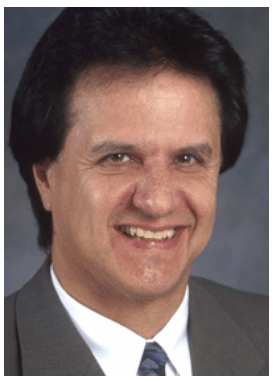
News Briefs

Lee-Leung Fu



Yahya Rahmat-Samii

Academy honors JPLers

Lee-Lueng Fu, a senior research scientist at JPL, and Yahya Rahmat-Samii, a former JPL scientist who is now an engineering professor at UCLA, have been elected to the National Academy of Engineering—among the highest professional distinctions accorded an engineer.

Membership in the National Academy of Engineering honors those who have made significant contributions to "engineering research, practice, or education" and to "pioneering of new and developing fields of technology, [and] making major advancements … in engineering, or [in] developing/implementing new approaches to engineering education," according to the academy, which is based in Washington, D.C. Fu and Rahmat-Samii were two of 65 members elected in the 2008 class. An induction ceremony for the academy's class of 2008 will be held in October, during the academy's annual meeting.

Fu is project scientist for two joint oceanography missions with France, Jason and the Ocean Surface Topography Mission/Jason-2. Fu's research has been focused on the dynamics of ocean waves and ocean circulation. Since 1988, he has led an international team of oceanographers and geophysicists in developing precise measurements of ocean surface topography using satellite altimetry.

"I'm really thrilled by this honor," Fu said. "This is really a team effort. I feel lucky to work with a first-class engineering team on Lab, as well as at the French space agency. I also feel privileged to work with a world-class, international science team."

Fu joined JPL in 1980. A native of Taipei, Taiwan, he graduated with a bachelor of science degree in physics from National Taiwan University, and a doctorate in oceanography from the Massachusetts Institute of Technology and the Woods Hole Oceanographic Institution in Massachusetts.

Rahmat-Samii, a native of Iran, is the Northrop Grumman chair in electromagnetics in the department of engineering at UCLA. Before joining UCLA, he was a senior research scientist at JPL. From 1978 to 1989, he helped develop the antenna systems for the Galileo and Cassini spacecraft, the Deep Space Network and other Earth-observation and remote systems. He still serves as a consultant to JPL.

Rahmat-Samii noted that many of the antenna designs he, his colleagues and his students developed are used in cell phones, planetary spacecraft and Earth-observation satellites.

"In one's life, especially as an engineer or scientist, the honor really makes you feel so proud of your work and of the collaboration with my colleagues at JPL and my students here," he said. "I was just the lucky person in the process."

Sotin wins European medal

JPL senior research scientist Christophe Sotin has been named winner of the European Geosciences Union's Runcorn Florensky Medal.

Sotin was cited "for his outstanding work on the structure and internal dynamics of the Earth, Mars and satellites of giant planets, and his major contribution to several planetary space missions."

Christophe Sotin

Sotin joined JPL full time in 2007. He is currently co-investigator of the visual and infrared mapping spectrometer aboard the Cassini spacecraft and co-investigator of the Omega instrument aboard the Mars Express mission. He is also a former JPL Distinguished Visiting Scientist.

The honor is given in recognition of the scientific achievements of prominent European researchers Keith Runcorn and Cyril Florensky and is reserved for scientists for their exceptional contributions to planetology.

Another cash option on Lab

The Caltech Employees Federal Credit Union has installed a new automated teller machine on Lab, the third such location at the Oak Grove facility.

Credit union cash machines are now located near the 303 and 190 cafés in addition to the Bank of America machine on the mall below the 167 cafeteria. All three machines allow for fee-free access of credit union accounts.

"Approximately 90 transactions a day are completed for cash-only withdrawals over the counter at the JPL branch office," said Richard Harris, the credit union's president and chief executive officer. "We encourage members to use any of the three ATMs located at JPL for convenient and quick access to their savings."

