

Featured Stories



Bringing STEM from Pasadena to Paramaribo

By Vincent Robbins

As the deep green expanse of rainforest stretched for miles in every direction below his airplane window, JPL Software Architect Rishi Verma thought, “Where’s the runway? Where’s the city?”

After a three-flight trek from Los Angeles, Verma touched down in Suriname, a small, mostly rural country of less than a million people on the northeast coast of South America. He was there to discuss and advise on cutting-edge robotics, artificial intelligence, and data science – an unlikely suite of topics considering the country’s economy is primarily dominated by mining, oil, and agriculture.



But over three weeks as a visiting Fulbright Specialist while on vacation from JPL, Verma worked closely with students, teachers, and professionals eager to build a vibrant future in technology, science, and business for the next generation of STEM graduates.

The Perfect Match

Fulbright, a U.S. Department of State program, is known for its year-long student programs, but their Specialist Program is unique in that it sends American academics and professionals on two- to six-week, project-based exchanges at institutions around the world.

Verma discovered the program in 2019, applied, and was accepted onto their specialist roster to await an assignment. The call came to join a project – in March of 2020. Needless to say, that didn't happen. Begin montage: the pandemic years. End montage.

"Then this opportunity for Suriname came, which sounded really interesting to me," Verma recalls. "They have a school there that is investing in cutting-edge educational programs for the first time in AI, data science, and robotics. And they had a need for a specialist – somebody with experience in these fields – to go help them develop their curriculum."

A software architect at JPL for 15 years, Verma focuses on end-to-end solutions that make data useful and relevant for science communities. He has worked on an eclectic range of projects on Lab: robotic modeling, deep space networking, cancer biomarker research, defense, climate science data system design, and open-source software strategy. Currently, he's the lead architect and systems engineer for the Science Data System component of Observational Products for End-Users from Remote Sensing Analysis and a manager for an open source project sponsored by the Multi-Mission Ground Systems and Services Program Office. He has also worked with JPL designers on outreach work that intersects with data visualization.

Not a bad match for Polytechnic College Suriname: University of Applied Sciences, a small higher-education institute with a budding information & communication technology program looking to expand its curriculum into advanced data science, artificial intelligence, and robotics.



Polytechnic College Suriname was established in 1997 to create new opportunities in Suriname's developing economy.

But while Verma knew the subject matter well, he realized quickly that there was more to the job than textbooks and syllabi. His expertise would only be useful if it was tailored to the opportunities and challenges of the students in Paramaribo.

A STEM Generation Emerges

When Verma arrived at the school – a two-story building behind an unassuming iron gate at the end of a dirt road – he started with questions before looking for answers.

“[I was trying] to understand what their needs were, what their interests were, what are the challenges they face with their existing courses?” Verma recalls asking both students and faculty. “What sort of courses do I think are important to teach undergraduate students? How do those tie into the needs of the Suriname economy?”

The best time to ask these questions was, of course, at lunch. Outside the main PTC building, across a stretch of dirt, students gathered in and around a gazebo for a midday break. It was here, sometime during the second week, that Verma learned the important fact that most students were juggling more than just school.

“Almost all of the students are full-time/part-time, meaning they have a full-time course load but they’re working every day of the week,” Verma says.

He also learned some students lived and studied remotely in other parts of the country, which could make in-person, hands-on lab work difficult. It was through these kinds of details about the students, and learning more about the history of the country and university, that Verma began tailoring the curriculum.

Suriname, a former colony of the Netherlands, is one of the smallest countries in South America, yet its population is one of the most diverse – with descendants of enslaved peoples from Africa, Dutch colonists, and Javanese and Indian indentured workers making up the largest ethnic groups (Verma, who was born in India, said he was often able to get by in Hindi). Suriname gained independence in 1975 and has experienced significant political and economic turmoil in subsequent decades, including a civil war in the 1980s and '90s.



Paramaribo, with a population of about a quarter of a million people, is the capital city of Suriname on the banks of the Suriname River.

Despite limited resources in the country's emerging economy, Polytechnic College Suriname was established in 1997 to train highly skilled, qualified technical employees. By 2021, PTC was offering 12 bachelor's programs and two master's programs, covering a wide range of subjects such as business, agronomy, hydrology, and hospitality.

Recently, the college has focused on developing programs in data science and information technology. The ICT department established data science and artificial intelligence programs and now looked to launch a robotics program.

"There isn't a major AI, data science, and robotics need right now in Suriname," Verma says. "But this university is trying to create new programs, trying to create a generation of students who understand these topics. And then they may go out and start their own companies, or they may try to bring new ideas to existing companies to bring in some of this work."

