National Aeronautics and Space Administration, Ames Research Center, Moffett Field, CA
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Astrogram
Communication for the Information Technology Age

Ames' role in transformation highlights leader-led workshop

During a recent visit to Ames, three senior NASA leaders outlined a roadmap for the Center to follow on the journey towards transforming the agency to make the Vision for Space Exploration a reality.

NASA photo by Tom Trower

James Jennings (left), Admiral Craig Steidle (center) and Robert Parker (right) take questions from the audience during their recent visit to NASA Ames.

Addressing a jam-packed auditorium Dec. 7 during the 2004 One NASA leader-led workshop, retired U.S. Navy Admiral Craig E. Steidle, NASA's associate administrator for Exploration Systems; James Jennings, associate administrator for Institutions and Management; and Bob Parker, a former astronaut representing the Science Mission Directorate, described the process, the goals and a glimpse of what lies ahead.

NASA is working to "acquire a system to send human beings beyond low-Earth orbit," explained Ames Center Director G. Scott Hubbard in introducing Steidle.

During a rapid-fire presentation accompanied by detailed charts and graphs, Steidle announced a variety of upcoming projects for Ames to help the agency transform and enable the Vision for Space Exploration.

A graduate of the Naval Academy and former combat and test pilot, Steidle said the fundamental goal of the Vision for Space Exploration is "to advance U.S. scientific, security and economic interest through a robust space exploration program." And, said Steidle, "it starts with science."

To accomplish this goal, Steidle said NASA would:

• Implement a sustained and affordable human and robotic program to explore the solar system and beyond;

• Extend human presence across the solar system, starting with a human return to the Moon by the year 2020, in preparation for human exploration of Mars and other destinations;

• Develop the innovative technologies, knowledge and infrastructures both to explore and to support decisions about the destinations for human exploration; and

• Promote international and commercial participation in exploration to further U.S. scientific, security and economic interests.

Steidle announced a series of 18 action items needed to implement the Vision, starting with returning the space shuttle to safe flight as soon as practical and then using the shuttle to complete the International Space Station before retiring it in 2010.

Once completed, Steidle said the Space Station should focus its research to support exploration goals. Next, Steidle said NASA would begin a series of robotic missions to the Moon by 2008 and develop a Crew Exploration Vehicle (CEV). He said the first "uncrewed" CEV test flight was targeted for 2011, followed in 2014 by the first "crewed"

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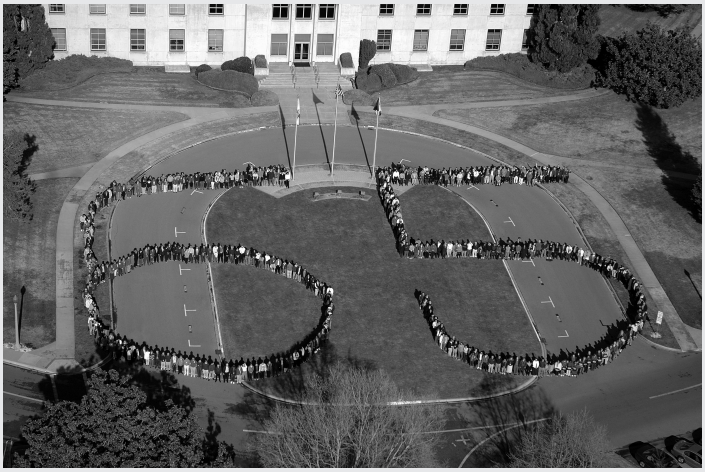


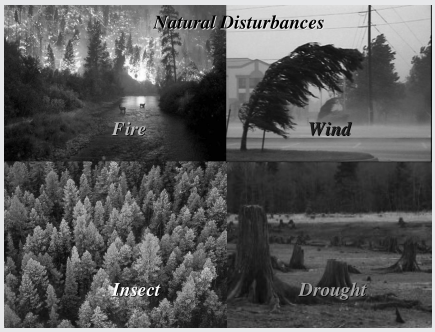
NASA photo by Eric James

Ames employees form the number 65 to recognize the Center's Dec. 20 anniversary and to honor Ames' sixty-five years of innovation and contribution to NASA and the nation.

A Happy Holiday Season to All!

NASA finds trees, insect outbreaks affect carbon dioxide levels

Winds and changing climate converted parts of Oklahoma, Kansas, Colorado and Texas into a giant 'dust bowl' in the 1930s. In response, the 1937 'Shelterbelt Project' involved the planting of trees to reduce erosion and provide relief from the biting winds that blew soil from farms and drove people west to California. Now, almost 75 years later, NASA scientists have found that planting trees also can significantly reduce carbon dioxide in the atmosphere.



Ecosystem disturbances -- Carbon dioxide can be lost from ecosystem to the atmosphere by any one of these large disturbance events.

Tree planting and insect control could greatly affect Earth's greenhouse gases – those gases in the atmosphere that warm the planet – according to NASA scientists who presented their findings this December during the American Geophysical Union's fall meeting in San Francisco.

"Planting trees on marginal agricultural lands could 'sequester' carbon and offset at least one-fifth of the annual fossil fuel emission of carbon in the United States," said Christopher Potter, an Ames scientist. "Scientists also have found that outbreaks of plant-eating insects may be linked with periodic droughts and heat waves in North America, which can trigger large seasonal losses of carbon dioxide back to the atmosphere," Potter added.

NASA scientists report a satellite-driven computer model that predicts forest re-growth conservatively projects that 0.3 billion metric tons of carbon could be 'stored' each year in trees growing on relatively low-production crop or rangeland areas in the United States.

The second study involves large-scale disturbances to greenhouse gases detected using global satellite data. "A historical picture is emerging of periodic droughts and heat waves, possibly coupled with herbivorous insect outbreaks, as among the most important causes of ecosystem disturbances in North America," Potter said.

According to scientists, the reason insects affect the planet's carbon dioxide level is that the six-legged creatures eat and kill trees and other vegetation. When the amount of greenery is reduced on Earth, the remaining plants take in less carbon dioxide. As a result, say scientists, more of this gas remains in the air, instead of being trapped in wood, fiber, leaves and other foliage parts.

The findings about tree planting and insect control are the subjects of two technical papers, co-authored by Potter. Other co-authors of the paper related to tree planting, include Matthew Fladeland, also of Ames, and Steven Klooster, Vanessa Genovese and Marc Kramer, all from California State University, Monterey Bay, Calif., all of whom are co-located at Ames.

Potter's co-authors for the second 'insect' study include: Pang-Ning Tan, Michigan State University, East Lansing, Mich.; Vipin Kumar, University of Minnesota, Minneapolis; and Klooster.

BY JOHN BLUCK

Ames' role in transformation outlined

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CEV test flight in preparation for human exploration of the lunar surface by 2020.

Other major milestones cited by Steidle are the Jupiter Icy Moons Orbiter (JIMO) spacecraft, targeted for launch in the 2012-2015 time frame, and the Hubble Robotic Servicing Mission designed to safely de-orbit and extend the service life of the telescope.

He also noted that NASA will be involved in Centennial Challenges, a program of contests featuring cash awards to stimulate innovation and competition in civil space and aeronautics.

In order to meet the exploration schedule, Steidle said there would have to be close coordination and cooperation between NASA's Science and Exploration Systems Mission Directorates. He also told employees that the private sector will play an increasingly larger role in developing new space hardware for NASA's missions in the future.

"Partnership with industry to identify innovative systems is very important," Steidle asserted. To foster collaboration and improve communication between NASA scientists and operators and their counterparts in private industry and academia, Steidle said he has removed all the partitions from a large room on the fifth floor at NASA Headquarters.

"We are developing new ways of doing business," Steidle said. He said the agency would utilize a "spiral development" process that employs technology to enable each successive step and implement a "strategy-to-task-to-technology process" to meet the goals of the Vision for Space Exploration. He also called for the agency to employ innovative and rigorous acquisition strategies as it moves to implement the Vision. Broad agency announcements (BAAs) and requests for proposals (RFPs) will be employed to ensure that the best value is obtained for the funds allocated.

Steidle said the effort will be "Center-centric" and that collaboration between field centers will be encouraged. He also said that he didn't want to lose NASA's "core competencies" from the field centers and that efforts would be made to identify and retain them. At Ames, said Steidle, those core competencies include intelligent / adaptive systems; biological sciences; computational modeling and simulation; human factors; field testing; and entry system technologies.

He pointed out that Ames is currently working in several research disciplines in support of exploration systems, including thermal protection systems; systems engineering and integration; simulation based acquisition (SBA) planning and development; biomedical research; space human factors; advanced life support; biomedical and biological flight hardware for the Space Station; technology maturation; advanced space technology and also developing innovative technology transfer partnerships.

Over the course of the next four fiscal years, 2005 through 2009, Steidle said Ames would receive $74 million in funding for several exploration systems projects, including: a trade study of au-

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tonomous operations for the crew exploration vehicle; fully-automated missions operations systems; a plug and play architecture for real-time intelligent avionics; peer-to-peer human robot for assembly and maintenance; and embedded real-time advisory systems for crew-automation reliability. He also said Ames would be supporting other field centers in nine projects.

