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NASA program to inspire summer learners kicks off June 10 on Lab

By Mark Whalen

"Materials provided by JPL are unique, inspirational and authentic, in the sense that they allow the students to do—at their level—what a NASA or JPL scientist or engineer would do."

Parvin Kassaie, manager of the JPL Education Office

JPL will host the national kickoff event Thursday, June 10 for NASA's "Summer of Innovation," an initiative that will use the excitement of space exploration to engage middle school students. The intent is to offer intensive learning experiences to improve their academic performance and ultimately strengthen the nation's future workforce.

NASA Administrator Charles Bolden, local and national education officials, state officials, astronaut Leland Melvin and other astronauts are scheduled to attend the event, which will include about 275 students and teachers from local schools. NASA TV and Ustream will provide live broadcasts.

Summer of Innovation is part of the federal government's "Educate to Innovate" campaign for excellence in science, technology, engineering and mathematics, or "STEM," education. The effort will focus particularly on engaging students who are underrepresented, underserved and underperforming in these subjects.

The summer pilot program will partner NASA centers with summer schools as well as non-traditional educational venues such as museums, camps and science centers. Each NASA center will reach out to at least 1,000 students and their teachers.

Parvin Kassaie, manager of the JPL Education Office, noted that JPL will leverage its existing programs as well as develop new partnerships to reach students in need. The Education Office will provide a series of training modules and lesson plans for partnering organizations, which will include 7.5 to 10 hours of NASA and JPL content. Modules and plans are customized according to students' needs, and JPL provides training for teachers and other educators.

"These materials provided by JPL are unique, inspirational and authentic, in the sense that they allow the students to do—at their level—what a NASA or JPL scientist or engineer would do," Kassaie added. "For educators, there are ways of combining STEM learning with summer activities that can be so engaging, sometimes even unforgettable for their students."

The key focus of the program, Kassaie noted, will be on disadvantaged students who slide back academically during the summer. Many times, as the new school year begins, they have fallen two or three months behind academically. "This is a very important campaign by the federal government and NASA to get the message out that summer learning is very important," she said.

Many JPLers will volunteer their time for the program in the coming weeks, and a major key to success will be their personal interactions with students.

"I think NASA and JPL scientists and engineers can play an extremely significant role because they can be outstanding role models," Kassaie said. "For example, some JPLers had academic struggles as middle-schoolers. For the students, knowing what their struggles were and how the JPLers' passions for learning allowed them to overcome those challenges and get on a path that brought them to JPL, it's a very powerful message.

"Many people, particularly young children, think scientists and engineers are cut from a different cloth. This will be a way to 'normalize' them and make them accessible."

Kassaie also believes an important factor is for students to become more confident, to believe they can achieve. "We want to help students see the unseeable, imagine the unimaginable," she said. "That's what JPLers can demonstrate just by being who they are."

JPL will also host its own kickoff event Saturday, June 12 with a science fair for local students.

Beyond the summer pilot, the program plans to assess its effectiveness by tracking participating students and partnerships for three years.