The school's former director, Robby Holband, worked with the U.S. ambassador to Suriname to identify ways to bring additional expertise and resources to the school. That's when Holband found the Fulbright Specialist program, ultimately connecting with Verma and empowering him to recognize the long-term impacts he could have on the school.

"We're making this program from scratch, we're going to create an industry potentially here," Verma recalls Holband explaining to him. "You're the expert, you tell us what you think is important."

Crafting a Program

After working with students, faculty, and administrators for three weeks on curriculum development, Verma's recommendations included upwards of 20 courses as part of a full, 4-year robotics program, including topics like programming, data science, artificial intelligence, robot operating systems, kinematics/dynamics, building hardware, robotic navigation, autonomy, and even some liberal arts courses and career development.

He also recommended electives and a full semester capstone project where students will apply what they've learned across the program and design and develop their own robotic solutions for an important

[regional] use case. In some cases, he identified gaps in the existing ICT department and recommended courses like advanced calculus – which wasn't yet in the department – or recommended Python to be taught before C++.

For Priyanka Kumari, program manager of the bachelor program at ICT, Verma's work was especially effective because it reflected the real-world requirements of the school and the students.

"Mr. Verma's curriculum blends theory with practical lessons, making it easy to understand and implement," Kumari says. "We're immensely grateful for his contributions, which have significantly enhanced our educational efforts."

One highlight for Verma was organizing a virtual panel with a few JPL colleagues – Vandi Verma, Aaron Yazzie, and Ryan McGranahan – who discussed their educational and career paths in STEM and shared stories of their work at the Lab.

"I think the students were very inspired because they could see what you can do with the curriculum – after you graduate with these kinds of degrees, what kinds of possibilities potentially await," Verma says.



Verma invited JPL colleagues to participate in a virtual panel discussion with the students at PCT.

And the panel proved to be just as insightful for the panelists as it was for the attendees.

"I learned a lot just by listening to them," McGranahan says. "I think there's no more important literacy for a scientist and an engineer than to be able to listen, be able to be a student and keep that curiosity and keep that explorative mindset."

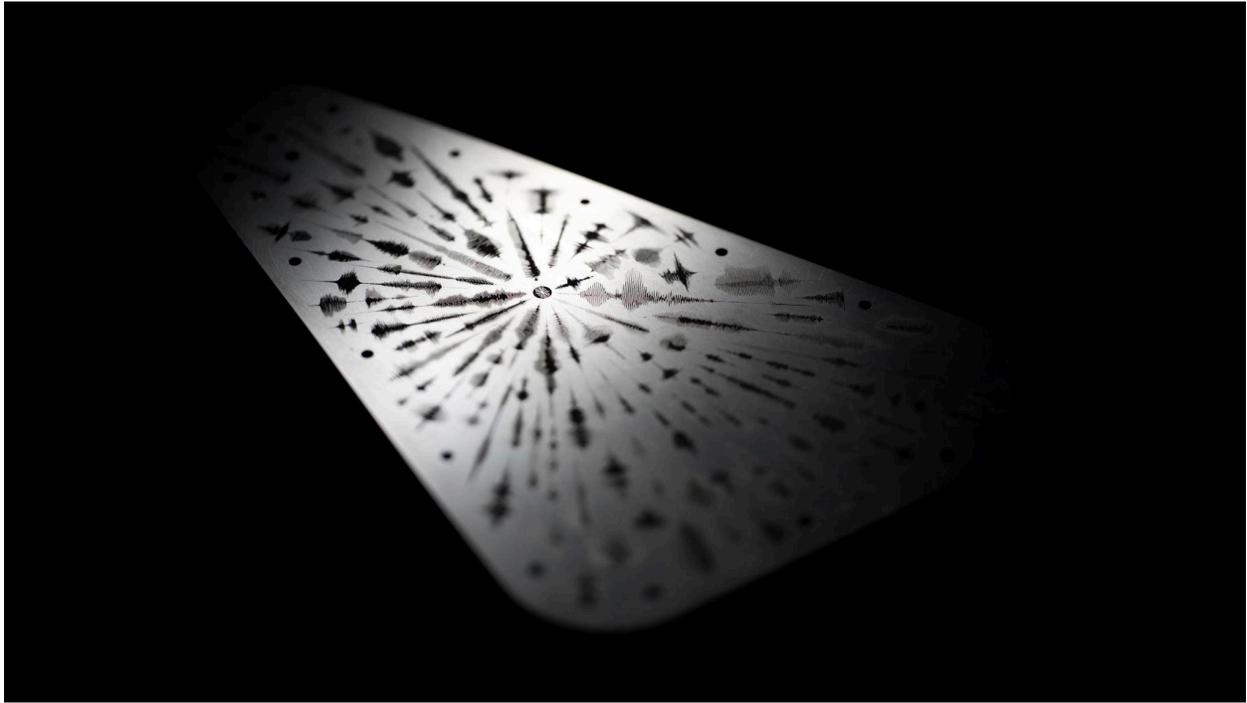
Toward the end of his time in Suriname, a student stopped Verma in the hall. She was pursuing her master's in data science and asked him about the new robotics curriculum he was working on.