Camp signups available

The JPL/Caltech Child Educational Center will offer its 10-week summer camp program, designed for children entering 1st through 7th grades, from June 23 to Aug. 27. The deadline for priority enrollment is Monday, March 17.

Camp activities include educational field trips, swimming, creative arts and crafts, outdoor physical activities and science exploration. *The Zone* offers specialized activities for older children (entering 5th through 7th grades) enrolled in the camp with specific trips and activities for that age group as well as a week-long camp that will take place Aug. 11–15 at La Cañada Elementary School's campus.

The Child Educational Center is also offering a Children's Exploration Series in August that will take place on La Cañada Elementary School's campus: Science Explore, Animal Explore and Art Explore. All three are for children entering 1st through 7th grades. Science Explore will take place Aug. 4–8, Animal Explore Aug. 11–15 and Art Explore Aug. 18–22.

For more information, call ext. 4-3418 or visit *www.ceconline.org.*

Passings

Robert Shrake, 80, a retired member of the technical staff, died Sept. 26.

Shrake joined JPL in 1957 and retired in 1989. He worked in the Actuators and Inertial Sensors Group in the Guidance and Control Section, where he helped to design and build the guidance packages for projects that included Pioneer, Voyager, Galileo and Cassini-Huygens.

He is survived by his wife, Barbara, daughter Robin, son-in-law Chris, grandson Tyler, sister Doris Parton and nieces Judy and Cathy.

Memorial arrangements are with Celestis, Inc.

Harry Buchanan, 86, retired from Section 333, died Jan. 10.

Buchanan worked at JPL from 1955 to 1986. He is survived by his wife, Ruth Ann.

Burial was at Rose Hills Memorial Park in Whittier.

Samuel Boyer, 92, a retired records manager, died Jan. 15.

Boyer joined JPL in 1964 and retired in 1980. He is survived by sons Brent and Craig, daughter Janine, and grandchildren Danny, Scott and Randy.

Services were held Jan. 19 at Forest Lawn in Glendale.

Retiree **Donat Vincent,** 81, died Jan. 22.

Vincent joined the Lab in 1950 and retired in 1988. He worked in several JPL organizations, including the Technical Information and Documentation Division, Deep Space Network Systems Section and the ADP Management Office.

He is survived by his wife, Martha, son Norman, daughter Barbara Ann and grandson Mason.

Services were held Jan. 26 in Los Osos, Calif.

Donald McClure, 79, a retired Deep Space Network operations engineer and group supervisor, died Jan. 30.

McClure joined the Lab in 1961 and retired in 1991. He is survived by his wife, Julie, and daughter Donna.

Services were held Feb. 23 in Port Townsend, Wash.

Patrick Roberts, 45, a mechanical engineer in the Advanced Deployable Structures Group, died Jan. 29.

Roberts had been with JPL since September 2007. He is survived by his wife, Felicia, daughter Nicole and son Derek.

Services were held in Lawrenceville, Ga.

Correction

The News Briefs section of Universe's February issue incorrectly identified a photograph as JPL retiree Donald Rapp. Due to an incorrect photo supplied to Universe, the photo was of JPL employee Donald Moore.

Letters

To all my friends and acquaintances I have had the pleasure of knowing on and off Lab, I bid you all a farewell for I have retired from CSC on Feb. 15. Some of you I have never met, but the telephone and Internet kept us in contact for our work. I have had the distinct pleasure and honor of saying I was associated with JPL. To all my friends, I say goodbye and thank you for friendships all these years (24).

Bill Laue

Thank you JPL for the beautiful memorial plant for the passing of my grandmother. It was much appreciated.

Kathleen Wincentsen

My family and I would like to thank the many friends at JPL and especially at the Solar System Exploration Directorate (4x), as well as in Division 34, who have sent me numerous e-mails and cards expressing their condolences on the passing of my mother, Vera Kohn Alkalaj. I would like to thank JPL for its support during a very difficult time for me. It helped me a great deal to know that I am working with colleagues who care very much about my personal situation and who often asked about my mother's health and well-being. Thank you JPL also for the beautiful flowers.