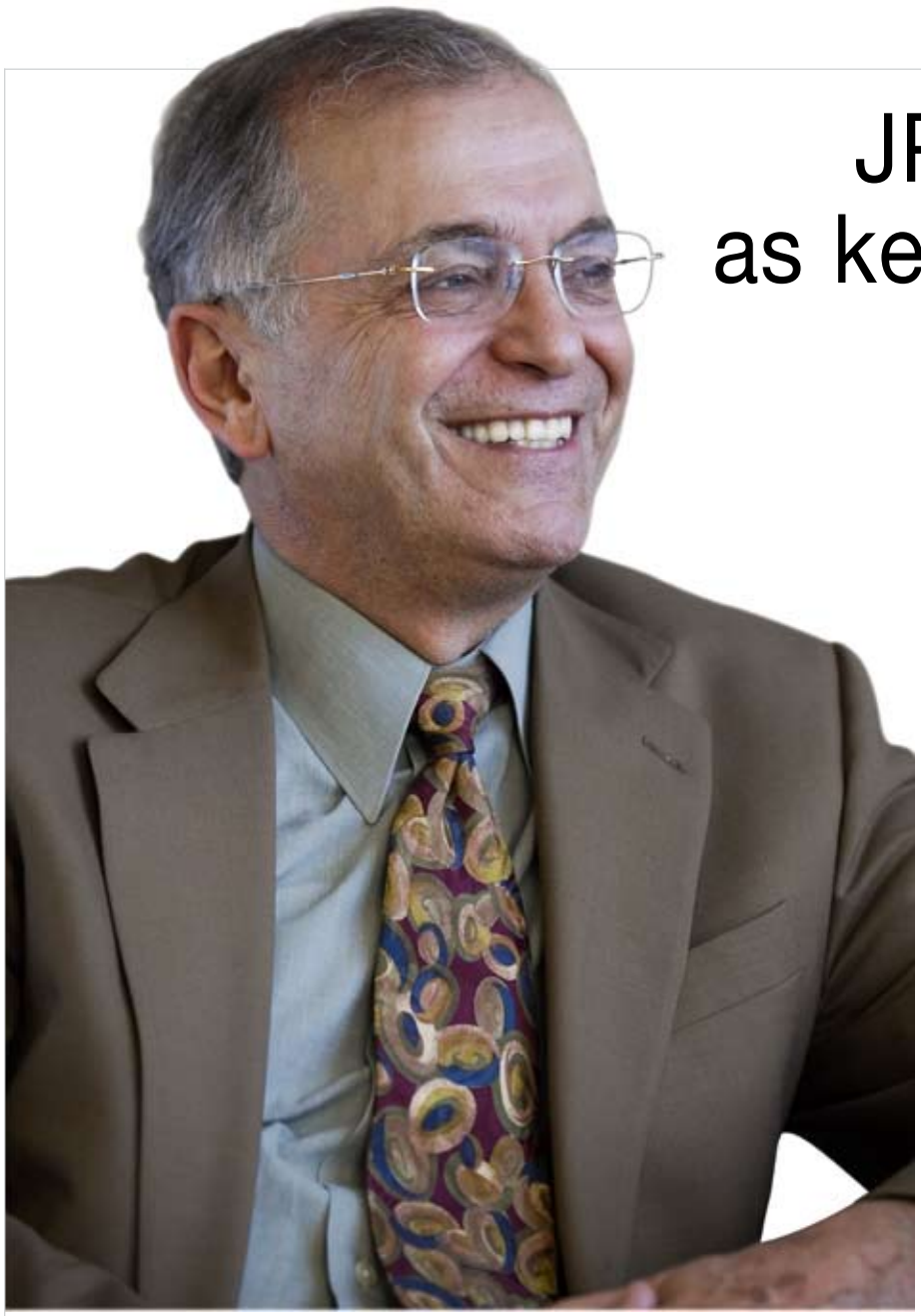

Photo by Bill Youngblood

JPL well-positioned as key contributor to the new NASA

The JPL Executive Council recently held its annual retreat. One item considered was how the Laboratory can position itself to continue to play a major role in supporting NASA's new directions. JPL Director Charles Elachi outlines the key points of the discussions.

DO YOU FEEL THAT NO MATTER HOW THE DIRECTION OF NASA SHAKES OUT, JPL CAN STILL PLAY A KEY ROLE FOR THE AGENCY?

Yes. There is a lot more interest now in combining robotics and human spaceflight in NASA's exploration endeavors, and I think people recognize the talent that JPL will bring as a team player working with the other centers.

The human spaceflight activities are being redefined to venture beyond Earth's orbit to the moon, asteroids, and ultimately to Mars. Preceding that will be a series of robotic precursor missions and the technology development to enable humans to travel more effectively, time-wise, to these targets.