Bob Parker, a former astronaut who was filling in for Al Diaz, associate administrator for the Science Mission Directorate, said that NASA has recombined Earth and space sciences, which had been split by former NASA Administrator Daniel Goldin. He said the goal is to position NASA's science endeavors to support and benefit from the exploration Vision.

Parker said that by combining Earth science with planetary science, NASA benefits from the synergy of the two scientific disciplines. He said scientists working together can look at connections between the biosphere and the atmosphere. He said scientists want to explore the universe and look for Earth-like planets. "We are going back to the future," Parker said.

Noting that NASA's Stratospheric Observatory for Infrared Astronomy (SOFIA) based at Ames is about to come on line, Parker said it will compliment the observations being made by NASA's Spitzer telescope. "We have an Earth Observation System in place," Parker ventured. He also noted that NASA's computational capabilities for conducting various science and exploration missions have been greatly increased.

Parker also called for increased emphasis on education and public outreach in order to help keep the public informed about NASA's ongoing transformation efforts.

Jennings also discussed the transformation process and said it was important to keep employees well informed about progress that is being made, at forums such as the leader-led workshop. Jennings said it was important to acknowledge the agency's numerous achievements, including four years of human presence on the International Space Station; nearly a year of the Mars Exploration Rovers Spirit and Opportunity on the Red Planet; the upcoming Return-to-Flight of the space shuttle in the May-June timeframe; and the numerous accomplishments made by high-end computing. He said the current changes being made at NASA will continue to evolve and that "they will never be over."

Concluding the presentations, Hubbard said Ames will play a key role in the agency's transformation process and implementation of the Vision for Space Exploration, through the Center's ongoing research in astrobiology and the use of "unparalleled technologies" to produce discoveries, innovations and solutions critical to NASA's missions.

Hubbard said astrobiology, the study of life in the universe, is a major core competency at Ames and the Center's "overarching science thread." Working with the Astrobiology Institute at Ames, scientists are conducting research to detect and understand habitable environments and studying Mars exobiology, Earth's ecosystems and gravitational and radiation biology using model organisms. Scientists are also utilizing airborne astronomy and platforms to conduct research in astronomy, astrophysics and astrochemistry.

Among the "unparalleled technologies" at Ames are the Center's use of integrated next-generation computational systems for supercomputing, high-speed networking, porting and scaling, and visualization for complex systems. Other examples cited by Hubbard include Ames' work in entry systems, including thermal protection systems, entry environments, flight hardware testing and qualification and the Center's work in intelligent / adaptive systems, including autonomy, robotics, health management, robust software and crew-centered operations.

Other examples of Ames' use of "unparalleled technologies" include the research being conducted in bio / nanotechnology, including sensors, thermal / radiation / impact protective materials, computing and electronics; human factors research in human-system integration and performance modeling for aerospace applications; and the work being done at Ames in air transportation management systems applying au-

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Veteran flight controller passes on

Donald R. Puddy, 67, whose 31-year career with NASA spanned the Apollo, Skylab and space shuttle programs, died Nov. 22 in Houston following a lengthy illness.

Puddy joined NASA's Johnson Space Center in 1964 and spent 22 years as a key leader of human space flights in the Mission Control Center.

"Don Puddy's distinguished career in flight control and program management was a fundamental component of NASA's success through the Apollo, Skylab, Apollo-Soyuz and space shuttle programs," said NASA's Associate Administrator for Space Operations Bill Readdy. "In addition, Don was a principal leader in the Shuttle-Mir Program with our Russian partners. Today's strong partnership for the International Space Station is a testament to Don's leadership."

As a flight director, Puddy led flight control teams during the Apollo Program, the three long-duration Skylab missions and the Apollo-Soyuz Test project. He served as flight director for the first space shuttle landing on April 14, 1981. Puddy was only the 10th person to become a NASA flight director.

"Don's leadership as a flight director was critical during our transition from Apollo through the early space shuttle flights," said Milt Heflin, chief of the JSC Flight Director Office. "His diverse talents allowed him to serve NASA and the country in many capacities."

Following his work in Mission Control, Puddy held other leadership roles at JSC; NASA's Ames as acting deputy director in 1985; and NASA Headquarters, Washington, DC. He was responsible for creating and managing many project and aircraft safety procedures, and he was instrumental in early joint collaboration between the U.S. and Russian space programs.

Puddy's contributions to the space program were recognized by numerous awards, including the Presidential Medal of Freedom and the NASA Outstanding Leadership Medal.

A native of Oklahoma, Puddy was inducted into the Oklahoma Aviation and Space Hall of Fame in 2002. "I had the honor of presenting Don at his induction into the Hall of Fame," said Heflin.

Puddy is survived by his high school sweetheart and wife of 48 years, Dana. He also is survived by their three sons, Mike, Doug and Glenn, and six grandchildren.

Television news videos produced by Ames' multimedia group

One important way NASA Ames reports about its activities and results to citizens is by way of video circulated to television stations. Most citizens get their news via television.

NASA photo by Dominic Hart

The Ames video crew, left to right, Jessie Carpenter on camera, Eric Land on sound (kneeling) and Ed Schilling (directing,) are shown during a broadcast session with Administrator O'Keefe (center.)

A survey by the National Radio-Television News Directors Association and Foundation reported that by 2003 half those people surveyed in the general public said that local television is their major source of news, up from 41 percent in 1988.

Distribution of details about NASA's research is a basic, critical requirement that U.S. law directs the agency to carry out. The Space Act of 1958 that created NASA says in section 203 (a) (3), "(The Administration . . . shall) provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof." The Ames Public Affairs Division's Multimedia Production Group is extremely important in meeting this legal requirement because its members produce 'video news file' videotapes that television news and documentary producers use as resources when crafting their news stories and documentaries.

"Everyone at Ames can be extremely proud of the contributions made by our joint team of civil servants and contractors in the area of audiovisual services, television and multimedia support," said David Morse, chief of the NASA Ames Public Affairs Division. "They are a very creative group who have won numerous awards. Recently, they provided 14 hours of live televised broadcasts from the NASA Risk and Exploration Symposium in Monterey, California, ensuring access to this important event to a broad and diverse audience. They are an extremely valuable resource to Ames and NASA, particularly as we move forward in the digital and high-definition television era," he added.

"In the past fiscal year, we produced 11 video news files for NASA television which helped NASA Ames gain visibility on a national level," said Victoria Steiner of Ames' Public Affairs Division. NASA distributed the taped video news files across the nation during multiple, daily satellite 'feeds.' In addition, Ames public affairs loans individual tapes to news and documentary producers across the nation and the world.

Video news files are not a final product intended for public viewing. Rather, they provide lengthy shots showing experiments, people and equipment. These tapes also provide longer expert interviews, animation sequences and sounds. Reporters and producers of news programs and documentaries prefer to have these longer, 'raw' scenes and sounds so editors can cut them to fit productions destined for broadcast.

Longer segments permit editors more easily to edit ('cut') their productions. Producers can have options of how long a shot should be to properly tell the story. In fact, producers generally do not desire finely edited productions for source material, because copyrighted music complicates using scenes and shots are too tightly edited. In addition, reporters want to have more editorial choice when creating their final segments and programs.

Because they are not tightly edited, video news files are generally much less expensive to produce than videotape productions made for audience viewing. Video news files also are cost-effective because scenes from them are seen by millions of viewers watching news and documentaries on television.

However, the Public Affairs' Multimedia Group also makes live broadcasts as well as polished video products for release on tape, on disc and on the Web.

"Probably the best example is the success of the Risk and Exploration Symposium broadcast, which we produced from the Naval Post Graduate School in Monterey Sept. 27-29," said Ed Schilling, leader of the public affairs multimedia group. "We built a set inside one of the lecture halls, used five cameras and a 30-foot broadcast truck. We produced title roll-ins, and combined video segments and PowerPoint slides into the live production, which ran for three consecutive days on NASA TV, totaling almost 14 hours of material. It has been rebroadcast many times since," Schilling added.

After the broadcast, the multimedia group edited, authored and duplicated an eight-disk DVD set of the event. NASA Headquarters distributed 1,000 copies of the set.

"One of our greatest accomplishments this year was a production of 'NASA Ames: Enabling Exploration,' a short video highlighting Ames' critical role in the nation's Vision for Space Exploration," Steiner added. "The biggest compliment for us was when Headquarters people asked if they could use this program as a sample for their own products. This shows the level of technical competence and creative force of our video team," she said.

Schilling also enumerated many other Public Affairs Multimedia Group polished products including, ". . . shows on Ames' role in nanotechnology, Ames' unique simulator capability (the Vertical Motion Simulator (VMS), FutureFlight Central (FFC), the Crew Vehicle Systems Research Facility (CVSRF) and the Virtual Simulation Laboratory (VLAB)). All have been extremely successful," Schilling stated.