"I like making things, not just computer science and coding, but I like making electronics and things like that – is that what the program is about?" Verma recalls the student asking him.

When he told her that's exactly what the program would be about, she reflected on her time as an undergraduate at PTC.

“That’s what I would have wanted to study,” she told Verma. So much so, she added, that she would consider returning for a second bachelor’s degree once the new program launched.

That could come as early as this fall, with the luckier incoming class getting their opportunity from day one.



Blank Slate: Designing the Europa Clipper Vault Plate

By Vincent Robbins

On Friday, March 8 – International Women’s Day – U.S. Poet Laureate Ada Limón and NASA’s Director of Planetary Science Lori Glaze kicked off the opening session of the South by Southwest festival in Austin, Texas by [unveiling a special design created for Europa Clipper](#) during a talk about space, poetry, and the many ways that science and art unite.

The Europa Clipper vault plate – an 11” x 7” piece of tantalum that will help to shield the spacecraft’s computers and electronics from Jupiter’s ionizing radiation – continues the tradition of the [Pioneer Plaque](#), the [Voyager Golden Record](#), the engravings on [Mars rovers](#), and other spacecraft. And while the Europa Clipper vault plate, like its predecessors, aims to represent all of humanity, it took several individual humans – from the Europa Clipper mission, Public Engagement, DesignLab, and the outside world of space communication and linguistics – years of effort to create this work of interplanetary art.



The red circle indicates the location of the vault plate on the Europa Clipper spacecraft.

The Outward Side: Water Words

It started with an email in 2021 from then-JPLer Lou Giersch — a member of the team that worked on the vault design — who saw the slanted, oblong-shaped piece of metal as an opportunity.

“They had this access panel on the radiation vault — only about two millimeters thick — and they were like, ‘It’s a blank canvas. Maybe there could be a design engraved on it that would help make people really excited,’” said Public Engagement Specialist Preston Dyches, recalling the email from Giersch.

Dyches jumped at the idea and immediately reached out to Dan Goods, who leads The Studio within JPL’s DesignLab, to pitch him on a collaboration.

“We both just loved the idea that this mission is about water — so the theme of this thing should be water,” Goods said. “But then, what do we do with that?”

After weeks of brainstorming, they engaged three outside experts — linguists Sheri Wells-Jensen and Laura Welcher, and interstellar message researcher Douglas Vakoch — to help think through capturing a representative and interesting sample of the word “water” in many human languages. Terrestrial languages aren’t the only expertise that made these three researchers ideal collaborators — Vakoch is the president and Wells-Jensen and Welcher serve on the board of directors of METI International, a nonprofit devoted to transmitting signals to extraterrestrial civilizations.

During one of their meetings, Vakoch had an idea: waveforms.

“The beauty of a waveform is that it lets you capture key elements of speech sounds from all languages spoken on Earth,” Vakoch said. “When I showed Dan and Preston what waveforms look like, they liked the fact that they look a bit like waves in an ocean, which is fitting for a space mission to a water world.”

The idea was an instant hit, followed by a question: How could they actually capture that?

A Sea of Waveforms

Just as Carl Sagan and his team went to great lengths to universalize the Voyager Golden Record — including greetings in 55 ancient and modern languages, as well as photographs and music from all over the world — Dyches, Goods, and the linguists were intent on capturing an inclusive sample. But how do you decide on a representative sample of human languages?

“[The linguists] said, ‘75% of them are the most used languages in the world. But then let’s save 20–25% to find the hardest, the least known,’ Goods said. “As long as we can find a native speaker.”