Without question, due to our extensive experience, I think we can play an important role in these missions. We are looked at now as part of the human spaceflight family. This is a benefit that came from building the trust between JPL employees and those at Johnson Space Center, Marshall, and other human spaceflight program centers.

EARTH SCIENCE IS A BIG AREA RIGHT NOW, WITH HEIGHTENED INTEREST AT THE FEDERAL LEVEL. DO YOU SEE THIS AS BASICALLY EXECUTING PROJECTS THAT ARE ON THE TABLE RIGHT NOW, OR ARE THERE GOING TO BE NEW OPPORTUNITIES THAT AREN'T DEFINED YET?

It's a combination of new strategic missions as recommended by the National Academies' decadal survey and missions that are continuation of ongoing activities.

Right now we are preparing Aquarius for launch within the next year and are planning a replacement mission for Orbiting Carbon Observatory, which could be ready in three years. In 2014 we will launch the Soil Moisture Active & Passive mission as well as a follow-on to the current Grace mission. The Deformation, Ecosystem Structure and Dynamics of Ice mission is set for launch in 2017.

Clearly, Earth science will grow significantly throughout this decade, and JPL can make significant contributions to the agency's goals.

HOW IS THE PLANETARY AREA SHAPING UP IN THE COMING YEARS?

Planetary is not growing at the same level as Earth science in NASA's budget request, but is still in very good shape. Mars Science Laboratory will launch in November or December of 2011, followed by studies for Mars missions in 2016 and 2018, and then we'll start planning for a proposed sample return mission to Mars. Of course, there will be more opportunities available through the New Frontiers and Discovery programs. We are also hopeful for the potential start of a Europa mission.

THE MARS PLANS FOR '16 AND '18, AS WELL AS THE EUROPA MISSION, HAVE A HEALTHY INTERNATIONAL FLAVOR. COULD EXPORT-CONTROL ISSUES—SUCH AS INTERNATIONAL TRAFFIC IN ARMS REGULATIONS (ITAR)—LEAD TO PROBLEMS?

ITAR is being reexamined by the executive administration. But with or without changes in ITAR, I think we are positioned very well for continued success with international partnerships because of our long-term history of successful collaboration—a few great examples are our work with the European Space Agency on Cassini, our experience on the Jason series with the French, and our partnership with Argentina on Aquarius.

AN ACADEMY DECADAL REPORT FOR ASTRONOMY IS DUE OUT THIS SUMMER. WHAT ARE THE PROSPECTS FOR AN ENDORSEMENT OF EXOPLANET STUDIES?

There is an expectation that there will be interest and support for a program in exoplanets, and we are well positioned to contribute in this field. One of the questions to answer is: "How do we structure a well-thought-out, strategic approach to explore exoplanets?" This will be a challenge that involves interferometers, chronographs and occultation techniques.

NASA IS STAKING ITS FUTURE ON DEVELOPING LEADING-EDGE TECHNOLOGIES. WHAT ARE JPL'S PROSPECTS IN THIS AREA?

NASA's technology program will be an area of major opportunity for us, and we expect to submit many exciting proposals to make sure we play a major role.

Recently, I was absolutely delighted to see that in response to a Labwide call for ideas to send to the NASA chief technologist, within a week we had some 500 ideas submitted. At the retreat, the JPL Office of the Chief Technologist showed us some of those ideas, and I thought they were fantastic. And just after the retreat the count on ideas submitted by JPLers was up to about 650, which illustrates the quality of our employees, their talents and ideas.

WITH THE LABORATORY'S CURRENT WORK, FUTURE COMMITMENTS AND PROSPECTS FOR NEW OPPORTUNITIES, WHAT ARE SOME OF THE THINGS JPL IS PLANNING TO ASSURE IT HAS THE APPROPRIATE TALENT AND EXPERIENCE TO BE ABLE TO CONDUCT THESE MISSIONS?

