being at NASA gave her the opportunity to gain a first-hand experience of what different kinds of engineers tend to do. She has grown to enjoy electrical engineering just as much as she does mechanical.



Pooja Mude is 16 years old and will be a junior at North Royalton High School. Pooja competes for her varsity gymnastics team and also is involved with her high school's choir. Her favorite subject is biology because the study of life amazes her; she loves to learn anything new about the subject.

When she learned her summer project at NASA would be working on an experiment called IV Generation, she was ecstatic because she believes the concept and the ideas are really neat and it's a great subject to learn about.



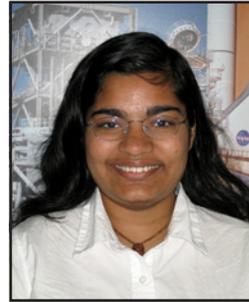
Poorva Limaye attends Avon High School and will be a senior this fall. In school she participates in track, tennis, Student Council, Junior Statesmen of America, and the National Honor Society. She was very pleased to be accepted into the LERCIP this summer. Poorva works in the Materials and Structures Department, running

temperature and spectroscopy tests on the materials being used in various projects at NASA such as aerogels, shape memory alloys, the Stirling Converter, and high-temperature space lubricants. She hopes to continue her education in the physical sciences and looks forward to returning as a LERCIP intern next summer.



Lauren Wyman has her head in the clouds, in interstellar clouds of gas and dust, which are cradles for newborn stars. Needless to say, Lauren is extremely passionate about astronomy and hopes to pursue a career in this field. Beyond that, Lauren is interested in all things related to science

and classical literature. When she is not reading or studying, Lauren daydreams, writes, and looks through her telescope. This summer, she is working in building 49 with the Materials and Structures Division. Lauren is going to be a junior at Beachwood High School and she hopes to major in astronomy, aerospace engineering, and journalism at Princeton University.



Shreyasi Parihar is working at NASA with the LERCIP. She is currently researching in building 86 with a couple of co-ops. She is a rising senior at Parma High School as well as a Post-Secondary student at Tri-C. Shreyasi wants to major in Aerospace and Aeronautics to one day become a famous astronaut.

She plans to attend Massachusetts Institute of Technology (MIT) or Embry-Riddle (Daytona) for her degrees. She is a native of India, and moved to the United States 6 years ago. Shreyasi hopes to make a great addition to NASA and make her family proud!



Joshua Curry is a senior at Shaker Heights High School. As a second-year summer intern at NASA Glenn Research Center, he worked with William Thompson in the Test and Verification division of the Ares I-X project. His responsibilities, as assigned by his mentor, included constructing a fastener database and performing various field tests.

While undecided about what career he would like to pursue in the future, he plans to attend a 4-year university and possibly graduate school to pursue his Master's degree. *

"Live like you were to die tomorrow. Learn like you were to live forever." —Ghandi

Favorite quote of Elizabeth Zebrowski

"Don't cry because it's over, smile because it happened." —Dr. Seuss

Favorite quote of Pooja Mude

STUDENT VIEWS

Back to the Moon:

NASA's Vision for the Future and How Glenn's High School Interns are Contributing

By Idaliz Báez

Hot pants, platform shoes, and disco fashion are all words related with the 70s, the last decade to experience a mission to the Moon. Why has NASA waited so long to return to our orbiting night light? What does NASA even have in mind to accomplish with a return to the Moon?

One idea set forth for returning to the Moon is that lunar exploration could expand our scientific knowledge about the history of the Earth, our solar system, and even the universe. NASA has compiled a database with over 200 different ideas for what we could gain from another mission to the Moon. For instance, we can use this opportunity to test new technologies, flight operations, and take a step in furthering our hopes for future missions to Mars and other planets. The newest change in technology that NASA will be testing for the flight to the Moon is the Ares rocket, the latest model of the space shuttle.

Before the launch of the Ares I to the space station, and the Moon, a test flight must launch to reassure that the hardware, facilities, and operations of the Ares I rocket function properly. This test flight is known as Ares I-X, the "X" signifies that it is an experimental vehicle. Ares I-X plans to launch in the spring of 2009 in order to provide data that will be crucial to the final design of the Ares I rocket and Orion crew exploration vehicle.

The Ares I rocket will use this new technology to carry crewed missions

to the Moon to eventually launch a mission to Mars and even farther out into the solar system. The brother of the Ares I rocket is the Ares V Cargo Launch Vehicle. This design uses the new technology and propulsion systems to safely deliver hardware to outer space in large quantities. Ares V is a pivotal part of extending humans into space and expanding our knowledge of the worlds beyond, because of its capabilities to establish a Moon base for future farther missions.

Collaborative efforts throughout the different NASA facilities are needed to accomplish this immense mission. Thermal engineers, material scientists, and even summer interns from the college and high school level are all diligently working to perfect each and every minute detail comprising the Ares rockets. Current summer NASA interns

are using test chambers to reassure that the materials used for each stage of the Ares rockets can withstand the high temperatures and pressures of the atmosphere. Some are putting together databases, spreadsheets, and even schedules or time tables for the Ares I and Ares I-X to ensure that the design and construction processes go smoothly.

All together there is an overwhelming and astounding amount of effort being set forth to accomplish this grand mission. Excitement, passion, sweat, and labor are all protruding from the NASA atmosphere as the dream inches closer and closer. Two different generations are working together with their eyes set on this single goal, this single desire, to accomplish this with an even greater finesse than before, to go back to the Moon. *



Back to the Moon in 2020. Drawing by Poorva Limaye.

And They All Lived Happily Ever After....:

The Process of Attaining a NASA Internship

By Lauren Wyman

Once upon a time, in a land not so far away, in an age of iPods and space exploration, there lived a teenager named Lady Lauren of the Wymans.

One day, while at secondary school, Lady Lauren unearthed a flyer for an internship program at NASA Glenn Research Center.

Deeply interested in this magical agency, Lady Lauren asked a genie to grant her the internship. The genie complied, and she lived happily ever after.

However lovely this story sounds, my journey to attain a NASA internship was less like a fairy tale and more like a quest; although it did end happily ever after.

The first trial of the quest involved eight pages of essay prompts, teacher recommendations, high school transcripts, and student questions. This task, of course, was the application. These pages showed NASA representatives exactly who the applicants were as students and as people—our strengths, our interests, and our dedication to school.

