

The Doctor is IN!

Ames and Salinas Valley pioneer 'virtual hospital'

The days of the "house call" are definitely over for most Americans. And few can deny that technological innovation and the pace of modern life have been major contributors to the downfall of this institution that many of our parents once took for granted. But who is to say that technology can't also come to the rescue, that things can't come full circle? Recent developments lend credence to this view.

Evidence the fact that, on Sept. 9, Ames Research Center and the Salinas Valley Memorial Healthcare System (SVMHS) signed a Space Act agreement to partner in the implementation of state-of-the-art information technologies to develop a 'virtual hospital' by January 1999.

And what, you may well ask, is a virtual hospital? In simple terms, it is defined as a healthcare 'facility' without walls, but with the technology and capability to transmit, receive and manipulate three-dimensional, high-fidelity, high-resolution images in near-real time.

Under terms of the recently signed accord, Ames will utilize its expertise in bioinformatics and high-speed, high-bandwidth networks to establish a workstation at Salinas Valley capable of rapidly transmitting data and receiving 3-D images of the human body.

This emerging next generation of telemedicine seeks to combine the sophisticated techniques of modern medical imaging with the latest developments in 'Next-Generation Internet'-type technologies. It promises to revolutionize modern healthcare and, in the process, may require development of a whole new way of looking at the doctor-patient interface.

The virtual hospital project will give doctors at Salinas Valley, and potentially those at other, geographically dispersed locations, the capability to share true-fidelity patient data (like X-rays, MRIs, and other 3-D images and data sets) on line. In this way, this new generation of 'cyber surgeons' will, in effect, be able to make house calls on patients' miles -- or even continents -- away. They will also be able to collaborate with their colleagues around the corner or around the world, both in the areas of consultation and diagnosis and in the performance of actual, although 'virtual,' surgeries. In the process, they can provide crucial feedback to Ames engineers and researchers regarding image quality and network efficiency in real-world, high-risk/high-payoff situations.

Why did Ames and Salinas Valley decide

to join forces in this ambitious project? Clearly, the two organizations recognize their respective strengths and needs, and hope to prove the power and synergy that comes of a world-class research laboratory working hand-in-hand with a world-class healthcare provider on a problem of mutual interest and concern.

Ames is NASA's Center of Excellence



The Space Shuttle makes a perfect landing at SVMHS!

for Information Technology. As such, Ames is a major contributor to research on the Next-Generation Internet, and is developing IT solutions for incorporation into all NASA programs in pursuit of NASA Administrator Dan Goldin's vision of "faster, better, cheaper" and the consequent order-of-magnitude forward technology leaps. Ames also has a growing expertise in biocomputation and bioinformatics, largely as a result of the pioneering work of Dr. Muriel Ross and her Ames team in these emerging fields.

Salinas Valley, while enjoying a rural setting, is a high-technology healthcare institution with a specialty in heart and oncology surgeries. Indeed, statistics provided by SVMHS demonstrate that they are comparable to UCLA, Stanford and other leading national medical facilities in terms of the number of heart catheterizations, angioplasties and bypass surgeries conducted on an annual basis.

William Berry, Ames' Deputy Director, and Salinas Valley Chief Executive Officer, Sam Downing, signed the agreement on behalf of their respective organizations. It is anticipated that, once the virtual hospital concept has been demonstrated, Ames and SVMHS will work with Stanford and the Cleveland Clinic to explore the possibility of implementing the resulting technology in remote areas around the world. Plans for 'transporting' the technology to



photos courtesy of Bob Smith and SVMHS

Bob Smith shows the audience examples of medical imagery available via the "virtual hospital" while Salinas Valley Medical Healthcare System (SVMHS) CEO Sam Downing and Ames' Deputy Director William Berry look on.



Spanish-speaking television network Telemundo interview SVMHS' Sam Downing and Ames' William Berry.

largely inaccessible parts of Alaska and for using it in a cooperative demonstration project with the Navajo Nation are under preliminary consideration.

This is the first Space Act agreement of its kind between a NASA field center and a community hospital. However, it is typical of the new NASA way of doing business. And it is reflective of ever-increasing agency efforts to commercialize aerospace technologies while reaching out to local communities in the conduct of collaborative research and programs of mutual benefit.

BY DAVID MORSE



Ames ISO Web-site address:
<http://dqa.arc.nasa.gov/iso9000>

see related story on page 6

Ames Activities

National Pollution Prevention (P2) week is scheduled for September 21 to 27

National Pollution Prevention Week '98, September 21 through 27, will be celebrated across the country to highlight the important role pollution prevention plays in protecting both our environmental and economic resources. Pollution prevention targets the source of pollution, before it is created, and can be accomplished by re-designing processes, using less toxic chemical inputs, and improving general operating practices. Pollution prevention benefits the entire community by increasing industrial efficiency, reducing costs, and enhancing environmental quality.

At home, residents can help prevent pollution by using protective practices and safer products for cleaning, maintenance and gardening activities.

National Pollution Prevention (P2) week is a perfect time to renew ones commitment to pollution prevention. Since Na-

tional Pollution Prevention week is coming up, plan to get involved! The Ames Environmental Services Office, Code QE, will be sponsoring an informational booth in the Ames Cafe between 11:30 am and 1 p.m. each day during this week. Flyers and posters will be available, highlighting the ways in which we can all reduce and eliminate pollution both at home and at work.

For more information about pollution prevention initiatives at Ames, contact the Ames Pollution Prevention coordinator, Jill Moudy, at ext. 4-3531. Additional pollution prevention resources are available through Santa Clara County. These resources include:

1. A guide to local reuse opportunities, available from the County Recycling Program. The hotline phone number is: 1-800-533-8414. The Web site URL is: <http://secondhand.com/~rtnc/resale/second/>

2. Tips on ways to help protect our ocean and bay by cleaning up local creeks. The phone number is: (408) 265-2607 ext.2049. The web site URL is: <http://www.ci.sunnyvale.ca.us/events/cleanup-0898.htm>

3. Activities calendars are, available from the Santa Clara County Pollution Prevention Program. The phone number is: 408) 441-1195. The email address is: P2_Program@qmgate.pln.co.scl.ca.us.

P2 projects actually improve quality, reduce production time, ease compliance, and save money. Whether the steps you're ready to take are large or small doesn't matter -- just make a commitment to P2 and get started.

Intranet Web site: ARCWeb introduced

The Applied Information Technology Division (Code JT) introduces the Ames Intranet. This special web site, called ARCWeb, serves as a central access point to most of the important Ames links for business services, research tools, computer tools, licensed software, employee information, training, and much more. Almost 200 local Ames web sites have been collected for the ARCWeb links.

ARCWeb is accessible by using your web browser and pointing to: <http://arcweb.arc.nasa.gov>.

It's an excellent starting point for you to find the information you need to do your work. You can learn about current Center events, the Ames organization, Center projects, information from the Center Director, archived Centerwide e-mail, and work place changes that affect you. We would like to suggest that everyone reset their browser to see this page as their new "home" page.

