

Astrogram

Communication for the Information Technology Age

F2M success: NASA lifts employee travel limitations

From Ames to Stennis, the number one complaint heard by NASA Administrator Sean O'Keefe as he visited NASA field centers was "There's not enough travel money to let NASA staffers do their jobs!" O'Keefe listened hard. And now, thanks to the efforts of NASA's Freedom To Manage (F2M) program, there has been a major change in the way travel funds are administered.

On Feb. 20, a key restriction that had limited NASA travel funds was lifted when the president signed the PY2003 Omnibus Appropriations Bill. Under the bill, NASA will no longer need congressional approval to increase the ceiling on travel funds and there will be greater flexibility to transfer program funds to travel fund budgets.

"This shows that, under F2M, there are no barriers to fixing important problems," said Lynda Haines, systems management and planning executive for the director's office and the Ames F2M representative for the agency.

Under the new rules for using travel funds, however, there are still significant guidelines and requirements that must be met. One is that NASA must notify Congress of any changes in the agency's operating plan. All NASA programs are classified as either human

space flight (HSF) programs or science and technology (SAT) programs. If more than \$500,000 is transferred from either HSF or SAT program funds into travel funds, or if more than \$500,000 is transferred from HSF programs to SAT programs, NASA must notify Congress. NASA is also required to submit requests to the Office of Management and Budget whenever funds are moved among programs, facilities construction budgets or personnel/travel accounts.

An important caveat to consider in transferring program funds into travel budgets is that program funds are multi-year funds, which means they can be spent over more than one year. Travel funds, on the other hand, are single-year funds, even if they were transferred from multi-year program funds. In other words, any travel funds that are either not used or transferred back into program funds will be lost at the end of that fiscal year.

In order to ensure that this new flexibility will be used to NASA's best advantage and to limit operating plan change notifications to Congress, each center must identify its need for additional travel funds and report this information to its institutional program office at NASA Headquarters. In the case

of Ames, this means forwarding change requests to the Office of Aerospace Technology (Code R). Code R will coordinate the requests with the affected enterprises at headquarters as well as the offices that will track the use of travel funds and make operating plan changes.

For FY03, requests for operating plan changes must be submitted in time for the pre-scheduled operating plan update in August.

BY LYNDA HAINES AND
KATHLEEN BURTON

CAIB team meets at KSC



NASA photo courtesy of KSC

NASA Ames Center Director G. Scott Hubbard (far right) and other members of the Columbia Accident Investigation Board (CAIB) view some of the debris from space shuttle Columbia in a hangar at Kennedy Space Center.

Hubbard meets with center staff



NASA Ames Director G. Scott Hubbard chats with Ames employees during an informal gathering in Bldg. N-200 on March 21. Hubbard expressed his appreciation to Ames management and employees for their support while he is away from the center as part of the Columbia Accident Investigation Board.

photo by Dominic Hart

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.

Pioneer 10 finally sends last signal to Earth

After more than 30 years, it appears the venerable Pioneer 10 spacecraft has sent its last signal to Earth. Pioneer's last, very weak signal was received on Jan. 22.

NASA engineers reported that Pioneer 10's radioisotope power source has decayed, and it may not have enough power to send additional transmissions to Earth. NASA's Deep Space Network (DSN) did not detect a signal during the last contact attempt on Feb. 7. The previous three contacts, including the Jan. 22 signal, were very faint, with no telemetry received. The last time a Pioneer 10 contact returned telemetry data was April 27, 2002. NASA has no additional contact attempts planned for Pioneer 10.

"Pioneer 10 was a pioneer in the true sense of the word. After it passed Mars on its long journey into deep space, it was venturing into places where nothing built by humanity had ever gone before," said Dr. Colleen Hartman, director of NASA's Solar System Exploration Division, NASA Headquarters. "It ranks among the most historic, as well as the most scientifically rich, exploration missions ever undertaken," she said.

"Originally designed for a 21-month mission, Pioneer 10 exceeded all expectations and lasted more than 30 years. It was a workhorse that far exceeded its warranty and I guess you could say we got our money's worth," said Pioneer 10 Project Manager Larry Lasher of Code SFS.

Pioneer 10 was built by TRW Inc., Redondo Beach, Calif., and was launched on March 2, 1972 on a three-stage Atlas-Centaur rocket. Pioneer 10 reached a speed of 32,400 mph needed for the flight to Jupiter, making it the fastest human-made object to leave Earth; fast enough to pass the moon in 11 hours and to cross Mars' orbit, about 50 million miles away, in just 12 weeks.

On July 15, 1972, Pioneer 10 entered the asteroid belt, a doughnut-shaped area that measures some 175 million miles wide and 50 million miles thick. The material in the belt travels at speeds up to 45,000 mph and ranges in size from dust particles to rock chunks as big as Alaska.

Pioneer 10 was the first spacecraft to pass through the asteroid belt, considered a spectacular achievement, and then headed toward Jupiter. Accelerating to a speed of 82,000 mph, Pioneer 10 passed

by Jupiter on Dec. 3, 1973.

The spacecraft was the first to make direct observations and obtain close-up images of Jupiter. Pioneer 10 also charted the gas giant's intense radiation belts, located the planet's magnetic field and established that Jupiter is predominantly a liquid planet. In

1983, Pioneer 10 became the first human-made object to pass the orbit of Pluto, the most distant planet from the sun.

Following its encounter with Jupiter, Pioneer 10 explored the outer regions of the solar system, studying energetic particles from the sun (solar wind) and cosmic rays entering our portion of the Milky Way. The spacecraft continued to make valuable scientific investigations in the outer regions of the solar system until its science mission ended on March 31, 1997.

Since that time, Pioneer 10's weak signal has been tracked by the DSN as part of a new advanced concept study of communication technology in support of NASA's future Interstellar Probe mission. At last contact, Pioneer 10 was 7.6 billion miles from Earth, or 82 times the nominal distance between the sun and the Earth. At that distance, it takes more than 11 hours and 20 minutes for the radio signal, traveling at the speed of light, to reach the Earth.

"From Ames Research Center and the Pioneer Project, we send our thanks to the many people at the Deep Space Network and the Jet Propulsion Laboratory (JPL) who made it possible to hear the spacecraft signal for this long," said Pioneer 10 Flight Director David Lozier, also of Code SFS at Ames.

Pioneer 10 explored Jupiter, traveled twice as far as the most distant planet in our solar system, and as Earth's first emissary into space, is carrying a gold plaque that describes what we look like, where we are and the date when the mission began. Pioneer 10 will continue to coast silently as a ghost ship through deep space into interstel-



Artist rendition of the Pioneer 10 spacecraft shown in orbit around Jupiter.

lar space, heading generally for the red star Aldebaran, which forms the eye of the constellation Taurus (the bull). Aldebaran is about 68 light years away. It will take Pioneer 10 more than 2 million years to reach it. Its sister ship, Pioneer 11, ended its mission on Sept. 30, 1995, when the last transmission from the spacecraft was received.

Further information regarding Pioneer 10 is available on the Internet at: http://spaceprojects.arc.nasa.gov/Space_Projects/pioneer/PNhome.html

BY MICHAEL MEWHINNEY ▲

Eco Challenge, anyone?

Do you want to be in the Eco Challenge North American championships, a 6-day adventure race taking place in Ontario, Canada this July? If so, Georgeann O'Brien of Code ASM is looking for two more team members, male or female, to complete a team of four.

O'Brien is looking for people with skills in some or all of the following areas: navigation, white water rafting, mountain biking, mountaineering (especially repelling), as well as people with the physical endurance and the will to race about 300 miles.

Contact O'Brien if you are interested in joining the Ames team at: gobrien@mail.arc.nasa.gov or by calling (408) 314-9249.

New centrifuge demonstrated at life science open house

While recovering from the loss of the STS-107 Columbia space shuttle, the NASA Ames community declared that the science must go on.

Managers have encouraged scientists, engineers and others to press forward with preparations for a return to flight.

The extensive ground-based research, a critical part of NASA's flight program, leads to successful flight experiments. A key component of Ames' life sciences research can now be done

ships between gravity load and different biological responses, we can use the hypergravity data to predict outcomes in microgravity."

The ISSTBC will support a variety of habitats including rodents, insects, plants, aquatic, cell and tissue cultures. It

first stepping stone for the use of graded gravity as a variable on the International



The International Space Station Test Bed Centrifuge (ISSTBC) demonstrated at a recent life science open house in Building N-239.

using the ground-based International Space Station Test Bed Centrifuge (ISSTBC).

On Feb. 25, the Ames Center for Gravitational Biology Research (CGBR) held an open house to demonstrate the renovated 8-foot-diameter centrifuge that has been designed to accommodate International Space Station (ISS) habitats and will provide ground controls for the ISS centrifuge in the future.

