

Keeping it in the family By Carl Marziali

4,500+ employees and their families enjoy a special weekend

The Mars Yard is off-limits to visitors even during open houses, so when the Lab held its first Family Days in years, Anarosa Villanueva had to bring her daughters.

Evelyn, 8, and Celeste, 6, knew their mom worked on the Mars Rover, though what she did, exactly, was a puzzle nested in mysteries. A rocket sent a car with funny wheels to a planet sort of like Earth, but rockier and dustier, and inside that car were gadgets and gizmos packed into special boxes to keep them safe.

Mom fabricated the boxes.

Villanueva could not point to her creations, concealed in the body of the Rover, but after seeing the vehicle and strolling around the Mars Yard, her husband Gerardo and their girls at least knew it was all true.

Even after 20 years at JPL as a mechanical engineer, from her student days to her current role in Electronic Packaging Engineering, it does not always feel true to Villanueva.

“It’s surreal to me, that I worked on something that’s on Mars. It’s life changing. We work so hard for years, fabricating, assembling things together, testing, and for it to work is just very fulfilling,” she said.

Family Days was the first such event since 2003, and JPLers responded. More than 4,500 employees and their families visited the Lab over the weekend of April 22-23.

Public interest in the annual Open House, now called Explore JPL, had crowded out JPLers in recent years. So Kim Lievense, manager of the Pub-



Photos by Josh Krohn / JPL Photo Lab

lic Services Office, lobbied for a family-only weekend.

It was a more leisurely and manageable event than its gargantuan public counterpart, staffed by a few dozen volunteers instead of hundreds, and featuring a carefully curated group of exhibits, including the Microdevices Laboratory and the fabrication shop.

“Most people never get to go there,” Lievense said of MDL, the machine shop and the Mars Yard, which she called “the icing on the cake.”

“People are just overwhelmingly grateful,” said Alice Wesen, who volunteered at the gates most of the weekend.

“My wife and I shared a mellow and fascinating morning today wandering JPL, and see-

ing some of the wonders we are allowed to create and explore,” wrote one visitor. “It made our families (who often get second priority behind our work here) feel special.”

Villanueva hoped the visit would spark a new curiosity in her girls, and she was proven right by the end of the day.

“Definitely they’re interested in science now,” she said as the family headed for home.

But maybe not quite as interested in mom’s work. Evelyn’s highlight was Mission Control. Celeste liked the movie “Journey to the Planets and Beyond” in Pickering Auditorium.

Asked about the Rover, Evelyn paused shyly, then volunteered one barely audible comment: “Awesome.”



Driving the car electric

By Carl Marziali

Electric car talk: Just like gas car talk — same characters, different parts.

Edwin Grigorian strolled past the Electric Vehicle Fair on the mall last month on his way to a presentation about — of course — batteries. Grigorian still drives a gas vehicle, but maybe not for long.

“I am in the market,” he explained.

A BMW i3 caught his eye in the small fleet of Fiats, Fusions and Teslas, and soon a small group formed to talk EVs: in place of gaskets and injectors, the lingo is heavy on torque and regeneration, chargers and kilowatt-hours, leases and rebates.

Put three engineers around a car, and it will be discussed.

“I like the aggressive regenerative braking. You don’t have to wait to move your foot all the way to the other pedal to start braking,” said one.

“Some people complain about it,” offered another.

“That’s because they’re not used to it,” the first replied. “It’s much safer to be able to immediately get that braking response.”

“It’s a lot more fun because you have full torque at zero rpm,” said Roger Klemm, who as head of the JPL Green Club and organizer of the fair, also admits to caring about carbon footprints.

But that’s not his pitch.

“They’re quiet, they’re low-maintenance, you don’t have oil chang-



A Tesla driver moves his car in reverse by remote control at the Electric Vehicle Fair.

es, you don’t have coolant changes. You have tires, and every couple of years you flush the brake system. That’s it.”

“You get really pressed back into the seat if you press down the pedal,” said Mark Adler of his i3, which technically qualifies as an ultimate driving machine.

There were questions about tax credits and rebates, buying or leasing, charging at home or at work. Grigorian was motivated by the addition of chargers near his office in Building 238, bringing JPL’s total to 65.

And there was a reminder of how different the EV life can be.