This is the first release for ARCWeb. We'll continue to add new links to Ames information and software tools. If you have a web site that provides information for Ames staff that should be included, please send an e-mail to <mailto:arcweb@mail.arc.nasa.gov>.

Ultimate frisbee at Ames

Ultimate frisbee is an exciting, coed, non-contact, team sport using a flying disc, or frisbee. The emphasis is not on winning or losing a game, but rather on having a good time, meeting new people, and getting exercise. The object of the game is to advance the disc up the field by throwing it to teammates, while the other team tries to block or intercept the passes. Players cannot run with the disc, and a point is scored when a catch is made in the end zone. Teams generally have seven players on a side but the game can be played with less. Since Ultimate frisbee is a new sport to many people, it is common practice at NASA Ultimate to briefly interrupt play to help someone understand the rules.

Perhaps the most unusual and wonderful aspects of Ultimate is something called "Spirit of the Game", which is actually written into the official rules. Competitive play is encouraged, but never at the expense of respect among players, adherence to the rules, and the basic joy of play. There are no referees, and players are expected to call their own fouls, to respect

others' foul calls and to resolve any disputed calls without argument. This tradition of sportsmanship is upheld, even at the World Championship level.

Ultimate frisbee is played at Ames year-round, every Thursday at 12:30 p.m. at Orion Park, (outside the main gate, across from the Visitor Center.) New players of any level are always welcome. Come on out and give Ultimate a try!



Jim Kennon and Doug Rainforth go for the disc at NASA Ultimate frisbee.

It's that JASON time of the year again!

Do you know a classroom teacher in grades 3-9? Are you, or do you know, a 4-H, Boy Scouts, Girl Scouts, or other youth leader? Do you have children, grandchildren, or neighbors that might be interested in participating in this year's JASON Project?

"Rainforests - A Wet and Wild Adventure," is the theme for the 10th annual JASON Project, to be hosted for the fifth consecutive year at Ames. Any group of students can join in the virtual exploration of the rainforests this year -- a comparative study of the fossil rainforests in Denver, the temperate rainforests in the Olympic Peninsula, and the tropical rainforests in the Amazon Peru. Teacher training sessions are scheduled for October, November and December. The telepresence broadcast/field trips will be held during the first two weeks in March 1999. More than 12,500 young people, their teachers, parents, and other chaperones were captivated by last year's

underwater program at Ames, yet others were turned away because their teachers didn't sign up early enough to attend the teacher trainings...so ACT NOW!!!

If you know a teacher that might be interested in receiving information about this FREE educational opportunity, send the adult name and school name -- we can locate the correct person and see that he/she receives information. If you would like to receive information yourself and pass it on to someone, contact us and let us know your name and mail-stop!

For additional information, you can contact Lisa Marie Gonzales at ext. 4-2046 or via e-mail at: lmgonzales@mail.arc.nasa.gov. In addition, you can check out the JASON homepage for more insights into the rainforests at the following web site: <http://www.jasonproject.org>

BY LISA MARIE GONZALES



Arthur Stephenson named to head Marshall Space Flight Center

Arthur G. Stephenson, President of Oceaneering Advanced Technologies, Houston, TX, has been named to become the next Director of NASA's Marshall Space Flight Center, Huntsville, AL.

Stephenson has over 30 years' experience as a manager in spacecraft and high technology systems.

"Arthur Stephenson is a bright, aggressive person who will fight for issues critical to NASA, and who will make sure this Agency has the best launch and in-space propulsion capabilities and technical tools in the world. He will bring a wealth of experience and a fresh vision to the operation of the Marshall Center, one of NASA's crown jewels," said NASA Administrator Daniel S. Goldin.

Goldin added that Marshall Deputy Director Carolyn Griner would assist in the transition and thanked her for serving as acting Center Director.

"Carolyn Griner has done a wonderful job at Marshall. She is deeply admired and respected by the Center staff. With these two accomplished leaders at the helm, I look for great things from Marshall in the future. With Arthur's vision and Carolyn's expertise, they make a dream team for the Center."

Since 1992, Stephenson has been a senior official with Oceaneering International. Prior to that, he worked for TRW, Redondo Beach, CA, for 28 years, and last

served there as Director, Space Transportation and Servicing Advanced Programs.

At Oceaneering, he was responsible for the company's work for government agencies such as NASA, the U.S. Navy and the Department of Energy, and led the acquisition of ILC Space Systems Division in 1993. His role at Oceaneering also included overall responsibility for products and services ranging from astronaut tools and equipment to space flight robots; life support equipment; thermal protection systems for launch vehicles such as the Titan,

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-- NASA Administrator Dan Goldin

Atlas and Delta; and special thermally controlled robotic space facilities such as the crystal preparation portion of the X-ray Crystallography Facility for the University of Alabama.

"I consider him a very dedicated, loyal,

and people-oriented person," said Steve Harris, who served as Director of Marketing for TRW in Huntsville.

During his 34-year career, Stephenson has worked on a variety of programs related to the activities at Marshall, including the Orbital Maneuvering Vehicle in the 1970s and '80s, the Gamma Ray Observatory, automated rendezvous and docking and the space welding inspection EVA tool. The Oceaneering services he directs also include International Space Station robotic system engineering support to Boeing, the prime space station contractor, and commercial operation of Marshall's underwater training facility.

Stephenson began his career designing digital test equipment for Project Apollo. From that beginning, he progressed to receiver and transmitter circuit design, and then to communications systems design. Over time, he moved to management of spacecraft subsystems, then entire spacecraft and ultimately entire launch vehicles.

Stephenson holds a B.S. in electrical engineering from the University of Redlands. He is a senior member of the American Institute of Aeronautics and Astronautics.

Astrobiology Academy celebrates second graduating class

On August 27 and 28, 15 members of Ames' second graduating class of the Astrobiology Academy presented the results of their summer research to an audience of their peers, NASA researchers and administrators.

The NASA Astrobiology Academy is a unique summer institute of higher learning whose goal is to help guide future leaders of the U.S. Space Program by giving them a glimpse of how NASA operates. Applicants are chosen from college juniors and seniors and first-year graduate students for their scientific accomplishments, scholarly achievement and individuality.

The program's main goal is to bring together NASA's future multidisciplinary astrobiologists from a broad range of fields, said Academy director Dr. Douglas O'Handley.

"The goals of the Academy are three-fold and are much broader than those of Ames — assigning the students to top researchers to make significant contributions toward a NASA mission, providing information about the disparate elements that make NASA missions possible, and visiting NASA partners and collaborators in the aerospace industry," O'Handley said. "Future missions to space involve profound multidisciplinary challenges."

During this summer's 10-week program, students developed independent lab-based projects under the direction of their assigned principal investigator (PI). They also participated in sessions and workshops with government, industry and academia leaders, visited other NASA facilities and scientific institutions and led a group project of their choosing. This year the students visited Lockheed-Martin, Lick Observatory, JPL and Desert Research in Reno.