"We had an amazing turnout. Many more people than we ever imagined. It was quite gratifying to hear all the questions and comments; to see all of the interest in our facility and in the space life sciences," said Duncan Atchison, a Lockheed Martin engineer who helped organize the event.

This facility provides researchers with the unique opportunity to conduct studies across the gravity continuum by utilizing the ISSTBC to collect hypergravity data that could then be compared to the microgravity flight data.

"Exciting new findings are emerging in the scientific literature in support of the view that, for many biological systems, gravity operates as a continuum," said Dr. April Ronca, a researcher in the Gravitational Research Branch. "For example, antigravity muscles become smaller in microgravity and larger in hypergravity. As we continue to establish systematic relation-



NASA photos by Tom Trower

also has a high-quality fiber optic connection for data and video that allows off-board monitoring of experiments.

During the open house, Dr. Charles Wade, currently the acting Life Sciences Division chief gave an introductory presentation

and answered numerous questions. "I feel that the opening of this facility is the

Space Station," Wade said. "This work will provide essential data on the survival and function of living systems in lower gravity levels such as the moon and Mars."

The NASA Office of Biological and Physical Research is scheduled to release a NASA Research Announcement for ground study opportunities on April 15. Anyone who is interested in submitting a proposal for hypergravity studies on this centrifuge should contact Tianna Shaw at ext. 4-6496 or via e-mail at: Tianna.L.Shaw@nasa.gov.

BY VICTORIA STEINER ▲

DDF poster session highlights research

The Ames Director's Discretionary Fund (DDF) poster session was recently held. Acting Deputy Director Steve Zornetzer (right) views a poster at the poster session. In the foreground is principal investigator Nathalie Cabrol and co-principal investigator Edmond Grin, both of the SETI Institute. In the background is co-principal investigator Andrew Hock, a graduate student at UCLA.

The poster they are looking at is entitled 'Licancabur: Exploring the limits of life in the highest lake on Earth.' This is part of the astrobiology research at Ames to explore life in extreme environments. The purpose of this DDF is to explore the biology and environment for life in the highest lake on Earth, which is located at the summit of the Licancabur volcano (6,017 meters),



NASA photo by Tom Trower

at the boundary of Chile and Bolivia.

The conditions of low oxygen, low atmospheric pressure, high ultraviolet radiation and average temperature make this environment a close analog to a martian paleolake 3.5 billion years ago. This is one of about 40 posters shown at this annual event.

Ames employee enters Swedish Lapland reindeer race

Kiruna, which has a population of about 25,000, is the largest town in Lapland. It is located about 120 miles north of the Arctic Circle, where the average daily temperature in January is

took place in early February.

The reindeer races are held as a part of the Kiruna 'Snow Festival,' and this year, the course was set up in the 'Centrum' town square. The square is normally a parking lot, but it was fenced off with the typical and picturesque Saami fencing made by setting sapling-size posts in the ground about a foot apart and at an angle of about 30 degrees. Workers added extra snow to the course and piled it high at the corners.

Within the

people watching the races from the fence line -- a genial crowd. There were lots of families with children on shoulders and grandparents in wheelchairs.

The announcer was a jovial man from Gothenberg. He must have a fair amount of experience at this sort of thing, because he had the crowd singing before the heats began. Everyone was swaying back and forth, obviously to a well-known song. It turned out the song is not a reindeer racing song but a sea chantey. We asked why they were singing a sea chantey, and we learned that it was because the announcer was from Gothenberg, a seafaring town.

Just inside the fence line in front of the Folkets Hus was the start/finish line. The reindeer were tied along the fence. They were wild-eyed with all the noise and confusion. Their owners, all Saami folk in traditional dress, picked out the deer for each heat and harnessed the animals. As soon as the teams for each heat passed the starting line, a long net



Reindeer races were held recently in Lapland.

minus 14 Celsius (7 degrees Fahrenheit.) This town was the base of operations for more than a dozen Ames researchers who, along with more than a hundred other U.S. researchers, recently studied ozone conditions in the stratosphere.

Before the deployment, Mike Craig of Code SGG went to Kiruna to survey it as a possible site for an ozone experiment. In years past, he also traveled to Kiruna during a prior ozone experiment and got to know the mayor, head of the airport and other local dignitaries. They invited him to participate in the reindeer races.

The eyewitness account below is by Sue Tolley and Michael Gaunce, both of Code SGG. Mike Craig may very well have been the first American to take part in the reindeer races in this frigid Lapland place, Kiruna.

"He is going head-to-head with the mayor of Kiruna and several dignitaries and celebrities from around Sweden. They will be dragged on sleds behind the reindeer in downtown Kiruna," said Code SGG Chief Steve Hipskind in an e-mail regarding the race that he sent to branch members in the states. "Mike is polishing up on his Swedish, so that he will be able to command his reindeer," Hipskind added.

"Prior to the race, some locals would kid about me being entered, but I was never really sure until I saw my name in the local paper," said Craig. The race

square defined by the fencing, the town set up a group of three Saami teepees. To our eyes, they were built exactly like the teepees Native Americans build--long poles stuck into the ground in a circle and tied together at the top to form a conical shape. They were covered with canvas and linked together so there was one large triangular interior space. Inside, people served food and a procession of traditional and rock bands played music. At night, crowds packed the tents, singing and dancing.

Along the side of the square was the 'Folkets Hus,' a community center and theater. In front, squeezed between the building and the fencing, someone had set up a sort of flea market, although we thought the goods were new.

It was an overcast day, minus 21 degrees Celsius (minus 6 degrees Fahrenheit) and snowing, but not heavily. The wind was swirling the snow and carried the smell of cooking reindeer meat. There were probably 3,000 to 4,000



photos by Bill Condzella, Dryden Flight Research Center

Mike Craig of Code SGG, (left), hangs on for dear life during the recent Kiruna reindeer races.

was pulled across the course to stop the reindeer if they wanted to keep going.

The race began at 11 a.m., with eight contestants who raced low wooden sleds, each pulled by a single reindeer. The drivers lay down on their stomachs in the sleds and got the reindeer to run by yelling at them. We thought they also ran because of the crowd noise.

Of course, we were all cheering for our driver, Craig, who raced against Hans Notofen. He has a popular band called Raj Raj (Rah Rah) that played in the Saami tent one night.

continued on page 5

Former Ames photographer passes away

Emerson N. Shaw passed away Feb. 10 in Los Gatos, the town in which he was born on Aug. 9, 1914.

Shaw attended Los Gatos High School and San José State College. He later served in the U.S. Navy as a photographer during World War II and was a member of the Rotary Club of Los Gatos.

Shaw later worked as an aerial and scientific photography specialist for NASA Ames Research Laboratory. He was also a former news photographer for the San José Mercury newspaper.

After his retirement, Shaw studied museology at the California History Center, De Anza College. Then he became executive director, and later president, of the Los Gatos Museum Association. He also served for many years on the board of directors of the Billy Jones Railroad.

During the 1980s, he established and endowed the Close-Up Washington program for students and faculty of Los Gatos High School. In 1988, he was named Los Gatos Senior of Distinction by the Los Gatos Weekly Times. Earlier, he had been named senior volunteer of the year in the town.

A model community worker, a devoted rotarian, and most notably, a thorough gentleman, Shaw was beloved of a multitude of friends and fellow workers. His dear wife, Sophie Bloom Shaw, preceded him in death. He was the brother-in-law of Eva Schweitzer, Lillian Berg, and Alice Bloom, Sam Schweitzer, Leslie Berg, Paul, Helen, and Esther Bloom. He was also uncle of Jordan (Judy) Bloom, Judy (Kent) Settles, Barbara (Dr. Louis) Ravitz, Elaine (Michael) Diamond, Allen (Dana) Berg, Murray (Laura) Berg, Ron Bloom and great uncle



Emerson Shaw

to Michael (Diane), Jonathan (Jill), Nicole (Sue Swigart) Bloom; Jane and Ed Settles; David and Jessica Ravitz, Matthew, Jeremy, Tamara and Heather Berg.

Services were held Feb. 15 at the Los Gatos Methodist Church. Memorial contributions may be sent to the Los Gatos Museum Association, the Eradicate Polio Campaign of Rotary International, or a charity of one's choice.

Ames employee enters Swedish Lapland reindeer race

continued from page 4

The other drivers were Kennet Winblad, a chef from Boden; Maria Niemi, a journalist from the NSD newspaper; Linda Alfredsson, a journalist from the local Kuriren newspaper; Stefan Emanuelz, is a representative of a nearby ski resort; Kurt Johansson, a theater actor and the mayor of Kiruna, Lars Torneman.

Torneman and Henrik Paivio ran one heat using skis pulled behind the reindeer.