Another task that the Multimedia Group does is to videotape research, tests and other historic happenings to 'document' them. This historical footage is then available for research, and for later use in video news files and polished video productions.

"We have supported research work by documenting Ames' work in the Return To Flight effort, most notably in wind tunnels and ballistics ranges," Schilling said. "In September we flew high definition and thermal video cam-

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NASA advances water recycling for space travel, Earth use

Would Columbus have reached the New World if his ships could not carry enough water for their crews? Would Lewis and Clark have made it to the Pacific if they had no fresh water along the way?

The answer is probably no, because water is just as precious to explorers as it is to everyone on Earth. Water is one of the most crucial provisions astronauts need to live and work in space, whether orbiting Earth, working at a lunar base or traveling to Mars. That's why NASA is following several different but complementary avenues at four agency centers to develop dependable ways of recycling water.

"Developing innovative life support technologies will reduce risks associated with human space exploration," said Eugene Trinh, director of the Human System Research and Technology Program at NASA Headquarters. "We are working to improve technology used onboard the International Space Station (ISS) and have several research projects under way for future missions to the moon and Mars."

ISS crewmembers must save as much water as possible. Each is allocated about two liters daily. They stretch the ration by collecting, cleaning and reusing wastewater, condensate in the air and urine. A new technology to improve recycling on the ISS is being developed by engineers at Hamilton Sundstrand Space Systems International, Inc., Windsor Locks, Conn., and researchers at NASA's Marshall Space Flight Center (MSFC), Huntsville, Ala. The Water Processor Assembly (WPA) will be the first major hardware delivery of the Regenerative Environmental Control Life Support System. The WPA and the Urine Processor Assembly make up the Water Recovery System (WRS), which feeds the oxygen generation system. These combined systems will support up to a seven-member crew.

"The water processing assembly can daily produce 35 gallons of potable recycled water," said Bob Bagdigian, MSFC Regenerative Environmental Control and Life Support System Project Manager. After the new systems are installed, annual delivered water to the ISS should decrease by approximately 15,960 pounds, about 1,600 gallons. The WPA is scheduled for delivery in 2008.

Water purity is also important. Chemical and microbial contaminants make it unappetizing or unhealthy, and it can clog complicated fluid systems. The Aerobic Rotational Membrane System (ARMS) research project at NASA's Kennedy Space Center (KSC), Fla., may help.

"We're trying to move toward a biological treatment method using bacteria to help cleanse the water," said Tony Rector, Dynamac Corporation bioprocess engineer at KSC. The KSC prototype shop fabricated a model of the system. It is being tested inside KSC's Space Life Sciences Laboratory, and Rector and colleagues designed it.

At Ames, a water recycler enabling reuse for three years without resupply is being developed on a timeline to fit into exploration plans, according to Ames scientist Michael Flynn. A preliminary engineering development unit can hourly recycle 13.2 pounds, about one gallon, of waste into drinkable water.

"If we were going to Mars tomorrow, this is the water treatment system astronauts might well use," Flynn said. He is developing it in cooperation with Water Reuse Technology, Inc., Garden Valley, Calif. "This unit can enable a six-person crew to shower, wash clothes and dishes, drink water and flush toilets over three years without resupply," Flynn said.

Engineers at NASA's Johnson Space Center (JSC), Houston, are developing technology to help astronauts live in space. They are studying biological water processors to minimize their size in space habitats. JSC microbiologist Leticia Vega describes her work as making biological water processors modular, so they can be easily removed and cleaned. Researchers are also identifying soaps that rapidly degrade at high concentrations. Cleansers, like shampoo and soap, affect the size of systems, because of the

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Multimedia group

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eras on board an Air Force KC-135 to document the atmospheric re-entry of the Genesis probe," he added.

"We've also been documenting key milestones of the SOFIA aircraft modification in Waco, Texas, including the installation of the main telescope mirror, the successful integration of mirror control software and installation of the new engines. We plan to document the telescope door installation and the first flight after the beginning of the year," Schilling stated.

Ames people who know of newsworthy subjects that could be taped to make video news files should contact Victoria Steiner at public affairs, phone: 4-0176 or Victoria.L.Steiner@nasa.gov.

Those persons who would like to request video documentation or production of a polished video should contact Ed Schilling by phone: 4-1307, or by e-mail: Edward.M.Schilling@nasa.gov.

BY JOHN BLUCK

PEP survey results available online

If you submitted a comment when you took the Performance Evaluation Profile (PEP) survey, did you wonder if anyone would read it and take note of your ideas? Read on to find the answer.

The Performance Evaluation Profile (PEP) survey was developed to help NASA analyze its safety and health programs. It evaluates both management and employee views of their safety and health programs with the questions corresponding to OSHA requirements. The PEP is administered agency wide and has been conducted each of the last six years here at Ames.

A sample consisting of one-third of the Center employees from each directorate participated. The Center had an overall score of 4.1 for employees and 4.0 for management based on a 5-point scale. A score of 4.0 or higher is considered a 'superior program.' It represents safety and health programs that have a planned strategy for continuous improvement and a goal of achieving an outstanding program level.

The survey results have been compiled for each directorate as well as centerwide results. By identifying potential weak areas, the organization or Center can assess their practices and determine the necessary corrective actions. A summary of the centerwide issues identified from the PEP survey can be found on the Voluntary Protection Program (VPP) Web page at http://q.arc.nasa.gov.

At the end of the survey, participants were invited to write in any comments they may have. Eight pages of comments were submitted. Those comments have been reviewed and responded to by various organizations. Responses are available for viewing on the VPP Web page.

NASA space act award -- over $12,000 awarded to Ames team

The Space Act Award program, which is coordinated through the Ames Technology Partnerships Division (Code EP) is designed to provide official recognition of those inventions and other scientific and technical contributions that have helped to achieve NASA's aeronautical, commercialization, and space goals, and to encourage the creation and reporting of future innovations. The Inventions and Contributions Board (ICB), funded by NASA Headquarters, is authorized to recommend the granting of these monetary awards to civil servants, contractors and other partners.

NASA photo by Dominic Hart

Space Act Award winners for the 4 Megapixel, High-Sensitivity Infrared Detector Array for Space Astronomy team. Left to right: Craig McCreight, NASA Ames; Bernard Rauscher of NASA Goddard Space Flight Center; Donald Hall of the University of Hawaii; Don Figer of the Space Telescope Science Institute; Ames Center Director G. Scott Hubbard; James Garnett of Rockwell Scientific Company; Markus Loose of Rockwell Scientific Company; Majid Zandian of Rockwell Scientific Company; and Shane Jacobson of the University of Hawaii.

The 4 Megapixel, High-Sensitivity Infrared Detector Array for Space Astronomy team recently received a Space Act Award for their work. The successful development of the detector was truly a mission (Near-IR instrument) enabling development for the mission of the agency and partners, the European Space Agency and Canadian Space Agency. It will also lead to many future applications in space science and ground-based astronomy.

This five-year activity provides an excellent example of what can be accomplished by teaming partners with the astronomical community and industry.

Honorees were Donald Figer, Space Telescope Science Institute; James Garnett, Rockwell Scientific Co.; Donald Hall, University of Hawaii; Shane Jacobson, University of Hawaii; Markus Loose, Rockwell Scientific Co.; Craig McCreight, NASA Ames, Code PMF; Bernard Rauscher, NASA Goddard Space Flight Center and Majid Zandian, Rockwell Scientific Co.

To obtain more information about the Space Act Award program, visit the ICB Web site http://icb.nasa.gov or contact the Ames Space Act Award Liaison officer Betsy Robinson (Code EP) Elizabeth.T.Robinson@nasa.gov.

All Space Act Awards should be coordinated through the Technology Partnerships Division.

Ames' artists to be featured

The Ames Research Center Kids Safety calendar is nearly ready for center-wide distribution.

The 2005 Safety and Health Calendar features artwork from 36 children.

Calendars will be printed and ready for centerwide distribution via your mail stop in mid-December.

All artists who submitted a picture for the calendar were recognized at an ice cream social on Dec. 16 in the Ames Café.

ACC safety awards ceremony held

In 2003, the Ames Contractor Council (ACC) initiated a new awards program to recognize contractors with the best safety practices at the Center. This year's second annual Contractor Council safety award recipients were: Elizabeth Mulleda (SecTek) for the Individual Award; Sierra Lobo for the Small Company Award; and JE Sverdrup for the Large Company Award.

Competition for the awards was strong, based on questionnaires submitted by the contractors that detailed their safety programs and low illness/injury rates during the last year. The questionnaires were scored objectively and the winners ranked in each of the three categories. Deputy Director Stan Newberry and Paul Kutler (CSC), the ACC's co-chairs, presented the awards at the October general session of the council.

The council is committed to assist Ames in providing world-class quality products and services to their customers that consistently meet or exceed all customer specifications and expectations for technical, schedule and cost performance for the overall success of the Ames.

Contractor members focus on developing closer working relationships between Ames and contractors and within the contractor community. They also facilitate communication between NASA and contractor managers.

