

NASA technology and volunteers to assist the physically challenged

Have you ever thought you were having a bad day because your car wouldn't start, your work clothes were still at the laundry, or your computer wouldn't respond quickly enough? Be honest! If you don't answer 'yes,' you're either very unusual or just kidding yourself!

Well, imagine what it would be like not to be able to put on your own socks, get yourself a drink, operate simple appliances, or do any one of a hundred other simple physical tasks that we all take for granted!

That's precisely the situation that the physically challenged face on a daily basis. And the higher order the disability, the greater the challenge -- to independence, self-esteem, and the pursuit of 'a normal life.'

On May 20, Ames Research Center signed an historic agreement with the Tetra Society of North America designed to utilize NASA technology and Ames volunteers in an attempt to help address this situation. The goal is to take Ames' expertise and technologies and utilize, adapt, and develop them to create assistive devices to improve the quality of life for disabled people.

Ames' participation in the project is primarily the work of Dougal Maclise, an engineer in the Electronic Systems Branch (Code FES). Through external contacts, Maclise became aware of Tetra nearly two years ago, and he has been looking for ways to have Ames volunteers help them ever since. This spring, with the dedicated assistance and hard work of Rachel Zimmerman, an intern from the International Space University

in Strasbourg, France, on a three-month assignment at Ames, Maclise finally achieved his dream.

Working in a close and dedicated partnership with the Ames' Commercial Technology Office (Code DK), Maclise is the technical principal on an agreement that will seek to match Ames engineers and technicians with disabled clients. Cooperative development of innovative solutions to the everyday barriers



Denise Helwig of Ames' Commercial Technology Office; Josh Cohen, consultant; Sam Sullivan of Tetra; and Dougal Maclise and Rachel Zimmerman of Ames (left to right).



Rachel Zimmerman (left) and Dougal Maclise (right) watch as Tetra's Sam Sullivan signs the Space Act Agreement with Ames.

encountered by the physically challenged is the goal. It is anticipated that the majority of the 'solutions' developed will be individual-specific and require custom design. But, ultimately, Ames' representatives hope that knowledge gained during long-duration space missions and other life science research may find application in the disabled community.

Some devices and projects that are anticipated in the near term include: a

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Hans Mark to get top defense job

As if right on cue to celebrate the release of his new engineering textbook, former Center Director Dr. Hans Mark wrote another chapter in his record of personal accomplishment on May 4 with the announcement



Center Director Henry McDonald looks on as Hans Mark inscribes a personal copy of his new book.

from Washington, DC of his nomination by President Clinton to serve as Director of Defense Research and Engineering (DRE), the chief technical advisor to the U.S. Secretary of Defense.

Mark hopes to take on his new assignment later this year, pending confirmation of his appointment by the U.S. Senate. Bipartisan approval of Mark's nomination seems probable given his impressive qualifications, previous record of Government service, and the early and strong support expressed, particularly by influential Texans, on both sides of the

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Ames ISO Web-site address: <http://nasarc1.arc.nasa.gov/iso9000/index1.html>

Neurolab is huge success — that's a no-brainer!

At precisely 2:19 p.m. on April 17, Neurolab blasted off from Kennedy Space Center aboard the Space Shuttle Columbia. To say the launch was spectacular doesn't do it justice. From the first plume of smoke that billowed from beneath the still Earth-bound shuttle and left you holding your breath, wondering if it really was going to defy gravity, to the awesome rumble that enveloped you, well after you began to think how surprisingly quiet the launch seemed to be, it was a totally involving experience. And while it was an exhilarating moment, it was only the beginning. The really exciting stuff — conduct of the scientific payload on the Neurolab mission — was just about to start.

How does the brain adapt to the new environment of space? Will the nervous system and balance organs develop normally in space? How does exposure to space affect one's perception, behavior, or ability to cope with gravity? The Neurolab mission, dedicated to studying the brain and nervous system, was designed to address all these questions and more. For nearly 17 days, Columbia's crew of 7 astronauts conducted 26 separate investigations for the Principal Investigators (PIs) and their teams who had prepared for nearly 6 years for this mission. Fifteen of those experiments — the ones using rats and mice, crickets and snails, oyster toadfish and swordtail fish — were managed by the payload team from the Life Sciences division at Ames Research Center.