Though the application may have seemed tedious at the time, the reality of the matter is that life is not a fairy tale. We are going to fill out applications like these for the rest of our lives: to apply for a position in a school club, to apply for college, or even to apply for a new job.

Rather than finding a toad to kiss, I spent much time organizing my application package for this trial. I began to wonder what my chance was to land this genuinely amazing summer opportunity. In story book terms, I began

to wonder about the oh-so-common force of fate. Who was to determine this decision? Who had my fate in their hands? Would they be as cruel as the Evil Witch or as nice as Snow White?

The applications were evaluated by a supremely (non-make-believe) panel of NASA employees who looked for a diversified record. Grades, extra-curricular activities, and special talents were all taken into consideration while they determined who would progress to the next trial, the interview.

The second task of the quest for the NASA Internship did not involve fire-breathing dragons nor devious warlocks, but something infinitely more frightening: a two-on-one interview with NASA representatives. Through this meeting, NASA attempted to get to know the people behind the paper application. Personalities and attitudes eventually shined through as potential interns became more and more comfortable with the interviewers.

Similar to the application, this interview was a preview of more to come. Learning how to deal with this high-pressure situation is a skill that NASA helps to instill in its interns.

Perhaps the most difficult aspect of the interview was not answering the questions, but getting over stage-fright. The night of my interview, my father and I arrived at NASA Glenn 1 hour early. Extremely anxious, I impatiently waited for my name to be called.

7:45...7:55...8:05...8:15: “Lauren Wyman! They are ready to see you now.” I jumped out of my seat and practically ran downstairs. This was

“The second task of the Quest for the NASA Internship did not involve fire-breathing dragons nor devious warlocks, but something infinitely more frightening: a two-on-one interview with NASA representatives.”

the culmination of my high school career and, like most heroines do, I had a flashback. For as long as I can remember, I have wanted to work at NASA. After cutting out NASA articles for years, after attending various Third Saturday Events at the Visitor’s Center, and after years and years of researching NASA missions, this was the end all be all. I took a deep breath, smiled, and shook the hands of my interviewers....

Three weeks later, it came in the mail. Dear Ms. Wyman: We are pleased to inform you.... Birds started to sing, squirrels and raccoons came up to my deck and started clapping, and the clouds arranged themselves in the sky to say “And they all lived happily ever after”!

Although that would have been seriously impressive, looking back on this experience, I learned that life is not a fairy tale. Instead, you must struggle, work hard, and have determination in order to attain what you desire. Like the NASA admissions process, life is an incremental quest of astronomical proportions in which diligence and passion are more important than crowns and princes. You make your own fate and your own fairy tale.

Let’s get started. ✱



Work Hard and Play Hard at NASA

By Vinit Parikh

When that first day of summer break rolls around, most high school students jump at the excitement of no work for an entire 3 months. Here at NASA, 49 high school students have decided to take a different route to get a thrill this summer. The LERCIP and Interdisciplinary National Science Project Incorporating Research and Education (INSPIRE) high school programs excel as two of the most amazing opportunities out there for summer internships.

There are so many opportunities for high school students to take advantage of during their summers. For instance, last summer I was a medical research assistant at the Case Medical Center at University Hospitals. I was placed in a research environment and was named second author on a published journal entry. Nonetheless, that summer experience doesn't even come close to what NASA has given me.

At NASA Glenn Research Center, there is without a doubt an incredible job experience that stands out among the others. As a research assistant last summer, I only worked on one project the entire time. Here, I am able to partake in multiple projects at the same time; working with space simulation chambers and a solar simulator one day and fabricating pens from scratch, constructing and programming robots the next.

Not only are the endless possibilities of this internship versatile, but there is a personal involvement with immense projects that will have an effect on our future. Through these NASA educational programs, high school students are given the opportunity to work on projects like the Ares I-X rocket. These projects could one

day dictate the path that aeronautics will take in the near future.

The last thing that separates the NASA educational programs from any other high school summer experience is the wealth of information and tools they provide GenY as we enter a changing world. Both the LERCIP and INSPIRE programs have provided the necessary skills and tools for students to succeed in the world that lies ahead of them. With workshops on diversity, harassment, business etiquette, and public speaking, NASA has given us more than just a great resume item to show off to colleges. Through these educational programs, high school students are given an unmatched experience, as well as many invaluable words of advice and resources for the present and future. These educational programs are inspiring the next generation as only NASA can. *

Michael Foreman: The Face Behind the Dream

By Shreyasi Parihar

Many children across the world dream of a day when they can close their eyes and all they would hear is a startling stillness in the air and when they open their eyes all they would see is a blanket of darkness and small glittering lights surrounding them. They dream of turning, weightless with grace, as they search for a beautiful planet bathed in blues and greens; a place where they have lived most of their lives, surrounded by everyone they love and know. Many would feel a strong urge to do something to protect this small, polluted haven of theirs; we know that Michael J. Foreman did when he was first blasted into space.

Michael Foreman was born on March 29, 1957, in Wadsworth, Ohio. After applying eight times for a position as an astronaut, Mike Foreman was finally selected by NASA in the June of 1998. His Astronaut Candidate Training (ACT) included orientation briefings and tours, numerous scientific and technical briefings, intensive instruction on shuttle and International Space Station systems, physiological training and ground school to prepare for T-38 flight training, as well as learning water and wilderness survival techniques.



Astronaut Mike Foreman speaks to students.

He was initially assigned technical duties in the Astronaut Office Space Station Branch where he represented the Astronaut Office on training issues. Later he was assigned to the Space Shuttle Branch as a liaison between the Johnson Space Center and the Kennedy Space Center, and also served as the Deputy of the Space Shuttle Branch. Foreman was then assigned to the STS-123 mission that delivered the Japanese Logistics Module and the Canadian Special Purpose Dexterous Manipulator to the International Space Station.

On June 16, 2008, a decade after his selection, Mike Foreman made an unannounced appearance at the orientation of the LERCIP and INSPIRE interns. Many interns, including myself, were very glad to see him. Mr. Foreman talked about his time at the Space Station as he explained the amazing chance that he had been given and the fun that he had.

At his formal presentation Mr. Foreman told us of races across the ramp of the space station to see who the better Superman was. If I was interested in NASA before, I enthralled now after hearing the crazy and fun things that the crew got to do. Mr. Foreman also took part in three of five space walks to attach the Canadian Arm in the space station.