The core of the program is teamwork. "It's been an incredible summer," said Joe Tamer, one of three of the Academy's resident assistants, prior-year students who are mentoring the current crop. Tamer graduated this year with a BS degree in Biology from the University of Rochester. "The academy gave me a lot of 'lessons learned' about people and about life. Everyone, me included, will take what they learned, including the team-building exercises, back to school and to our lives." This

year the group took a rafting trip to the Truckee River and hiked at Yosemite and Lake Tahoe.

This year's students encompassed an



Astrobiology Academy students on July 4th during Lake Tahoe outing.

academic cross-section, including Harvard University, Abilene Christian University, Princeton University, Michigan State University, Colgate University and the University of California, Irvine. Areas of study ranged from astro-geophysics, medicine and mechanical engineering, to aerospace engineering and biology.

Student's summer projects included studying adaption to simulated Mars gravity, analyzing Hubble Space Telescope data of the Orion Nebula, observing the interactions between mechanical load and cellular response, measuring solar radiation in the atmosphere and studying its implications in climate and remote sensing applications, and studying musculoskeletal biomechanics and the formation of biomolecules on interstellar grains.

Student's final presentations included studying the DNA repair mechanisms of early Earth organisms that are exposed to UV damage, studying water vapor and aerosol in the atmosphere to help determine how much solar energy is absorbed in the Earth's atmosphere, and quantifying calcium absorption rates in mice.

"The latter could lead to a drug to stabilize or increase bone calcium levels in astronauts and osteoporosis patients," said

Academy researcher Stephen King. Two measures of student success are employment and co-authoring papers, O'Handley said. Last year's first graduating class boasts 7 out of 11 students employed (or soon to be) in the space industry and two students accepted into JSC's astronaut program. This year, four students will co-author a professional publication, five will attend graduate school and eight will return to Ames next summer in a research capacity.

Ames continues its mentoring role even after the Academy sessions are completed. Each student has a permanent e-mail address at Ames to keep in touch and correspond with Pls. "We're building a lifelong relationship," O'Handley said.

The program is highly competitive; this year's 15 students were selected from 56 applicants from 31 states.

Interested students for the 1999 summer program should submit applications to the Space Grant Consortium office in their state for initial screening by January 30, 1999.

The Academy costs approximately \$10,000 per student for the 10-week program, including food, lodging and transportation. The program is co-sponsored by 52 NASA state space grants and fellowships under the NASA National Space Grant College and Fellowship program, the state Space Grant Consortium and participating NASA centers.

The first program, called the NASA Academy, was launched at Goddard six years ago, modeled after the International Space University in Strasbourg, France. Currently, there are academy programs in various disciplines at Dryden, Goddard, Marshall and Ames.

Ames is the lead NASA Center for Astrobiology — the multidisciplinary study of life's origin, evolution, distribution and destiny in the universe. Astrobiology research ranges from the protection of Earth to seeding terrestrial life in space and terraforming extra-solar planets. In astrobiology-related space technologies, Ames is also the lead Center for thermal protection systems, critical for future planetary atmospheric entry vehicles.

BY KATHLEEN BURTON



Ames Activities

Mentoring--it's a positive experience for all!

Have you every wondered where you would be now if not for that special someone who took the time to focus strictly on you? Would you be on the same career path? Would you have somehow strayed and lost your way? If you have a reflective smile on your face, you are probably thinking about the important role some special mentor played in your life.

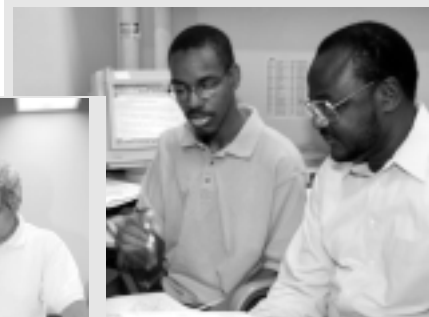
Based on feedback received from many of the students in this year's summer internship programs, I am delighted to say that mentoring is alive and well at Ames!

Lancet Foster, who returned to Morehouse College as a senior this fall, stated that "this summer internship has been a pleasure and a wonderful chance to gain hands-on experience in my future career field. I have been blessed and extremely fortunate to have had an opportunity such as this." Most student interns have similarly positive comments.

Not only do summer interns have the opportunity to work with researchers, scientists and other professionals, their mentors are able to impart advice that has a lasting effect upon the intern. Ali Finley who worked with Linda Vrabel said, "Getting involved in what's going on in the office helped me to gain a thorough understanding of how NASA operates. My mentor suggested that I occasionally help other specialists in the environmental department with their projects so that I could get a look at the many other things that the department does. She helped me to get out to take a look at the many other things



Lancet Foster (student) with Rabi Mehta (mentor).



photos by Dominic Hart
Ali Finley (student) with Dr. Peter Yimbo (mentor).

that NASA does. It's more than building Space Shuttles. Now I know what it means to manage my time. You never have as much as you think you do, so use what you have to the fullest."

It is quite apparent the impact mentoring has upon the student, but what about the mentor! What is in it for the mentor? Apparently, a great deal if we are to draw our conclusions from comments made by many of this summer's mentors! Cedric Walker and Stan Harke were so elated by their experience that they have requested both Justine Bailey (Spelman College) and Milton Williams (Morehouse College) to

join their team again next year.

Walker and Harke took the interesting and unusual approach of involving their interns in daily activities. Not only did the interns participate in staff and team meetings, lunches and parties, they also spent an hour each day watching footage of the Apollo missions. This exercise not only

gave the interns valuable information regarding the missions, it also highlighted the need for teamwork and demonstrated to the student interns the pride, enthusiasm, and gratification that comes from participating in research that is on the cutting edge.

Many of this year's mentors have remarked that they have found new joy in performing their jobs as a result of their experience this summer. Looking at their work through the eyes of high school, undergraduate and graduate students has renewed their spirit. Many are continuing the relationships fostered this summer by keeping in contact with the interns.

If you are interested in obtaining a summer intern next year, there will be plenty of opportunities to do so. Please contact Brenda Collins at ext. 4-3540 or Patricia Powell at ext. 4-6988 for additional information. It can be a life-changing experience for all parties!

BY BRENDA COLLINS

'98 U.S. Savings Bond Campaign closes

The 1998 U.S. Savings Bond Campaign closed with an awards ceremony held at the Ames Café on August 24. Speaking for the Center Director, Dr. Jack Hansen thanked all the canvassers and coordinators for their hard work and congratulated everyone on a job well done. Bev Akins was honored for her work as the Campaign Co-Chair and Devin DeKeczer for his work as a student intern supporting the campaign. Dougal MacLise was introduced as the Co-Chair for the 1999 Campaign.

Bob Sudderth and Rick Corrigan from the U.S. Treasury Department were on hand to give out certificates to each of the 100 coordinators and canvassers to show appreciation for all their hard work. They congratulated Ames on a very successful 1998 campaign. In addition to the Treasury Dept. certificates, each canvasser re-

ceived a "Time-Off" award and a U.S. Savings Bond Campaign commemorative coffee cup. Each coordinator received a commemorative desk clock and a "Time-Off" award with their Treasury certificate.