Combining rocket science with brain surgery makes for an ambitious and challenging mission, but the crew and supporting teams demonstrated that the years of preparation had paid off. While the crew worked in the Spacelab, the Ames team — located at Kennedy Space Center, Johnson Space Center, and back

at Ames — worked on the ground. Some interfaced with PIs to begin ground control studies and prepare for landing activities; some sat at consoles to answer questions from the crew, track hardware performance, and record inflight activities; some tracked the hundreds of logistical and operational details, or thousands of pieces of data; and others helped to trouble-shoot problems or replan the next days activities.

"The Neurolab mission was extremely challenging as we had limited resources to support a large number of experiments. Due to the dedication and perseverance of

well. However, working in space is challenging, and it was during the challenging times that the team's dedication and persistence really paid off. The first half of the mission went off without a hitch, but at the mid-point two problems surfaced. First, the Shuttle system responsible for removing excess CO₂ from the atmosphere appeared to be failing; and second, the youngest group of neonate rats onboard began to be having problems. The first problem was temporarily resolved when the crew activated the LiOH canisters that are flown in case of such an event. While neither crew nor animals were at risk, there was the potential for shortening mission duration. As the project and PI teams reprioritized science activities and developed new timelines, Shuttle engineers were busy developing inflight maintenance procedures to be sent to

the crew. The procedure worked and the crew repaired the CO₂ system with mission duration unaffected. The problem with the nine-day-old rats, however, persisted.

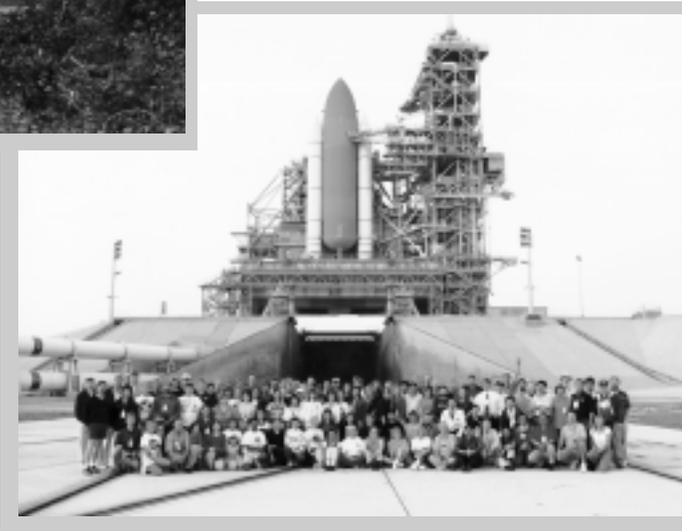
These rats were essential to study how the nervous system develops in space, and to determine if gravity is required for development to proceed normally. When the crew removed one of the litters from the Research Animal Holding Facility (RAHF), they observed that they were not in the best of health. This caused Dr. Linnehan, payload commander and inflight attending veterinarian, to begin assessing the health of all the neonates in the RAHF. Over the course of the mission, a total of 57 of the 96 animals in this age

group died, or were euthanized by Dr. Linnehan (the nearly 200 animals in the ground control groups had no problems). Due to the crew's willingness to set up the first inflight veterinary hospital, the mortality numbers were kept to a minimum, and

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Above: The launch of Columbia on April 17, began the inflight phase of the Neurolab mission, dedicated to increasing our understanding of the brain and nervous system.



The Ames Neurolab team had a rare and much deserved opportunity to snap a photo from the flame trenches beneath the Shuttle.

those working the mission, much was accomplished. Supporting space flight experiments will always be a challenge, and we have some great folks at Ames who help to make that possible," said Chris Maese, Neurolab Project Manager, in speaking of his team.