In addition, the contractor members actively participate in the programs and activities supported by the council, focusing on specific activities of mutual benefit in support of Ames.

For more information about the ACC, visit the Internet at http://contractorcouncil.arc.nasa.gov/

BY CHRIS JOHNSON

Kaumeyer, senior contract manager at Ames, passes away

John F. Kaumeyer, Lockheed Martin science manager at NASA Ames, passed away on Nov. 17 at the age of 55 of heart failure. He served as the science manager on the Astrobiology and Space Research Programs and Projects contract, the Engineering and Technical Support contract and the Flight Payload Integration contracts. The programs are responsible for developing science requirements for space station life science research equipment, providing operations support for flight experiments, conducting life sciences research and life support technology development in support of the space station and shuttle programs.

John F. Kaumeyer

Kaumeyer was born in Ohio and grew up in Grand View Heights, a suburb of Columbus. After high school, he spent two years in the U.S. Marine Corps serving in Vietnam. Kaumeyer received a bachelors of science in biology from Ohio State and a Ph.D. in genetics from Indiana University. He spent five years doing post-doctoral research in molecular biology at Johns Hopkins University and the University of Pennsylvania. Kaumeyer moved to California in 1987 to work for Genentech, Inc. where he was responsible for leading a project to leverage relationships with outside university investigators for the purpose of testing new recombinant proteins for potential clinical indications.

Kaumeyer began working for Lockheed Martin in 1989 at Ames. As senior manager on various contracts, Kaumeyer was responsible for approximately 100 scientists, engineers and administrative staff who supported a number of technical areas at Ames in life sciences including the NASA Astrobiology Institute, the Space Station Biological Research Project, flight payload integration, gravitational biology research and astrobiology technology.

Under Kaumeyer's direction, his staff has contributed to the success of many payloads including GHCD, CNCR, PSE-01, SLS-1, PARE-1, IML-1, PHCF, SL-J, PSE-02, Cosmos 2229, PARE-2, PARE-3, SLS-2, Immune-1, PSE-04, IML-2, NIH-R1, NIH-R2, Immune-2, SLM-1 and Neurolab. He had exceptional experience in life sciences research and experimentation and, through his FPI assignments, was familiar with all aspects of human factors and associated life support necessities to sustain personnel in spaceflight and extravehicular activities. In addition, he was an active member of the Ames IACUC.

Kaumeyer understood the risks involved in developing experiments and ensuring the integrity of NASA science programs. He placed an emphasis on developing a full understanding of his customer's requirements. It was crucial for him to know what their goals were in order to ensure that his staff was properly focused on achieving those goals. Likewise, he made a special effort to reward, recognize, promote and advocate for employees who had done an excellent job. Kaumeyer was a respected member of the science community and had more than 25 years of experience in life sciences project management, new technology identification and transfer, scientific and laboratory research, and development and evaluation of flight and ground based hardware systems.

Kaumeyer met his wife, Joanne, on a Sierra Club backpacking trip in 1990 and they were married in 1992. With a special love for the outdoors, they enjoyed backpacking, hiking, camping, cross-country skiing and snow camping. As a wonderful stepfather, Kaumeyer was highly supportive of Eric and Sheila. Kaumeyer served as scoutmaster of Eric's Boy Scout troop for three years. Sheila's love of music was very important to him and he never missed a performance. Kaumeyer adored Lady, the family dog, very much appreciated Peet's coffee and frequently enjoyed a good beer at the end of the day. Golf was a game Kaumeyer not only played, but studied as well. He had a keen intellect and was forever reading or studying areas of interest to him. He was an avid listener to KQED Public Radio. He always had a home project going on and was a regular customer at Orchard Supply Hardware.

Kaumeyer wanted to be remembered for trips to the mountains, a laconic sense of humor, honesty and integrity, a sense of perspective and an ability to view the 'big picture.' He is survived by his wife Joanne, stepchildren Eric and Sheila, and a sister in the state of Washington. The family requests donations be made to the American Heart Association, the Sierra Club or KQED Public Radio. Kaumeyer will be greatly missed by his family, friends and colleagues.

BY SHIRLEY BURG

Official passport for NASA travel

NASA's International Travel Program requires civil servants on business travel to use an official passport rather than a tourist passport, in support of current reciprocal international policies. Official passports (and any required business visas) are provided free of charge to civil servants through the Ames Passport and Visa Office.

The Passport and Visa Office has moved. In an effort to centralize some of the stops associated with international travel, the Passport and Visa Office has been relocated to Building 15 to be close to both the Safeguards Office (foreign travel briefings) and the international travel coordinator's Office (principle gatekeeper).

Contact Karol Broussard at ext. 4-1722 or e-mail her at kbroussard@mail.arc.nasa.gov to schedule your passport and visa appointments.

If you have questions about Ames' international travel process, check the Web site at http://travel.arc.nasa.gov; contact the associate gatekeeper for your directorate (visit the Web at http://travel.arc.nasa.gov/gatekeepers.html); e-mail the Ames international travel coordinator (principle gatekeeper) at Maureen.C.Weller@nasa.gov; or call her at ext. 4-1955.

Former Ames employee William "Bill" Mersman dies

William A. Mersman died peacefully at Stanford Hospital on Sept. 8. "Bill," as he liked to be called, was born on April 3, 1914 in Saskatoon, Saskatchewan. His family moved to southern California when he was seven. He majored in math and physics at CalTech, where he won the CalTech Travel Prize and sailed to Europe by steamer through the Panama Canal in 1933. He earned his Ph.D. in math at CalTech in 1935.

William Mersman

Mersman's first teaching position was at Deep Springs, a two-year men's college in the Sierra Nevada. From 1939 to 1945, he taught math at California Agricultural College (now UC Davis); served on secret teams (during World War II) developing radar at Brown, MIT, and in England; and worked briefly in industry.

Mersman found his true calling and professional home as a research scientist at Ames, where he worked from 1947 until his retirement in 1974. As section head for Analog Computation in the Theoretical Aerodynamics Branch, he acquired and managed the operation of the first analog computer, used to study missile trajectories. Within a couple of years, the digital computation world had begun to unfold with the introduction of the IBM card-programmed calculator. This resulted in the formation of the Electronic Computing Machines Branch in 1953 with Mersman as chief.

It was in this environment that Mersman found his niche. Working with personnel from the wind tunnels and Center instrumentation staff, Mersman helped to establish the first automatic data acquisition and reduction program at Ames in 1955. He was responsible for the acquisition, installation and operation of all digital computational systems at the Center from 1952 to 1966. During this time, more than nine new digital computational systems were acquired, representing IBM, Honeywell and Burroughs. Each system significantly enhanced the research and data acquisition and reduction capabilities at Ames, while establishing sophisticated operational and user-friendly environments. Mersman's skills at numerical analysis and mathematics were invaluable as he developed computational techniques for digital computers.

With the advent of the space race, requirements for studying vehicle orbits, ablation rates and re-entry problems became key issues for the Center. Mersman subsequently found a new arena for his skills as he broke ground in problem formulation for orbital theory and celestial mechanics. Research scientists were grappling with the problems of space research and flight, as well as the opportunities that digital computation presented. Mersman became their primary consultant as he worked with them to optimize their equations for computation. His contributions were noted in many joint publications with those research scientists.

Mersman's work won him international recognition as well. In the 1950s and '60s, he presented papers on orbital theory and celestial mechanics in Amsterdam, Rio de Janeiro and Sao Paolo. His studies made possible the prediction of satellite orbits.

Although Mersman was retired for 30 years before his death, much of his work formed the foundation for the computational activity of Ames. He was a critical resource for the Center when the page was blank, and his efforts were an early force in helping Ames become a leading computational center in the nation, as demonstrated by the Office of Information Sciences and Technology.

The pioneer in celestial mechanics spent his retirement years walking all the trails in the Bay Area hills and shorelines. For many years, he and his wife also took annual hiking trips to the British Isles, Switzerland and Austria.

Mersman is survived by his wife, Evelyn, of Pilgrim Haven in Los Altos; his daughters, Patricia Mersman and Megan Mersman-Black; Megan's sons, Theo and Doug Black; and nephews, James Mersman and Ross Mersman, Jr. He will long be remembered for his crusty manner, his ever-present sense of humor, and his generous spirit.

'Women of Color' recognizes Tianna Shaw

Tianna Shaw of the Payload and Facilities Engineering Branch (Code SLE) was recently honored as the 'Young Professional for 2004' at the National Women of Color Technology Awards conference. The conference, held in October in Atlanta, Ga., is a yearly event designed to encourage women of color to pursue excellence in technology. Many past and current recipients of Women of Color Technology Awards are top managers and key decision makers for Fortune 500 companies.

The selection of Shaw for this award is a tribute to her professional development and to her accomplishments at NASA Ames. Shaw, of Native American descent, has been the manager of the Life Sciences Division's (SL's) Acceleration Facilities since August 1999. Along with a team of civil servants and contractors, she supports extramural and intramural hypergravity research using Code SL's array of centrifuges and linear sleds. Forty-seven peer-reviewed Life Sciences publications have been associated with this work during the past five years.