“You have your gas station at home. You just plug it in, it’s always full, every morning. You never have to really worry about going to a gas station,” Adler said.

Which brings up one issue: “I had to buy a squeegee because I used

to clean the windshield at a gas station.”

For those who depend on gas stations for black buckets of window-washing sludge, there are always traditional cars. For anyone who missed the fair and wants to learn about life on the other side, Klemm will be happy to help. Contact him at roger.klemm@jpl.nasa.gov or 818-635-9532, or visit the electric vehicle website on JPL’s intranet.

The fifth annual Electric Vehicle Fair took place Thursday, April 20 and showcased about a dozen JPLer-driven EVs, along with electric motorcycles and electric-assist bicycles. Attendees browsed the selection and learned about the EV lifestyle, the charging program at the Lab, and alternative transportation options such as the rideshare program. The event was presented by the JPL Green Club.

News Briefs



James Rinaldi

Rinaldi to CIO Hall of Fame

Jim Rinaldi, JPL's chief information officer and director for information technology, has been elected to the CIO Hall of Fame by CIO.com.

JPL was one of 100 international organizations named to the 2017 CIO 100 for business and technology innovation. The internet publisher named Rinaldi among 100 CIO Hall of Fame inductees. Honors will be awarded at the CIO 100 Symposium Aug. 14-16 in Colorado Springs, Colo.

This is the sixth consecutive year that JPL has been named to the CIO 100. Rinaldi is the only person representing a Federally Funded Research and Development Center or NASA to be a part of this year's class of inductees.

Antenna design paper honored

JPL researcher Goutam Chattopadhyay received the Best Paper Award in Antenna Design and Applications at the 11th European Conference on Antennas and Propagation, held in March in Paris.

The paper, "Shared Aperture Metasurface Antennas for Multibeam Patterns," was co-authored by David González Ovejero, a former JPL research scientist who is now at the Institute of Electronics and Telecommunications, University of Rennes, France. The paper's other co-authors are from the University of Siena, Italy.



Goutam Chattopadhyay

Passings

Retired electrical engineer William Hurd died Nov. 17, 2016.

Hurd began his 40-year JPL career in 1967. He was the principal system architect for the Interplanetary Network, researched deep-space communications and GPS, and served as the deputy manager of the Communications Ground Systems Section.

He was the recipient of the NASA Exceptional Service Medal for Technical and Managerial Leadership and the JPL Award for Exceptional Technical Excellence. In retirement, he served as a JPL Solar System Ambassador.

Hurd is survived by his wife, Elaine, sons David and Jeff, and two grandchildren.

Retired project manager Dan Karmon, 75, died Jan 27.

Karmon worked at JPL from 1986 to 2010. He was project manager for the electronic nose, the JPL-developed environmental monitor deployed to the International Space Station in 1998, and served as project element manager for the Avionics Hardware and Software Outer Planets/Solar Probe. He also led JPL's Power Systems Engineering Group.

Karmon is survived by his wife, Judy, son Michael, daughters Galit and Adina, and six grandchildren.

Retired physicist John Lambe, 90, died Feb. 12.

Lambe had expertise in areas such as inelastic tunneling, nuclear resonance, semiconductors and electron tunnel spectroscopy. In 1987, he received the NASA Exceptional Scientific Achievement Medal for his pioneering research in neural networks. He also received awards for his work in thin film electroluminescence, light modulation and other areas.

He is survived by son James and daughter Marybeth. Services were held March 25 in Issaquah, Wash.

Morris Birnbaum, 95, a retired engineer, died April 5.

Birnbaum was a principal guidance, navigation and control engineer on Voyager, Galileo, the Shuttle Radar Topography Mission and Mars Science Laboratory. He was a contract manager and group supervisor, and as a member of several tiger teams provided creative solutions to several in-flight problems. Birnbaum was awarded the NASA Exceptional Service Medal in 1991 for a body of work critical to the success of NASA's planetary exploration missions. He retired in 1995.

Birnbaum's wife, Madelaine, died April 14. The couple is survived by son Mark, daughter Nina, and grandchildren Reva and Yael.

Phillip Barnett, 79, a retired engineer, died April 23.

Barnett worked at JPL from 1967 to 2000. In the 1960s and 1970s he worked on flight project environment requirements, including the Mariner Venus/Mercury project. He later worked on the planning and development of proposed planetary and Earth-orbiting space science projects, including a key role in launch vehicle integration for proposed projects.