"It was one of the warmer days in Kiruna, but even if it had been colder, I would have been a little too excited to notice," Craig said. When his turn came, he was given the sled on the outside, and we all had a good view.

"The competing reindeer never did start at the same time, it was just a matter of luck if yours started first," Craig said. We yelled. He yelled.

"There was really very little competition to it other than just hanging on," Craig recalled. He thrashed the reindeer with the reins, but that wasn't enough.

"Mine was the closest race of the day, and unlike some others, I didn't fall off," he reported. It was the agony of defeat, but only by a reindeer's nose! Craig was beaten by the best. Notofen,

the bandleader, was the winner. Unfortunately, Craig was eliminated from the competition before he could race the mayor or others.

"Losing the race by a reindeer nose wasn't a big deal, other than it meant I couldn't do it again," Craig said. "It was such an honor to get the chance to do something as exciting as this, win or lose."

"After seeing all the pictures, I was actually kind of lucky, because I had the better-looking reindeer," Craig added. "I've challenged the mayor of Kiruna to another race, if I ever return again, and the next time we will be on skis behind the reindeer."

The Web site for the Kiruna Snow Festival is located at: http://www.kirunasnowfestival.com/index_eng.html

The Ames researchers who went to Kiruna participated in the second SAGE II Ozone Loss and Validation Experiment (SOLVE II). SAGE III stands for the third Stratospheric Aerosol and Gas Experiment. Information regarding the SOLVE II mission can be found on the Web at: <http://cloud1.arc.nasa.gov/solveII/index.html>

VPP annual report approved

On Feb. 12, Ames Center Director Scott Hubbard and Suzanne Meyer, the Ames Federal Employee Union vice president for safety, approved the center's annual report of Voluntary Protection Program (VPP) activities during 2002 for submittal to OSHA.

The report, which all VPP participants are required to submit, includes the goals and accomplishments for the continuous improvement of the safety and health program, injury and illness numbers and rates, and results of the safety and health management systems evaluation. It was prepared using input from each directorate, the chairperson of each centerwide safety committee, the Ames Federal Employee Union, the Disaster Assistance and Rescue Team and the Safety, Health and Medical Services Division.

The Ames Annual Safety and Health Program evaluation report can be viewed on the VPP Web page at: <http://q/qh/vpp>.

EDITED BY JOHN BLUCK

Ames goes to the Channel Islands with JASON project

For 14 years, the JASON Project, established by the world famous oceanographer Dr. Robert Ballard (of the discovery of the Titanic fame) has taken students and teachers from polar regions, to red-hot volcanoes, the depths of the ocean and to the dense tropical rain forests. A year-long education program, the JASON Project includes a printed curriculum, access to a gated Web community, year-round professional development for teachers, and a spectacular live, two-week broadcast of an annual scientific research expedition. For the last nine years, Ames has provided training and support to thousands of Bay Area JASON teachers. This year,

vices Inc. recruited 193 different volunteers who donated over 2,000 hours in the successful effort to ensure an educational and safe visit to Ames.

In addition, Lauren Dunec, a 9th grade student from Castilleja School in Palo Alto, was chosen to represent the Bay area in a scientific expe-



NASA photos by Dominic Hart

A JASON student wears diving equipment for the first time.



A group of students discusses the features of an Orca skull at the recent JASON XIV event.

the JASON XIV curriculum studied California's Channel Islands in a program called 'From Shore to the Sea.'

From Jan. 27 to Feb. 7, the JASON program at Ames hosted a record 11,500 students and teachers from 169 schools for a live satellite broadcast from the Channel Islands. After the broadcast, the JASON visitors headed over to Hanger N211 for JASON City. The 'city' featured 12 different educational activities that supported the JASON curriculum, including examining San Francisco Bay mud for sea creatures, using a 3D model to test the effects runoff has on our environment and making a set of native Californian stick dice. Activity sponsors included Apple Computer, Marine Science Institute, Resource Area for Teachers, Rock-it Science and the Santa Clara Valley Water District.

In order to support the JASON broadcast and city events, Quantum Ser-

math and science activities while encouraging technical and scientific careers. In fact, NASA is a major sponsor of the non-profit JASON Foundation for Education with a 2003 grant of \$2.25 million.

The following quote summarizes how many of the broadcast/city participants felt about their JASON event here at Ames, from a K-5 technology and gifted teacher from San Francisco.

"I wanted to tell you what a wonderful field trip we had when we went to Moffett Field for the live video conference and visit to JASON City. My students are really enjoying the hands-on activities using math, science and social studies. My principal is very impressed with the content of the lessons. We are very thankful to be participants this year in this exciting program from NASA Ames!"

BY WILL SHAW ▲

Rainforests to be studied next year

Next year's event, 'JASON XV: Rainforests at the Crossroads,' will focus on the research, monitoring and management of the Panama rainforest to better understand how it functions and how it changes through time. The issues of how human technology has influenced the geography, hydrology and biology of Panama and how technology is used to better understand how the world works will be studied. The journey takes students and teachers into the tropical rainforest, looking at steps that are being taken to better understand and conserve these valuable forest ecosystems.

Using satellite data gathered by NASA and NOAA combined with data collected in the field, the big picture of the region will be collected. Watersheds will be examined as a vehicle to explore the management challenges facing the region's various interconnected ecosystems. Participants will study the microclimates and seasonality of rainforests from canopy to forest floor. They will explore the complex food webs that exist tying species of plants and animals together in the environment in unique and exciting ways.

For more information regarding the Ames JASON Project, contact Will Shaw at ext. 4-0857.

Call for Nominations--2003 NASA Software of the Year Award

The NASA Software of the Year Award competition is designed to recognize

outstanding software developed by NASA.

leashed during the last three years;
(2) a NASA intellectual property interest;

(3) been supported, adopted, sponsored or used by NASA; and,

(4) played a significant part in the success of aeronautical and space activities

Documentation required for submitting a nomination:

1) NASA Form 1329 (ICB SpaceAct Award application) in its current and standard format. The form is on

the Web at: <http://icb.nasa.gov/> This form must be submitted electronically with the exception of Part II of NASA Form 1329, which must be submitted in hard copy; and

2) letters of endorsement from the software users.

In addition, the following forms must be on file in the Ames Commercial Technology Office:

- NF 1679 (invention disclosure)
- CTO-6 (software release request)

Contact Ames' software release authority, Robin Orans, at e-mail: Robin.M.Orans@nasa.gov for guidance.

Entries and supporting materials should be submitted electronically to Betsy Robinson at: e-mail: Elizabeth.T.Robinson@nasa.gov in the Ames Commercial Technology Office, by Monday, April 14. For forms and specific award criteria information, contact Robinson at ext. 4-3360.



NASA photo by Dominic Hart

Ames Center Director G. Scott Hubbard (second from left) with the 2002 NASA Software of the Year Award recipients (left to right) Michael Aftosmis of Code INR; Marsha Berger of Code I, USRA/RAICS; and John Melton of Code APS. The CART 3D team shared over \$50,000.

Ames Center Director G. Scott Hubbard (second from left) with the 2002 NASA Software of the Year Award recipients (left to right) Michael Aftosmis of Code INR; Marsha Berger of Code I, USRA/RAICS; and John Melton of Code APS. The CART 3D team shared over \$50,000.

Ames has won or placed in the NASA Software of the Year for several years including the following software packages. Approximately \$250,000 was distributed to the members of these six teams.

2002

- Cart3D (co-winner)

2000

- Surface Movement Advisor (second place)

1999

- Remote Agent (winner)
- Ross 3D Virtual Clinic (runner-up)

1998

- Center TRACON Automation System Software (winner)
- Overset Tools for CFD Analysis (runner-up)

The eligibility criteria for this software award include:

- (1) must have been officially re-

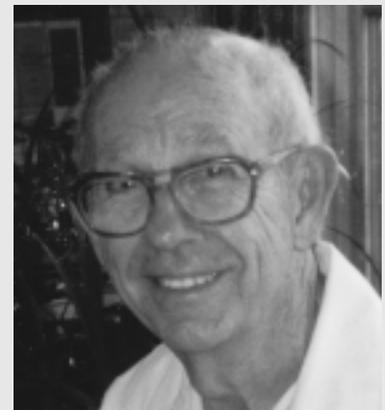
Former Ames aerospace engineer passes on

Robert Arthur Taylor passed away Feb. 10. Taylor was born Nov. 8, 1918 in Tacoma, Wash., the son of Arthur Dewey Taylor and Grace (Haas) Taylor. Taylor was a fourth generation Californian; his family was based in Redlands, Calif.

Taylor graduated from Riverside Junior College in 1940 and the University of Nevada in 1948, served in the U.S. Army Air Corps as a bombardier instructor during WWII and retired from the Air Force Reserve in 1978 as a lieutenant colonel.