BY JOHN CONNOLLY

Tianna Shaw seen here with her husband, Ross, during the recent National Women of Color Technology Awards Conference held in October in Atlanta, Ga. Shaw was presented with the '2004 Young Professional Award' during a breakfast ceremony.

NASA issues new diversity and equal opportunity policy

The Office of Diversity and Equal Opportunity has issued policy guidelines to NASA Headquarters and NASA centers regarding two important issues affecting managers, supervisors and employees -- sexual harassment in the NASA workplace and management participation in the Alternative Dispute Resolution process.

With a recently issued policy statement on sexual harassment, NASA is providing important information on the rights and responsibilities of managers, supervisors and employees with a recently issued policy statement on sexual harassment. The statement reaffirms NASA's long-standing commitment to ensure against sexual or any other form of discriminatory harassment in the NASA workplace. NASA's Assistant Administrator for Diversity and Equal Opportunity Dr. Dorothy Hayden-Watkins has issued guidelines to the field centers for the implementation of this policy, NPD 3713.2H, which is available online in NODIS on the NODIS library at http://nodis3.gsfc.nasa.gov/displayDir.cfm?Internal_ID=N_PD_3713_002H_&page_name=main

NASA has taken a strong leadership position on the use of Alternative Dispute Resolution (ADR) in a policy memorandum issued by the deputy administrator. ADR is a mediation program in which managers, supervisors and employees have the opportunity to resolve disputes efficiently and expeditiously. The new policy makes management participation in Alternative Dispute Resolution mandatory in equal opportunity disputes, when the employee elects ADR. Hayden-Watkins has also issued guidelines on this policy in NPD 3713.6N, which is available online in the NODIS library at http://nodis3.gsfc.nasa.gov/displayDir.cfm?Internal_ID=N_PD_3713_006N_&page_name=main

Ames financial processes streamlined for more efficiency

From the previous issue of the IFMP newsletter the 'Scene,' people know that there are process re-engineering teams either in place or being formulated to streamline and improve the Center's financial processes that are involved in budget formulation and budget execution. These teams will be kicked off in a staggered fashion to allow for the maximum amount of participation from people around the Center and will continue through the holidays and into January.

In December, several events were held in response to comments received through sponsorship and hallway discussions. The first of the events was an 'all-hands' Code C meeting held on Dec. 7 to provide an opportunity for all Code C employees, both those that are centralized and those located in the field, to hear what's happening with the realignment and next steps from the CFO, Tom Moyles. Following closely on the heels of the all hands, was the annual Code C holiday party scheduled Dec. 8 in the Building 3 ballroom. This was not only a celebration of the year, but a chance to bring together the resources community without the expectation of talking about work. It was an opportunity to get to know colleagues in the CFO organization in a festive and relaxed atmosphere.

There have been a plethora of great questions being asked over the past several months about the realignment activity and the impacts that could potentially be felt across the resources community and the affected organizations as well. These questions have been compiled through a series of interviews, and answers have been developed that accurately reflect the intent of some of the actions the realignment has generated. As a result, these frequently asked questions (FAQs) will be posted in the immediate future as a link to the existing CFO Web site located at http://cfo.arc.nasa.gov. A listing of existing process re-engineering teams, the executive sponsors for the teams, as well as current membership can also be found at this link so you know who to go to if you are interested in participating in this change effort and would like to provide the benefit of your thinking to one or more of the processes.

If you have any further questions or need some clarity, call Deb Feng at ext. 4-0256 for more information or to schedule a meeting time for your organization.

Smithsonian curator gives talk at Ames

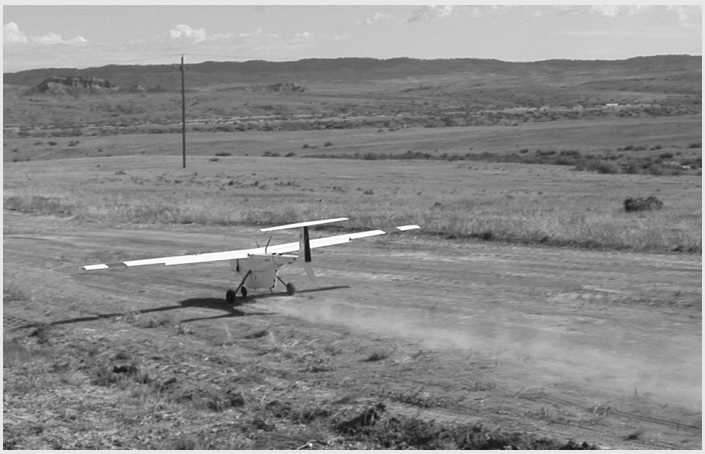
NASA Ames photo by Dominic Hart

Paul Ceruzzi, curator of information technologies at the Smithsonian's National Air and Space Museum, presented his work on 'Internet Alley: High Techology in Northern Virginia, 1957-2000' at Ames in November. His paper can be viewed at: http://archives.arc.nasa.gov/upcomevents.html

NASA using unpiloted aerial vehicles to detect gas leaks

NASA scientists are testing the use of unpiloted aerial vehicles (UAV) to detect leaks in the nation's natural gas system before accidents occur.

Scientists from Ames' Ecosystem Science and Technology Branch and the UAV Applications Center, in partnership with the Lawrence Livermore National Laboratory, Livermore, Calif., recently participated in a field test at the Rocky Mountain Oilfield Testing Center (RMOTC), located 35 miles north of Casper, Wyo. During the Sept. 12-17 test, supported by the U.S. Department of Energy, a controlled underground gas pipeline leak was conducted to evaluate a wide range of leak detection technologies.



NASA photo by Duane Allen

The APV-3 unpiloted aerial vehicle landing after a flight in Casper, Wyo. Kelly Carter is the launch and recovery pilot and operates the remote control. Rich Spicer, from RnR (Richard Spicer and Richard Tiltman company) in Milpitas, is the builder of the aircraft.

"This demonstration mission is part of a bigger picture for oilfield testing by identifying new and emerging technologies that can help in leak identification," said Randy Berthold of Ames' Ecosystem Science and Technology Branch. "These types of collaborations and demonstrations will help the country provide for a more stable monitoring of natural resources to protect the environment and the nation's security," he added.

The science research team used an APV-3 UAV fitted with miniaturized sensors to collect imagery along a section of the pipeline. The APV-3 is a small aircraft capable of autonomous flight, with a wingspan of 12 feet, a takeoff weight of 60 pounds and a cruise speed of 55 miles per hour. NASA provided a multi-sensor payload, including a high-resolution digital camera, a low-resolution thermal infrared camera and a hyperspectral sensor capable of identifying subtle changes in the health of vegetative cover. The data were provided to the laboratory's research scientists for interpretation.

The Lawrence Livermore Laboratory has a mandate to develop monitoring and detection technologies for the national energy infrastructure. The laboratory's research scientists are developing a methodology for detecting the effects of long-term effects of methane on the natural vegetation. Using acquired hyperspectral imagery, they are investigating the reflectance spectra of the vegetation in an effort to detect methane leaks using stressed plants as indicators.

"It's very satisfying to contribute to technology developments that increase the security of our resources," said Stan Herwitz, director of the UAV Applications Center in the NASA Research Park, who managed the UAV deployment to Wyoming. Prior to deployment, the UAV collaborative obtained authorization from the Federal Aviation Administration to conduct the UAV flight in the National Airspace System. The one and a half-hour mission was the first by a UAV in the airspace over the oilfield-testing center. The flight demonstrated a new capability for take-off and landing on a graded dirt surface.

Established by the U.S. Department of Energy, the Rocky Mountain Oilfield Testing Center operates the Teapot Dome Oil Field and is the most comprehensive test site in the U.S. for field-testing of upstream petroleum and environmental products. The testing center works with the nation's petroleum industry to improve domestic oil and gas production by field-testing new technology, evaluating new equipment and demonstrating new processes for exploration, leak detection, oil recovery, pipeline security, and spill responses.

For further information visit: http://www.netl.doe.gov/scngo/Natural%20Gas/index.html

BY JENNIFER KREMER

'Yo - Yo' (YO-3A aircraft) returns to Ames

NASA photo by John Pierre Wiens

This quiet, slow research aircraft has returned to its NASA Ames and is available for platform research programs.

NASA computer program is 'hot download' on Internet

A NASA computer program that is able to zoom in from a global view of Earth to reveal regional 3D pictures of climate, elevation, vegetation and cities by population, has become a 'hot download' on the Internet.

Hurrican Kate in the Atlantic Ocean shown on Oct. 4, 2003.

Available free of charge, the PC-compatible program proved so popular in its first week on the Web, that 100,000 Internet users downloaded 'World Wind.' The NASA Landsat satellite image and elevation data server computer at the Jet Propulsion Laboratory, Pasadena, Calif., received more than 1,000 requests for data per second from users seeking to visualize some of Earth's more interesting events, including wildfires and volcanoes, from the millions of images acquired by Landsat satellites during more than 30 years of flight.