In the end, I got to meet personally with Mr. Foreman and was lucky enough to get his autograph. Then, speaking with a journalist from the Plain Dealer who interviewed me about my experience with the astronaut, I told him, "One day it will be me inspiring the next generation. I will meet Mr. Foreman one day, one astronaut to another." *

anybody in a variety of ways." Therefore, NASA establishes a win-win situation in which both the Agency and the students benefit from these great opportunities.

NASA's mission, with regard to education, is, according to NASA's Web site, to "continue its tradition of investing in the nation's education programs and supporting the country's educators, who play a key role in preparing, inspiring, exciting, encouraging, and nurturing the young minds of today, who will manage and lead the nation's laboratories and research centers of tomorrow."

It is clear that education is seen as an investment in the future.

The Web site further sites three major education goals: To "strengthen NASA and the nation's future workforce, attract and retain students in STEM disciplines, and engage Americans in NASA's mission."

To meet these goals, NASA has developed an "educational pipeline." This pipeline is a series of programs for children and young adults of all ages. For younger children, there is the Science, Engineering, Mathematics and Aerospace Academy (SEMAA), and for high school and college students

there are internships and shadowing programs.

INSPIRE intern, Michael Adams, views his NASA pipeline experience as wholly beneficial. "There is always something new every year... Every year brings a different field, requiring something different."

Different assignments each year foster excitement and growth in these "pipeline" students. As Juana Calloway said, "I noticed myself maturing more as I came back each year. I have been in five different educational programs offered by NASA and have enjoyed every one"! Students who participate in NASA's educational programs learn about other programs they can become involved with in the future. Juana, James, and Michael are a few of the many students who have taken advantage of the great educational opportunities that NASA Glenn has to offer.

It is hoped that once a child becomes involved in one NASA program, they will continue to participate and become increasingly more involved in the NASA community until the former student becomes an employee at a NASA center. *

Adventures Through NASA's Educational Pipeline

By Josh Curry

Boasting over seven instructive programs for students as young as 5 years old, NASA Glenn Research Center is committed to education. This begs the question: Why is education so important to NASA?

The answer is actually quite simple: educating the youth of today is the only way, in NASA's opinion, to guarantee success in the future.

Likewise, as NASA intern James Weaver commented, "NASA can help



Students tour Glenn Research Center's Ares Facility.

Learning About the Mission: The Aerospace Workshop Where Fun and Learning Join Together

By Elizabeth O'Malley

Before I began my first day as a LERCIP intern, my understanding of what actually happens at the NASA was blurry. I had no idea how large and complex NASA Glenn Research Center (GRC) really was. With an estimated 3000 employees and more than 140 buildings, GRC is its own little city. But what is more amazing than the numbers at GRC is what is actually going on there. GRC has designed rocket engines, fuels to power systems, and support for human space flight, and many other areas of research and development that truly show the accomplishments of NASA.

In my first week at NASA Glenn the LERCIP and INSPIRE interns participated in an Aerospace workshop in order to learn more about NASA. This workshop helped educate us about NASA's online resources and mission of space exploration. We were each given a folder filled with pictures and facts about some current and past missions. These folders were extremely helpful to many of us who were not aware of NASA's past missions.

After icebreakers to help us get to know our fellow interns, our first activity was the Crater Activity. The Crater Activity helped to simulate the effects of different weights, angles, and forces of impact on planetary surfaces. By putting flour and cocoa in tin dishes we created representations of the Moon's surface. Then we threw rocks and marbles into the tins to represent asteroids hitting the Moon and creating craters. The activity really got us having fun and learning, key to a great activity!



From left to right, Anthony Thomas, Markus Primes, Sarah Murphy-Gray, Jim Fitzgerald, and Adwoa Boakye had fun learning about the Moon's surface.

The second activity was the Venn Diagram Activity. This assignment taught us more about our solar system and universe. During this activity we worked with fellow interns to categorize the parts of our solar system in any way we chose. Some categorized the various bodies by atmospheric conditions while others grouped the planets by how they appear in popular culture such as celestial bodies that have inspired cartoon characters such as Pluto, Mickey Mouse's dog, and Marvin the Martian from Mars. This activity helped us to learn about planetary science and allowed us to problem solve with a group in a short time-frame.

Finally, we participated in the Racecar Activity that showed us the problems programmers encounter when running and programming the Mars or lunar rovers.

The Aerospace workshop helped the LERCIP and INSPIRE interns get acquainted with one another as well as educate us about NASA's mission for the present and future. *

"In order to change the world, you have to get your head together first"
—Unknown author

Favorite quote of Michael Schnell

Public Speaking or Business Etiquette: There is so Much To Learn from goCarpeDiem

By Adwoa Boakye

The interns were impressed with them as they clamored for a handshake and thought of questions to ask. The information was helpful and informative and caught many attentions. The conversation did not end once the students left the building and lunch time talk was filled with anecdotes of the enthusiastic presentation and many, “you’ll enjoy it.” What am I talking about? Well, the goCarpeDiem seminars of course.

Happily, the general consensus was that the goCarpeDiem workshops were successes. Sitting down with presenters Dr. Fred Higgs III and Nicholas A. Pearce the source of the presentations’ success was evident; Dr. Higgs and Mr. Pearce are successes

themselves. Dr. Higgs, cofounder of goCarpeDiem, is currently an associate professor of electrical and mechanical engineering at Carnegie Mellon University. He previously attended Tennessee State University, where he started goCarpeDiem with friend Jason Ward during his sophomore year, and Rensselaer Polytechnic Institute. Mr. Pearce is currently working towards a degree in management at Northwestern’s Kellogg School of Management after having attended the MIT for engineering.

The advice that they shared during the seminars came from their experiences and their education and that advice was gobbled up by all in attendance. As we move forward taking advice will be important. Dr. Higgs and Mr. Pearce left a few words of advice and experience for all of us during our interview; just one example of how students at NASA are helped along their way.

From Mr. Pearce:

“Be intentional. When you go into an experience make sure you know what you are there to do and do not lose sight of that goal. You should try to make a purpose for yourself.”

From Dr. Higgs:

“Working at NASA prepared me for the work I do. Working here opens your eyes to the possibilities. Having hands on training before having to work gives you a head start.”