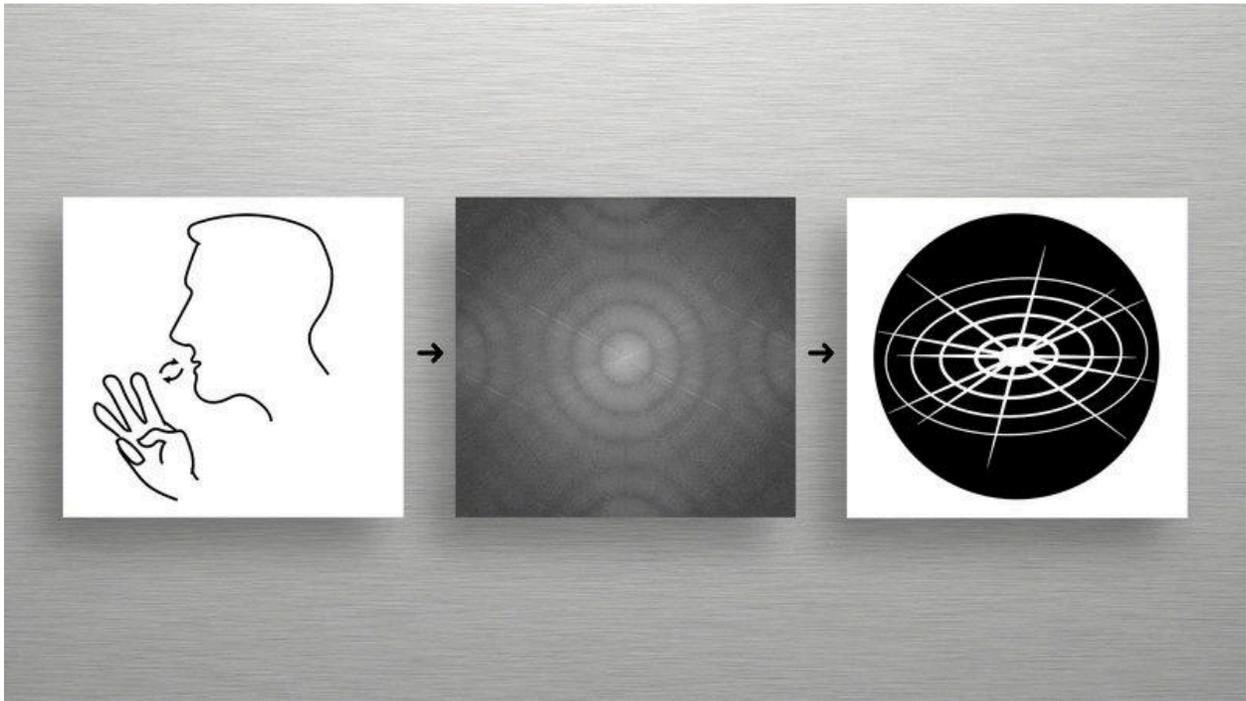
Fortunately, these itinerant linguists had contacts. Soon, dozens of audio files from all corners of the planet poured in — simple voice notes recorded on phones in languages as disparate as French, Farsi, and Fula (a language spoken in West and Central Africa). The audio needed to be equalized, enhanced, and edited, but the library of “water words” was becoming a reality. And despite representing a vastly diverse range of languages and places of origin, Vakoch said there was something inherently unifying about the format.

“They all rely on the same [human] speech apparatus,” Vakoch said. “We see both these commonalities and differences...in the waveforms that are broadly representative of all of Earth’s languages.”

With the waveform files in hand, Goods tapped noted designer, author, and podcaster Debbie Millman to incorporate them into a compelling visual design. She imported all 103 vector waveforms into a design program where she could manipulate them by hand, layer by layer. As she stretched and turned the shapes, she realized that she wanted to make sure the words themselves were preserved.

“When you elongate a sound wave, it just has the sound going slower and when you condense it, it’s going faster,” Millman said. “So you keep the integrity of the actual [word] — it’s just the speed of the sound that’s different. I learned a lot about acoustics and sound waves.”

One of the linguists — Wells-Jensen, who is blind — suggested another way to be more inclusive, such as capturing the word water through American Sign Language. Dyches worked with hearing enhancement technologists to use a Fourier transform — a mathematical data representation technique — to transform a line drawing of the ASL sign for “water” into an abstract vector symbol.



Dyches worked with hearing enhancement technologists to transform a line drawing of a human making the ASL sign for water into a compressed data representation, which was then turned into an abstract vector art symbol.

After a few concepts, Millman landed on a design that she says was inspired by the Big Bang – a corona of waveforms emanating from a central point, anchored by the symbolic representation of the ASL sign for water.

The team named the piece “Water Words.”



Dan Goods, Debbie Millman, and Preston Dyches pose with a replica of the Europa Clipper vault plate.

For Millman, whose design resume is long and lauded, this project was something special.

“It feels completely surreal and cosmic – literally and figuratively,” Millman said. “And I truly feel honored and incredulous that this has even happened at all.”

The Inward Side: Handmade and Interconnected

As the Water Words design came together, Heather Doyle and Laurance Fauconnet in Public Engagement worked with Europa Clipper Project Scientist Bob Pappalardo, Project Staff Scientist and Science Communications Lead Cynthia Phillips, and others to coordinate a montage of five additional elements of “festooning” – NASA lingo for any embellishment or decoration of a spacecraft – to adorn the inward-facing side of the vault plate.

1. The Poem:

[U.S. Poet Laureate Ada Limón read her poem](#) “In Praise of Mystery: A Poem for Europa” aloud in the halls of the Library of Congress last summer, revealing a beautiful meditation on what bonds humanity to the moon of Jupiter that the spacecraft will visit: “we, too, are made of water.”