In 1948, Taylor moved to Los Altos to work at Ames, where he was employed as an aerospace engineer for 26 years, from 1948 to 1974. At Ames, he was involved in the operation of the wind tunnels and in the aerodynamic testing of the SST, Blackbird, Gemini and Mercury capsules, the space shuttle and a variety of other aircraft. Taylor took great pride in the accomplishments of his coworkers and himself on behalf of the Ames research programs.

For the past two-and-a-half years, he resided in Kalamazoo, Mich. He was an accomplished carpenter, furniture maker, photographer, painter and archer.



Robert Taylor

On Oct. 16, 1942, he married Maxine Schoenig, who survives him. He leaves behind a daughter, Patricia (Richard) Kirschner of Kalamazoo; and one granddaughter, Shanna Kirschner of Washington, D.C.; and five nieces and nephews. He was preceded in death by his brother, Donald Taylor.

A memorial service was held on Feb. 12. Memorial contributions may be made to the Natural Resources Defense Council or the Humane Society.

From nano through micro further in space

The Plasma Research Group at the NASA Ames Center for Nanotechnology is developing advanced diagnostics to support atomistic control over optimized reproducible processes of fabrication and functionalization of nanostructured materials and nanodevices.

An innovative approach to extraterrestrial missions suggests miniaturization of spacecraft and development of intelligent micro-instrumentation capable of performing autonomously various difficult tasks at minimal power consumption. To meet these goals, superhigh-performance electronic processors, integrated nano/micro-systems, miniature highly sensitive detectors, and nanostructured materials are being developed, assembled and tested at the molecular scale.

“Nanotechnology presents a whole new spectrum of opportunities to build device components and systems for entirely new space architectures,” said Meyya Meyyappan, director of the Center for Nanotechnology at Ames. “The main road toward future space exploration goes through research in nanoelectronics, nano-electromechanics, nano-photonics, multifunctional nanomaterials and ultrasmall instruments and sensors. These fields are most important for construction of advanced spacecraft and for attaining the capabilities to acquire and treat the flight control data on board in real time.”

“Further progress in space exploration requires a significant leap in technology that can only come out of research laboratories, such as NASA,” said David Lackner, manager at Ames’ Office of Commercial Technology. “Ames Research Center has capabilities to grow, align and integrate nanostructures into functional devices within a nano-world of atoms and molecules, but it still remains tricky to access and control them from the macro-world. A real advantage would be a combination of our new approaches and new techniques in nanotechnology with the sophisticated industrial capabilities in silicon integration and packaging, their extremely expensive tools and extensive expertise on microchip integration through semiconductor etching, deposition, implantation, interconnects, etc. This is why the idea of the Ames Research Park looks so promising to us.”

At the ultrahigh integration level, use of many diverse materials inevitably makes them a source of various con-

taminants that are inadvertently transferred from one technological process to another. Careful control and understanding of the paths of low-level contamination that occurs during fabrication is necessary. Even single foreign



Intel's microelectronics museum.

atoms or molecules may cause improper operation of the products at this quantum level of miniaturization. Impurities affect drastically the local electronic and mechanical properties of nanostructures, which may be extremely damaging. On the other hand, they may be purposely used as ‘dopants’ in nano-scale design. Very high sensitivity and sharp spatial resolution are required for the atomistic control over either incorporation of specific atoms into nanodevices or anchoring the functional molecular groups onto their surfaces, or monitoring purity of the microscopic environment.

Now Alexander Bol'shakov and Surendra Sharma, researchers at the Center for Nanotechnology, propose to investigate in detail the plasmachemical processes of carbon nanotube synthesis and functionalization in order to understand the reaction kinetics and to improve and optimize these processes. The lead scientist is Sharma.

Their proposal is focused on the development of a diagnostic technique that would be sensitive enough to moni-

tor the nanofabrication processes and robust enough (compact, low-cost) to be applicable in the industrial environment in the future. The proposed detector is based on one or several semiconductor microchip lasers (so-called VCSELs) capable of acquiring a multitude of data parameters with high sensitivity and resolution during the nanofabrication and functionalization processes. In the future, such detectors may themselves be based on anticipated nanolasers.

“The study will be fundamental in nature and of significant practical importance,” said Sharma.

“I believe that Ames Research Center surrounded by the top-notch semiconductor companies must be an absolute leader in nanoelectronics and nanotechnology research. Our proposal, alongside other research efforts, is aimed at bringing us to this noble goal through fundamental research and prospective collaboration with industrial partners,” said Bol'shakov. “This should set out a flow of synergetic fusion between a newly emerging world of tiny nanodevices and a readily accessible, familiar world of microelectronics.”

The technique of absorption spectrometry in a highly reflective optical cavity is based on the measurement of the rate of absorption of the diode-laser radiation confined in a high-quality resonator. It promises a unique combination of qualities necessary for the in-situ ultrasensitive detection of trace species (atoms, molecules, clusters or nanoparticles) in real time. It will enable tracking down the origin, pathways and kinetics of functional nanoelements as well as detrimental contaminants, and then adjustment and control of the nanofabrication process through active feedback.

The main advantage of the proposed technique is its ultimate sensitivity, enabling advanced process control and contamination management within an immediate vicinity of designed nano-scale features during fabrication of nanomaterials and nanodevices. Additionally, it is also capable of continuous measurements of the processing plasma parameters such as electron density and temperature, gas temperature and velocity, and absolute densities of various reacting species. A goal is the development of a multiplexing technique capable of comprehensive multi-parametric data acquisition by means of a single,

continued on page 9

From nano through micro further in space

continued from page 8

simple, compact and inexpensive tool.

"I find this research proposal very intriguing!" said Lisa Pivin of Intel, a member of SEMI (Semiconductor Equipment and Materials International.) "In the semiconductor industry, as we decrease device size, it is critical that we monitor and control processes at the nanometer scale. This type of research enables development of future long-term potential solutions required to keep pace with the technological progress. It is essential that we encourage research organizations with the resources and enabling technologies to perform this long-term potential solution research."

"The NASA technological requirements have always been unique; we must focus on development of enabling technologies in the area of nanotechnology to ensure the success of future NASA missions," said Sharma.

"Revolution in control electronics and computing capabilities will allow reconfigurable, autonomous, 'thinking' spacecraft."

Historically, the use of individual molecules as electronic devices was first proposed in the 1970s. Since then, nanoelectronics has attracted much interest. A true molecular-scale transistor was realized using carbon nanotubes in 1998. By 2001, highly integrated patterned arrays of nanotube-based transistors were assembled. In the future, hundreds of billions of transistors will be integrated into a single chip.

NASA Ames Center for Nanotechnology started in 1996 and is the largest in-house R & D in the federal government; it consists of 50 scientists and engineers working on various aspects of experimental and computational nanotechnology fields. Process plasma

diagnostics is one of the key areas of ongoing research. Other research areas include development of onboard computing systems for future autonomous intelligent vehicles - powerful, compact, low-power, high-performance computing, revolutionary computing technologies, smart, compact sensors, ultra small probes, advanced miniaturization of all systems, micro-spacecraft, 'thinking' spacecraft, micro-, nano-rovers for planetary exploration, computing nanoelectromechanical systems and sensors, the interface of nano, bio, and information technologies, bio-inspired structures and devices, ultra small sensors, power sources, communication, navigation, and propulsion systems with very low mass, volume and power consumption.

By VERONIKA SOUKHOVITSKAYA ▲

Ames tour program resumes

NASA Ames has resumed its popular public tour program after a two-year absence. Ames employees and the public are invited to join daily tours of some of Ames' most interesting facilities.

Two-hour tours are offered five times per week, Monday through Friday, from 9:30 a.m. to 11:30 a.m. Tours begin with an overview of the center's key technologies and depart from the Visitor Center at Ames.

Suggested tour stops may include the NASA Advanced Supercomputing (NAS) facility, featuring some of the world's fastest supercomputers; the Crew Vehicle Systems Research Facility (CVSRF), which contains two full-size cockpit flight simulators; the Vertical Motion Simulator (VMS), which is used by NASA astronauts and pilots to practice simulated take-offs and landings; a mock-up of the International Space Station; and the National Full-Scale Aerodynamics Complex (NFAC), the world's largest wind tunnel, which contains two test sections, including the 80-foot by 120-foot test section that can test a full-size 737 aircraft and a 40-foot by 80-foot test section and the 20G centrifuge.



Tour program director Mike Reeves, (top of photo), during a recent Ames tour.

To book a public tour, call ext. 4-6274. The third Wednesday of each month has been set aside for Ames employees. Tour size is limited to 20 people per tour. Reservations are recommended.