Leon Alkalai

To all my friends at JPL, a huge thank you. Thank all for the wonderful gifts and the beautiful and unforgettable send-off! I have so many wonderful memories of my time at JPL. The only bad part of retirement is not seeing your friends as often as you did. You will all forever remain in my heart! Thank you all so very much and God bless you all! With much love,

Georgene Peralta

I want to express my appreciation and thanks to all my JPL friends and coworkers who have given me support during my sister's illness and recent death. I also appreciated the wonderful plant that JPL sent to my home. Thank you.

Robert Powers

Retirees

The following JPL employees retired in March:
Willard Bollman, 49 years, Section 343; **J.C. Klose,** 41 years, Section 173; **Henry Awaya,** 31 years, Section 354; **Robert A. Johnson,** 29 years, Section 333; **J. Javier Bautista,** 27 years, Section 333; **John Bonner,** 15 years, Section 3745.

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It's 8:15 on a Tuesday morning. Most JPLers are at work as you arrive in your office. Suddenly, the walls and floor start moving violently, with books and papers flying everywhere. After a few more seconds of shaking, the lights go out. When it is over, a bleating of car alarms comes from the west lot. Phones—both landline and cell—are down; there is no running water. You don't yet know it, but most freeways and many streets are impassable. Later you learn that the earthquake you just went through was the long-rumored "Big One" on the San Andreas Fault.

What would you do?

Though it hasn't happened yet, that scenario is very plausible. In Southern California it's not a question of if, but rather when a major emergency such as a large earthquake, fires or other incident will occur, say emergency preparedness experts.

Are you ready? Is your home stocked with supplies? Do you have a plan with your family? This year JPL's Office of Protective Services is embarking on a major campaign to prepare the Lab—both as a workplace and as individuals—to be ready for such emergencies. Randy Aden, the office's manager, recently discussed that effort with Universe.

What prompted JPL's interest in emergency planning now?

This began as part of a greater national recognition of a need to be prepared for emergencies. There have been a number of events—the Katrina hurricane, flooding that we've had across the United States, brushfires in Southern California, as well as the shooting incidents at Virginia Tech and at Johnson Space Center. These all contributed to an awareness that we have to be prepared, and preparation begins at the most local level and then works its way back up nationally.

What are the main points of the campaign this year?

We're going to start with making each individual aware of what they need to do on an individual basis. It's easier to recover if you've planned for recovery on a personal level, at home, with family. Then part of that recovery on an individual basis involves recovering operations at JPL. It's important for everybody who works here that if there is a disaster, that JPL becomes viable as quickly as possible.

So if JPLers want to be prepared, what do they need to do?

We've set up a Web site—prepare.jpl.nasa.gov—that addresses disaster preparedness. We're going to be working the entire year to make people aware of things they can do in specific instances with different kinds of events that could befall us. In addition, we're always looking for volunteers for our search and rescue team. You get some valuable training there and you also provide a valuable service to JPL, as well as possibly your community.

What if an emergency occurs during the workday?

We have a multi-hazard emergency response plan that would go into effect, including the activation of the Emergency Operations Center. General Tattini chairs an executive group committee, the Management Operations Committee, that would be responsible for making policy decisions regarding the allocation of the resources that we have available here to react to a major disaster. We do have some supplies on hand if we have to shelter people in place after an emergency. We recognize that if an emergency happens while our employees are here, most people are going to be concerned about their homes and their families, and we're going to try and react to that and provide at least the means to communicate. It may not be the safest thing for our individual employees to take off and head home.

Hopefully we'll all work together and get a good plan in place, and it really depends on the cooperation of each individual. We do conduct fire drills every year. Those are very important. There's an old adage that says you play like you train. Well, this is part of the training that we go through. So hopefully we'll be in a position that if it does happen and we're impacted greatly that people will know what to do and do it and participate.

What kind of emergency supplies does the Lab maintain?

We have some food on hand, as well as water, cots and some medical supplies. These would be made available as needed if we have to have people staying here for a long period.