One key area is how to strengthen the critical role of group supervisors. One concern is that group supervisors are sometimes caught up in nontechnical activities that demand a lot of their time. We want to make sure we provide the appropriate balance for them to keep the major role they play as the technical lead for the group and as a mentor for both new and veteran employees.

Continued on page 3

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Among the executive council members and their deputies, an overwhelming majority were once group supervisors. This shows that the line path is also critical for moving up at JPL, not only the project path.

Beyond the group level, we are also assessing the roles and responsibilities of line management and project management—are there ways we can work better as a team to be very successful?

Leslie Livesay, Chris Jones and Matt Landano are leading efforts to assess our commitments throughout the decade to determine what kind of critical expertise we need to have in-house. We want to examine our depth of talent and make sure we hire to keep a long-term strength in those areas.

We do intend to stay at roughly the present level of about 5,000 people. In an average year, we have about 5 percent turnover. That's about 250 people each year, allowing us to bring in talent in areas where we think we need more depth or capability.

INSTITUTIONALLY, WHAT ARE THE MOST IMPORTANT PRIORITIES FOR THE NEXT COUPLE OF YEARS?

Our infrastructure—in terms of engineering, research, information technology and business support—is very important, and we need to continue investing in these areas over the next few years as flexibility in our budget allows. We also will continue to work to streamline the administrative processes for procurement, proposal submission and other key areas.

Firouz Naderi is drafting a strategic plan that will lay out a strategy for the next five years; it should be complete by end of the calendar year. By then, we should have a clearer picture of where NASA is going in the human spaceflight program, and how JPL can contribute.

2010 Open House

More than 36,000 guests were welcomed on Lab to JPL's annual open house May 15-16, with about 14,000 more viewing the proceedings online. The event was highlighted by the new visitor center at von Karman Auditorium. To view a collection of images from the open house, visit *http://internal.jpl.nasa.gov/open-house-2010.html.*

Photos by Brad Graverson

OPEN HOUSE SPARKS CAREER INTEREST FOR UCLA VISITORS

By Catherine Sum

JPL's annual open house has a role in sparking the wonder of prospective scientists and engineers, but for one UCLA undergraduate seminar, some students take it a step past sustained curiosity.

After attending this year's event in May, Laurence Smith, a professor and vice-chair in the college's department of geography, said he has seen in his students a pattern of recurred interest on the topics of space science, Earth remote sensing and electrical engineering.

"After we visit the JPL open house, two or three of the students will take a course in geography or space sciences," said Smith. "And another two or three, who are typically undeclared or major in something generic, will then say they consider majoring in something like Earth science."

Smith has been teaching this one-credit seminar for several years, and says the pattern is consistent: He brings students to open house every year and, as he puts it, lets them go wild: "I tell them to pursue their interests, so they go off and talk to the scientists."

Earth System Science Formulation Manager Anthony Freeman, who has known Smith for several years, was working open house this year when he bumped into the professor. "Hearing about his seminar has been really inspiring," said Freeman. "This is why we [at JPL] love these encounters."

About a week after the event, Smith meets with his students on campus in order to discuss their experiences, and they are always "blown away," he said. The feedback Smith receives the most deals with the nature of the Lab itself: that the students didn't previously know about JPL or they didn't realize the scope or scale of its work.

Freeman feels much of the same excitement in the feedback that Smith's students have given.

"I work open house every year when I can, and I always enjoy it immensely, especially speaking to those who don't work in the same line of work as you," Freeman said. "When you see the light bulbs turn on, it's incredible."

News Briefs

Webby honors for Global Climate Change

"It's getting hot in here"—that's the message the JPL-managed Global Climate Change site (http://climate.nasa.gov) is trying to convey, and with a recent Webby Awards win, it may do just that.

The site won the 2010 People's Voice Award in the science category, as voted by Internet users. Nearly 10,000 entries were received from more than 60 countries. A gala will be held for winners on June 14 in New York City.

