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Join Us:



Calling All Alumni: SPREAD THE WORD!

Applications for the 2018-2019 cohort will open August 25, 2017!

Please share the newsletter and website with eligible candidates!

Reflections on the Fellowship: The James Webb Space Telescope

By Guest Writer and Current AEF Fellow: Jennifer Mayo

Upon learning that I was accepted as the Albert Einstein Distinguished Educator Fellow at the National Aeronautics and Space Administration Office of Education (NASA, OE), it was AEF NASA Aeronautics Research Mission Directorate (NASA, ARMD) alumna Jennifer Kennedy who reminded me that the James Webb Space Telescope (JWST) is housed at NASA Goddard Space Flight Center, my new home. My exact words to her were, "That telescope melts my heart!!!!" So, it was only natural that after driving nearly 3,000 miles for my fellowship, I went another 20 miles for a late-August, Goddard drive-by. I couldn't believe that I was going to get to spend my fellowship on actual NASA ground with what was behind those gates. I was fortunate to spend the first seven months of my fellowship with the JWST. The building housing JWST became a special place for me, and I visited as often as I could. My first recorded photo with JWST is dated September 21, just one week after my first appointment in the center's badging office. The fall months consisted of seeing the installation of the telescope's instruments behind the luminous honeycomb mirrors. This led to the terrifying shake tests during the winter, followed by further testing of the focus of each of the 18 mirror panels, separately and in unison, this spring.



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Where Are They Now: From Miami to Maryland

Two months after completing his Einstein fellowship from 2011 to 2013, with the National Science Foundation (NSF) Education and Human Resources Directorate (EHRD), Remy Dou returned home to Miami where he joined the STEM education research group at Florida International University (FIU) as a fulltime graduate student. While his AEF assignment included a special appointment to the White House's Office of Science and Technology Policy under the supervision of the Associate Director of Science, upon his return to FIU he worked on projects under the auspices of FIU's STEM Institute contributing to a variety of research mostly focused on understanding the effect of student socialization in active learning undergraduate physics courses. He has published a variety of papers and presented at a myriad of conferences, including AAAS annual meetings and the National Association for Research in Science Teaching meetings. While working on his Ph.D., Remy also participated in K-12 STEM education outreach, partnering with NASA and Miami-Dade County Public Schools to engage students in projects that included contacting astronauts on the International Space Station.

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Alumni Updates:

Einstein Alumna Increases Access to AP Courses

Sharon Hessney, 2011-2012 Einstein Fellow, is the Massachusetts Advanced Placement Statistics Content Leader for Mass Insight Education (MIE). The membership of MIE is comprised of schools who do not have historically strong AP programs. The objective of the program is to increase access to AP math, science, and English courses while increasing student performance as measured by increased qualifying scores. Through MIE, she has traveled the state for five years, providing support for roughly 80 teachers and 2,300 students per year. Though many of the schools are in urban areas, there is a sizable contingent of rural schools.

During her fellowship as an education advisor to Senator Al Franken, Sharon saw first-hand the necessity for citizens to be critical thinkers with regard to statistics in its many applications. With her background as a Boston Public Schools math teacher, Sharon was frequently asked by Hill staffers to help them both use and understand statistics. Based on this identified need, she contacted Steve Pierson of the American Statistical Association, and they created *Stat for Staffers*, a sequence of presentations by noted statisticians about how to use (and not misuse) statistics.

Currently, Sharon is also a volunteer tutor of refugees who are seeking their high school diplomas.

Check out these **FREE** resources from the DOE Office of Science, Workforce Development for Teachers and Scientists.

<http://science.energy.gov/wdts/stem-resources/k-12-educators/>

Barizo Honored as Chesapeake Bay Trust 2017 Educator of the Year

At a January 12 reception at the Miller Senate Office Building in Annapolis, MD, Ophelia Barizo, 2013-2014 Einstein Fellow, Director of STEM Education at Chesapeake Conference Office of Education and STEM coordinator at Highland View Academy in Hagerstown, was honored as the 2017 Educator of the Year by the Chesapeake Bay Trust. In addition to receiving a citation from the Maryland General Assembly, she was also awarded a \$2,500 grant for use in environmental projects at Highland View Academy. More than 150 Chesapeake Bay supporters joined Maryland legislators at the event honoring Barizo and others for their outstanding contributions to environmental education, Bay restoration, and volunteerism.

Ophelia served her fellowship at the National Science Foundation (NSF), Engineering Directorate (ENG), Office of Emerging Frontiers of Research and Innovation (EFRI). As an educator, she has taken students on numerous field trips and planting projects in the Chesapeake Bay Watershed, and has initiated many environmental projects in the school and Washington County, receiving environmental education grants from the Chesapeake Bay Trust almost every year since 1999. Ophelia has raised approximately \$850,000.00 in grant funding for Highland View Academy and her district thus far. She is also a recipient of several awards from the National Science Teachers Association (NSTA), including the STEM Educator of the Year Award for 2012.



Pictured above l-r: Andrew Serafini, MD Senator; William Wivell, Delegate, Legislative District 2A of MD General Assembly; Barizo; Neil Parrot, Delegate, Legislative District 2A of MD General Assembly

We welcome your submissions regarding the Einstein Fellowship. Send your updates and accomplishments to: Einsteinfellows@orise.orau.gov. Subject Line-Newsletter



ITEEA announces Jonathan Gerlach as its 2017 Dallas Conference Program Excellence General Session keynote speaker



ITEEA is pleased to announce Jonathan Gerlach as its 2017 Dallas Conference Program Excellence General Session keynote speaker. Gerlach is the International Consultant for STEM Education Initiatives at Discovery Education.