“I spoke with my peers about issues such as networking informally but I started goCarpeDiem during my sophomore year of college because I felt there needed to be a more formal discussion about such issues. I accomplished this along with Jason by researching the topics that I cover in presentations today. Being young it was important to integrate research with experience. I did not have enough work experience to be teaching on experience alone but I was able to learn about the material. This gave me an edge. I could teach from a different perspective than other presenters.”

“Just remember, “learning is an experience. Make sure you have a plan. For myself that was working as an intern at NASA for 6 years.”

“Always seek the opportunity. There are a lot of opportunities out there; all you need to do is look for them. Read about people who have gone before you and learn about their experiences. There are biographies out there and Google is a great way to learn about jobs. Make sure you take advantage of the many opportunities available to you.”

For more information about goCarpeDiem go to www.gocarpediem.com/ *



William Konyk, Liana Wiley, and Srikant Dhanireddy at the GoCarpe Diem workshop.

RePlay for Kids

By Breonna Slocum

On Thursday, July 24, the LERCIP and INSPIRE summer interns participated in the RePlay for Kids workshop. RePlay for Kids is a nonprofit organization that adapts and repairs mainstream toys so that children with disabilities are able to play with them. Assistive devices and switches, such as hand-operated switches, foot peddles, and sip and blow switches are attached to the main circuit of the toys. These devices make the toys serviceable to children who otherwise would not be able to play with them. It is important for all children to experience the thrill of playing with toys because it develops social and interactive skills. Adapted toys are generally more expensive than nonadapted ones, and finding a repair shop for them is sometimes even more difficult. RePlay for Kids offers both of these services free of charge.

Although at first the task of adapting the toys seemed difficult, the hardest part for most turned out to be taking the toy out of the box. The interns used solders, extra wire, hot glue, and drills to adapt the toys. For most, it was their first interaction with these tools. Popular toys such as “Laugh-With-Me” Elmo, “Go Diego Go!”, and “Kung-Fu Panda” were adapted along with baby dolls and motor cars. After the toys were adapted, they were placed on a stage where all of the interns could see their progress and for all, it was a most valuable experience; “I really feel like I made a difference today.” said intern Allyson McClendon.



Many students spoke about the difficulties they encountered in the beginning because it was hard to find the correct wires to solder; but after the students began working, they were able to move smoothly through the operation and reach their goal of creating 24 adapted toys!

Long-time volunteer and NASA employee Robert Brock reflects that the most valuable thing from RePlay for Kids for him is educating people about

how difficult it is for children with disabilities. “Most people don’t realize that a child with disabilities can’t play with normal toys, they [the toys] have to be adapted. I love the education part of this; making people aware of the issues surrounding children with disabilities.”

RePlay for Kids has a monthly workshop at Case Western Reserve University that is open to all who wish to become more involved.



Top: Camille Everhart and Qiaodan Jin Stone adapting a toy. Bottom: Mentor John Ferguson volunteers his time and helps students at the RePlay for Kids workshop.

INTERVIEWS

Preparing Gen Y for the Future

By Vinit Parikh and Elizabeth O'Malley

Growing up, Dr. Woodrow Whitlow dreamed of being a chemist before he had his first NASA experience. When he first saw NASA flying people into space, he knew that is what he wanted to do.

Dr. Whitlow's dreams began big by wanting to go to a premier engineering school at Purdue University but ended up somewhere bigger than he had ever imagined. At MIT, he attended undergraduate and graduate schools, which launched his career towards NASA. His attachment to NASA carried him through many of the NASA facilities including Langley, Kennedy Space Center, Headquarters in Washington, DC, and here at the Glenn Research Center.

"Gen Y is the future. If students are not inspired to learn, they won't." —
Dr. Woodrow Whitlow, Jr.

His passion to better the future of NASA begins with his goal to prepare Gen Y. He is investing his time and effort into Gen Y to ensure NASA's progression in the fields of aeronautics and technology. He wants us to be educated on NASA's missions and career options. However, his main goal is to inspire us to be NASA's future. In his own words, "Gen Y is the future."

He believes the process of preparing Gen Y for the future starts within NASA's walls. The educational programs here have proven to be invaluable in educating high

school as well as college students. Dr. Whitlow strongly supports the educational programs office's outreach to today's youth since this is one of his top priorities. Preparing Gen Y is the same as preparing NASA for the future. "I'm investing in you," as Dr. Whitlow voiced.



Dr. Whitlow speaks to the high school students about their interest in STEM (Science, Technology, Engineering, and Mathematics) at an All Hands meeting.

Inspiration is what drives anyone to be the best they can. As Dr. Whitlow said, "If students are not inspired to learn, they won't." It takes a great amount of wisdom and experience for one man to place such high expectations in the future NASA: Mission Gen Y. ✱

"Today is the tomorrow we worried about yesterday, and all is well."
—*Unknown author*

Favorite quote of Poorva Limaye

Meeting the Man Behind the Curtain: An Interview With Mr. Hairston

By Idaliz Báez and Shreyasi Parihar

On our first day at Glenn Research Center's LERCIP, I along with 50 other interns got the chance to listen to the encouraging words of Mr. John Hairston, the Director of Education. His words set us off, determined and eager, into the thrilling world of NASA. About 2 weeks later, Idaliz Báez and I had the opportunity to have an interview with Mr. Hairston. Keyed up, we went to his office with Ms. Maria Arredondo,

covering as the photographer, almost 15 minutes early!

Mr. Hairston responded with great emotion to every question we asked. We could easily see that he loves his job very much by the way he talked about it. Besides spending his time working, Mr. Hairston strongly believes that there is God first, then family, and lastly, work. The following is a copy of our interview with Dr. Hairston:

Looking back at NASA, what moments do you cherish the most?

I have worked for 17 years—I am most impressed with the people I work with, as well as the dedication and commitment they have for the task. I will definitely miss the people that surround me and work with me.

Is there anything you regret?

Yes, I have no reason to leave, other than I have to move on. I also regret not getting enough money to sustain more programs at NASA. There are things I could've done differently. But I believe to not look at the past, only the future.

What did you like most about your job?

I had a chance to be innovative and creative, "for me there is no box." I do what I want to in the boundaries of the organization. If I think of something I want to do, I have the right people and I am in the right place to make it happen.