"Our servers are on fire," said Patrick Hogan, NASA's Learning Technologies program manager at NASA Ames. "The software program will take you anywhere on the planet - inside Yosemite Valley, through the Grand Canyon or over the Himalayas," explained Hogan, who is in charge of World Wind's development.

People can 'virtually explore the world' using their personal computers equipped with the new program. NASA World Wind is delivering terabytes of global NASA satellite data that are a result of years of daily observations of precipitation, temperature, barometric pressure and much more.

Computer users from more than 100 nations have acquired the free World Wind program via the Internet, though most users are from the United States. "NASA is working to establish more server capability to handle the heavy demand for data by users of the NASA World Wind program," Hogan said.

In addition to NASA data, World Wind is able to access public domain United States Geological Survey (USGS) aerial photography and topographic maps. There are an estimated 10,000 daily users of World Wind. To download World Wind, visit http://learn.arc.nasa.gov/worldwind/

Later this month, the NASA Learning Technologies program also will establish an international agreement to support use of the NASA World Wind software by schools and students from other countries.

"An International Space Act Agreement will be signed between Australia, the United Kingdom and NASA to develop a 10-week, 10th grade curriculum on the 'Origin of Life' based on World Wind and other NASA Learning Technology tools," Hogan said. "This will involve full-time teachers from the two countries, several astrobiology research scientists, two university instructional technology departments, two governments, the Australian Center for Astrobiology, the NASA Astrobiology Institute and the NASA Learning Technologies program," Hogan added.

"This International Space Act Agreement was signed in October, by Bob Carr, the premier of New South Wales, Neal Newman, the NASA attaché to Australia, and other dignitaries from the U.K.," Hogan explained.

BY JOHN BLUCK

Acquisition office recognized

NASA photo by Dominic Hart

NASA Ames recipients of the NASA Headquarters Acquisition Improvement Award (nominated by Glenn Research Center) for their work on the ODIN contract, from left to right: Barbara Young (Rhonda Baker accepting); Christine Munroe; Tandy Davis; Raymond G O'Brian III (Karen Petraska accepting); with Ames Center Director G. Scott Hubbard who presented the award to them in November.

The Headquarters Office of Procurement recognized Ray O'Brien (Code JTC), Tandy Daras (Code JTC), Christine Munroe (Code JAC), and Barbara Young (Code JAC, now retired) with one of their semi-annual Acquisition Improvement Awards. Glenn Research Center nominated these four Ames employees for their superior effort on the Aerospace Research Mission Directorate's Outsourcing Desktop Initiative for NASA (ODIN) Delivery Order 2 procurement team. Ames Center Director G. Scott Hubbard specifically noted that the nomination recognized the team for their innovative techniques, Mission Directorate focus, significant time commitment, and support for a One-NASA Initiative. Hubbard thanked them for their hard work and endorsed the significant merit that Glenn Research Center bestowed upon the four Ames employees. The recently awarded ODIN Delivery Order will provide Ames (and Dryden, Glenn and Langley) with comprehensive, end-to-end desktop, server, and intra-center communication services.

BY GENE MOSES

Ames Contractor Council 2004 Excellence awards given

The Ames Contractor Council (ACC) held its 16th annual awards ceremony in November in the Exploration Center Lecture Hall (Bldg. 943).

The ceremony began with a welcome by the 2004 ACC Awards Chair, Doreen Cohen (the Planners Collaborative site manager). The council's mission is to improve productivity and enhance the quality of contractor services and products on site at Ames.

The awards chair introduced the ACC Co-Chair Paul Kutler, who shared highlights of ACC contributions to the Center this year. Highlights included sponsorship of a special reception in June for Center management to mix and mingle with company representatives who support contracts here at Ames. Other highlights included sponsorship of a fund-raising golf tournament and a new educational outreach program.

Kutler then introduced the ACC NASA co-chair and Deputy Center Director, Stan Newberry, who expressed appreciation for the support of contractors at Ames. Newberry also introduced a video clip featuring Ames Center Director, G. Scott Hubbard, who said that contractors are an integral part of the work here at Ames.

This year, the ACC recognized 16 individuals and 16 teams nominated by their companies for the outstanding contributions they have made in support of NASA's mission. Each individual and each team was represented by a PowerPoint slide, providing a very visual depiction of everyone's contributions.

NASA photo by Tom Trower

The ACC team award went to Advanced Management Technology, Inc./Computer Sciences Corp. and their NAS security recovery team. The team members are Bill Arasin, Avnish Bhatnagar, Nichole Boscia, Chris Buchanan, John Buchanan, Matt Cary, Deryl Castellano, Davin Chan, Johnny Chang, Sherry Chang, Frank Cianci, Christine Cortez, Liz Cox, Mike DeFrenza, Don George, Chris Grimes, Chris Hamilton, Chris Keller, Ernst Kimler, Mi Young Koo, Veronica Law, Diane Llavore, Hoan Mai, Andy Meyer, Heather Mitchell, Jason Monroe, Iain Morgan, Terry Nelson, Chuck Niggley, John Pandori, Cathy Parks, Ron Pesta, Alan Powers, Jamie Richardson, Dave Robertson, Frank Sabadin, Chris Shaw, Derek Shaw, Donna Souza, Ryan Spaulding, Todd Welch, Mindy Wilson, Herbert Yeung, SGI; Scott Emery, QSS Group, Inc.; Alan Bishoff, John Hardman, Lockheed Martin; Mark Erdos, Education Associates; Craig Meakin, FCCD; Ansel Sermersheim, Lisa Settle and Lisa Yeung
The team's nomination read "For extraordinary support rebuilding hundreds of systems, designing, implementing and managing multiple networks with increased security measures due to the security compromise at the NAS."

Ames Systems Management procedures explained

The Ames Systems Management Office (SMO) was established by the center director to improve the effectiveness and efficiency of the Center's projects. Since this time, the SMO has interacted with many projects and has documented numerous 'lessons learned' to share with the rest of the Center.

The following is a summary of a lesson learned which can be seen in its entirety on the SMO's Web site located at http://smo.arc.nasa.gov/.

Adopting industry business practices, over those of the government, where they have proven successful, is cost effective and conducive to early problem resolution and ultimate project success.

The project's contractor used an 'integrated product development' (IPD) process to successfully design and develop their deliverables. The IPDs which used collocated, small and select teams to implement the processes were able to perform rapid prototype development and solve problems before they impacted the schedule and resulted in rework. The IPD design and development processes included participation by specialists and experts covering the full life-cycle of their deliverables including: design and engineering, maintenance, flight operations, software development and software/hardware integration. However, while the IPD process worked well in the design and manufacturing of the test vehicles, there was not a clear transition into the flight test phase (the only phase not having adequate representation on the IPD).

The IPD process allowed the project to optimize the use of its resources and resulted in early problem resolution, less rework due to faulty or misunderstood design requirements, greater workforce motivation and enhanced project tracking and control. The project would also have benefited by providing a greater degree of liaison between the development and flight test sites to understand and integrate the business practices and procedures peculiar to each.

Recommended actions to consider include an 'IPD-type' design and development approach for projects that are collocated, small and human resource limited. Also, if the project moves from one location to another during its life cycle, provide early and direct liaison with these other locales to integrate and understand their processes, procedures, and cultures to ensure an effective and efficient IPD transition, especially when the new environment has a strong culture such as in flight test.

Former Ames employee, William "Bill" Morgan, passes on

William "Bill" John Morgan, Jr. died from a stroke on Oct. 20 at Vasona Creek in Los Gatos. He was 84.

Born on July 20, 1920, in Ideal, South Dakota, Morgan worked on the family farm until he was 21. Morgan then worked for Boeing Aircraft until WWII needed his services in the United States Navy in 1942. From 1946 through 1947, Morgan worked at the Alameda Naval Air Station and then went back to his roots and returned to farming and implement repairs in his hometown of Presho, S.D. In 1950, Morgan returned to the Bay Area and worked for the San Francisco Naval Shipyard. Finally, in 1955 Morgan went to work for Ames Laboratory at Moffett Field which would later become NASA Ames Research Center. Morgan retired from NASA in 1976.

Morgan was a member of the Mountain View Lodge of Free and Accepted Masons of California, the Eagles Lodge and the Elk Lodge.

Morgan was preceded in death by his wife, Dorothy Jane who passed away in 1995. They were married for 49 years. Morgan was also preceded in death by his son, Michael, who died from meningitis as an infant, his daughter, Barbara German (1999), his son-in-law, Dick German (2004) and his sister, Kathryn Jennings (2000).

Morgan is survived by his daughter, Shirley Maul of Boise, Idaho; his sisters, Gladys Stanley of Lake Havasu, Ariz.; and Lila Sanders of Hayward, Calif. Morgan had five grandchildren and four great-grandchildren.

Services were held at the Chapel of the Chimes in Hayward. In lieu of flowers, the family requests that you take a friend to dinner. Morgan was always taking someone to dinner.