He was the recipient of the NASA Exceptional Service Medal for his contributions to program design and implementation.

Barnett is survived by his wife, Myrna Gale, daughter Jill Shalvitz, son Michael and five grandchildren.

Nathan Bridges, 50, a planetary research scientist who contributed to many of JPL's missions to Mars, died April 26.

Bridges worked at JPL for 12 years, starting as a post-doctoral scholar for Mars Pathfinder. He was an acknowledged expert on Mars geology, remote sensing, and the role of wind-driven processes in planetary erosion and sedimentation.

Bridges left JPL in 2009 to take a position as a staff scientist at Johns Hopkins University Applied Physics Laboratory, where he also

served as an associate professor in the Earth and Planetary Science Department. Continuing his planetary research, he served as a co-investigator on the HiRISE team on Mars Reconnaissance Orbiter, a co-investigator on the Curiosity rover's ChemCam instrument, and a science team member on two Mars-2020 rover instruments, SuperCam and the Mars Environmental Dynamics Analyzer.

He is survived by his wife, Karen, daughter Sarah and son Matthew.



Nathan Bridges

Retirees

The following JPL employees recently announced their retirements:

April

Peter Theisinger, 46 years, Section 4200; **Richard O'Toole**, 42 years, Section 1530; **Raymond Keith**, 40 years, Section 1010; **Mary Beth Murrill**, 35 years, Section 1660; **Steven Adams**, 34 years, Section 398D; **Roger A. Lee**, 28 years, Section 7100; **John Diehl**, 27 years, Section 397J; **Marta Gallegos**, 18 years, Section 2724.

March

Shari Asplund, 39 years, Section 1862; **Virginia Kemp**, 32 years, Section 2630; **Ellen Walsh**, 29 years, Section 252F.

Letters

I'd like to thank my colleagues for the condolences and fine plant after my mother passed away in April. The plant will be a special reminder as my mother was an avid gardener.

Phil Callahan

I would like to thank my colleagues for their condolences and prayers for me and my family on the recent passing of my 89-year-old mom early in March 2017. Without my mom I'd never be here at JPL. Thanks for the beautiful plant and support during my time off.

Tim O'Donnell

I would like to thank my colleagues for their condolences and best wishes to me on the recent passing of my father. It was reassuring to have so many supportive friends.

Mark Anderson

I would like to thank my fellow co-workers (my JPL family) for the support, cards, fruit arrangement and picture frame during the illness

and recent passing of my mother to pancreatic cancer. It is so helpful to have such amazing, caring, special people to help me during a very challenging time. I'd also like to thank JPL for the lovely plant. It is beautiful and so symbolic at this difficult time. I appreciate all of your kind words and hugs. Thank you again.

Kelly Gaudet

Dear JPL Family: Your kind words, moments of thoughtfulness, and willingness to share laughter and hugs have been of invaluable support during these sad, challenging times. Both of my parents, Paul and Shirley Repath, long-time La Canada residents and big-time JPL fans, were so very proud of the work we are doing here at the Lab, and they shared their wonder and excitement with me at each launch, peppered me with questions at every successful maneuver, and rejoiced in every newsbyte released to the public. Thank you for the lovely plant in honor of their lives, and a special note of gratitude to my colleagues for their patience during my absences. In my parents' memories, the stars are calling, and we must go!

Lyn Repath-Martos

Classifieds

Ads submitted May 1-5.

For Sale

PLAYPEN, medium sized Century brand, almost new, bought for grandkids to visit, so it's hardly used, in Glendale; \$35. 626-373-6283.

SOFA & LOVESEAT pair, reclining, tan suede fabric, exc. cond.; 4 of the 5 seats (all but center seat of sofa) recline, and both split into individual segments for easy disassembly/cleaning/transport; pictures at <https://losangeles.craigslist.org/sgv/fuo/6114533463.html>; \$550 for both. 818-472-9889, Daniel.

TV, LG model 60LB6100, 60," \$500. pcstek@sbcglobal.net.

Vehicles / Accessories

'67 CHEVY Camaro SS, \$40K. pcstek@sbcglobal.net, Paul.