Four special awards were presented for achievements during the campaign. Arlene Pineo and Dan Dugan were each presented with a \$100 Savings Bond for signing up the most new participants. The award plaque for the highest participation was presented to Code D, while Code J won the plaque for the highest number of new participants.

Lynda Haines also received a special award thanking her for the many years she has supported the Bond Campaign as the Staff Assistant for the Director's Office.

BY DOUGAL MACLISE



photo by Tom Trower

Bev Akins presenting a \$100 savings bond award to Dan Dugan.

Second ISO 9001 Preassessment slated for November

The first ISO 9001 Preassessment audit by Det Norske Veritas (DNV) was performed during the week of July 20. Since then, the Ames ISO Program manager, the Ames Management Council, and the center Directorates have taken several significant actions to begin preparation for the second preassessment in November. An ISO Executive Representative, Ron Johnson, has been named, two Tiger teams have been formed at the program level, Corrective Action Requests (CARs) have been assigned and are being closed out, and Directorate teams have been created to ensure completion of corrective actions from the preassessment and internal audits (IAs).

A Documentation Tiger Team was created to focus on changes needed for ISO 9001 Quality System documentation. The team has the primary tasks of ensuring that the ISO 9001 requirements flow down properly from the Quality Manual to the

Ames System Level Procedures (SLPs), and to Directorate documents and below; making corrections to the centerwide SLPs according to findings; and completing the remaining centerwide SLPs. A second team, the IA Tiger Team, was assembled with the charter to complete the already-planned internal audits (IAs) and perform a complete second round of audits that cover all directorates, divisions, and branches.

In tandem with the startup of activities by the Tiger Teams, the Ames Corrective and Preventive Action (C&PA) coordinator prepared CARs to address the preassessment findings. All corrective actions were assessed and grouped into eight categories. These were summarized into eight CARs that have been assigned to responsible individuals for action and close-out.

Meanwhile, the directorate teams have begun making respective documentation changes based on preassessment and IA

findings. They are also assessing their individual procedures for proper flow down of Ames SLPs, and for removal of duplication with respect to Ames SLPs and other directorate documentation.

As this strategy and plan are being implemented, our internal audit program will play a key role. The auditors will evaluate how effective the corrective actions are, and keep management informed regarding the state of readiness for the DNV audit.

A point to keep in mind is that both the internal and external audits (DNV) are assessing the quality management system and not the people. The results of the audits are forwarded to management so that appropriate resources can be allocated to address problems found. We all have a common goal in mind: for Ames to be recommended for certification in April 1999.

BY RAY KEMPLE

A GEM of a program helps students and Ames

Four students pursuing advanced degrees in engineering and science have been dazzling their Ames mentors this summer while they work on exciting and important projects. The students, Tori Bailey, Adrienne Matthews, Veronica Lopez, and Shannon Wilson are participants in GEM – the National Consortium for Graduate Degrees for Minorities in Engineering and Science, a program designed to enable under-represented minorities to pursue graduate education in engineering and science. GEM fellows receive tuition, fees and a stipend as well as a paid summer internship where they can work on projects that enhance both their academic and professional development.

For example, Tori Bailey, a new master's student in mechanical engineering at Stanford, is conducting an assessment of the modifications that would be necessary to use the 8-foot centrifuge to perform ground-control studies for the experiments to be done on the 2.5 meter centrifuge planned for the International Space Station. Adrienne Matthews, a second-year graduate student in the Department of Chemistry at the University of California, Santa Barbara, is working under the supervision of Dr. Mark Kliss in the Advanced Life Support Branch to help find a catalyst that will allow the waste gasses from solid waste incineration to be recycled to support plant growth.

Veronica Lopez, a doctoral candidate at the University of California at Davis, is working with Dr. Ruth Globus in the Structural System and Biomineralization Laboratory

to study the effects of zinc deficiency on osteoblast development. Shannon Wilson is contributing to the development of future supersonic transport vehicles through her work on the Artificially Blunted Leading Edge (ABLE) concept project.

"As a NASA GEM Fellow, my work at Ames has been both rewarding and fulfilling; and ties directly to my studies and research at school," said Shannon, currently a master's student in Aerospace Engineering at the Georgia Institute of Technology in Atlanta.

The students are not the only ones who find the GEM program fulfilling. Tina Herrera from the Life Sciences Division, a mentor for Tori Bailey, notes that "Tori has been a great asset to the Life Sciences Division. She has proven herself to be very capable, reliable and self-sufficient. We've been very pleased with her work and look forward to having her return next summer. We appreciate the GEM Program support which has enabled this connection to continue".

Participants for the GEM program are selected by the employer, based on their summer intern needs. In addition to making valuable contributions to the projects they work

on, the students who can be hired by NASA once they graduate, can also strengthen the center's work force by increasing the diversity of the employees who work here. For more information about the GEM program at Ames, contact Patricia Powell, GEM Program Coordinator, at ext. 4-6988.

BY LAURA LEWIS



photo by Tom Trower

From left to right (standing): Patricia Powell, GEM Program Coordinator; Terri Templeton, Co Program Coordinator; and Adrienne Matthews. From left to right (seated): Shannon Wilson, Veronica Lopez and Tori Bailey.

Ames Honor Awards

1998 Ames Honor Awards

A celebration ceremony was held on Wednesday, September 2, in the main auditorium (N-201). A reception was held immediately following the ceremony in the lobby of Building 200 to offer congratulations to the winners and their families and friends.

Contractor Employee

Susanne C. Ashby, QUANTUM Services
Thomas S. Burnett, SIMCO Electronics
Mark Clark, RAYTHEON STX, Corp.
Michael R. Derby, RAYTHEON STX, Corp.
Lisa Marie Gonzales, QUANTUM Services
Stephen Jackson, SVERDRUP
Cetin Kiris, MCAT, Inc.
Norbert M. Ulbrich, CALSPAN
Johannes M. Van Aken, RAYTHEON STX, Corp.
Diane Vaswig, Up To Snuff, Advanced Office Systems
Ethiraj Venkatapathy, ELORET Institute

Secretary/Clerical

Ginny Rochette
Margie Stathes
Hope T. Wilden

Mentor

Sandra C. Lozito
Mark Mallinson

Group/Team

Ames Deep Space 1 Remote Agent Team
Joint Strike Fighter Simulation Project Team
Transport Cab (TCAB) Project Team
Wind Tunnel and Simulation Divisions ISO Certification Team



Ames 1998 Honor Awards winners gathered during the recent ceremony and celebration.

Technician

Samuel Caires
William K. Chun

Administrative

Thomas W. Berndt
Deborah A. Renick
Linda M. Vollenweider

Engineer

Alan R. Boone
Scott Jensen
Joseph J. Totah

Best First Paper by a Junior Researcher

Gregory C. Carr

Technical Support

Danielle J. Goldwater

Equal Employment Opportunity

Michael L. Marlaire

Continual Improvement

Bob Wong

Scientist

Charles Chackerian, Jr.