Do you have any hopes or expectations for the generations to come working at NASA?

I'm in love with Generation Y; I believe that they are going to move this country. They're number 1, even if they bore easily, because this means they need to keep their minds moving. I like the way they embrace technology, but they should be careful as to not lose any people skills. There are other things besides computers, technology, and texting. It is important how one relates to others personally and socially. Their

creativity and energy will be beneficial to the country and global society. In this generation, 2/5 people in a group of friends are diverse; they embrace diversity. Generation Y pays "no attention to white, black, blue, purple." We are seeing more diversity and "that's a good thing." I'm a very religious man. I don't believe in a melting pot, but in a coat of many colors where distinct colors make a coat (Joseph's coat in the Bible); everyone should be a part of me!

What is one of the largest impacts you've had in the external program?

I don't think I personally had any impacts. I have leadership and the position to motivate people to make an impact on their own. I can lead as well as follow. Innovative education, outreach programs, creating businesses, and an improved quality of life for people are all things that through the people I have led or motivated, we have accomplished. Hang on to find your niche in life. Have the energy I have to call

people along with you, like your staff, on the ride.

What do you plan to do now?

I thought I had a plan to work at a consultant job for half of the year, but now I'm going to help someone expand their business and be on the board of trustees on a 7-year term for the Cleveland Public Library. I really need to stop saying "yes" to people who come to me with a job offer or a position somewhere. I have a house in North Carolina on the beach. I would like to go there for 6 months with my wife and learn to surf and fish. I want to get back on an exercise program, swim in the Atlantic, bike, and most importantly serve as a deacon in my church coordinating the site selection for the new church. I would like to present to the church a new site to build by December 31.

Did you plan on working at NASA?

No, I didn't plan this. I didn't want to go to college. I wanted to go to the



Idaliz Baez, John Hairston, Director of External Programs, and Shreyasi Parihar.

Marines like all of my friends. But when I was 17, my Dad wouldn't sign the paper and told me to stay home to go to college. Later on, I learned to love the college I was in; I even made the Dean's list and graduated at the age of 20. I have been married for 43 years. I applied and interviewed here at NASA and walked away from a full retirement at the Cleveland Municipal Schools. I kept my faith, otherwise I never would have been here. My parents and I had to make sacrifices to get here and to pay for my college and my Masters. I am amazed at how many people still offer me jobs even after my retirement. I already worked for 44 years and am not going to work full time.

Do you have any words of wisdom, or piece of advice, for students here at NASA?

"Diversify, Diversify, Diversify" and get as much knowledge as you possibly can, look at more than one thing you want to do, but stay focused. I manage my life from number 1. God, 2. Family, and 3. Work; without God it all falls apart. My mom is currently 84. I believe that my parents had a vision that I was not going to stay here, so I worked every day to pay for my college tuition, while my parents did the best they could. Technology isn't where you get all of your smarts from, it is from networking. No one can ever keep up with technology. My grandparents and parents were the best of the best and so I was the best of the best. You are the best of the best to be here. So, don't let anyone tell you otherwise. Don't let anyone take you down. Always remember that YOU ARE THE BEST OF THE BEST. *

The Pioneering Spirit of Jo Ann Charleston

By Josh Curry

While she earned her bachelor's degree in chemistry, Jo Ann Charleston has found incredible success in the Glenn Research Center's Educational Programs Office.

After entering the NASA workforce nearly 30 years ago, today Charleston is the Education Director at GRC. Charleston is responsible for managing all of the Center's education programs, including NASA's Science, Engineering, Mathematics and Aerospace Academy (SEMAA) and NASA Explorer School (NES) project. SEMAA serves under-represented K-12 students, educators, and families, while the NES project provides opportunities for educators, middle school students, and families to become involved in NASA research. NES also strives to meet the local schools' needs in mathematics, science, and technology. These K-12 projects support NASA's goal of attracting and retaining students in the science,

technology, engineering, and mathematics disciplines.

Charleston has received more than 100 awards and honors from NASA and other organizations including two of NASA's most prestigious awards: the Equal Opportunity Medal for her outstanding leadership in ensuring that minority youth receive educational opportunities and the Outstanding Leadership Medal.

Her most recent award, the 2008 Black Engineer of the Year Award's K-12 Promotion of Education Award, is perhaps her most prestigious. Sponsored by Lockheed Martin Corporation, The Council of the Engineering Deans of the Historically Black Colleges and Universities, and the magazine U.S. Black Engineer and Information Technology, the award honors Charleston's achievements in "encouraging minority students to go into STEM... what I do every day," Charleston said.

Charleston said the award is one that she is particularly proud of because she was nominated by her



Breonna Slocum, JoAnn Charleston, Chief, Educational Programs Office, and Joshua Curry.

peers and students. The nomination included endorsement letters from former students. "The feedback from student nominations made me proud," Charleston said. "I was able to see a return in my investment."

It's hard to talk to Charleston without seeing the immense joy that she gains from seeing her students succeed. "Every year I look forward to finding ways that the Educational Programs Office can provide quality opportunities for young students," said Charleston. "I am proud when students can say that they have had a valuable, meaningful, and inspirational experience here at NASA. Only then can I say that the program goals have been met."

Charleston hopes that the Glenn educational programs, under her leadership, will help to prepare the next generation of professionals for their future careers. "There are two main assets that the next generation must possess: passion and leadership skills," Charleston said. "You have to have passion because if you don't you won't stay in the workforce for too long.... You can develop passion by looking for opportunities to learn new things and do new things and by surrounding yourself with positive people. Network and learn from the people around you." Likewise, Charleston asserted how her leadership skills allow her to see the big picture and give guidance to her staff.

Aside from leadership and passion, Charleston also places high value in a set of abilities she calls "21st century skills." These skills are more than academic and they include critical thinking, ethics, social responsibility and teamwork, and communications. "These skills will allow students to seamlessly enter into the job market and compete in a global economy," Charleston said. *

Ann Heyward: A Success Story

By Shreyasi Parihar and Pooja Mude

Ann Heyward has led the Research and Educational Programs Team since September 2000. She has also led the sponsored research, education, and training activities at Ohio Aeronautics Institute (OAI). Ann proudly told us that she was lucky to have traveled so much in her life. She has been everywhere from Geneva, Italy, to Australia, to England, to Spain and even our neighboring country, Canada. Currently, she is living a simple life outside of NASA with her husband and her three cats.