“We want to use this moment in time to create a sense of connectedness with Europa – in our connectedness in nature and water and habitability – but also with each other,” Doyle said.

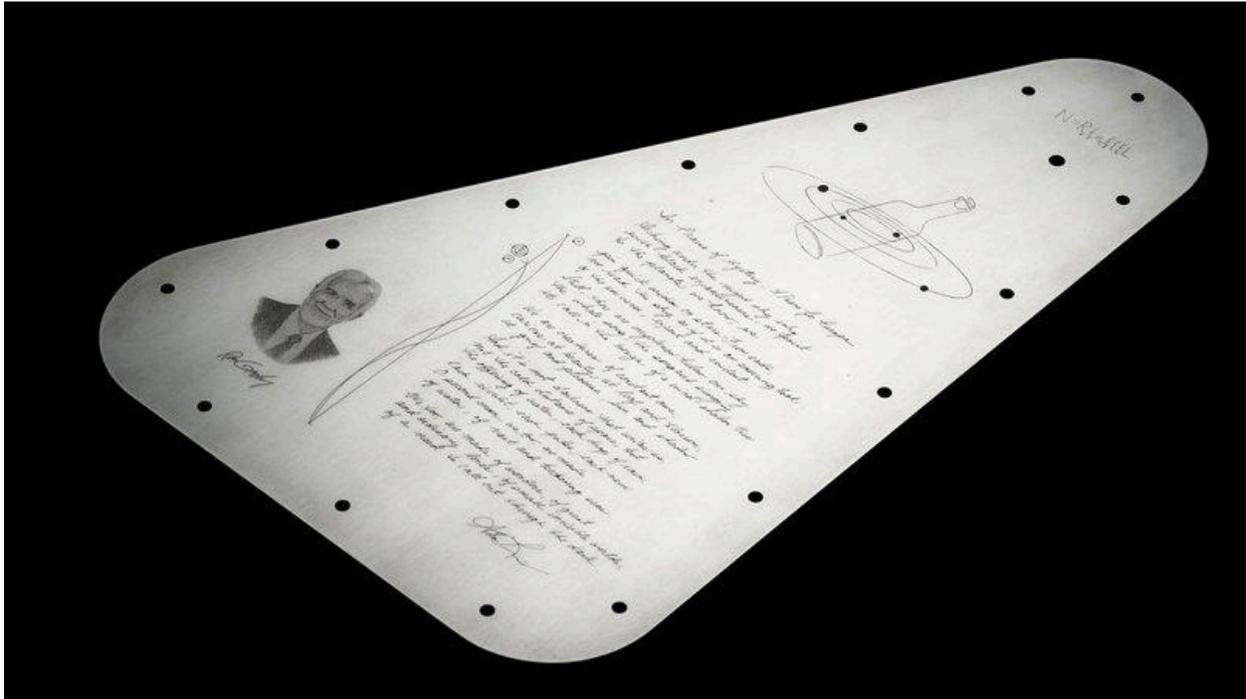
Limón agreed to write her poem in her own handwriting – later revealing that it took multiple attempts to get it just right – which set the tone for the visual aesthetic of this side of the plate: everything would be written or drawn by hand.

2. The Names & The Bottle:

With the release of Limón’s poem, the Europa Clipper public engagement team had launched a “Message in a Bottle” campaign which gave the public the opportunity to digitally “sign” their names on a microchip that would fly alongside the poem on the spacecraft, effectively signing onto Limón’s poetic message. As the team thought about attaching the microchip to the vault plate, Phillips realized they were missing one thing: a bottle.

The resulting illustration, which will hold the fingernail-sized silicon chip with 2.6 million names, is a hand-drawn illustration of a bottle, with the four largest moons of Jupiter with their mass and orbits drawn to relative scale.

“The water ripples surrounding a bottle traveling through water looked like the spiral arms of a galaxy, so I leaned into that in my initial draft to the team,” Designer Kaelyn Richards said. “After some iterating, the loose wave lines turned into cleaner concentric circles and a representation of each of the main Jovian moons orbits.”



The inward-facing side of the vault plate features a montage of five meaningful "hand-crafted" elements.

3. The Drake Equation:

Engraved in the handwriting of astrophysicist and astrobiologist Frank Drake (1930–2022), the Drake Equation is a mathematical formula that represents the possibility of finding advanced, communicating civilizations in the Milky Way.

"In understanding Europa — if we pull back to the bigger picture — we are helping to get at the value of a couple of those terms in the Drake equation related to how many planets are potentially habitable," said Pappalardo, who studied under Drake at Cornell University. "And ultimately, as we explore other ocean worlds, how many actually have life."