Jonathan has a deep background in STEM, including a certification

from Columbia University Teacher's College in STEM Education with a distinction in STEM Education Leadership, which he utilizes when providing expertise in STEM Education, curriculum development, professional development, coaching, and school culture transformation to school districts globally.

As an Albert Einstein Distinguished Educator Fellow, he worked in the U.S. Senate focusing on STEM education policy for the office of Sen. Michael Bennet [CO]. As a former NASA Endeavor Fellow he collaborated with teachers and leaders around the country as well as professors at the Columbia University's Teacher College in understanding the impact of STEM professional development. Jonathan previously supported STEM education in Hillsborough County Public Schools as a district level science resource where he was named the Florida Association of Science Teachers, Science Teacher of the Year as well as the Florida Engineering Foundation STEM Educator of the Year. Jonathan is considered a leader in STEM education and has authored multiple publications on the topic including, "All Teachers are STEM Teachers", in *EdWeek*, "STEM: Defying a Simple Definition" and "Talking SMath" in *NSTA Press*, as well as "Elementary

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Design Challenges" in *Science & Children*. His work on elementary engineering education is also highlighted in *Integrating Engineering and Science*. As a thought leader, he has spoken at multiple national conferences for STEM education, science education, and educational research as well as delivering keynotes at numerous STEM events both nationally and internationally.

On its surface, "STEM" is the acronym for science, technology, engineering, and mathematics. However, pulling away the first layer, reveals the most elaborate puzzle in the education world. Recently, STEM has gone through a dramatic change as industry and employers' needs have been changing and increasing exponentially. Information is more readily at our fingertips and employers are now looking for employees with critical 21st century skills, or, the 4C's: Creativity, Collaboration, Communication, and Critical Thinking. For students to be successful in their future careers, they need to develop the skills employers are looking for, not just the subject's content. By utilizing the 4Cs, exploring global problems and solutions are tied directly to our students' futures.

How Student-Centered Models Work

Einstein Fellow Mickie Flores, '04-'05, and 2015 Hancock County Teacher of the Year, was featured in [Student-Centered Models: Showcasing Innovation in Maine Classrooms](#), at the 6th annual Educate Maine Symposium. Her out-of-classroom learning experience functioned as a measurable demonstration of science proficiency as her 7th and 8th graders at Deer Isle Stonington Elementary School reopened the school's Nature Trail. In conjunction with the Gulf of Maine Research Institute and Great Schools Partnership, students spent thirty days collecting and analyzing data, identifying native species, and observing the relationships between living and nonliving components of the site as they cleared the trail.



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Remy is currently in the midst of transitioning from his Ph.D. program into a postdoctoral research associate role with the Department of Physics at the University of Maryland. His new assignment is supported by a National Science Foundation (NSF) grant awarded for the development of a course-design website for higher education faculty teaching introductory physics targeting life science majors. Remy continues his research on student affect in active learning STEM environments, paying particular attention to career decision-making constructs.

For now, Remy resides with his young family in Miami, Florida where he spends much of his free time reading and writing Young Adult fiction.

(JWST, cont'd. from Page 1)



I was there for the special center-wide viewing day when the glass-walled platform looking into Goddard's impeccable clean room was jam-packed with employees and guests seeking to view JWST, mirrors up and turned out, and for quieter moments to chat with other observers, Goddard scientists and engineers, and visitors. Since I had come to know more than superficial details, I could share knowledge of the science and engineering behind this modern marvel set to travel well beyond the habitable zone in which we live. In the midst of my personal JWST revelry, I was asked to design a workshop making the telescope's science accessible to K-4 teachers attending the Space Exploration Educators Conference (SEEC) at Space Center Houston. This opportunity, extended to me by Education Director and AEF Goddard alumni, Daniel Newmyer, was the chance of a lifetime. Several months of preparation—talking with project scientists at Goddard and staff at the Space Telescope Science Institute at Johns Hopkins University in Baltimore, home of JWST Mission Control—was a journey in and of itself. Attending SEEC to support the JWST keynote with the K-4 workshop was an exciting experience! The workshop was well attended by educators K-20; everyone wanted to bring JWST back to their schools. With a little teacher resourcefulness, and support from Dr. Matt Greenhouse, JWST Scientist and keynote speaker, as well as Dr. Hussein Jirdeh, Director of Outreach for the Space Telescope Science Institute, I quickly revamped the original session to accommodate the wide range of participants. Similarly, when the JWST video stalled during my wrap-up, I reenacted the selected segment using my scarf as the hairnet for a clean room bunny suit! However, my favorite JWST moment came on the day my fellow AEF fellows visited Goddard. As the Goddard AEF placement is a bit from the well-traversed path between the Hill and Ballston, being able to create and share a day at Goddard with my cohort put me over the moon. One of the most special activities that day was at the JWST viewing area where two of the telescope's engineers, Giuseppe Cataldo and Begoña Vila were able to share their expertise and answer questions with the JWST beautifully positioned near the ground, mirrors facing the ceiling, technicians working on the instrument panel, was amazing! Many highlights of Goddard's science and engineering team were shared that day, but for me, bringing my people and my telescope together was incredibly wonderful. The JWST recently travelled to Johnson Space Center for the next step of its journey, leaving me to continue to explore Goddard for the final two months of the fellowship. While it's still terrestrial, I keep up with the JWST via webcam. When it launches for its permanent home at Lagrange Point 2 in 2018, part of my heart will travel there, too.



Resources:

JWST webcam: <https://jwst.nasa.gov/webcam.html> *Into the Unknown* excellent JWST video):

<https://www.youtube.com/watch?v=jnpZzPAsz1U> JWST NASA site: <https://jwst.nasa.gov/index.html>