By SHEILA JOHNSON ▲

Emergency kits

The American Red Cross is selling emergency preparedness kits priced from \$10 for a basic emergency kit, to a \$40 three-day survival kit. Kits are good for home, car or office. Contact the Red Cross at (408) 577-2178 or by fax at (408) 577-2110.

Looking for used books...

Got a bunch of old books cluttering up your office, living room or garage? Have CDs you don't listen to or movies you'll never watch again? Then donate them to the Ames Child Care Center (ACCC) fundraiser and receive a donation receipt for your taxes at the same time!

The ACCC accepts all books, CDs, VHS tapes and DVDs for adults and for kids. Items can either be dropped off at the ACCC across from Gate 17 or pick-up can be arranged by contacting Maja at e-mail maja@sbcglobal.net or call her at: (650) 988-6993 or Sally at (650) 224-9268.

Men needed to participate in bone density study

Male participants between the ages of 20 and 30 years are needed for a study entitled 'Effects of Running Activity on Bone Density and Bone Structure in Elite Athletes,' a joint project between researchers from NASA Ames, Stanford University and the Palo Alto Veteran's Administration.

The goal of this study is to investigate the influence of running activity on bone density and cross-sectional structural properties of the tibial bone. We will examine three different populations: elite male long-distance runners, elite male soccer players and sedentary controls. Previous research indicates that higher musculoskeletal forces and higher rates of force development generated by ball sports, compared to a sedentary lifestyle or even running, create stiffer, stronger, more fracture-resistant bones. We hypothesize that the greater variety of loading magnitude and direction imposed during soccer training will lead to a larger, more symmetric tibial bone cross-sectional geometry in soccer players compared with long-distance runners, making their tibiae more stress-fracture resistant.

Participation will require two appointments. The first appointment will be at the Stanford campus with the Stanford track team physician for a 45-minute physical exam and questionnaire. The second appointment will be for scanning at the Palo Alto Veteran's Administration. This is a completely non-invasive procedure. We will scan your tibia, femur, hip, spine, whole body and heel bone with a DXA scanner that measures bone density. The only risk associated with the study is the radiation dose, and it is very low for these machines. We have estimated the added radiation dose from the scans to be equivalent to 2.5 to 3 days of background radiation living in the Bay Area. Total time for scanning will be 1.5 to 2 hours.

We are currently looking for individuals who qualify as control subjects. The control subjects must be caucasian males, between 20 and 30 years of age, between 140 and 200 pounds and between 5'8" and 6'3" tall.

Candidates must not have participated in organized running or sports such as track, cross-country, soccer, football, baseball or basketball since their freshman year of high school. Water sports and cycling are acceptable. Females are not a part of this initial investigation in order to minimize potential confounding factors, but they may be included in future work pending the results of this study.

Unfortunately, we cannot offer any monetary compensation for your participation in this study. However, you will get some interesting information regarding your bone density status at the hip, spine, whole body and calcaneus, as well as body composition, and

hopefully contribute to understanding the influence of exercise on bone.

If you qualify as a control subject and are interested in participating, e-mail tcleek@mail.arc.nasa.gov for more detailed information.

BY TAMMY CLEEK ▲

X-file projects completed

Four projects from the X-files were completed in 2002 to improve safety. Buildings 213 and 227 now have automatic fire sprinkler systems and a new alarm system. Additional work was done in Building 213 to improve existing basement safety exits. Building 19 was strengthened to be earthquake resistant and doors and stairs were modified to be code compliant. To learn more about the X-file projects in your building, you can view descriptions of planned or completed projects on the VPP Web page at: <http://q//qh/vpp>.

The Directorate of Research and Development Services (Code F) manages the X-files at Ames. The X-files are building safety/hazards correction issues that require significant

dollars to be abated and are outside the scope of the respective directorate. Examples include fire prevention, fire protection or ventilation projects. A risk assessment code (RAC) is assigned to each project and is used to help prioritize in what program year facility issues will be placed. Interim actions have been determined in each case to minimize risk in the affected work place until the hazard has been permanently corrected.

Currently, there are a total of 106 hazardous conditions in the X-files, of which 56 are either in design or under construction. Engineers in Code F continue to work on designs, cost estimates and detailed scheduling of the remaining 50 hazards.

Panelists discuss Mars snowbanks



NASA photo

Dr. Lynn J. Rothschild (far right), a researcher in the Ecosystem Science and Technology Branch at Ames, Code SGE, and president of the Society of Protozoologists, took part in a NASA Headquarters space science update briefing in February, discussing the results of the latest Mars Odyssey observations and a related 'Nature' paper discussing evidence that Mars may once have been covered with snowbanks. The panelists said the snowbanks may have served as greenhouses, trapping heat, melting some of the martian snow into water and possibly providing nourishment for life. Also in the photo (left to right) are: Drs. Phil Christensen of Arizona State University; Jack Mustard of Brown University; Michael Meyer of NASA Headquarters; and Bruce Jakosky of the University of Colorado.

Hubble Space Telescope missions illustrate advantages of OneNASA philosophy

The OneNASA philosophy emphasizes enhanced coordination, collaboration and communication among all NASA agency facilities to reach common goals. One highly visible, productive, efficient, cross-enterprise, inter-center group that demonstrates this concept's long-term success is the Hubble Space Telescope (HST) team.

Since 1993, the HST team has successfully conducted four servicing missions plus a technology demonstration flight. The servicing, repair and upgrade of Hubble incorporates the space shuttle and astronaut extra vehicular activities (EVAs) to accomplish some of NASA's most important program objectives.

"All elements of the agency are involved in HST and must work together on each mission--astronauts, scientists, engineers, EVA crew, hardware developers, launch teams and finally, integrated operations teams," said Frank Cepollina, deputy associate director for the HST Development Office and a recent inductee into the National Inventors Hall of Fame. "GSFC, JSC, KSC, MSFC and Glenn all come together to provide the best expertise, supported by contractors at every center, as well as international partners. NASA works best when it works together."

It was not this way from the outset. Although HST's design was integrated with the shuttle design and capability since its original concept, the team formed in the early days of HST development and deployment initially did not continue into the servicing mission.

When the high visibility of Hubble's original optical problem caused concern at the upper levels of NASA, multiple external review committees convened. When asked, "Who's in charge?" top officials from every center and program claimed responsibility. Then, a mission director was appointed to arbitrate conflicts. Although this satisfied the formal requirement, the real solution was found in the collegiality of the engineers, planners, operators and flight crew. Those most technically capable formed joint action teams within and across working groups. This has become a model for other shuttle users and customers over the years.

The world-class science produced by HST motivates the team toward mission success and impeccable safety. This motivation is so strong that the teammates exercise all capabilities available, without regard for center or contractor

affiliation. Team members maintain relationships with other NASA centers, then come together in inter-center coordination meetings and working groups. Within these joint sessions, the respective roles of participants are consistent with the formal arrangements defined by the controlling authorities. Specific participations and allocations of responsibilities are jointly arranged according to practical considerations of resources, facilities, talent and expertise.

The professionalism, mutual respect and camaraderie of the HST team casts any disputes regarding authority or territoriality into a very harsh light. Such issues are scrutinized by a management structure committed to mission success and safety, while clearly recognizing the team's mutual interdependence. Substantive issues are quickly addressed and resolved.

Inter-center participation includes the Marshall Space Flight Center, which originally managed HST's design and build. Also, the neutral buoyancy simulator at Marshall served as a training facility for astronauts on the first and second servicing missions. The SpaceLab program at MSFC has provided structural pallets, in addition to the development of the orbital replacement unit carrier, which was used successfully for consecutive missions. This carrier protects the delicate scientific instruments provided by teams from JPL, universities, international partners and aerospace contractors.

During launch preparations, key members of the HST hardware team reside at KSC, working closely with the KSC payload customer support staff and the shuttle integration engineering teams. At Johnson Space Center (JSC), another HST team works with astronauts, trainers and flight controllers in the Neutral Buoyancy Lab to thoroughly practice each EVA. During mission operations, another team of HST servicing mission managers, program and enter-

prise officials, operators, engineers and technicians resides at JSC. They are linked with a group of managers, engineers, operators and analysts from the control center at GSFC and the Space Telescope Science Institute.

A major benefit of a OneNASA team



Astronauts train with the flight advanced camera for surveys instrument and its carrier inside Goddard Space Flight Center's cleanroom in preparation for Servicing Mission 3B.

is shared technology, such as the development of crew aids and tools. Power tools originally developed for HST are also routinely used for the international space station. In addition to the flight centers, this inter-center relationship also includes the research centers such as Langley and Glenn.

One excellent illustration of inter-center teamwork occurred after the second servicing mission. The HST project assembled a team of experts in space environmental effects, materials degradation and testing from five NASA centers and industry to assess the damaged outer layer of Hubble's thermal blankets. The mutual rapport and respect developed by this team continues today, five years after the completion of this effort. Members of the team have worked together on many projects since then, including the James Webb Space Telescope, ISS payloads, Living With a Star and Gossamer Structures.