Drake — who passed away shortly before the development of the vault plate design — also worked closely with Carl Sagan on the Voyager Golden Record.

4. The "Water Hole" Lines:

The term "water hole" refers to a range of frequencies that are relatively quiet of background noise, and thus have been considered ideal by for interstellar communication. These frequencies fall between the hydrogen emission line and the hydroxyl line.

"If there was an intelligent civilization in a star system sending a message to us, how would they communicate?" Phillips said.

But this range of frequencies is not just effective for communication. Hydrogen and hydroxyl molecules combine to make water, which might be vital to other life forms as well.

"These fundamental wavelengths of hydrogen and oxygen might be a way that an alien civilization might say, 'Let's communicate at wavelengths that are fundamental to water because water is so important to us.'" Phillips said.

The addition of these lines was another insightful suggestion by METI's Vakoch.

5. The Portrait:

As for the hand-drawn portrait of Planetary Scientist Ron Greeley, Pappalardo laughs, noting that it may seem a little random to an outsider. But he said those who have been involved in Europa Clipper since its whiteboard days know how much Greeley influenced the mission and the team. Greeley was one of the founders of the field of planetary science and was involved in many missions, including Viking, Mars Pathfinder, Mars Global Surveyor, the Mars Exploration Rovers, and Galileo.

“So much of the time when there is an issue in getting consensus as related to the mission, I think, ‘what would Ron Greeley do?’” Pappalardo said, looking up at a picture of Greeley on the wall of his office, hung alongside the last note that Greeley wrote to him in 2011 about staying the course toward what would become Europa Clipper. “For those of us who have worked this mission for decades, having his portrait there with that kind of half smile, half ‘this better work!’ means a lot – just having him along for the ride.”



Tossed into the Vast Ocean of Space

As the spacecraft will be later this year, the vault plate is now out of the hands of its creators. A [dedicated vault plate website](#) tells its story, including interactive features like a 3D rendering and a waveform generator for the word water in all of the languages used.

Pappalardo – for whom this will be the first launch of his decades-long career that he has intimately supported – points out that, at the end of its mission, Europa Clipper will be intentionally crashed into Ganymede or Callisto, the other large icy moons of Jupiter. And when it descends at a blistering speed of nearly 7 kilometers per second, the spacecraft will be destroyed upon impact, vanishing alongside the poem, the Drake Equation, the multilingual waveforms of water, 2.6 million human names, the water hole lines, and the portrait of legendary mission mentor Ron Greeley.

Unlike Voyager’s Golden Record, there is no chance of an alien civilization discovering this plate. So, who is the message in a bottle for?

“The vault plate won’t literally be picked up by another being, but it will make people think about this idea of being tossed into the vast ocean of space,” Pappalardo said. “So we constructed this as a message to ourselves.”

And given that even the Golden Record likely will sail through eternity undiscovered, it is the message to ourselves that counts. And that message will endure. The test version of the vault plate – the one revealed at SXSW by Glaze and Limón – is likely headed for the Library of Congress, and the Smithsonian has expressed interest in storing a copy. And at the place that created the message, a copy of the plate will go on display for generations of JPLers to come.





Leslie Livesay: One Big Job, Five Quick Questions

By Carl Marziali

Leslie Livesay became deputy director and chief operating officer on March 18, succeeding Larry James, who served in the role for more than 10 years. Functioning as the Laboratory's chief operating officer, the deputy director is responsible for the day-to-day management of its resources and activities.

Livesay reflected on her new position and on her distinguished career at the Lab in a recent interview for JPL Space.

1. You've been director for astronomy and physics, director for engineering and science, and most recently associate director for flight projects and mission success, among your other roles at JPL. How did those experiences prepare you for this position?

I've seen the Laboratory from about as many angles as you can see it from. It has helped me develop relationships with almost all of the organizations on Lab. I understand how the flight projects work, I understand the value of the line organizations, and that all will make me better in being able to do the deputy director job and to support Laurie Leshin in leading the Lab.

2. You're coming in at a difficult time in recent JPL history. How should the Lab be thinking about where we are?

It's not the first challenging time for us. We do have experience from other situations we've been in, for example we had a downturn in work after Mars Science Laboratory. Prioritizing, and making sure that we're absolutely doing the best that we can in terms of how we perform, is going to be critical in this time frame when resources are more scarce. This is a time for us to focus and step up on those key things that will ensure that we have future work.

3. What have you learned from a previous challenge or challenges that you overcame?

When I took over the project management of Kepler, it was an extremely challenging time for the project. We were over budget, and they were going to be subject to a cancellation review. The team and its

relationships were dysfunctional, and it was kind of a make-or-break time for the project. We had to step back as a group and admit that.