'62 CHEVY Impala 2-door coupe, all stock, 283 engine, factory a/c, power steering/brakes, in family since first purchased, \$30,000. gradgirl08@sbcglobal.net or 818-517-0674, Angela Azevedo.

Wanted

SPACE INFO/memorabilia from U.S. & other countries, past & present, for personal use (see <http://www.youtube.com/watch?v=S7PvjGp7mCU>). mrayman@alumni.princeton.edu, 818-790-8523, Marc Rayman.

Real Estate for Sale

LEBEC-area mountaintop retreat, spectacular views, 4 br./2 ba., 3,210 sq. ft. custom-built house on 20 acres, surrounded by wildflowers in spring, but stunning year-round; only about an hour from JPL north on I-5; includes spacious workshop or artist's studio; see <http://www.tourfactory.com/idxr1308594>; \$549,900. 805-358-1626 or Robert.A.Preston@icloud.com.

For Rent

ALTADENA, furn. rm. w/awesome view for lease; non-smoker to share a beautiful 4-bedroom, 3-bath house across from community garden; close to local colleges, route to Kaplan, Pasadena city schools, walk to JPL; utilities included, central air/heat, internet access; near 210/134/110, bus stop/shopping/banking/entertainment/restaurants; \$800/mo. 818-370-0601.

ALTADENA (91001), furnished loft w/awesome view for lease; non-smoker to share a beautiful 4-bedroom, 3-bath house across from community garden; close to local colleges & Pasadena city schools, walk to JPL; utilities included, central air/heat, internet access, near freeways/bus stop/shopping/banking/entertainment/restaurants; \$740/mo. 818-370-0601.

ALTADENA apt. for lease; non-smoker, 2 bedrooms (1 large), 1 bath, carpet, carport parking, storage + laundry room on site, no smoking or pets, very close to JPL/bus stop/grocery stores/24 Hour Fitness/bank, close to local colleges, Pasadena city schools, walk to JPL; utilities included, central air/heat, internet access; \$1,500/mo. 626-798-6185.

PASADENA, Bungalow Heaven house for lease to non-smokers: electricity paid by solar; 2 bedrooms, LR, DR, kitchen, 1 bath; central air/heat, washer/dryer, refrigerator; huge, fenced yard with citrus trees, central patio; 2 blocks from park, great neighborhood close to Caltech/Old Town/Lake metro; water/gardener paid; security alarm option; pets considered; \$2,750. 626/398-5005.

PASADENA, furn. room in a lovely 4-bd./2-bath house, big backyard, hardwood floor, big closet, shared bathroom, kitchen and laundry privileges; 2 miles to JPL, close to public transportation; short- or long-term lease available; must like dogs and be very clean; \$900 + \$900 deposit. 818-960-8654.

PASADENA, just east of PCC; includes bedroom with en-suite bathroom, laundry in unit, and very reasonably priced. 562-646-7061, Thomas.

SYLMAR, unfurn. room (& guest bathroom) in 3-bedroom/2-bathroom ranch home on cul-de-sac in equestrian community; full house & laundry privileges, satellite TV, WiFi, semi-monthly housekeeper/gardener, big backyard, off-street parking, 19m to JPL (carpool?); homeowner has dogs, a cat and horses; clean & tidy, non-smoking female preferred; \$750/mo. (incl. utilities) + \$350 deposit. Text or call: 818-282-2954.

Vacation Rentals

MAMMOTH, Snowcreek, 2 bd., 2 ba. + loft, sleeps 6-8, fully equip'd kitchen incl. microwave, D/W, cable TV, VCR, phone, balcony w/mtn. vw., Jacz., sauna, streams, fishponds, close to Mammoth Creek, JPL discount, no pets. 626-798-9222, 626-840-3749 or valeriee@caltech.edu.

MAMMOTH, Snowcreek, beautiful updated condo, 2 bd., 2 ba. + loft (sleeps 6-8), great location by pond/meadow, new appliances, TVs, DVD players, free wireless Internet and washer/dryer, no pets. 818-952-2696 or BigMtnPrettySky@gmail.com.

MAMMOTH, remodeled 2 bed/2 bath + loft, short walk to Canyon Lodge; Courchevel 6 features full kitchen, cable/Internet TV, DVD, Blu-Ray, wireless hi-speed Internet, 2-car garage, Jacuzzis, grill, pool; no pets. <http://Courchevel6.com>.



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Universe

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