During the mission, most of the hardware performed flawlessly, and most of the experiments went extremely



A flock of birds takes flight as Columbia touches down, marking the end of the Spacelab era, but just the beginning of the postflight phase of the Neurolab mission.

SpaceDay at Ames

Space Day 1998 - Prospecting for Knowledge

Take a large hangar filled with lunar rocks, space suits, a laser light show, a

captains guided the young students through activities that sparked their creativity and imagination. The activities were as diverse as the participants, all challenging the young and not-as-young minds alike. Many activities resulted in take-home projects, such as designing a lunar habitat, building a Lunar Prospector model, making space helmets, or designing a mission patch.

Other activities also proved extremely popular, especially those involving food. What fun to make (and eat) lunar ice cream, and to learn about rocks and meteorites through snickers bars and butterfingers! And imagine creating your own volcanoes and magma flows — with jello. Eat your heart out Bill Cosby! The activities were non-stop — just far too many for all of the students to experience every one.



photos by Dominic Hart

rover in a sand box, and 25 carefully-designed "hands-on" activities. Add 1,250 children in grades 3 through 6, more than 200 high-school mentors, 250 chaperones, 40 teachers, and some serious logistics/operations support. Combine all ingredients for over 3 hours, and let the mixture "rise" to its full potential. And what have you got? The perfect recipe for education and fun, that's what! And you'd better be prepared for an explosion of brisk activity, excitement and learning.

On the morning of May 21, Moffett Field's historic Hangar 1 was the venue for just such an activity. This first joint Space Day celebration was hosted by NASA Ames and co-sponsored by Lockheed Martin Missiles and Space, the American Institute of Aeronautics and Astronautics (AIAA), and the Astronomical Society of the Pacific (ASP). Judging by the look and sound of things, it won't be the last such event.

Under the theme of "Prospecting for Knowledge," the event focused on the recent Lunar Prospector mission, with many other solar system and space themes sprinkled throughout. It was hard to tell who had the most fun as the high-school mentors and the adult activity

A grand finale utilized the special feature that only Hangar 1 can offer — its tremendously high ceiling. Early in the day, many students experienced the "make a crater" activity, simulating meteorites crashing into the surface of the moon by dropping rocks into small sandboxes and learning how craters are formed. At the conclusion of the morning's activities, a brave NASA volunteer appeared at the high reaches of the hangar to do the same exercise on a much larger scale. On command, the crowd performed a count-down and he dropped a series of ice-rock comets and meteorites from the ceiling onto a large moon (sandbox) surface approx. 200-feet below. How easy this made it for the students to visualize the creation of lunar

craters! This is one group of kids that will never believe the Swiss-cheese theory of the lunar features.

As the busy morning ended and the students were ushered back to their buses, it was abundantly clear that Space Day 1998 was a success — even the tired chaperones, mentors and teachers were still smiling! Dragging a little, perhaps, but smiling nonetheless.

By BETSY CARTER

Briefs

Hubble provides multiple views of how to feed a black hole

Astronomers have obtained an unprecedented look at the nearest example of galactic cannibalism -- a massive black hole hidden at the center of a nearby giant galaxy that is feeding on a smaller galaxy in a spectacular collision. Such fireworks were common in the early universe, as galaxies formed and evolved, but are rare today.

Although the cause-and-effect relationships are not yet clear, the views provided by complementary images from two instruments aboard NASA's Hubble Space Telescope are giving astronomers new insights into the powerful forces being exerted in this complex maelstrom. Researchers believe these forces may even have shifted the axis of the massive black hole from its expected orientation.

NASA and Yale push barriers of communications and medicine on Mt. Everest

As four climbers made their assault on Mt. Everest's summit this week, NASA and Yale University are testing new health care devices based on space science technology. From the mountain's extreme environment, health data will travel from the base camp to the NASA-Yale telemedicine project. The problems of high altitude adaptation, physiological stress and the climbers' location represent great medical challenges similar to an astronaut's situation in space.