The HST inter-center teams are a shining example of OneNASA in action for more than 10 years. To view their spectacular accomplishments, visit the archive of Hubble pictures on the Space Telescope Science Institute Web site at: www.stsci.edu/hst/

BY GODDARD SPACE FLIGHT CENTER ▲

March celebrates Women's History Month

Have you ever pondered just how the special emphasis observance of Women's History Month came into existence? Yes, there were laws and proclamations that officially declared this milestone in history, but where did the concept begin? What is now celebrated globally in U.S. territories all began here in northern California.

As recently as the 1970s, women's history was an unknown topic in the general public's consciousness. To address this, in 1978, the Education Task Force of the Sonoma County Commission on the Status of Women (SCCSW) initiated a 'Women's History Week' celebration. March 8, International Women's Day, was selected as the focal point to ensure that events and celebration included a multicultural perspective, recognized the connection between and among all women and celebrated the important role of women in the paid labor force. The activities and events that were held met with an overwhelming response and scores of area schools began holding programs for Women's History Week.

In 1979, Molly Murphy MacGregor, then director of the SCCSW, was invited to a Women's History Institute to discuss the importance of using Women's History Week as a focal celebration to recognize and celebrate women's historic accomplishments. In March 1980, President Jimmy Carter issued a presidential message to the American people, encouraging the recognition and celebration of women's historic accomplishments during the week of March 8, Women's History Week. By the end of 1980, then-Representative Barbara Mikulski (D-MD) and Senator Orrin Hatch (R-UT) had co-sponsored the first joint congressional resolution that declared the week of March 8 in 1981 as National Women's History Week. In 1980, the National Women's History Project (NWHHP) was founded by Maria Cuevas, Paula Hammett, Molly Murphy MacGregor, Bette Morgan and Mary Ruthsdotter. The goal was to provide a national clearinghouse for general information regarding women's history and for specific information regarding National Women's History Week celebrations.

In 1987, at the request of women's organizations, museums, libraries, youth leaders and educators throughout the country, the National Women's History Project petitioned Congress to expand

the national celebrations to the entire month of March. A National Women's History Month resolution was quickly approved with strong support in both the House and the Senate. Since 1992, a presidential proclamation has carried the directive for what is now a major national and international celebration.

Today, 'Women Pioneering the Future,' this year's theme for Women's History Month, is indicative of how the past contributions of women of various races, national origins, ages and abilities

have paved the way for the future. The women of history (the pioneers) have led and won struggles for equality and civil rights, created and advanced educational and professional opportunities, and have made great contributions to the arts, sciences and humanitarian causes, whereas the innovative women of today have taken a proactive role in furthering these efforts and continue to expand the frontiers of possibility for generations to come.

A MESSAGE FROM THE EQUAL
OPPORTUNITY PROGRAMS OFFICE

Squyres speaks at colloquium



NASA photo by Tom Trower

Dr. Steve Squyres speaking at the recent director's colloquium.

Dr. Steve Squyres, a professor of astronomy at Cornell University, delivered a director's colloquium at Ames in February about the Mars Exploration Rover (MER) project, NASA's next mission to the surface of Mars.

Squyres, the principal investigator for MER, discussed highlights of the mission. In early 2004, two large rovers will traverse Mars' surface and use a suite of science instruments to explore the rocks and soil's mineralogical composition and history. NASA Headquarters officials will select two landing sites for MER in April.

All aboard for Travel Manager! --stand by to go-live and training

The Travel Manager project has established new training and go-live dates based on the new Ames Core Financial implementation project schedule. Following are questions and answers addressing details surrounding the Travel Manager project implementation.

- When will Ames begin to use Travel Manager?

Travel Manager will be available to all codes at Ames beginning May 5. After go-live, no paper travel orders will be accepted.

- When will training be offered?

Training for Travel Manager will begin April 14 and continue through May 30. For specific dates, times,

courses and registration information, check the Travel Manager Web site at: www.travelmanager.arc.nasa.gov.

- How do I get a user ID and password for Travel Manager?

If users have not obtained a user ID and password, they must submit a system access request (SAR) form to the Business Systems Group (BSG) help desk in Building 19, Room 2044 in exchange for a user ID and password.

There will not be a freeze on travel reimbursement payments as previously communicated. All travel vouchers will be paid within 30 days.

Direct additional questions to travelmanager@arc.nasa.gov.

Inspiring a new NASA generation

Many great, thoughtful and determined people are devoted to nurturing undergraduate and graduate student education at Ames. Carol Roland is one of them.

Roland, the Education Associates Program manager, is a true leader in reaching out to students from different communities, connecting them with mentors at NASA in both scientific and non-scientific branches and providing support and help during the course of internship.

"I love the program. My kids are the best, I like the sponsors. I'm impressed at how they bring out the best in my students. I feel proud when the students do well," said Roland. "By the way, some of my 'kids' are in their 50s and 60s, but I feel about them the same as my 20-somethings."

Roland has been with the program for two years. During this time, the program has grown from 60 students to 120 students. Currently, there are 82 students interning at Ames as part of the Education Associates Program. Working with and helping students have been 170 sponsors and more than 150 mentors in numerous branches such as Office of Director, Public Affairs, Aerospace, Information Systems, Center Operations, Astrobiology/Space Research and many others.

Students represent 89 schools including the University of California, Berkeley; the University of California, Santa Barbara; San José State University; National Hispanic University; Mills College; Santa Clara University; Stanford University and out-of-state schools such as Harvard University; Massachusetts Institute of Technology (MIT); Princeton University; the University of Illinois; Georgia Institute of Technology; and the U.S. Air Force Academy. Students with degrees ranging from high school diplomas to doctorates and visiting faculty also represent many different ethnic backgrounds such as Asian and African Americans, Hispanic, Native Americans and others.

"It is truly enjoyable to meet all my students from various backgrounds, collaborate with my colleagues at Ames and share the NASA experience. Sponsors have helped several students enter special school programs. My students always have fun at Ames and have numerous interests. There is even a group of hockey-lovers, too," said Roland.

Roland's favorite work experience at Ames has been assisting a post-doctoral student in becoming a part of the biology department team. Elena Kozak, an Education Associates student, has a Ph.D. in biology, but was working as a Web developer. Roland coordinated with Kozak's sponsors and Kozak transferred to the biology department.

Roland is always helping students, always smiling and is always there for students to inspire and support. One of her students, Curt Johanson, came to intern at Ames with no goal beyond his bachelor's degree, but inspired by Roland and his mentors at Ames, he is now working on his master's degree at San José State University.

Roland's husband is also working at Ames in Code I. Roland's assistant, Teresa, has been working with Roland since July 2002.

"Every day working with Carol and Dale is a great experience," said Teresa.

Teresa helps Roland get students' records up to date, mentor students and work on weekly reports.

"Every day is great. Carol brings the mood up, even if you are tired. She will drive to deliver checks to students, calls them to stay at her house if they need any help. A lot of people around base feel the same way. Many people know her," said Teresa.

Other program participants include Wendy Holforty, a sponsor, and Jose Navarrete, a student intern. Holforty, who won the best first research paper last year, has been involved in the program since the beginning. Navarrete, who is getting his master's degree, has been named the best intern of the year.

Being an Education Associates student and intern in the Public Affairs Office since June 2002, I would like to say that my work experience at Ames has been very educational, enjoyable and inspiring. I would like to thank my mentors and coworkers at the Public Affairs Office: Ann Sullivan, David Morse, Ruth Collins, Sheila Johnson, Kathleen Burton, Astrid Terlep, Victoria Steiner, Mike Mewhinney, John Bluck, Jonas Dino, Kristine Navarro, Anil Jindia Carol Roland and Teresa for the best work experience I have ever had.

By VERONIKA SOUKHOVITSKAYA ▲

ACCC to host golf tournament

The Ames Child Care Center (ACCC) will host its eighth annual charity golf tournament on Friday, May 9 at the Palo Alto Municipal Golf Course. The proceeds from this tournament will be used to support the Tuition Assistance Council, fund the music and science programs and purchase classroom equipment.

The cost of registration will be \$75 per person; teams of four are \$300. The registration fee includes the round of golf and one raffle ticket per player. Appetizers will be provided after the tournament and golfers can order from the grill and bar. One mulligan per team will be given with the opportunity to purchase up to three additional. Carts are available at an additional cost of \$25.

The format for the tournament will be a four-person scramble (best shot from your team used for each stroke). Prizes will be awarded to the teams with the lowest three net scores and the lowest gross score. There will be prizes at select holes for the 'longest drive' and 'closest to the pin.' The shotgun start is at 1:00 p.m. and there will be a drawing for raffle prizes immediately following the tournament.