I remember one very rainy weekend in Colorado where we had an off-site retreat. It ended up being the pivotal point for that project. That was where we all finally realized that everybody was at fault and we all needed to step toward the center to make it work. And we did. We were able to do that. Not everybody stayed on the team, but we made it through.

4. JPLers right now are hungry for good news. If someone came up to you at the cafe and told you they were really worried, what would you say?

First of all I would show that I understand, with the events that have happened, that they would be worried. Most of NASA's flagships have been through challenges at different times in their life-cycle. But JPL is resilient. We will weather whatever storms are out there. We are still strong. We have a large, diverse, and exciting portfolio and a great outlook for the future. What we do for the nation hasn't fundamentally changed, it is still very much intact. Just dare us not to do mighty things.

5. What do you like to do outside work?

I'm an avid hiker and trail runner. I hike locally, but I also try to go somewhere outside of the LA area. Being in nature grounds me and makes me happy. I am a dog person – I have a Vizsla named Tucker who likes to go with me on the hikes, not so much on the runs. Those are a few things I'm really passionate about.

Deputy Director Leslie Livesay has over 35 years of experience in autonomous space exploration. Previously, she was associate director for flight projects and mission success, director for Astronomy and Physics and, prior to that, director for Engineering and Science. Other positions include project manager for the Kepler project, a mission to conduct a census of extrasolar terrestrial planets; deputy director for Astronomy and Physics; and flight system manager for the New Millennium Deep Space 1 project.

Livesay is the recipient of the American Astronautical Society Carl Sagan Memorial Award, Aviation Week's Laurels Award, NASA's Exceptional Achievement Medal, and the NASA Outstanding Leadership Medal.

She holds a bachelor's degree in applied mathematics from California Polytechnic State University, and a master's degree in electrical engineering from the University of Southern California.



JPL and Caltech Open Joint Center for New Age of Exploration

Last week JPL and Caltech announced the creation of the Brinson Exploration Hub, a joint venture that will enable Lab and campus to collaborate on exploration, scientific breakthroughs, and space demonstration of key enabling technologies.

It's a shift in how JPL has long operated as a federally funded research and development center – always tasked as NASA's risk taker, and now exploring how to move faster in response to a rapidly changing space industry. Commercial space companies have drastically lowered the cost of both launches and spacecraft.

"Through the Brinson Exploration Hub, we'll be empowered to do two things: enable streamlined missions to generate scientific breakthroughs, and have a way to much more quickly demonstrate key technologies in space," Associate Director for Strategic Integration Dave Gallagher said in an interview March 27.

A \$100 million founding gift from the Brinson Foundation will enable JPL and Caltech researchers to collaborate in dedicated facilities on Caltech's campus, with operating costs covered and seed funding available for mission and space technology concepts.

JPL and Caltech have been working toward such a model for at least 18 months, Gallagher said. When the Brinson family became interested, the stars aligned for the dream to become a reality.

"The idea of some sort of 'skunkworks' operation at JPL has been around for decades, but this joint venture with Caltech has really been facilitated by a lot of interaction between JPL and campus, particularly [former JPL chief scientist and Caltech faculty member] Mark Simons at Caltech and [JPL Office of Strategic Integration Manager] Dave Bearden, who deserve a lot of credit for maturing this idea and making it a reality."

The hub plans to make its first call for ideas in the near future. The competition will be streamlined and dramatically shorter than current typical mission selection process.

“We don’t see this as replacing any pieces of the current formulation ecosystem,” Gallagher said. “The Foundry, Blue Sky Studies, JPL Next, the Keck Institute for Space Studies: All of those programs take ideas and research concepts up to a certain level, but we see the hub as the final piece that can take an idea to space.”

The hub will also offer Caltech students the opportunity for hands-on hardware and system experience.

“We are working ourselves out of a really challenging time for the Lab, and it’s important during those times to keep driving,” Gallagher said. “Instead of hunkering down, it’s more important than ever to lean forward, push the state of the art, and drive for new technological and scientific discoveries. The Brinson Exploration Hub helps us do that.

“In my view, if we’re funding five projects through the hub, and one or two of them don’t fail, we’re not leaning forward hard enough.”

The hub is a Caltech entity jointly formulated and operated by Caltech and JPL. The hub’s work will rest on five pillars:

- Implement breakthrough exploration projects that drive scientific and societal benefit
- Respond to the strategic ambitions of both Caltech and JPL
- Execute with speed, agility, and risk tolerance
- Seize emerging opportunities in the broad ecosystem of Earth and space exploration
- Produce a new generation of “space savvy” alumni

Caltech President Thomas Rosenbaum, Caltech Provost David Tirrell and JPL Director Laurie Leshin form the hub’s executive team. Simons will serve as the hub’s inaugural director. JPLer Andy Klesh will be the associate director.