Supervisor/Manager

Sanford S. Davis
William G. Warmbrodt

Student

Kellie A. Chau
Akili P. Nickson

Headquarters Employee

William C. Stamper



photos by Roger Brimmer

Center Director Henry McDonald poses with award winner Deb Rennick as Gail James reads part of the award citation.

Near-Earth Objects (NEOs): Fact and fiction

Ames' Chief of Space, Dr. David Morrison, is a world-renowned expert on Near-Earth-Objects. With all of the interest surrounding the topic these days, including several blockbuster Hollywood movies, the Astrogram asked him recently to prepare and address the 10 most frequently asked questions on the topic. Here are his responses:

What is an NEO?

Near-Earth-Objects (NEOs) are small bodies in the solar system (asteroids and short-period comets) with orbits that regularly bring them close to the Earth and which, therefore, are capable someday of striking our planet. Sometimes, the term NEO is also used loosely to include all comets (not just short-period ones) that cross the Earth's orbit. Those NEOs with orbits that actually intersect the Earth's orbit are called Earth-Crossing Objects (ECOs).

What size NEOs are dangerous?

The Earth's atmosphere protects us from most NEOs smaller than a modest office building (50 meters diameter, or impact energy of about 5 megatons).

From this size up to about 1 km diameter, an impacting NEO can do tremendous damage on a local scale. Above an energy of a million megatons (diameter about 2 km), an impact will produce severe environmental damage on a global scale. Still larger impacts can cause mass extinctions, like the one that ended the age of the dinosaurs 65 million years ago (15 km diameter and about 100 million megatons).

How many NEOs exist?

There are many more small NEOs than large ones. Astronomers estimate that there are approximately 2,000 NEOs larger than 1 km in diameter, and more than a million larger than 50 m in diameter (the threshold for penetration through the Earth's atmosphere). The largest NEOs are less than 25 km in diameter.

Who is searching for NEOs?

Several teams of astronomers worldwide are surveying the sky with electronic cameras to find NEOs, but the total effort involves fewer than 100 people. The most productive NEO surveys in 1997-98 are: the LINEAR search program of the MIT Lincoln Lab, carried out in New Mexico with US Air Force support; the NEAT search program in Hawaii, carried out jointly by the NASA Jet Propulsion Lab and the US Air Force; and the Spacewatch survey at the University of Arizona, funded by NASA and a variety of private grants. Other searches in the US, France, Japan and China also contribute to

discovery of NEOs, while additional astronomers follow up the discoveries with supporting observations.

Are any NEOs predicted to hit the Earth?

The Earth has been hit throughout its history, and certainly it will be in the future. But none of the known NEOs is on a collision course with Earth.

All known NEOs and their predicted future positions are openly available to everyone with access to the Internet. The problem is that astronomers have discovered only about 10% of even the larger NEOs (diameter greater than 1 km). So 90% of them remain unknown, and we have no way of predicting the next impact from an unknown object.

Will asteroid 1997XF11 hit the Earth in 2028 as predicted?

No! There was never a prediction that XF11 (or any other asteroid) will hit the Earth. In March 1998, one astronomer told the press that XF11 would come close to the Earth in 2028 and that a collision could not be ruled out, but fortunately better calculations and additional observations quickly revealed that there is no risk of a collision.

What is the risk of impacts?

We don't know when the next NEO impact will take place, but we can calculate the odds. Statistically, the greatest danger is from an NEO with about 1 million megatons energy (roughly 2 km in diameter). On average, one of these collides with the Earth once or twice per million years, producing a global catastrophe that would kill a substantial (but unknown) fraction of the Earth's human population. Reduced to personal terms, this means that you have about one chance in 20,000 of dying as a result of a collision.

Such statistics are interesting, but they don't tell you, of course, when the next catastrophic impact will take place -- next year or a million years from now.

How much warning will we have?

With 90% of even the larger NEOs remaining undiscovered, the most likely warning today would be zero -- the first indication of a collision would be the flash of light and the shaking of the ground as it hit. In contrast, if a survey is carried out and NEO orbits are calculated, we would expect many decades of warning. This is the purpose of the proposed Spaceguard Survey. In almost all cases, we will either have a long lead time or none at all.

How can we protect ourselves?

NEO impacts are the only major natural

hazard that we can effectively protect ourselves against, by deflecting (or destroying) the NEO before it hits the Earth. The first step in any program of planetary defense is to find the NEOs; we can't protect against something we don't know exists. We also need a long warning time, at least a decade, to send spacecraft to intercept the object and deflect it. Many defensive schemes have been studied in a preliminary way, but none in detail. In the absence of active defense, warning of the time and place of an impact would at least allow us to store food and supplies and to evacuate regions near ground zero where damage would be the greatest.

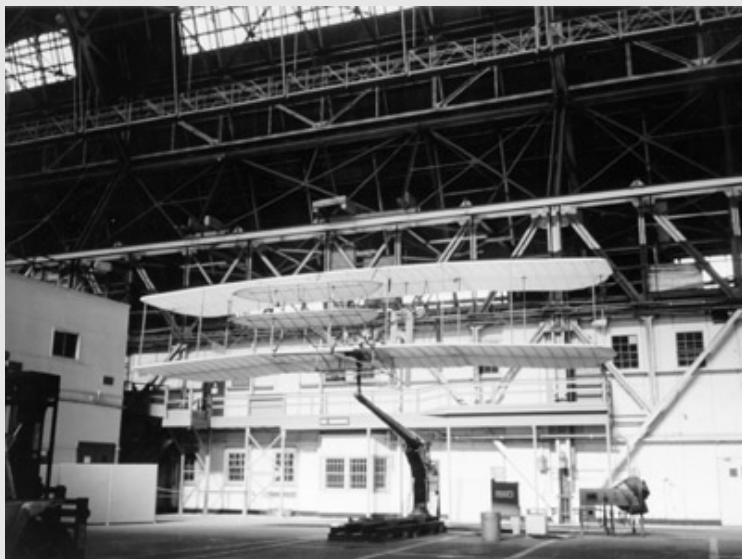
What is the government doing about it?

The US Congress has held hearings to study the impact hazard (in 1993 and 1998), and both NASA and the US Air Force are supporting surveys to discover NEOs. In 1997, NASA adopted the objective of finding 90% of the NEOs larger than 1 km diameter within the next decade. In 1998, NASA created a NEO Program Office, and it is expected that at least \$3 million per year will be spent on NASA-supported NEO searches and orbit calculations. At current (1998) discovery rates, however, the surveys will require a century, not a decade, to achieve 90% completeness. In addition, the US Department of Defense is studying a space mission called Clementine 2 to test the technology for intercepting an NEO. Other governments have expressed concern about the NEO hazard, but none has yet funded any extensive surveys or related defense research. A private Spaceguard Foundation, based in Europe, also promotes NEO surveys on an international basis.

BY DAVID MORRISON



Ames Activities



Wright Flyer prepares for move

In preparation for its wind tunnel tests early next year, the full-scale replica of the historic 1903 Wright Flyer in Hangar One was recently mounted on a "Sting" stand by several members of the Los Angeles section of the American Institute of Aeronautics (AIAA) under the supervision of Pete Zell, Ames' wind tunnel test manager. During its wind tunnel tests, the replica will be mounted on a "Sting" stand as shown in the photo.