What about disasters other than earthquakes? For example, how would the response to a pandemic virus differ? Would we go into a mode of more people working from home—social distancing?

I think you'd see that. If we do have a pandemic, obviously we're going to have people who are home sick, probably very sick. The pandemic probably will close schools. So if we have employees who have children, whether their children are sick or not, they will be home.

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Lab has big involvement in concept studies

JPL is involved in 15 of 19 science teams selected by NASA to conduct yearlong studies of new concepts for its next generation of major observatories.

These concept studies will be used for midterm and far-term forward planning of a diverse astrophysics mission portfolio and for obtaining a simultaneous and uniform assessment of future technology development needs for NASA's Astrophysics Division. Study results and information related to the technical maturity of proposed mission components are expected to be provided as input to the panels convened by the National Research Council for the upcoming 2010 Astronomy and Astrophysics Decadal Survey, which produces directions that guide federal agencies such as NASA and the National Science Foundation in planning their programs over the coming decade.

JPL is the lead NASA center and would provide study management for 11 of the studies, two of which also have JPL researchers listed as principal investigators. The Actively-Corrected Coronagraphs for Exoplanet System Studies is a medium-class coronagraph mission study led by John Trauger; the Dilute Aperture Visible Nulling Coronagraph Imager, a nulling interferometer, is a mission study led by Mike Shao.

Here are the other studies in which JPL is named a lead center, with principal investigators:

Pupil-mapping Exoplanet Coronagraphic Observer, Olivier Guyon, University of Arizona; Extrasolar Planetary Imaging Coronagraph, Mark Clampin, Goddard Space Flight Center; eXtrasolar Planet Characterizer, David Spergel, Princeton University; Planet Hunter, Geoffrey Marcy, UC Berkeley; Star Formation Observatory, Paul Scowen, Arizona State University; Mars Laser Ranging, Tom Murphy, UC San Diego; Lunar Array for Radio Cosmology, Jacqueline Hewitt, Massachusetts Institute of Technology; Cosmic Inflation Probe, Gary Melnick, Smithsonian Astrophysical Observatory; Experimental Probe of Inflationary Cosmology, Stephen Meyer, University of Chicago.

Four other studies were cited that list JPL as a co-investigator:

Advanced Technology Large Aperture Space Telescopes, Marc Postman, Space Telescope Science Institute; Dark Ages Lunar Interferometer, Joe Lazio, Naval Research Laboratory; Astrobiology Space Infrared Explorer, Scott Sandford, NASA Ames Research Center; and Orbiting Astrophysical Spectrometer In Space, James Adams, Marshall Space Flight Center.

Roger Lee of JPL's Astronomy and Physics Competed Missions and Technology Office noted that concept study teams are now being formed in anticipation of the start of funding in March. The astrophysics concept studies total approximately $12 million in fiscal years 2008 and 2009, ranging in cost from $250,000 to $1 million. The studies' results are expected in March 2009.

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JPL was also recently selected to lead two studies and co-lead a third study under NASA's Research Opportunities In Space and Earth Sciences Program.

Yoaz Bar-Sever is principal investigator for "GPS-aided Real-Time Earthquake and Tsunami Alert System." The study will use the increasingly available global and regional real-time GPS data from NASA's operational Global Differential GPS System to enable more accurate and timely assessment of the magnitude and mechanism of large earthquakes, as well as the magnitude and direction of resulting tsunamis. The additional GPS-based information will be used to enhance the United States Geological Survey's operational system for post-earthquake damage assessment and emergency response, and improve tsunami warnings by the National Oceanic and Atmospheric Administration's Pacific Tsunami Warning Center.

Yi Chao is principal investigator for "Impact of NASA Satellite Data and Models on U.S. Coast Guard's Decision Support Tool for Search and Rescue in the Northeastern Pacific Ocean." The goal is to provide improved real-time ocean surface current and wind observations as well as ocean circulation model forecasts with error estimates in the northeastern Pacific Ocean. The proposed work will enhance the input into coastal management Decision Support Tools used by the Coast Guard for search and rescue.