"The primary goal is to make this kind of content accessible and understandable," said Internet Communications Manager Randal Jackson. "We don't have an agenda," he added, speaking on the website's content. "We just present the facts."

The site is a departure from traditional text-based reports on the science of climate change, instead conceptualizing the information into user-friendly visualizations and interactive features, without compromising the original research.

One popular feature, "Eyes on the Earth 3D," provides a dimensional representation of the 14 Earth-orbiting missions. The web team provides visitors with real-time tracking of satellites and updates that can be viewed "almost as soon as the scientists can," Jackson said.

Launched in June 2008 by Jackson and Michael Greene, Global Climate Change began as a JPL site but after a year of operation NASA adopted it as its agency-wide website on the subject. Other key contributors to the initiative include science writer Amber Jenkins, media representative Alan Buis and JPL historian Erik Conway.

The site plans to roll out new features over the next couple of months. Among them are the Global Ice Viewer, which will allow visitors to track ice cover and shrinkage, as well as an "Eyes on the Earth 3D" touchscreen installation for other NASA centers, and an application that will allow iPhone users to track overflying satellites through a GPS device.

"NASA as an agency has a great gold mine that allows us to visualize Earth science," Jackson said. "We are excited to use new and innovative ways to help the public understand what's happening to our planet."

JPL-led proposal selected for Venture class

Charles Miller of JPL's Earth Atmospheric Science Group will lead a new mission selected as one the first investigations in NASA's new Venture-class series of low-to-moderate cost projects. Miller is principal investigator for the "Carbon in Arctic Reservoirs Vulnerability Experiment," one of five competitively selected proposals for the Venture class.

The proposal, for which JPL's Said Kaki was capture lead, notes that the release and absorption of carbon from Arctic ecosystems and the response to climate change are not well known due to a lack of detailed measurements. This investigation will provide unprecedented experimental insights into Arctic carbon cycling, especially the release of greenhouse gases such as carbon dioxide and methane. Aircraft-based instruments will produce the first simultaneous measurements of surface characteristics that control carbon emissions and key atmospheric gases.

JPL also submitted the proposal titled "Airborne Microwave Observatory of Subcanopy and Subsurface," with JPL's Sasan Saatchi as capture lead. Mahta Moghaddam of the University of Michigan is principal investigator. The proposal notes that North American ecosystems are critical components of the global exchange of the greenhouse gas carbon dioxide and other gases within the atmosphere; to better understand the size of this exchange on a continental scale, the investigation addresses the uncertainties in existing estimates by measuring soil moisture in the root zone of representative regions of major North American ecosystems. Investigators will use NASA's Gulfstream-III aircraft to fly synthetic aperture radar that can penetrate vegetation and soil to depths of several feet.

Both of the above investigations with JPL involvement address greenhouse gases and their interaction with the biosphere.

As part of the selection, Bob Herman (unmanned aerial system laser hygrometer) and Michael Mahoney (microwave temperature profiler) are co-investigators whose instruments will fly on the Airborne Tropical Tropopause Experiment, which is led by NASA's Ames Research Center. Also, Bjorn Lambrigtsen's high-altitude monolithic microwave integrated circuit (MMIC) sounding radiometer will be onboard "Hurricane and Severe Storm Sentinel," led by Goddard Space Flight Center.

Lynn Gref

Gref pens book on American technology

Lynn Gref, retired former manager of JPL's Defense and Civil Program Office, is the author of a new book, "The Rise and Fall of American Technology."

Using historical examples, the book examines the process by which new technologies are born and find their way into products, and discusses how very few bright ideas ever make it to the marketplace. Gref writes that while rest of the world envies American technological prowess, the United States is no longer dominant in new technology.

A 20-year JPL employee, Gref is a former manager of JPL's non-NASA business. He is currently on the board of advisers of the College of Natural and Agricultural Sciences at UC Riverside.

The book, published by Algora Publishing, is available at the JPL store.

Passings

William Becker, 93, a retired publicist in JPL's Public Affairs Office, died Jan. 27.