NASA and Yale have been working in partnership since July 1997, to contribute to the United States' competitive lead in commercial applications of telemedicine. The goal of the program is to develop and test next-generation technologies. Tests on Mt. Everest may lead to design improvements in future automated medical monitoring and care systems for astronauts who may be in space for months.

Most powerful explosion since the Big Bang

A recently detected cosmic gamma ray burst released a hundred times more energy than previously theorized, making it the most powerful explosion since the creation of the universe in the Big Bang.

"For about one or two seconds, this burst was as luminous as all the rest of the entire universe," said Caltech professor George Djorgovski, one of the two principal investigators on the team from the California Institute of Technology, Pasadena, CA.

The team measured the distance to a faint galaxy from which the burst originated at about 12 billion light years from the Earth. The observed brightness of the burst, despite this great distance, implies an enormous energy release.

The burst was detected on Dec. 14, 1997, by the Italian/Dutch BeppoSAX satellite and NASA's Compton Gamma Ray Observatory satellite.

The ISO 9001 Certification Plan for Ames

Recipe for success; how we're going to get there

ISO 9001 represents an improved international standard for quality management as evidenced by its provision for external certification. Ames Research Center has always demanded world class leadership in the effective management of its programs and in the quality of the work it performs, providing value to its customers. The NASA Administrator and the Ames Center Director, recognizing the significance of conformance to the ISO 9001 standard and wishing to maintain NASA's leadership role in quality management, have required Ames to obtain ISO 9001 certification.



To gain more insight into the centerwide implementation of ISO 9001 at Ames, questions were posed to Ames Center Director Dr. Henry McDonald, Deputy Director and ISO 9001 Management Representative William E. Berry, and ISO 9001 Program Manager Rick Serrano.

Dr. McDonald, why is Ames implementing ISO?

Our end users will have more confidence in our products and services, and it will improve our processes, efficiency and safety. That is why Ames has committed to success in this ISO certification effort. It is really the output from this program we are seeking, not just obeying a Headquarters mandate.

How will this benefit Ames?

In formalizing the system of quality, we will become more efficient and better able to compete in the very competitive environment for scarce resources. We must maintain high quality and not let the system of management get in the way of doing quality research. I believe ISO 9001 can help in all of these areas.

Bill Berry, would you like to add something here?

Yes. Our partners in industry have chosen the ISO standard, making it a natural choice for Ames. Our customers

are increasingly expecting us to be ISO certified, just as we will be expecting our suppliers to meet this requirement.

Any other reasons why this will be good for Ames?

A lot of important knowledge leaves Ames over time as our workforce transitions. Relearning or replacing lost information is expensive and time consuming. Thoroughly documenting how and why we do things will reduce this expense and eliminate the recovery problems.

Rick Serrano, what exactly is ISO?

The International Organization for Standardization (ISO) is a worldwide, non-governmental organization established to promote the development of standardization in processes and related activities, with a goal of providing enhanced product quality and reliability at a reasonable price.

Would you explain the difference between ISO 9000 and ISO 9001?

There is a single technical standard called ISO 9000, but when most people speak of ISO 9000 they are referring to a family of ISO technical standards that deal with quality management. ISO 9001 defines the elements for a basic Quality Management System, and applies to any organization that has projects, processes and customers. ISO 9001 defines the essential elements for management systems in the areas of design, development, production, installation and servicing. ISO 9001 best fits the Ames scope of activity.

How does ISO 9001 work?

The philosophy is simple:

- All processes affecting quality are identified and their intended mode of operation is described in documented procedures.
- Customer requirements are analyzed, planned and systematically deployed into operating processes.
- Processes are actively designed, managed and controlled to ensure that customer requirements are consistently met.

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Neurolab is huge success — that's a no-brainer!

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nearly all PIs on the team were able to still achieve the majority of their primary research objectives.

"I'm extremely proud of the way the Neurolab project team, the investigators, and the crew pulled together to bring this complex and sophisticated mission to fruition," said Ken Souza, Chief of the Life Sciences Division at Ames.