Here are some of the following questions that Pooja Mude and I had the opportunity to ask Mrs. Heyward.

What do you think is most beneficial about the LERCIP high school program?

I think that the most beneficial thing about the LERCIP high school program is that a lot of people and interns have a great experience here at NASA. Since

NASA is always looking for engineers, scientists, and researchers for the future, they want the new generation of kids to have an interest in these areas to be able to help fill in the spots of those retiring. This high school program gives students the first experience into the science and engineering career field, which will hopefully excite them to work for NASA in the future. I believe that experiences like these really pave the way for the future of our interns.

How do you think this program helps students grow?

This helps students grow personally, professionally, and academically, by meeting people one wouldn't have gotten the opportunity to meet with before. Interns have been given the chance to work everyday with important people like mentors, peers, coworkers, astronauts and of course, other interns.... It gives students a broader universe of what is possible. From the professional point of view, it



Shreyasi Parihar, Ann Heyward, Vice President, Research and Educational Programs, Pooja Mude.

is the first real experience in a serious science and engineering career, helping students academically.”

What do your responsibilities for work entail?

For OAI, I oversee all research programs. I also supervise educational programs, Ohio Space Grant Consortia, and continuing professional programs, as well as am in charge of 50 other people. We have over \$90 million in our budget.

What steps did you take to become the Vice President of OAI?

I have been very fortunate at each stage of my career. I had the right opportunity given to me at the right times. In my opinion the greatest reason for my success would have to be the networking. If it weren't for networking I never would have received these marvelous opportunities. By meeting new people and making myself well known, mentors of mine encouraged me to pursue whatever I wanted to. This just shows the importance of building a platform for good relationships.

Do you have any other advice or words of wisdom to share?

Once again I cannot say it enough, developing good relations is critical. Also, another word of advice is, “Luck favors the prepared mind.” I believe that if we put forth positive energy in the world, then we get that positive back; and if we send out bad, then we get bad in return.

What are your plans for the summer?

Well, I don't think that I will be traveling much this summer since I just came from a vacation. I love to garden though, so I will be doing a lot of gardening and taking care of my cats. I also have a couple good books I would like to get my hands on. Previously I

had worked in photography, it would be nice to try and jam that in my busy summer as well.

What are your hopes for the next generation—Gen Y?

I am very impressed with the next generation. They are growing fast in a changed and different world. It is so exciting. There are a lot of challenges Gen Y has coped with. They have thrived in a fast-paced, complex world. I believe that Gen Y will be the most-connected generation the world has ever seen. *

The Woman Who Wears Many Hats

An interview with Mrs. Stephanie Brown-Houston

By Adwoa Boakye

“Enjoy what you're doing at work or play so play can be work and work can be play.”

This proverbial phrase came from Stephanie Brown-Houston as she gave a few words of advice during her interview; the type of advice one hears at NASA Glenn Research Center, where work is play.

Mrs. Brown-Houston coordinates Glenn's INSPIRE and Glenn's Exploring Program. As the manager of these programs, Mrs. Brown-Houston opens the door for students interested in learning more about careers in the sciences.

Mrs. Brown-Houston truly prepares students for the future by giving them

great opportunities and connecting the student community to NASA. Not everyone could do Mrs. Brown-Houston's job. It involves a great deal of networking and therefore confidence. So, remember her piece of advice—“enjoy what you're doing”—she does.

What do you generally do from day to day?

“We don't have that much time”! I wear many hats. I am the Program Manager for NASA Glenn's INSPIRE and Exploring programs so I am occupied year round, Exploring during the school year and INSPIRE during the summer. I act as the liaison with Kennedy Space Center, the NASA center that controls the INSPIRE program, and with Oklahoma State University, the contractor for INSPIRE. I am also the Institutional Budget Coordinator and the Informal Education Liaison. So, I am busy.

As Program Manager for INSPIRE, I work with various institutions, including schools, to ensure that students found out about the program. Through my job as the Informal Education Liaison, I have gained contacts around the state and across Glenn's six-state region: Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin; that helped me to spread the word about INSPIRE, which is available for all high school students within Glenn's region.

I also oversee the use of congressional earmarks to planetariums, museums, and science centers. That means after Congress designates who receives government funding, I oversee those institutions to ensure they are using the money for the projects to which the money was awarded. This also gives me the opportunity to link the community with NASA.

This year NASA initiated a new nationwide program, INSPIRE, avail-



Stephanie Brown-Houston does it all!

able for students in grades 9 to 12. How was this program started, and how were you involved in its beginnings?

In order for a program to be initiated, ideas need to be proposed to a review board. Education meetings are then held by the Educational Council Committee to discuss it. In order for an idea to be considered it needs to be unique, not the same as any of our existing programs. INSPIRE was unique. It established a networking platform through an online community along with a kind of pipeline that provides an opportunity for students to

get involved with NASA throughout high school.

A lot of interns are interested in sticking with NASA throughout the year; how do students find out about the opportunities that NASA offers?

NASA tries to get the community involved by sending our information to high schools and businesses in our six-state region. The businesses I have

worked with, the planetariums and science centers, including Center for Science and Industry (COSI), also send out information to people on their mailing lists and teachers who are affiliated with them. Otherwise there is information on the Web. For INSPIRE, Oklahoma State University also had the responsibility of letting people know about the program.

Since you are the Project Manager for the NASA Glenn Exploring Program, can you tell us how we can get involved?

The NASA Glenn Exploring Program generally has about 100 participants each year. It is available for 14 to 20 year olds and they meet once a week throughout the year. There are currently four Exploring activity groups: computer science, human space flight, balloon satellite, and aeronautics activities.

Last remarks:

Be able to adapt to any situation. You must be versatile. If you are, you can do any job you'd like. What I have learned at NASA can be used anywhere. It has really been a great experience for me.

For more information about NASA programs go to <http://www.nasa.gov/centers/glenn/education> *

NASA's Educational Wonder Woman: An Interview With Mrs. Darla Kimbro

by Lauren Wyman

We have all seen Mrs. Darla Kimbro many times throughout the summer. She was at our orientation, she spoke with us during our One-on-One Follow-ups, and she has attended every LERCIP workshop and group meeting. A certifiable "Wonder Woman," Mrs. Kimbro oversees every aspect of our time at NASA.