The ACCC is a non-profit child care and preschool, accredited by the prestigious National Association for the Education of Young Children located at Ames. The ACCC provides full-time quality day care to children of civil servant and on-site contractor personnel. The tuition paid by the parents covers salaries and operational costs only. All other costs are covered by fund-raising activities such as the golf tournament.

Plans are still underway for a new, permanent facility to be located adjacent to Bush circle at Ames. The new ACCC is expected to be completed sometime in the next two years. Part of the proceeds from the May tournament will go toward a fund that will furnish the new facility and buy equipment for the new classrooms.

Registration forms will be available for download from the ACCC Web site: <http://accr.arc.nasa.gov>. Registration forms can also be requested by contacting the ACCC at MS T20-D, NASA Ames Research Center or by e-mail at childcare@mail.arc.nasa.gov.

Event Calendar

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

Ames Ballroom Dance Club. Classes on Tuesdays. Begin classes at 6:15 p.m. Higher-level class meets at 5:15 p.m. Held in Bldg. 944, the Rec. Center. POC: Helen Hwang, e-mail: hwang@dm1.arc.nasa.gov.

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

Ames Child Care Center Board of Directors Mtg, every other Thursday (check Web site for meeting dates: <http://accn.arc.nasa.gov>), 12 noon to 1:30 p.m., N-215, Rm. 212. POC: Tom Maier, ext 4-3643.

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. 19, Rm 1042. Info: <http://www.afeu.org>. POC: Marianne, 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, 2nd Thurs of ea. month (Feb through Nov), 11.30 a.m. -1 p.m. Bldg. 223, Ames Visitor Center & Gift Shop, special events room. 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: Julie Morsellino, 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, ext. 4-5137 and Mark Leon, ext. 4-6498.

Jetstream Toastmasters, Mondays, 12 p.m. to 1 p.m., N-269/Rm. 179. POC: Cathy Payne at ext. 4-0003.

Model HO/HOn3 Railroad Train Club, Bldg. 126, across from south end of Hangar One. Work nights: usually Fridays, 7:30 p.m. to 9:30 p.m. Play time: Sundays, 2 p.m. - 4 p.m. John (408) 735-4954 (W) or (408) 281-2899 (H).

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 meets the first Fri. of each month at HomeTown Buffet, 2670 El Camino (at Kiely), S. Clara, 11 a.m., lunch \$6.70, Spkr. 12 noon Spkr. April 4: Visit by CA State President of NARFE. 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, ext. 4-1132.

Retirement seminars scheduled

The following retirement seminars for federal employees will be held in the ballroom of Building 3 from 8:30 a.m. to 4:30 p.m:

- For CSRS employees: Wednesday, April 2
- For FERS employees: Thursday, April 3

These seminars will provide you with a detailed understanding of the benefits you are entitled to receive

under the Civil Service Retirement System (CSRS) and the Federal Employees Retirement System (FERS).

Topics will include: retirement eligibility, annuity computations, survivor benefits, health and life insurance, Thrift Savings Plan and Social Security and Medicare.

If you are unable to attend, contact Lita Que at ext. 4-1019, or Mary Perez at ext. 4-6865, as employees are on the waiting list to attend the seminars.

Fire department to hold pancake breakfast

An all-you-can-eat pancake breakfast is set for April 15 and April 16, from 7 a.m. to 11 a.m., at the Moffett Field Fire Department fire house, Building 580 on Zook Road near historic Hanger One. Bushnell turns into Zook Road.

Cost is \$5.00 for adults and \$4.00 for children.

The department will also check your child's safety restraint car seat as part of the 'Buckle-up Baby Program' to check if the seat has been installed properly and/or recalled.

For more information about the event, call ext.4-4525.

Core Financial Project advances

On March 13, the center Core Financial project completed all of the preparation criteria required to advance the project to its next phase, and was given the authorization to proceed by the Agency Core Financial Project Office. The Core Financial team is now executing the final sequence of implementation steps required to go-live during the week of April 21, joining five other successfully implemented centers MSFC, GRC, KSC, JSC and HQ.

As of March 6, most financial and purchasing users have stopped entering transactions in the legacy financial systems and started utilizing manual data capture and reporting processes in the interim. This interim step is necessary to prepare data in the old system to be converted to the new system. The first couple of weeks after we go live,

users will be given access to the system in phases: first the project team; then users with interim transactions to enter; finally, all remaining users. Details on phasing access will be available and communicated to affected users during April.

The Core Financial system represents a great deal of change for Ames users. Like any major change, end users can expect a transition period and a learning curve. Employees should be patient as we learn and adjust to new processes and a new tool. Your patience, commitment and openness will help the center get through this initial stage and and move us toward enjoying the benefits of the Core Financial system.

For more information, visit the Core Financial Web site at: <http://ifmp.arc.nasa.gov>

Safety Data

	Civil Servants	Contractors
Not recordable first aid cases	1	1
Recordable no lost time cases	0	0
Lost time cases (Under new OSHA rules, lost time is defined as restricted duty and/or days away from work (lost work days))	0	1
Restricted duty days	0	4
Lost work days	0	1
Data above is for February 2003.		

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

For sale: Two story, bi-level townhouse, 3 bd/2ba, 1,188 sq. ft. in Fremont. Rms include dining area, inside laundry room. New appliances. A fireplace. Home network wired for broadband internet (cat 5 cabling). 1 car garage. lrg rdwd deck in bkryd. Walking distance to Lake Elizabeth/Central Park. \$330K or make offer. Call (510) 209-1311.

A quiet couple looking to share a 2bd/2ba condo in South Palo Alto boundary to Mountain view, less than 5 miles to Ames. Separate bedroom area. Abundant storage/closet, private yard, covered parking. On-site pool and laundry. \$1,500 total rent. Call (650) 856-9122.

Cottage for rent, 1 bd/1ba, in Cambrian/Good Samaritan area, small but cozy. Single person only. Non-smoker/no pets private entrance, off-street parking, \$850/mo. includes all utls except phone. First and last month rent, no dep. Avail. April 1. Call (408) 377-4427.

For sale: 2bd/2.5 ba townhouse, San José; 2-story end unit 1,241 sq ft w/2 master suites, 2-car garage. One block to H280/680, close to Willow Glen area; great condition; \$350K. Mark (408) 279-2168.

Condo, 1 bd/1 ba, downstairs patio unit, pool, carport, \$850 per month, Berryessa area of North San José (Near I-680). Jeff (650) 941-1721.

Room for rent in quiet Los Altos close to Ames. Share with professional males/females. Large house and yard with gardener. W/D, N/S, no pets. \$600/mo + dep and 1/4 utls. Call (650) 964-2913.

For rent, room in condo unit. Share unit with prof'l female, San José (near Campbell), female pref'd, no pets, N/S, \$650/month + half utilities. Call (408) 977-0673 or e-mail at: cecemad93@earthlink.net.

Room with large closet in 4 bd/2 ba home excellent, Mtn. View area close to Ames. New carpet, washer, dryer, microwave, fireplace, wired for cable modem. Tidy person and nonsmoker. Easy access to Ames, H85, 237, & 101. \$445 + share utls. Avail. April 1. Call (650) 964-1900.

End your commute problems in this Milpitas mobile home park. Double wide mobile home is available for \$86,250. Space rental is only \$550/month, and they accept families. For more info e-mail: D49erAmor@yahoo.com

Miscellaneous

Dual-CPU computer, P2/333MHz, w/sound, U/W SCSI, AGP slot and SVGA monitor. Asking \$175. Mike (510) 278-2601.

Antique oak ice chest, 3 doors. Approx 54" tall, 36" wide, 18" deep and heavy. \$375. Laura (408) 343-1272.

Oak Jenny Lind crib (\$30) and crib mattress (\$10). Both together (\$35). Joan (650) 493-0729.

Moving sale. Gas-powered lawn mower: \$50. Very good condition. Redwood bunkbed w/ mattresses: \$65. Call (408) 230-4212.

Airhockey set from Brookstone. Perfect cond, only used 3 times. Approx 26" X 50 plus legs. \$150. Rolltop desk, walnut veneer 20"H X 24D X 32W plus 24" legs. Pencil drawer, 4 cubby drawers, 3 letter slots. \$75. Call (510) 278-2601.

5-pc cherry wood bedroom set. Cal King. Asian floral Design. Excellent condition. Pd over \$2,500 will sacrifice for \$850 or B/O. Call (209) 836-4290 after 6:30 p.m. Ask for Fernando or Jan.

Macintosh laser printer with two new cartridges: \$75. Works very well. Call (408) 230-4212.

TV armoire and matching end table w/3 drawers, perfect for bedroom, stained honey-color finish, like-new \$65. Call (408) 295-2160.