Events



Von Karman Lecture Series — Seeing Earth's Coastlines: SWOT Satellite Provides Higher-resolution Data than Ever

Thursday, April 18
5 to 6 p.m.

[Watch live on YouTube](#)

The main idea: Research Scientist Ben Hamlington will discuss how SWOT is tracking Earth's water to fill in our current gap of information regarding water at coastlines around the globe.

Background: NASA has monitored Earth's water from space for decades, but there's always been one stubborn observational gap: coastal sea level. This data, while critical to coastal communities as they plan for the potentially devastating effects of rising seas, has been difficult to measure because of its variability — but the Surface Water and Ocean Topography mission, also known as SWOT, is giving scientists higher-resolution data than ever before.

SWOT measures the height of nearly all water on Earth's surface from space and provides one of the most detailed, comprehensive views of our planet's oceans and freshwater lakes and rivers. After more than a year in Earth orbit, the mission has provided detailed information about coastal flooding, our warming oceans, and global sea level rise.

SWOT is a collaboration between NASA and the French space agency, Centre National d'Études Spatiales, with contributions from the Canadian Space Agency and the UK Space Agency. NASA's Jet Propulsion Laboratory leads the U.S. component of the project.

Speaker: Ben Hamlington, research scientist in the Sea Level and Ice Group, team lead of the NASA Sea Level Change

Host: Nikki Wyrick, Office of Communications and Education

Co-host: Jocelyn Argueta, Public Outreach Specialist

JPL Family News

Retirees

The following JPL employees recently announced their retirements:

40+ Years:

Mark S. Ryne, Section 392A, 41 years

30+ Years:

David P. Gilliam, Section 173F, 37 years

Marco A. Hernandez, Section 382F, 35 years

20+ Years:

Cozette Parker-Lawson, Section 398D, 24 years

Frank P. Mortelliti, Section 5000, 22 years

Passings

Passings must be submitted through Human Resources, which coordinates with the family of the deceased.

Longtime JPL employee **Anne Swatfigure** passed away peacefully on March 7 after a protracted struggle with cancer. Starting first at the Caltech campus, Anne worked in Division 35 for 25 years as a member of the administration staff. She was one of the primary “go-to” people to facilitate procurements for the design and testing of spacecraft, and learned how to bend the then-new computer-based system to her will. She accomplished B.S. degrees in business administration from University of Redlands and in aviation administration from California State University of Los Angeles. She was also known for her acute wit and poetry. In lieu of flowers, a donation to the Anne V. Swatfigure Scholarship Fund in the Society of Women Engineers can be made.

-This obituary was written and submitted by Don Sevilla.

Awards & Honors

JPLers often Dare Mighty Things, and nearly as often earn awards or professional designations. JPL Space periodically features a roundup of recent honorees. Please join us in congratulating your accomplished colleagues.

NASA Jet Propulsion Laboratory

Fast Company - The World's Most Innovative Companies of 2024

"For demonstrating the future of deep-space communications." [Award citation](#)

John R. Brophy

National Academy of Engineering Class of 2024

"For technical leadership in development and flight implementation of electric propulsion in spacecraft systems." [Award citation](#)

Dariusz Divsalar

National Academy of Engineering Class of 2024

"For theory and practice of channel codes that impact deep-space communications." [Award citation](#)

Richard Hofer

Class of 2024 American Institute of Aeronautics and Astronautics Fellow

"For revolutionizing Hall thruster design and pioneering leadership in electric propulsion that has enabled new, groundbreaking space missions." [Award citation](#)

George Lamb

Aviation Week Network

The 20 Twenties program was established by Aviation Week Network in 2013 to recognize talented individuals who are on course to change the face of the aviation, aerospace and defense industry. [Award citation](#)

JWST-MIRI Team

2024 Group Achievement Award (A) of the Royal Astronomical Society

"Awarded to the team responsible for the design and build of Webb's Mid-InfraRed Instrument (MIRI)." [Award citation](#)

NASA Parts Engineering School Team: Shri Agarwal, Seth Gordon, Dori Gallagher, Shayena Khandker,

Roxanne Cena, Amy Wilson, and Jeremy Bonnell

Distinguished Engineering Project Achievement Award

"For the development of the Parts Engineering School program." [Award citation](#)

Kathleen Harmon

International Astronomical Union Minor Planet Center

Asteroid 2003 QM114 is now named 209075 Kathleenharmon in recognition of DSN Mission Interface Manager support for the NASA New Horizons mission flyby of Arrokoth in the Kuiper belt. [Award citation](#)

Personnel Appointments

Star Tracks is a monthly series highlighting recent personnel appointments on Lab

Keith Coste: Manager of 7070 Nightshade Project on Feb. 26.

Alex S. Gardner: Group Supervisor of 329C Sea Level and Ice on Feb. 26.