NASA research a hit at annual supercomputing conference

Exciting new research and technology from five NASA centers drew crowds of interested participants at SC2004, the 16th annual Supercomputing Conference held in Pittsburgh, Pa., in November.

During the conference, the agency shared its recent success with the 10,240-processor SGI Altix supercomputer, Columbia, which was planned and constructed at the NASA Advanced Supercomputing (NAS) facility at Ames.

"SC2004 was the real unveiling of the power of the SGI and Intel-based system [Columbia] that NASA and the contractor team developed in just four short months. It was really gratifying to see people appreciating that; although we were excited about our high ranking on the TOP500 list, we were most proud of the 600-plus users, and the amazing, almost instant impact the system is having on NASA missions," explained NAS Division Chief Walt Brooks.

Columbia's performance garnered the number two spot on the TOP500 supercomputers list—results were announced at the conference. Surpassing Japan's Earth Simulator after its two-year stint as the world's fastest computer, the U.S. now holds the number one and two spots on the coveted list—IBM's Blue Gene system, slated for delivery at Lawrence Livermore National Labs, captured the number one spot.

NASA photo by David Robertson

NASA's 1,200 square-foot booth at SC2004 presented research from five NASA centers.

Among the 35 demonstrations and presentations given at NASA's 1,200 square-foot research booth (representing NASA Ames, Langley, Goddard, Glenn, and JPL) was information on the X-43A scramjet-powered vehicle, which holds the Guinness World Record for the fastest air-breathing aircraft at Mach 10. In addition, advances in the emerging field of nanophase thermal and structural composite materials was presented. These materials are expected to revolutionize the capabilities of virtually every system for future robotic and human exploration missions of the moon and Mars.

Also attracting the attention of many conference attendees was the "mini hyperwall," a three-foot-by-three-foot array of liquid crystal displays, driven by a Beowulf-style cluster. Using applications from NASA's four mission directorates (science, aeronautics research, exploration systems and space operations), scientific visualization experts from the NAS Division took advantage of the mini hyperwall's 17 million pixels to explain Earth and ocean models, Mars terrain data captured by the Mars Exploration Rovers, black hole and neutron star models, and the astounding engineering being performed in support of NASA's return-to-flight efforts.

In addition to the booth demonstrations, NASA was involved in several birds-of-a-feather (BOF) sessions and a keynote address, which were all heavily attended by conference participants and the media. Brooks and NAS Terascale Applications Group lead Jim Taft spoke at a Columbia BOF session. Brooks also chaired a BOF on SGI user experiences and delivered the keynote address at an SGI Innovators Breakfast.

"This year's conference marked NASA's return to a true leadership position in numerical simulation technology. Developing a highly scalable single-system image, shared memory architecture has been the culmination of work over the last five years, and demonstrates it can function as one of the world's most powerful supercomputing systems," Brooks said.

BY HOLLY A. AMUNDSON

Events Calendar

Ames Amateur Radio Club, third Thursday of each month, 12 noon, N-T28 (across from N-255). POC: Michael Wright, KG6BFK, at ext. 4-6262.

Ames Ballroom Dance Club. Classes on Tuesdays. Beginning classes meet at 5:15 p.m. Higher-level class meets at 5:50 p.m. Held in Bldg. 944, the Rec. Center. POC: Helen Hwang at helen.hwang@nasa.gov, ext. 4-1368.

Ames Bowling League, Palo Alto Bowl on Tuesday nights. Seeking full-time bowlers and substitutes. Questions to sign up: Mike Liu at ext. 4-1132.

Ames Child Care Center Board of Directors Mtg, every other Thursday (check Web site for meeting dates: http://accc.arc.nasa.gov), 12 noon to 1:30 p.m., N-210, Rm. 205. POC: Cheryl Quinn, ext 4-5793.

Ames Contractor Council Mtg, first Wednesday each month, 11 a.m., N-200, Comm. Rm. POC: Anita Fogtman, ext. 4-4432.

Ames Diabetics (AAD), 1st & 3rd Weds, 12 noon to 1 p.m., at Ames Mega Bites, Sun room. Support group discusses news affecting diabetics. POC: Bob Mohlenhoff, ext. 4-2523/e-mail at: bmohlenhoff@mail.arc.nasa.gov.

Ames Federal Employees Union (AFEU) Mtg, third Wednesday of ea. month, 12 p.m. to 1 p.m., Bldg. 221, Rm 104. Guests welcome. Info at: http://www.afeu.org. POC: Marianne Mosher, ext. 4-4055.

Ames Mac Support Group Mtg, third Tuesday of ea. month, 11:30 a.m.to 1 p.m., Bldg. N262, Rm 180. POC: Julie ext. 4-4694 or Tony ext. 4-0340.

Ames Model Aircraft Club, flying radio-controlled aircraft at the north end of Parsons Ave. on weekend mornings. POC: Mark Sumich, ext. 4-6193.

Ames Sailing Club Mtg, second Thursday of ea. month (Feb through Nov), from 11.30 a.m. -1 p.m. in the special events room in the Ames Visitor Center in N-223. All are welcome. POC: Jeff Smith, ext. 4-2586.

Environmental, Health and Safety Information Forum, first Thursday of each month, 8:30 a.m. to 9:30 a.m., Bldg. 221/Rm 155. URL: http://q.arc.nasa.gov/qe/events/EHSseries/ POC: Stacy St. Louis at ext. 4-6810.

The Hispanic Advisory Committee for Excellence HACE Mtg, first Thurs of month in N255 room 101C from 11:45 a.m. to 12:45 p.m. POC: Eric Kristich at ext. 4-5137 and Mark Leon at ext. 4-6498.

Jetstream Toastmasters, Mondays, 12 p.m. to 1 p.m., N-269/Rm.179. POC: Becky Brondos at ext. 4-1959, bbrondos@mail.arc.nasa.gov or Bob Hilton at ext. 4-1500, bhilton@mail.arc.nasa.gov.

Nat'l Association of Retired Federal Employees, (NARFE). Former and current federal employees. Your only contact with Congress. Join to protect your federal retirement. Chptr #50 will then meet on the first Fri. of each month at HomeTown Buffet, 2670 El Camino (at Kiely), S. Clara, 11 a.m. lunch. POC Earl Keener (408) 241-4459 or NARFE 1-800-627-3394.

Native American Advisory Committee Mtg, fourth Tues each month, 12 noon to 1 p.m., Bldg. 19, Rm 1096. POC: Mike Liu at ext. 4-1132.

Silicon Valley Astronomy Lecture Series

Astronomer Jeff Cuzzi of NASA Ames will give a non-technical, illustrated talk on 'Exploring the Lord of the Rings: Cassini at Saturn.'

Date: Wednesday, Jan. 26, 2005
Time: 7 p.m.
Place: Smithwick Theater,
Foothill College,
El Monte Road and
Freeway 280
Los Altos Hills, Calif.

The event is free and open to the public. Parking on campus costs $2. For more information, you can call the series hotline at (650) 949-7888.

After a seven-year journey, the Cassini spacecraft arrived at Saturn in July 2004, to begin a four-year tour of the planet, its icy moons and its vast ring system. In January, a probe from Cassini called Huygens will explore the haze-shrouded giant moon called Titan (the only moon in the solar system to have a thick atmosphere.)

Cuzzi, one of the world's experts on ring systems around planets, will describe the Cassini-Huygens spacecraft and plans for this fascinating mission.

He will highlight the most exciting results from the first few months of Saturn system exploration, with an emphasis on what we are learning about the complex structure and composition of Saturn's ring system and how such a dramatic set of rings may have originated.

Cuzzi is a research scientist in the Space Science Division at Ames and serves as the interdisciplinary scientist for rings and dust on the Cassini-Huygens.

He was a 'ringleader' in planning all the ring images taken at Saturn, Uranus, and Neptune by the Voyager spacecraft in the 1980s. Among his other research interests, he studies the formation of the first large objects during the birth of our solar system.

No background in science is required for this talk, which will interest everyone who enjoys the latest news of exploration at the frontiers of astronomy.

The event is co-sponsored by NASA Ames; the Foothill College Astronomy Program; the SETI Institute and the Astronomical Society of the Pacific.

Ames' role

continued from page 3

tomation sciences for airspace operation concepts and tools.

Noting that Ames is "grounded in Silicon Valley," Hubbard said there is a strong emphasis on innovative partnerships, such as the University Affiliated Research Center with the University of California and NASA Research Park. He said the Center's core competencies serve the science and education communities, as well as the general public, and that Ames employs a multidisciplinary approach linking scientists, engineers and technologists.

"Ames' award-winning NASA Research Park and University Affiliated Research Center provide a portal to the best technology region and public university system in the world," he said.

He said that the Center's last decade of programmatic and technical transformation is ongoing to meet the needs of the Vision for Space Exploration and that Ames' competencies are "on the critical path to enable NASA's goals and objectives."