Constructed by a team of volunteers from the Los Angeles section of the AIAA using plans provided by the Smithsonian, the replica features a 40-foot-4-inch wing-span reinforced with piano wire, cotton wing coverings, spruce propellers and a double rudder. Using the wind tunnel test data, a second Wright Flyer will be built by the AIAA volunteers and flown on Dec. 17, 2003, to commemorate the 100th anniversary of the original flight of Orville and Wilbur Wright at Kitty Hawk, NC.

Team NASA first annual BBQ and potluck

Team NASA Volunteers and the Ames employees they work with enjoyed the First Annual BBQ and Potluck on September 3. About 80 people celebrated the accomplishments of the volunteers and had a well-deserved opportunity to just relax and enjoy each others company and good food. Usually, the only time these volunteers get together is to support the on-going efforts of the Ames Aerospace Encounter, the Educators Resource Center, Tours, Special Projects and Events.

Team NASA Volunteers contributed 7,385 hours through August of 1998, a 73% increase over last year. They just keep giving and giving and giving! Along with

the programs they support, Team NASA Volunteers have contributed their time as Science Fair evaluators in Teacher Workshop support to Ames Aerospace Encounter exhibits, to the Robotics First Project, to SpaceDay and to the JASON Project.

So far this year, 163 adults and 179 junior and high school students have volunteered. Thirty percent of the Team NASA Volunteers are employees at Ames. The other 70% are from local communities and are retired professionals, working professionals and stay-at-home parents. All Team

NASA Volunteers are motivated by their love of space science and aeronautics and a dedication to learning for children as well as themselves.

If you would like to find out more about the Team NASA Volunteer Program, call Lori Burkart, the Volunteer Program Manager at ext. 4-0494, or e-mail her at lburkart@mail.arc.nasa.gov. Interested parties can also take a look at the project web page at: <http://TeamNASA.arc.nasa.gov>.

BY LORI BURKART



From left to right: Sid Sun, assistant to the Deputy Director; Annette Rodrigues, Program Mgr, Quantum Services; Dr. Charles Smith, Deputy Chief, Code AI and Bill Berry, Deputy Director



From left to right: Stan Ferriss, TNV; Edith Barr, Code DX; Elaine Uhren, Code DX; Ken Stocking, Code DX; Linda Tittsworth, guest; Dick Borgert, TNV; Pam Davoren, Code DX. (TNV = Team NASA Volunteer)



From left to right: Rita Jones; Pearl Yip; Geoff Bruce, Code DX; Team NASA Volunteers Shirley Havner and Jerry Havner; Jack Boyd, Special Assistant to the Center Director, Code D; Laura Shawnee, Code DX; Sharon Bay, Code SF and Team NASA Volunteer

Center Briefs

Projects selected for commercial use of remote sensing data

The Commercial Remote Sensing program office at NASA's Stennis Space Center, MS, has selected 10 projects that could lead to new commercial uses of advanced sensors. The projects are being developed through the Earth Observations Commercial Applications Program-Hyperspectral (EOCAP-Hyperspectral).

The program is designed to increase the use of NASA technology for gathering and analyzing information about the Earth through sensors mounted on aircraft or satellites. EOCAP-Hyperspectral will define the technology gaps that prohibit or impede the use of hyperspectral data and recommend solutions for filling those gaps.

NASA accepts "keys" to first U.S.-built station component

The Unity connecting module, the first U.S.-built component of the International Space Station, moved a step closer to orbit this month, when Boeing, the manufacturer of Unity, officially handed over the module's "keys" to NASA.

NASA officially accepted the module after review and certification of Unity's construction by NASA and Boeing station managers at NASA's Kennedy Space Center, FL. Unity is scheduled for launch aboard Space Shuttle Endeavour on the STS-88 mission on Dec. 3. Unity will be launched two weeks after the first station component, the U.S.-funded, Russian-built Zarya module, from the Baikonur Cosmodrome in Kazakstan. Unity will be mated to Zarya by Endeavour's astronauts to begin the five-year orbital assembly of the International Space Station.

Martian Moon Phobos hip-deep in powder

New temperature data and close-up images of the Martian moon Phobos gathered by NASA's Mars Global Surveyor indicate the surface of this small body has been pounded into powder by eons of meteoroid impacts, some of which started landslides that left dark trails marking the steep slopes of giant craters.

New temperature measurements show the surface must be composed largely of finely ground powder at least three feet (one meter) thick, according to scientists studying infrared data from the thermal emission spectrometer instrument on the spacecraft. Measurements of the day and night sides of Phobos show such extreme temperature variations that the sunlit side of the moon rivals a pleasant winter day in Chicago, while only a few kilometers away, on the dark side of the moon, the climate is more harsh than a night in Antarctica.

Tribute to the Early Birds: STS-91/ Commander Precourt and Hangar One exhibit

Have you visited the Moffett Historical Museum in Hangar One lately? There is a very informative and interesting new exhibit on the Early Birds of Aviation, Inc., a pioneer aviation organization group, and an exhibit on Women In Aviation. Among the special women exhibited in the Women In Aviation display are Harriet Quimby, Amelia Earhart and Lt. Col. Eileen Collins. Eileen Collins is NASA's first woman to command



photos by Dominic Hart

Debbie Rosas, Commander Charlie Precourt, Carol L. Osborne, Ken Blackwell, Julie Mikula and Carol Henderson (museum curator) in the museum.



Carol Osborne and Commander Charlie Precourt at the Early Bird's banner case displayed at the hangar.

asked Carol to secure a copy of their banner; however, since their banner is some 12 feet long, NASA requested that the banner be reduced down to five feet. Therefore, Carol had her friend, Ken Blackwell, make a drawing and pattern using reference from a small color photo.

With the drawing and pattern made, Carol needed the assistance in the making of the banner and received support from Julie Mikula, Simulation Operations Manager of the Flight Simulation Experimental Branch. This project became a community effort.

Julie and her good friend, Debbie Rosas, accomplished the making of the banner in only a few days during the weekend of May 30 and 31st. The banner was shipped to Charlie to be included in his personal flight kit for use while he was in space. Charlie's flight lifted off on June 2, and landed 10 days later.

He did a splendid job of displaying the banner and describing the Early Birds and their contribution to the development of aviation in a broadcast from the Shuttle. This recording can be replayed by visiting web site: <http://shuttle.nasa.gov/sts-91/earlybirds.wav>. Ames residents can view the actual banner flown in space and photographs of Charlie and the banner by visiting the Hangar One exhibit.

Some of the additional artifacts in this latest exhibit are memorabilia flown by some of NASA's finest shuttle pilots: artifacts such as Bobbi Trout's 1929 pilots' license signed by Orville Wright; Amelia Earhart's personal scarf; and WASP wings used by women pilots who ferried planes in WWII. Also on display is a photo of George Grundy on his 99th birthday, viewing astronaut patches and photos received from Charlie Precourt. It was on Charlie's STS-84 flight (Eileen was the pilot on that mission with Charlie) where Charlie took up George Grundy's official Early Bird pin.

continued on back page

the Space Shuttle Orbiter, next scheduled to fly in January, 1999.