What is your story? How did you arrive at NASA? Were you always an Educational Programs Specialist?

No, I was not always an Educational Programs Specialist. I arrived at NASA 8 years ago, in October 2000, as a logistics coordinator. I helped project managers arrange logistics for enrichment activities. Two years later, I found myself assisting the manager for the NASA SHARP. I became more involved, and within the following year I was managing the NASA SHARP myself.

What are your jobs and duties in relation to LERCIP?

My responsibility is everything. It begins in the fall with calling local high schools to make sure that the "points of contact" for LERCIP are still there. Over 200 schools are on our contact list. Then, we have a student team that meets for the creation of our application. We talk about what is pertinent on the application and what information we should include on the first few pages. We make sure the goals and objectives of the program are stated, and then we begin revamping the application. In December, the applications are sent out to the local high schools. Then, in January and February, we receive applications. They are checked for completion and are rated. I'm responsible for organizing a rating panel, giving the applications to the rating panel, and meeting with the rating panel to determine who is going

to be interviewed. I am responsible for creating the interview panel, for compiling all results and ratings, and presenting it to my chief so she can make a decision about who is going to be finalists. I also plan all enrichment activities for the students. Everything from A to Z is my responsibility as it pertains to the LERCIP.

How long have you been working with LERCIP/SHARP? How has the program evolved over the years?

When I first started, I was with SHARP, which stands for "Summer High School Apprenticeship Research Program." It was an Agencywide project, so SHARP students were across the nation in all of the NASA field centers. And it had two components: it had a center-unique component where the students were sent to the particular bases and a residential component in which the student participated for 8 weeks at a university. At Glenn, our partnering universities were the University of Wisconsin and the University of Michigan. Unfortunately, in 2005 the SHARP was canceled. And once the program was canceled, Glenn decided to continue high school opportunities for students. The SHARP focused on science, technology, engineering, and mathematics, but we had two other programs that were Center unique. The NASA PLUS program was for students interested in professional and educational experiences, and the ETP was for students interested in mechanical and electrical engineering. So at the end of 2005, our Center decided to create a Center-unique opportunity combining the three components. We called it LERCIP high school. Our high school program began the summer of 2006.

Why are programs like LERCIP important to the students, to Glenn, and to the community as a whole?

For NASA, it is important to offer opportunities because we want to have a future workforce. We know that the people working now are not going to be here forever, so we need to replenish our workers. We need to inspire minds now...we cannot wait to do it. Our whole goal is to get students interested and keep them engaged through college. It's an investment in NASA to invest in your education and to invest in what it is you want to do. Also, I think it's a great opportunity for students to say that I worked at NASA when I was 16 and this is what I did. I think it's a win-win situation for the students and for the Agency.

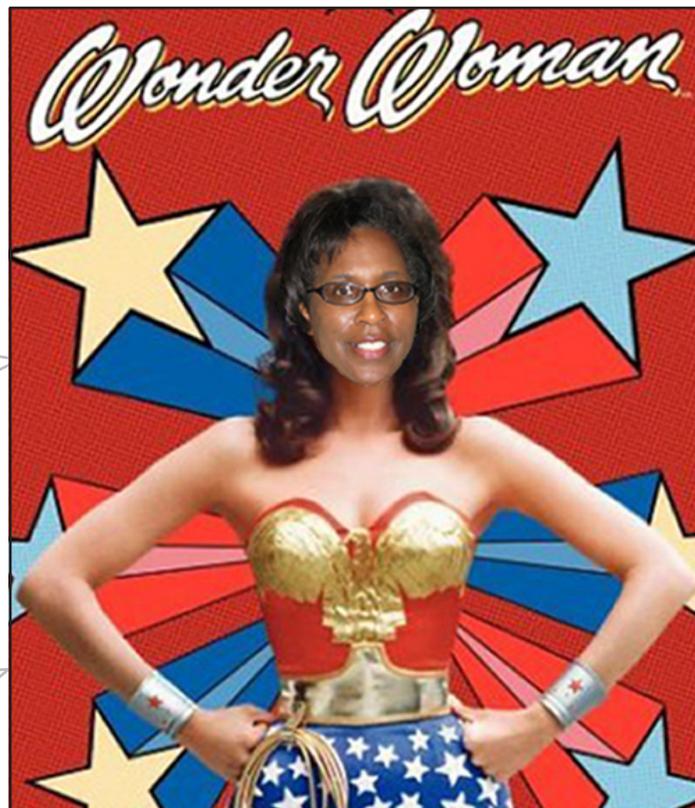
What aspect of the internship do you believe most helps our professional and academic development?

I think the mentor-mentee relationship most helps this development. And as a mentor myself, I think it's invaluable

because you have an opportunity to be connected with an employee at NASA who serves as a mentor, a guide, an advisor, and a teacher. This one person can be all these things to you, as well as a great resource and a great networking opportunity. These relationships you establish are really valuable. It encompasses so many things and can open doors for you. And I think that really helps you academically and professionally. Look to the relationship as the utmost part of your experience and really tap into the person for knowledge and advice as a mentor, a guide, a teacher, and an advisor. It's invaluable, and it helps you grow academically and professionally.

What is one aspect of the program that you are particularly proud of?

There are two things. When I get to sit and watch the presentations, it's



Darla Kimbro, LERCIP high school program manager, Wonder Woman, our superhero of Education!

amazing to me to see the students shine at that moment, to be able to share what they've done at NASA, and to see how they have evolved from the first day. It is amazing! And then the awards banquet is always somewhat bitter-sweet because it is the end of another summer, and I feel that I've impacted the group, even if it was indirectly. It's just a good feeling seeing students come in the door, see what they've accomplished in 8 weeks, and then see them move on. I wouldn't trade it for anything. It's a great thing to see year after year.

What are some words of wisdom that you would like to impart upon us as we leave NASA?

Really believe in yourself regardless of how things are stacked against you or how others treat you. Some people are nay-sayers, they tell you to do the easy thing. Really believe in what it is you want to do. Believe that you can do it. There is nothing that you can't accomplish if you believe you can do it. If I believe in myself, it doesn't matter what anybody else says or how many people are stacked against me. It just makes me more determined to say that I know this is something I want to do, I'm going to pursue it, and I'm going to do it. So believe in yourself. Don't look to other people to believe in you. YOU should be your number one cheerleader. I think it's very important that you cheer yourself on. If we wait for other people to do it, we may be on the sidelines longer than we want to.