BY MIKE MEWHINNEY AND JOHN BLUCK

Ames Classifieds

Ads for the next issue should be sent to *astrogram@mail.arc.nasa.gov* and must be resubmitted for each issue. Ads must involve personal needs or items; (no commercial/third-party ads) and will run on a space-available basis only. First-time ads are given priority. Ads must include home phone numbers; Ames extensions and email addresses will be accepted for carpool and lost and found ads only. Due to the volume of material received, we are unable to verify the accuracy of the statements made in the ads. Caveat emptor!

Housing

Studio cottage, $750/month (utilities included). Private and detached in back of front home. Very central and easily accessible area near Good Samaritan Hospital. Easy access to 17/880 and 85. No laundry facilities, however, laundry mat is the street. Perfect for single person. NS, female preferred. Avail. Jan. 15, 2005. Drive by, or call (408) 358-5865.

Transportation

'79 Volvo 242, 2 dr, brick red in color, volvo w/stndrd 4 spd, sun-rf. About 128K mls, in decent shape; very reliable w/some modificatins: Boge gas struts and lowering springs, after market 15" mag wheels, Blaupunkt stereo (am/fm, cass.) w/six spker system. Recent clutch replacement. $900 or B/O. Kevin (408) 723-2115.

'99 TOYOTA CAMRY, 75K mi, 33mpg, air bags, ac, ps, tilt, p/windows, p/mirrors, Excellent Condition, needs no work, very clean, Pioneer Audio CD, $8,200, 831-630-0716, ex.4-1070 Pictures available at: http://webpages.charter.net/inert/Camry

Miscellaneous

The Ames Cat Network needs help finding homes for cats trapped at Moffett. They range from feral to abandoned/lost pets. Tested, altered and inoculated. Call Iris at ext. 4-5824 if you or someone you know are interested in fostering or adopting a cat.

1.05 carat diamond solitaire ring for sale at $8,000, orig. price is $10,000. VS clarity and custom made with a 18kt solid gold mount. Jomarie at (408) 921-9501 after 6:00 p.m.

Exchange Information

Information about products, services and opportunities provided to the employee and contractor community by the Ames Exchange Council. Visit the web site at: http://exchange.arc.nasa.gov

Beyond Galileo N-235 (8 a.m. to 2 p.m.) ext. 4-6873

Ask about NASA customized gifts for special occasions. Make your reservations for Chase Park

Mega Bites N-235 (6 a.m. to 2 p.m.) ext. 4-5969

See daily menu at: http://exchange.arc.nasa.gov

Visitor Center Gift Shop N-943 (10 a.m. to 4:00 p.m.) ext. 4-5412

NASA logo merchandise, souvenirs, toys, gifts and educational items.

Tickets, etc...(N-235, 8 a.m. to 2 p.m.) ext. 4-6873

Check web site for discounts to local attractions, http://exchange.arc.nasa.gov and click on tickets.

NASA Lodge (N-19) 603-7100

Open 7 days a week, 7:00 a.m. to 10 p.m. Rates from $40 - $50.

Vacation Opportunities

Lake Tahoe-Squaw Valley Townhse, 3bd/2ba, View of slopes, close to lifts. Per night: $250, two night minimum. Includes linens, cleaning, propane fireplace, fully equipped. Call (650) 968-4155, DBMcKellar@aol.com

South Lake Tahoe cottage w/wood fireplace, hot tub. Rates $50 to $130 per night. Call (650) 967-7659 or (650) 704-7732.

Vacation rental, Bass Lake, 4 mls south of Yosemite. 3bd/1.5 ba, TV, VCR, MW, frplc, BBQ, priv. boat dock. Sleeps 8. $1,050/wk. Call (559) 642-3600 or (650) 390-9668.

Big Sur vacation rental, secluded 4bd/2ba house in canyon setting. Fully eqpd kitchen. Access to priv. beach. Tub in patio gdn. Halfway between Carmel and Big Sur. $175/night for 2; $225 for 4 and $250 for more, plus $150 cleaning dep. Call (650) 328-4427.

Tahoe Donner vacation home, 2 bd/2ba. trees, deck. Access to pools, spa, golf, horseback riding, $280 wkend, $650 week. Call (408) 739-9134.

Pine Mountain Lake vacation home. Access to golf, tennis, lake, swimming, horseback riding, walk to beach. Three bedrooms/sleeps 10. $100/night. Call (408) 799-4052 or (831) 623-4054.

Incline Village: Forest Pines, Lake Tahoe condo, 3 bd/2ba, sleeps 8. Fireplace, TV/VCR/DVD, MW, W/D, jacuzzi, sauna, pool. Walk to Lake, close to ski areas. Visit Web page for pictures: http://www.ACruiseStore.com. $120/night low season, $155/night high season (holidays higher) plus $156 cleaning fee and 12% Nevada room tax. Charlie (650) 355-1873.

Disneyland area vacation rental home, 2 bd/1ba. Nearing completion completely remodeled w/new furniture. Sleeps 6 (queen bed, bunk beds, sleeper sofa). Air hockey and football tables. Introductory rate $600/wk, once completed rate will be $1000/wk. Security deposit and $100 cleaning fee required. Call (925) 846-2781.

Ski Park City Utah, NASA Ski Week XIV, Feb 5 - 12, 2005. Space limited. E-mail Steve at e-mail exnasa@sbcglobal.net or call (408) 432-0135.

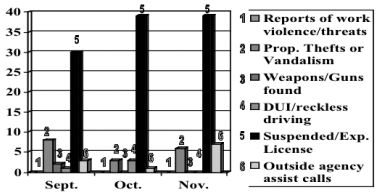
New York, 5th Ave. One fully furnished bedroom in 24 hour security bldg. overlooking Washington Square Park, $1,000/wk or $3,000/mo. negotiable. Call (650) 349-0238.

Paris/France: Fully furnished studio, 5th Arr, Latin Quarter, Notre Dame and Ile-St. Louis., $1,400/wk. negotiable. Call (650) 349-0238.

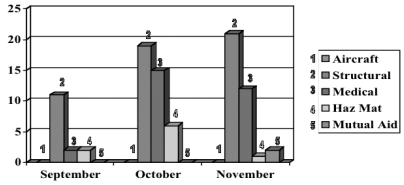
Protective Services monthly activity

A statistical summary of activities of the Protective Services Division's Security/Law Enforcement and Fire Protection Services units for the month of November 2004 is shown below.

Security/Law Enforcement Activity



Fire Protection Activity



Safety forum set

The NASA Ames Environmental Services Division will hold an environmental health and safety forum, to cover the topic of the drinking water program at Ames.

The forum will be held on Thursday, Jan. 6, from 8:30 a.m. to 9:30 a.m. in Bldg. 221, Room 155.The presenter will be Phil Ting, an environmental compliance specialist, ISSi. All are welcome to attend.

Ames emergency announcements

To hear the centerwide status recording, call (650) 604-9999 for information announcements and emergency instructions for Ames employees. You can also listen to 1700 KHz AM radio for the same information.

Safety Data

	Civil Servants	Contractors
Not recordable first aid cases	0	1
Recordable no lost time cases	0	1
Lost time cases*	0	0
Restricted duty days	0	0
Lost work days	0	0

Data above is as of 11/29/04. May be subject to slight adjustment in the event of a new case or new information regarding an existing case.

Note: Under new OSHA rules, lost time is defined as lost work days, restricted duty or job transfer.

Sitting Bull's grandson speaks at Ames

NASA photo by Tom Trower

Ronald Mc Neil (Ron His Horse Is Thunder) speaks recently at NASA Ames in honor of American Indian/Alasks Native Heritage Month.

Astronaut class of 2004 visits Ames

NASA photo by Dominic Hart

The Astronaut class of 2004 visited Ames in November. Here they are seen in the Jack Boyd Committee room, meeting with Ames Center Director G. Scott Hubbard. Later, they toured Ames' arc jets, FutureFlight Central, various nano and IT research labs and the Center's flight simulators.

Water recycling

continued from page 5

time it takes for them to break down. Researchers are studying ways of optimizing size of ion exchange beds used for the final purification of water.

Water recycling technologies developed by NASA will undergo combined water recovery systems testing at JSC to meet exploration timelines. Many of these recycling technologies may have Earth-based uses. NASA is working with the Expeditionary Unit Water Purification Program of the U.S. Office of Naval Research and Bureau of Reclamation to explore ways to use recycling in remote locations.

For information about the Environmental Control and Life Support System, visit: http://www1.msfc.nasa.gov/NEWSROOM/background/facts/eclss.pdf

For ARMS images, visit: http://mediaarchive.ksc.nasa.gov/index.cfm To obtain NASA Ames water recycler publication-size images, please visit http://amesnews.arc.nasa.gov/releases/2004/vpcar/vpcar.html To get more information about the JSC water recovery systems, please see: http://advlifesupport.jsc.nasa.gov/water/index.html

BY JOHN BLUCK

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Ames Research Center
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Managing Editor.....Ann Sullivan
Editor, Layout and Design.....Astrid Terlep

You can reach the Astrogram Office at: astrogram@mail.arc.nasa.gov or by phone at (650) 604-3347.

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