Ed Armstrong of JPL, with Dale Kiefer of USC, will lead "Pelagic Habitat Analysis Module: Enhanced Decision Support for Pelagic Fisheries and Marine Sanctuaries."

The Pelagic Habitat Analysis Module will provide an advanced information system that will enhance decision support systems currently at agencies managing pelagic fisheries and marine protected areas. The module will leverage streams of NASA research products from JPL and integrate this with multivariate datasets in support of agency marine resource management applications.

Preparedness

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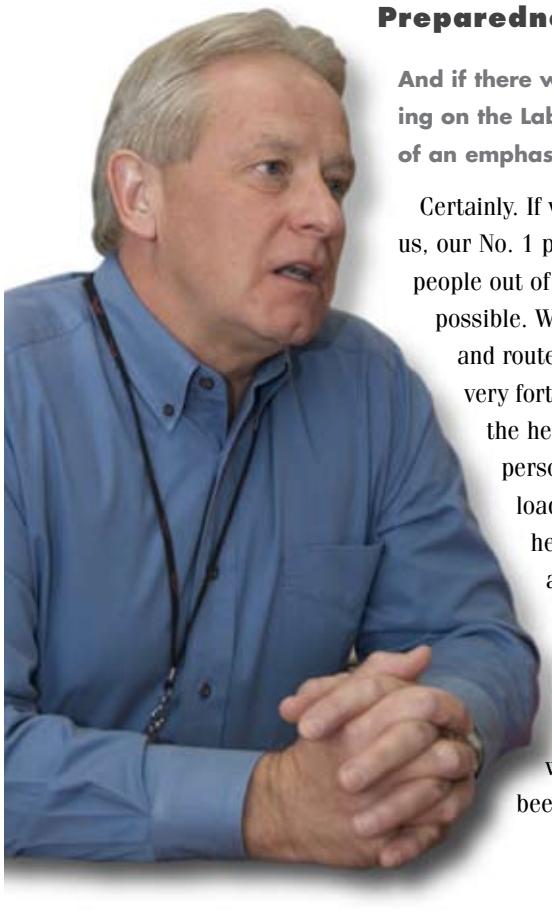

Carol Lachata / JPL Photolab

And if there was a major fire impinging on the Lab, there would be more of an emphasis on evacuation?

Certainly. If we had a fire threatening us, our No. 1 priority would be to get people out of harm's way as quickly as possible. We have evacuation plans and routes in place to do that. We're very fortunate here at JPL; we have the helipad above us that fire personnel use regularly to load their water-dropping helicopters for fires in the area. So we feel that this is a place that would be well protected But even with the best intentions, the fires that we've had recently have been very significant—especially in the San Diego County area, where so many homes were lost. So anything's possible.

And human-caused crises?

It's unfortunate that we read almost daily somewhere in the country of incidents of violence. We have plans in place for what we call active-shooter response, and we are getting the necessary equipment to address those as quickly as possible.

So the first step for employees is to look at the Web site—prepare.jpl.nasa.gov—and see how they can become prepared both at home and work?

Yes, that is the first step. We are very open to feedback from employees on what information they would also like to see—there are contact addresses on the Web site that they can use. Over the coming months we will be hosting talks and special events to help the JPL community become more knowledgeable and prepared. Specifically, JPL will be hosting a Preparedness Day in the mall on April 16.

"We're going to start with making each individual aware of what they need to do on an individual basis. It's easier to recover if you've planned for recovery on a personal level, at home, with family."
—Randy Aden

Carol Lachata / JPL Photolab

The Technical Equipment Facilities Infrastructure Management team, from left. Front row: Bill Revere, Marty Johnson, Bob Develle, Valerie Thomas; second row: Melody Moore, Henry Tauchen, Pete Jones, Steve Lichten; third row: Warren George, Bruce Troutman, Ashley Collins, Jason Hyon, Dan Rascoe; back row: Craig Timmins, Willis Chapman, Michael Gregory, Kevin Clark, Richard Van Why, Phil Garrison, Carl Ruoff.