If we were to get one thing out of this internship, what would you want that to be?

Make sure you make the relationships. Relationships are very important; they can open doors for you and they can close doors for you. Again, it goes back to that mentor-mentee relationship. Really build upon it, capitalize on it, and make the best of it, because assign-

ments come and go, but relationships are for a lifetime.

LERCIP students thank you, Mrs. Kimbro, for your hard work and dedication and for making our summer here at NASA possible. *

Etiquette Training Professional Vincent Satterwhite

By Vinit Parikh

On its own, this summer has been a fulfilling experience being part of the LERCIP High School Program. However, Mr. Satterwhite takes a select few students under his wing and gives them opportunities and experiences beyond what they had expected before starting this internship. As a member of the Engineering Technology Program (ETP) that Mr. Satterwhite manages, I was given wonderful opportunities and learned important skills that have undoubtedly helped me grow as a person. Mr. Satterwhite is not only the ETP manager, but also the Etiquette Training Professional for the high school students.

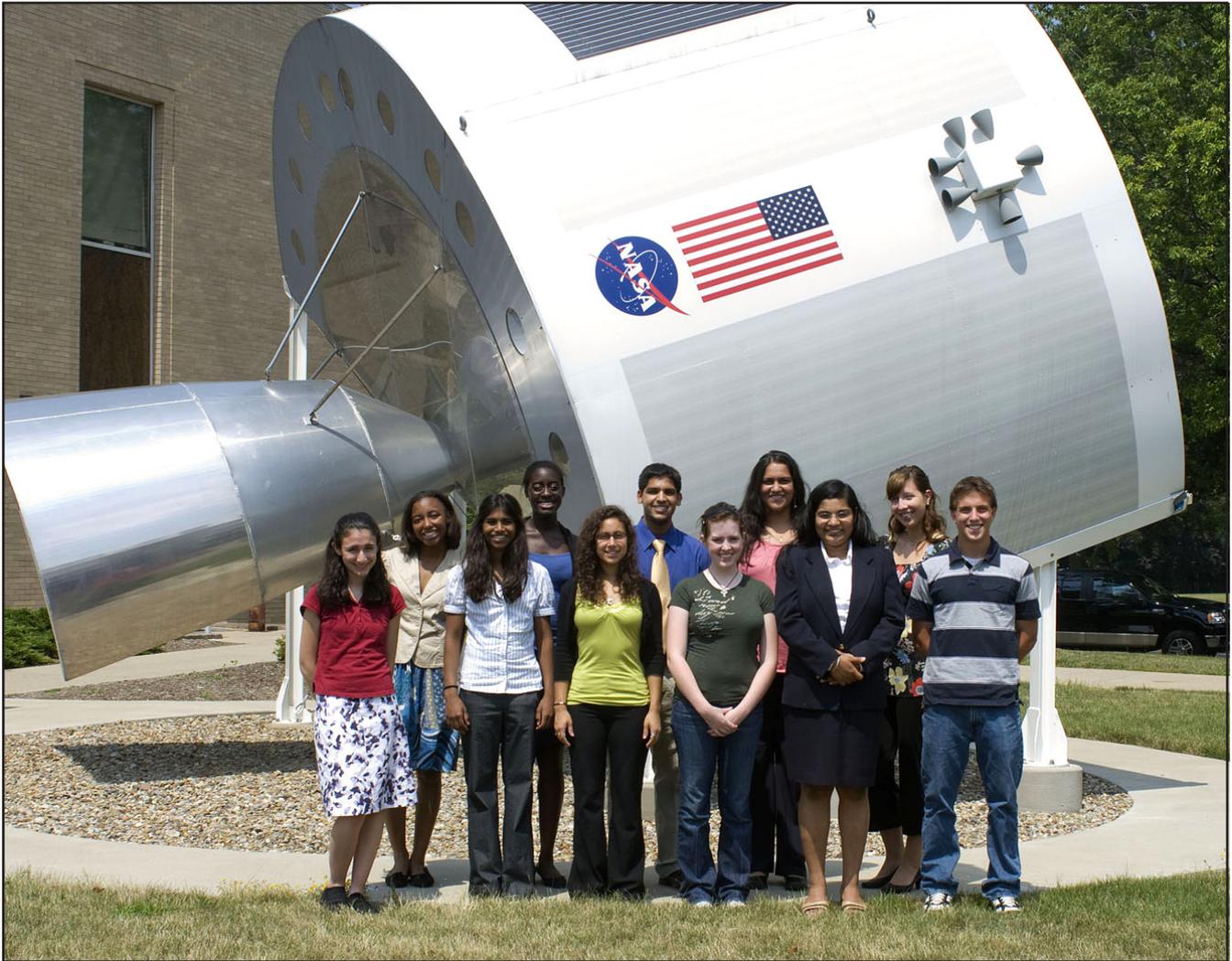
In terms of a job experience unmatched by any other summer internship, Mr. Satterwhite takes the NASA experience one step further for his 12 ETP interns. He had us fabricate pens from blocks of wood and plastic as well as construct and program our own robots.

However, his impact on the educational programs does not stop there.

From learning how to build a proper resume to learning how to present ourselves to an executive when the time comes, Mr. Satterwhite prepared us with tools that will get us farther along in the job market. "My hopes for Gen Y are to also teach them the importance of soft skills." He stresses the importance of personal character over a high school GPA because communication skills and networking skills is what will carry us through life. It is very important to Mr. Satterwhite that students be given an opportunity to learn technical skills at NASA so they can become part of the existing pipeline and future NASA workplace. He covers everything we need to be successful—from proper speech techniques to good networking skills because he is dedicated to prepare Gen Y for the future. It is people like Mr. Satterwhite that contributes the most to the betterment of our generation. Honestly, if you saw how classy those pens turn out to be, you would want to be part of his program too! *



Vincent Satterwhite, Aviation Environment Technical Branch.



The Glenn Gazette staff, front row from left to right: Lauren Wyman, Pooja Mude, Idaliz Báez, Liz O'Malley, Shreyasi Parihar, Joshua Curry. Back row from left to right: Breonna Slocum, Adwoa Boakye, Vinit Parikh, Poorva Limaye, and Maria Arredondo.