George D. Grundy, Jr., the last living member of the Early Bird organization recently passed away, and astronaut Commander Charlie Precourt honored him and this pioneer group of early flyers in his flight into space, June 1998, on Space Shuttle Discovery, STS-91.

The Early Bird organization is composed of the 598 men and women who have proven to Early Bird officials that they had flown solo before Dec. 17, 1916, the 13th anniversary of the Wright Brother's first flight.

Charlie Precourt who has followed the Early Bird organization for some time, was in contact with historian Carol L. Osborne. From their discussions, it was determined what he would carry a commemorative item into space to honor these early fliers.

The resulting decision was to carry the Early Bird's organization's banner and say a few words for the group from space. Charlie

Events & Classifieds

Calendar

Jetstream Toastmasters, Mondays, 12 noon to 1 p.m., N-269/Rm. 179. Guests welcome. POC: Jenny Kahn at ext. 4-6987 or Pam Walatka at ext. 4-4461.

Ames Bowling League meets at Palo Alto Bowl every Tuesday at 6 p.m. The league is in need of substitute bowlers. POC: Mina Cappuccio at ext. 4-1313.

Ames Child Care Center Board of Directors Meeting, Wednesdays, 12 noon to 1 p.m., N-213/Rm. 204. POC: Debbie Wood at ext. 4-0256.

Native American Advisory Committee Meeting, Sept 22, 12 noon to 1 p.m., Ames Café. POC: Mike Liu at ext. 4-1132.

Hispanic Advisory Committee for Employees, Oct 1, 11:45 a.m. to 12:30 p.m., N-239/Rm. 177. POC: Carlos Torrez at ext. 4-5797.

Environmental, Health & Safety Monthly Information Forum, Oct 1, 8:30 a.m. to 9:30 a.m., Bldg. 19/Rm. 1078. POC: Linda Vrabel at ext. 4-0924.

Ames African American Advisory Group Meeting, Oct 1, 11:30 a.m. to 12:30 p.m., N-241/Rm. 237. POC: Mary Buford Howard at ext. 4-5095.

Nat'l Association of Retired Federal Employees, S.J. Chapter #50 Meeting, Oct 2, at the Elk's Club, 44 W. Alma Avenue, San Jose. Social hour: 10:30 a.m. Prog. & bus. mtg. follow lunch at 11:30 a.m. POCs: Mrs. Leona Peery, Pres., (650) 967-9418 or Earl Keener, Public Relations, (408) 241-4459.

Ames Contractor Council Meeting, Oct 7, 11 a.m., N-200/Comm. Rm. POC: Greg Marshall at ext. 4-4673.

Professional Administrative Council (PAC) Meeting, Oct 8, 10:30 a.m. to 11:30 a.m., Location TBD. POC: Janette Rocha, ext. 4-3371.

Ames Sailing Club Meeting, Oct 8, 11:30 a.m. to 1 p.m., N-262/Rm. 100. POC: Greg Sherwood at ext. 4-0429.

Ames Asian American Pacific Islander Advisory Group Meeting, Oct 15, 11:30 a.m. to 1 p.m., N-241/Rm. B2. POC: Daryl Wong at ext. 4-6889 or Brett Vu at ext. 4-0911.

Ames Amateur Radio Club, Oct 15, 12 noon, N-260/Conf. Rm. POC: Walt Miller, AJ6T at ext. 4-4558.

NFFE Local 997 Union General Meeting, Oct 21, 11:30 a.m. to 12:30 p.m., Bldg. 19/Rm. 1040. POC: Marianne Mosher at ext. 4-4055.

Ames Multicultural Leadership Council Meeting, Oct 21, 11:30 a.m. to 12:30 p.m. in the Galileo Room of the Ames Cafe. POC: David Morse at ext. 4-4724 or Sheila Johnson at ext. 4-5054.

Ames Classifieds

Ads for the next issue should be sent to astrogram@mail.arc.nasa.gov by the Monday following publication of the present issue and must be resubmitted for each issue.

Ads must involve personal needs or items; no commercial/third-party ads and will run on space-available basis only. First-time ads are given priority. Ads must include home phone numbers; however, Ames extensions will be accepted for carpool and lost and found ads only.

Housing

Temporary space available for part-time use. Excellent for interns. Share bathroom, kitchen, telephone, garden and laundry facilities in the rustic & natural location of Mountain View near the Castro Street restaurants. Easy transport: 5 miles from Stanford by bike/bus/train; Central Expressway/El Camino/Hwy. 101/237/851. Weekly: \$100 + one month deposit. Call (650) 969-3932 leave msg. or: solemate@best.com.

For rent - NS, quiet, mature person to share 3BR/2BA with 2 of same. Incl. BR and LR w/fireplace. Share BR. Kitchen and W/D access. Digital cable. Phone not incl. Avail 10/1. \$600 + 1/3 util. First/last month, plus \$350 deposit. Call (408) 297-8959.

Wanted: Minimal living accommodations. Work at Ames, home in Clearlake. Gone wkends. Would like to keep Bay Area costs down. \$250-\$375. Gloria (650) 969-5250.

Transportation

'68 VW Bug, very good condition. \$2,300 or B/O. Ken (408) 249-3030.

'85 Dodge Ram Family Van, runs good but needs paint. \$700 or B/O. Ken (408) 249-3030.

'87 Ford Escort wagon, pr.st., a/c, tilt wheel, am/fm cassette, new tires, radiator, battery, plus. \$1,700 or B/O. Call (408) 736-4039.

'87 Toyota Camry, 4dr Sedan, 4 cyl, auto, AC, 98K mls, orig. owner, \$4,000 or B/O. Call (408) 253-8473.

'98 Dodge Caravan, loaded, 5K mls, 7 year service contract, \$20,500 or B/O. Call (408) 257-5737.

Miscellaneous

Free bunny to good home. Netherland Dwarf, brown, 8 weeks old, male, weighs one pound and will not get any bigger than three. Very cute! Call (408) 969-9916.

2 rattan bar stools \$10 ea., woman's bike, Mont. Ward, 10 spd., \$15. All B/O. Call (408) 446-0654.

Looking for homes: Two very loving cats with personality need good homes. They are clean, healthy, and love people. Please call if you are interested in a permanent companion, or in foster parenting a pet! Call (408)464-3036.

AudioSource Dolby ProLogic surround sound processor, model SS Three, w/ subwoofer output, \$65. Call (408) 295-2160.

In-wall ironing board closet from a 1920s era home. \$25. Call (408) 295-2160.

Wanted: Stereo system - tuner, CD, cassette and speakers. Call (408) 257-0583.

Wanted: Surfboard (10 ft. beginner board) for 40-year old teenager. Jeanie (831) 336-2216.