Under the hood

By Mark Whalen

Initiative supports investments in key equipment

For JPL to continue its preeminence as a world leader in solar system exploration and other areas of research, the Laboratory needs to strive to maintain its technical infrastructure—the very backbone of the operation—so that the technical staff has access to world-class facilities to do their work.

But that task has been a major challenge in recent years—so much so that the processes for replacing aging equipment and facilities and for guiding investment in priority fixes were considered all but broken.

Now, thanks to Labwide efforts to rein in the problem, JPL's infrastructure is undergoing a long-overdue upgrade to accommodate today's workload as well as the commitments of the future.

The initiative, Technical Equipment and Facilities Infrastructure Management, began in late 2006 and continued in earnest throughout last year. It's a five-year assessment of the needs for investments, guided by the Lab's current workload and anticipated future business. The goals are to provide an ongoing assessment of the health of the Lab's technical infrastructure; invest to replace old or obsolete equipment and technical facilities, as well as add new capability in areas important to future business; and establish improved processes for managing technical infrastructure investments.

"There is a whole spectrum of concerns," said deputy Engineering and Science director Phil Garrison. "But the Lab has stepped up to the plate and is making significant investments to address this problem."

The issues have been logistical as well as financial. Garrison acknowledged that "a root cause was underfunding of the Lab's technical infrastructure." But, he added, the problem was compounded by the lack of an overarching process for aligning investments with the Lab's priorities and coordinating investments in equipment and facility modifications. For example, he noted, "There would be situations where new equipment would be purchased, but there was no planning for modifications to the facilities to accommodate the new equipment. That type of problem was widespread."

Up until this time, the responsibility for technical facilities and equipment was largely designated to the organizations doing the work; only locally optimized solutions were being worked. "We didn't look at the big picture; there was not an opportunity to understand how big the problem was," Garrison added. "It had grown to a point that it really needed a focused initiative to address this problem."

Now, these areas of concern are being addressed. Based on a survey of section managers in the Engineering and Science Directorate and the Office of Safety and Mission Success last year, Garrison's team identified priorities for improvement.

The survey was an eye-opener. About 270 items and areas supporting flight project work and/or research were identified. Included were calls to fix ventilation and electrical systems, roofing, plumbing, fire suppression systems and related areas. The requests for facility maintenance and modification totaled about $60 million, while requests for new and replacement equipment came in at about $27.2 million.

Garrison said the solution would require an augmentation budget of about $10 million yearly over five to six years. Fiscal year 2007 investments totaled $13.4 million and included the acquisition of a scanning electron microscope, massive data storage for the supercomputer, and machine shop tools, such as a vertical mill, an ultrasonic mill and an electrostatic discharge machine. The darkroom in Building 230 was refurbished, as was the Project Design Center.

Seven and a half million dollars has been budgeted for Technical Equipment and Facilities Infrastructure Management funding this year, with the potential of an additional $2.5 million if the Lab's business base can support it, Garrison said. This is in addition to approximately $2.5 million that is budgeted by the Project and Engineering Management Committee and the Science and Technology Management Committee for technical infrastructure. To date, $4.2 million has been awarded to address urgent needs in the fiscal year 2008 budget as well as fiscal year 2007 carryovers. A second round of awards totaling $3.7 million is about to be announced, he added.

Current priorities are to focus on critical, existing capabilities for missions and projects as well as any new capability that's important for capturing new business. The highest priorities are given to areas involving personnel safety.

Garrison noted the success of the major changes in the processes used for determining priority infrastructure investments. A 19-member proposal evaluation team—representing all JPL directorates as well as technical divisions—assesses the needs for facilities and equipment. An advisory board comprising senior managers and program office representatives reviews the process and overall internal decisions. "We are working closely with the responsible management committees to make sure we understand their priorities to make the right investment decisions. We believe we're on the right path and are providing benefits," Garrison said.

"To our scientists and engineers, it's extremely important they have state-of-the-art facilities that allow them to do the work they want to do, better. It is also important to our ability to attract the best and the brightest for JPL's future," he added.