Becker joined JPL in 1966 and retired in 1982. He is survived by his wife, Rachel; daughters Marilyn, Amy and Kathryn; 14 grandchildren and four great-grandchildren.

Services were held in Ventura.

Dorothy Robinson

Dorothy Robinson, 92, a retired secretary in the Mission Assurance Office, died Feb. 17.

Robinson worked at the Lab from 1981 to 1998. She is survived by daughter Kathy and son Mike, two grandchildren and one great-grandchild.

Services were held at Forest Lawn, Glendale.

Letters

I want to thank JPL for the wonderful tribute you organized for my father, Dr. Lew Allen. As children, we always knew how smart and kind he was and how hard he worked, but we rarely had a chance to see him through the lens of his colleagues. It was very meaningful to learn, not only about his accomplishments, but also about his professional relationships. You made us feel very special during our stay in Pasadena, and even more proud than ever of this extraordinary man. With gratitude,

Barbara Fenton Miller

Heartfelt thanks for your presence at our son Christopher's funeral mass and gravesite service. The generosity and support of our Labwide and extended family has lifted our spirits and helped us to begin the healing process as well. Your thoughtful prayers, words, meals and incredibly beautiful flowers and plants have also helped us get through the dark days, begin to see and feel brighter days, and start to begin to move on with our lives. We will miss Chris as our lives are forever changed, but you have all made our burden bearable. We would also like to thank you for the generous donations made to AbilityFirst in memory of Chris. We are so blessed to have such a wonderful and supportive extended family.

Joe, Bo and Amy Kahr

On behalf of my family, I wish to thank Division 25 management, my fellow colleagues within the division, all of the WISE and SIM project team members, and all of my other JPL family members for your contributions, breathtaking flowers, plants and cards filled with such heartfelt emotions and encouraging words that will be kept throughout the years. I know Julio's unmatched uniqueness, kindness and humor touched so many lives that my family are not the only ones grieving from his recent passing on April 25, 2010. I have always known that JPL is the finest institution to have the pleasure to work for and once again has proven its excellence by reaching out and supporting Jennifer, Lauren, Kyle and myself during this most difficult life transition. Heartfelt gratitude to everyone.

Lynn Osornia

My family would like to thank all our friends at JPL for the flowers, cards, support and prayers after the recent passing of my father, Dr. Robert G. Scott Jr. Doc was a survivor of the Battle of the Bulge in the Ardennes Forest in the winter of 1944-45. He served in Patton's 6th Armored Division and was awarded the Bronze Star for Heroism. His memorial may be viewed at *http://www.wwiimemorial.com/registry/search/pframe.asp?HonoreeID=1892706&popcount=2&tcount=3.* Highest regards,

David Scott

The winds of time and fate have separated friends. I'm looking for my girlfriend, Chris Brokyl, whose last name perhaps has changed. It has been many years, but the last we spoke both our lives were in flux. Chris was returning to the Pasadena area and to work at JPL, where we became good friends. Chris, if you would like to get in touch with an old friend, please call 919-373-9322 or e-mail *bethandbrandy@nc.rr.com.*

Beth Schroeder

Retirees

The following JPL employees retired in May:

Eri Cohen, 38 years, Section 3540; **Gary Yagi,** 38 years, Section 332F; **Carl Franck,** 34 years, Section 3465; **Thomas Starbird,** 33 years, Section 3170; **Jerry Landmaier,** 32 years, Section 3430; **Joan Westgage,** 26 years, Section 5114; **Dan Karmon,** 24 years, Section 3800; **Kathleen Hahn,** 23 years, Section 2672; **Roger Kern,** 22 years, Section 352N; **Charles Bodie,** 19 years, Section 3740; **Alvey Clayton,** 19 years, Section 374; **Constantine Andricos,** 13 years, Section 337B; **Harvey Endler,** 12 years, Section 333C; **James Crosby,** 11 years, Section 3756.

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