Colonial Style, maple, solid wood furniture: drop-leaf table with 4 chairs, \$150; end table and occasional table, \$40 ea.; Queen size bedframe and head/foot boards, \$40; 7.2 amp Kenmore upright vacuum, \$25; custom bookcase, \$15. Call (408) 732-1391.

Completed 4-room wooden dollhouse w/ carpet, parquet flooring, wallpaper and electricity!! Great start for a new hobbyist or for a child's dollhouse. \$50 or B/O. Erica (650) 988-1190.

Ames Retirements

| Name | Code | Date |
|-------------------|------|----------|
| Steven A. Timmons | FMD | 09-03-98 |

AST IBM compatible computer (486) 12 MB Ram, CD Rom, motem. MS office, Quicken, and other software included. Also comes with a Canon color bubblejet printer. Both in good condition, purchased 3 years ago. \$600 OBO. Lisa (408) 364-1834.

Moving sale ~ Everything must go! '96 Jeep Wrangler in immac. condition (\$12K mls); mahogany bookcase (\$50); -black entertainment center (same as Jerry Seinfeld's) (\$50); 31 in. stereo TV(\$500 or B/O); womens mountain bike and touring bike, other misc. household items. Call (408)464-3036.

Key boxes -- two quality, American made, metal, locking key boxes are available; measurements are: 10"x12" (hangers for 30 keys) and 13"x17" (with hangers for 120 keys). Also have U.S. made metal wall mount document holder measuring 11.5x14.5" with 4 "pockets". Make offer on all or one. Dave (510) 471-3466.

Vacation rental

Houseboat for rent on "Trinity" Lake in No. CA (Claire Engle Lake). Sleeps 8, kitchen, bathroom w/shower. Floating heaven. \$1,200 week. After Sept 9, \$850 per week or \$480 for 3 days (until October). URL site: www.wildhorses.com/houseboat.html or email at: pam@wildhorses.com

Lake Tahoe-Squaw Valley-Townhse, 3bd/2ba, balcony view, horseback riding, hiking, biking, golf, river rafting, tennis, ice skating, and more. Summer rates. Call (650) 968-4155 or email at: DBMcKellar@aol.com

Condo for rent, Kona, Hawaii (Big Island). One bedroom, top floor, air/conditioned, complete kitchen with all conveniences, nicely furnished, ocean view from lanai, sleeps up to 4 persons. Complex has 2 pools, sand beach, BBQ area, convenience store. Summer rate \$60/night; winter rate \$80/night. Gene (408) 720-1210.

Lost & Found

Moffett Field Lost and Found may be reached via ext. 4-5416 at any time. Residents and employees at Ames Research Center/Moffett Federal Airfield may also use Internet browser at: <http://ccf/arc.nasa.gov/codejip/lostFound.html> to view a list of found property and obtain specific instructions for reporting lost or found property and how to recover found property. You may also contact Moffett Field Security Police Investigations Section: ext. 4-1359 or email at: mfine@mail.arc.nas.gov.

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.

| DEADLINE | PUBLICATION |
|-------------|-------------|
| MON, SEP 21 | FRI, OCT 2 |
| MON, OCT 5 | FRI, OCT 16 |
| MON, OCT 19 | FRI, OCT 30 |
| MON, NOV 2 | FRI, NOV 13 |
| MON, NOV 16 | FRI, NOV 27 |
| MON, NOV 30 | FRI, DEC 11 |
| MON, DEC 28 | FRI, JAN 8 |

Early Birds Tribute

continued from page 10



photo by Dale "Andy" Anderson

Early Bird gathering, San Diego, Sept, 1983. The original banner is about 12 ft. long. A tradition at Early Bird gatherings was to have a photo session of all Early Birds present. Here are five of the few left in 1983. From left to right: Glenn Messer (of the Messer/Fairgraves Flying Circus) stunt flyer before WWI. Glenn checked out Charles Lindbergh in his JN4-D "Jenny" before Lindbergh flew the plane. Several years later the world learned of Charles A. Lindbergh, first to fly solo over the Atlantic, May 20-21, 1927; Dr. Paul Garber, Historian Emeritus of the Smithsonian Institution. Congress approved the Smithsonian "Silver Hills Annex" to be renamed the Dr. Paul Garber Annex; P. H. "Spence" Spencer, Inventor and early aeroplane designer of the Spencer Air Car. Spence's father invented the Spencer Repeating Rifle and made a presentation to Abraham Lincoln. The sale of the rifle was a key to the end of the Civil War; Captain Walter J. Addems, past president of the Early Birds organization and who flew airmail for National Air Transport (NAT) by use of a road map and bond fires to light the way. He was the former Chief Pilot for United Airlines; and Forrest Wysong, early employee of Glenn Curtiss, third man to fly. Wysong was a pilot and aircraft designer of the JN-3 "Jenny" wing. The Jenny was used to train taught pilots for WWI. When this photo was taken, Forrest was the Early Bird President.

A few prominent aviators to join the group of Early Birds are listed below:

Walter J. Addems, H. H., Hap Arnold, Hillery Beachey, Giuseppe M. Bellanca, Louis Bleriot, G., Tiny Broadwick, Walter R. Brookings, Glenn H. Curtiss, Max C. Fleischmann, Anthony H. G. Fokker, Robert G. Fowler, Paul E. Garber, E. M., Matty Laird, E. Hamilton Lee, Allan H. Lockheed, Grover C. Loening, Glenn L. Martin, Matilde j. Moisant, Edwin C. Musick, Ruth Law Oliver, Earle L. Ovington, Igor I. Sikorsky, Sir Thomas O. M. Sopwith, General Carl T. Spaatz, P. H. "Spence" Spencer, Anthony Stadlman, Edward A. Stinson, Jr., Marjorie C. Stinson, Waldo D. Waterman, Charles F. Willard Orville Wright*, Wilbur Wright*, (*Honorary members).

BY CAROL OSBORNE

Retirement Party for Sylvia "Sukie" Stanley slated

Please join the Center to honor Sukie Stanley on her retirement from 25 years of government service. A reception will be held at the Ames Cafeteria from 3:30 p.m. to 5:30 p.m on Thursday, September 24. Hors d'oeuvres, coffee, and soda will be provided at a cost of \$10.00 per person. Also, a "no host" bar will be available with beer and wine.

Please send notification of your intent to attend, along with payment to Toni Kirchmeier at MS: 240-10, phone ext. 4-5760 by Monday, September 21. Do not forget to include your mail stop for ticket receipt. If you care to contribute to a gift donation, please contact Bonnie Dalton at ext. 4-6188.

Code FM's presents awards

This was Code FM's twelfth annual presentation of the peer achievement award. Recipients are nominated and selected solely by Code FM's non-supervisory staff.

Division chief Gerald Mulenburg presented the awards at a ceremony on August 25 at Chase park.



The winners from left to right: Damon Flansburg, Vincent Derilo, Bill Laurie, Lorin Belanger, Sam Caires, and Robert Kornienko.

THE AMES Astrogram

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Managing Editor.....David Morse
Editor.....Astrid Terlep

THE AMES Astrogram

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