Want to fly? Looking for one (1) private pilot who wants to earn his/her commercial license (or just build time) in an IFR-certified Cessna 172, at reasonable price. Flight instruction avail. to earn both commercial license and instrument rating. Minimum number of monthly hours apply. Page Mike (408) 788-0962.

Reclining chair, \$35; 28" square end table, \$30; stereo cabinet and speakers, \$50; TV stand, \$20; 9 cu.ft. freezer, \$45; portable microwave w/table, \$25; square rdwd picnic table w/benches and umbrella, \$50; 8 blue and ivory area rugs, various sizes. Call (408) 255-8362.

Free! Small microwave. Works. Janet or Jack (650) 961-6117.

Credenza/hutch, 20" X 30" X 46" beautiful honey-laquer finish, excellent condition, made in Mexico, \$350. Call (650) 473-0604.

Sailboat 1/4 partnership. 25' Pacific seacraft in Fort Mason marina (San Francisco). \$3,000 or B/O. E-mail silvanopc@yahoo.com or call (415) 826-3041.

Bird-of-Paradise, healthy 7' indoor plant outgrew its space. Free to good home. Eilene (408) 979-9107.

NOVA walker, green with hand brakes, for person 5 feet tall or shorter, excellent condition, used two months, half price, \$128. Call (408) 732-7080.

Oak Captains beds in excellent condition. Has extra long mattress and 4 drawers. \$300 or B/O for both bed and mattress. Call Pattie Robben (408) 448-1024.

2,600 square feet of commercial space for lease. 2 blocks from downtown Mountain View (off of Moffett Blvd.). Very reasonable price. For details call Monday thru Friday, 9 a.m. - 2 p.m. or leave a message at (650) 967-4234. Ask for Kirsten.

Transportation

'78 Miley 2-horse trailer w/ramp, extra tall, extra wide, 29"W x 81"H x 6'D. New tires, new floor, new front windows, new outside lights. Fully-closed back, ramp needs some reinforcement work. Structurally safe trailer. Asking \$1,800 or B/O. Call (650) 365-3690.

'82 Audi 4000, 2 dr, 147K mls. Runs ok, about 30 mpg, but A/C is broken. Bought new car, so this vehicle is available for \$400 or B/O. Call (650) 962-1314.

Camper van, high top, self-contained, 114K mls on '87 Ford Econoline engine. \$6,000 or B/O or trade w/car. Runs great. Needs some body work. Email silvanopc@yahoo.com or call (415) 828-0513.

'88 Toyota Camry LE, white w/blue int., clean, gd cond., all equipment works. 177K mls; engine replaced @ 149K mls. \$1,795. Sunnyvale (408) 244-9732.

'88 Subaru XT-6, 2 dr sports sedan. Automatic, AC, 124K mls. Kelly Blue book lists it at about \$1,500 (low value). Due to head light condition, pricing at \$1,200. Any mechanically-inclined individual can fix this. Call/lv msg. for Kevin at (408) 723-2115.

'94 Ford Explorer, Limited, 4x4, at, 4.0L V6, 4 wh ABS, ac, ps, pw, pdl, tint, cc, mnrf, rf rack, lthr, lumbar, cass. w/ sub woofer, \$6,500. Call (408) 267-6635.

'95 MAZDA Miata, auto trans, exc cond, chrome alloys, ac, pwr steer, cass, hard and soft tops, car cover, bra, 84k, must see, sharp, \$7,500. Call (510) 623-7054.

'96 Cadillac DeVille Concours Sedan, excellent condition, 4 door, leather, 104K mls, \$9,000. Jeff or Kim at (650) 529-0332.

'96-Chevy S-10 Pick-Up extended cab, V6 automatic trans w/overdrive, camper shell w/carpet camper pkg, shell matches truck color. Trailer hitch for towing w/power assist brakes for trailer. Hood and grill covers, have used Amsoil and filters since new. Immaculate condition, always maintained at chevy dealers. \$7,500. Call (408) 270-1582.

'96 Green Suburban, w/75k mls, tow, leather, CD, rear air, factory privacy tint, runs good, Offering 2K below blue book for bumper and minor cosmetic damage, \$9,000. David (415) 759-5248.

'00 Honda Odyssey LX, 54K mls, gray, dual A/C, fold-down rear seat, Yakima bike rack, new frnt tires, w/ extended transmn warranty and \$100 credit at Larry Hopkins Honda. Exc. running cond., \$18,700 or B/O. Call (408) 358-5080.

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-223
(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 min. Includes linens, cleaning, propane fireplace, fully equipped. Call (650) 968-4155, DBMcKellar@aol.com

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

Vacation rental, Bass Lake CA 14 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 lovely canyon setting. Fully eqpd kitchen. Access to priv. beach. Tub in patio gdn. Halfway between Carmel & Big Sur. \$175/night for 2; \$225 for 4 and \$250 for more, plus \$150 cleaning dep. Call (650) 328-4427.

Incline Village: Forest Pines, Lake Tahoe condo, 3 bd/2 ba, sleeps 8. Fireplc, TV/VCR, MW, W/D, jacuzzi, sauna, pool. \$120/night low season; \$155/night high season. \$90 cleaning fee and 12% Nevada room tax. Charlie (650) 366-1873.

Tahoe Donner vacation home, 2 bd/2ba. trees, deck, sun, fun. 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.

Car Pool

Car pool from Pleasanton. Contact Natalio Mingo at mingo@nas.nasa.gov or ext. 4-1776 or contact Deepak Kulkarni, kulkarni@ptolemy.arc.nasa.gov or ext. 4-4869.

Carpool from Monterey/Carmel/Salinas. Call Bob Mohlenhoff at ext. 4-2523 or e-mail him at: bmohlenhoff@mail.arc.nasa.gov.

Seeking car pool from East Bay (within 20 min. of Berkeley) to Ames. Flexible schedule, part time OK. I will provide car, gas and bridge tolls if you do the driving (I'm recovering from back surgery). Cecilia Aragon at e-mail: aragon@ptolemy.arc.nasa.gov

Seeking car pool riders from Marin county via SF, 19th Ave. Highway 101 X Highway 1. If you would like to join us, contact: Al Kile (415) 380-5068 (H) or call ext 4-1221.

One person needed to join car pool from Los Gatos. Compressed schedule: 6:30 a.m. - 4 p.m. Contact Tim Gafney at ext. 4-6405 or e-mail Timothy.J.Gafney@nasa.gov

S P O N S O R S : NASA Ames Research Center • DePaul College • RISEM The National Center For Women In Science, Technology, Engineering and Mathematics

Winter/Spring 2003
A lecture series to inspire people of all ages

Women in Science

NO LIMITS

Lecture Series

Flint Center
Bring signs, quarters for parking
Cupertino, CA

**Wednesday
April 2**

**Protecting and Preserving Earth's
Fragile Atmosphere**
1:30-3:30 p.m.

**FREE
& OPEN to the
PUBLIC**

Speaker: **Dr. Azadeh Tabazadeh**, NASA Ames Research Center
Moderator: **Celena Wilson**, Superintendent, San Jose Unified School District

Dr. Tabazadeh, a NASA atmospheric scientist, will discuss the fragile atmosphere surrounding the Earth, good and bad ozone and the causes of air pollution and global warming.

Go to www.flintcenter.com or call
(408)864-8816 for more information

Admission is free and open to the public • Please bring 2 quarters for parking





Ames Public Radio & Phone

1700 KHz AM radio -- information announcements and emergency instructions, when appropriate, for Ames employees. The emergency information phone number for Ames is (650) 604-9999.

Astrogram deadlines

All Ames employees are invited to submit articles relating to Ames projects and activities for publication in the *Astrogram*. When submitting stories or ads for publication, submit your material, along with any questions, in MS word by e-mail to: astrogram@mail.arc.nasa.gov on or before the deadline.

<i>Deadline:</i>	<i>Publication:</i>
March 28	April 2003
April 29	May 2003
June 26	July 2003
July 29	August 2003

VPP STAR Tip

Employees interviewed can explain the system(s), including at least one that includes reports in writing, to get hazards they notice corrected and/or for making suggestions for safety and health improvements.

...Margaret Richardson, in Preparing for the Voluntary Protection Programs, Copyright © 1999 by John Wiley & Sons



National Aeronautics and Space Administration

Ames Research Center
Moffett Field, CA 94035-1000

Official Business
Penalty for Private Use



FIRST CLASS MAIL
POSTAGE & FEES PAID
NASA
Permit No. G-27



The Ames Astrogram is an official publication of Ames Research Center, National Aeronautics and Space Administration.

Editor-in-Chief.....Ann Sullivan
Managing Editor.....Michael Mewhinney
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.

 PLEASE RECYCLE
Printed on recycled and recyclable paper with vegetable-based ink.