Other than these two problems, every thing else went extremely well. However, it wasn't until after Columbia's landing at KSC on May 3 that this was confirmed. It was then that the PIs were able to count their cricket high experiment groups, see how many snails were born, perform postflight behavioral testing and dissections, and begin analyses of the tissues that were collected by the crew at various times during the mission. Within days, the good news from the PIs began to arrive.

Dr. Eberhard Horn, the German neurobiology PI, soon reported that the BOTEX hardware used to house his crickets had performed flawlessly and that he had had an even greater survival rate in some of his crickets than he had on the ground. Dr. Michael Wiederhold reported that the snails successfully reproduced in space, and that snails born during the mission will provide significant data on

the development of the vestibular system in microgravity. Dr. Gay Holstein, one of the neuronal plasticity PIs using adult rats to study how the brain adapts in space, sent a quick note from her lab to Dr. Louis Ostrach, the Project Scientist, to tell him that the brain tissue collected by the crew during the first of two inflight dissections "looks stunning. STUNNING. I'm dancing," she said. And Dr. Danny Riley, one of the mammalian development team PIs, reported that his experiment, involving the first inflight surgery, was completely successful. The tissues the crew collected appeared to be as good as those obtained on the ground, and will permit the identification of individual motor neurons.

All in all, the Neurolab mission, the last Shuttle mission to fly the Spacelab module, must be considered a triumphant end to the "Spacelab Era". According to payload specialist Jay Buckley, "This whole flight was an amazing accomplishment for Ames. On SLS-2, the General Purpose Work Station was used for two major setups and we thought that was complex. On Neurolab, we had six completely different setups and sessions. I can't

believe they worked out as well as they all did!"

Canadian astronaut, Dafydd Williams, M.D., also commented on how well the operations went. It is Dr. Williams belief that the experience gained caring for the sick rats, doing the inflight dissections, and performing the first inflight surgery, will find numerous applications for human space medicine on the International Space Station (ISS).

And that's a good thing, because ISS is just around the corner. Fortunately, as Ken Souza, pointed out, "Neurolab is providing major contributions to our understanding of how the nervous system develops and functions, and the engineering, human factors, and operations information we gain from Neurolab will greatly facilitate our preparations for the conduct of life sciences on the International Space Station." Brad Berch, Neurolab IPT Lead for Lockheed-Martin, added, "A solid working relationship was established during this mission between the Ames team and our international partners — one that will position us well for future cooperation on the International Space Station."

BY LAURA LEWIS 

Tours of Hangar One begin June 1 Ames Tour program shifts its "sites"

Effective June 1, NASA Ames tours will take place in Moffett's historic Hangar One in anticipation of its conversion to the future California Air and Space Center (CASC). Visitors, in essence, will be getting a sneak preview of what is planned to be a top-notch, west coast air and space museum of Smithsonian quality. Plans for CASC also call for Hangar One to encompass a state-of-the-art education resource center, gift shop, and special events area, among other goals.

Hangar One, a pre-WWII dirigible hangar, currently is home to a full-scale replica of the 1903 Wright Flyer and a number of Ames research aircraft (see May 15 issue). In the near future, more NASA and Ames artifacts, as well as timely exhibits, will be housed in the hangar.

Opportunities to see these displays will be through guided tours offered by the Ames Tour Program. Overseen by the Office of External Affairs, the tour program is a part of NASA's public and educational outreach programs and functions as the primary interface between NASA Ames Research Center (ARC) and visitors from the public and

private sectors. Complex technical NASA Ames aerospace concepts are communicated in understandable terms during educational and informative tours conducted for the general public and diverse groups comprised of students, civic organizations and audiences from all professional backgrounds, nationalities and disabilities.

Mondays through Fridays (excluding federal holidays), the Ames tour program hosts individuals on public tours, and schools and community groups on group tours at 9:30 a.m. and 1:30 p.m. Tours are free of charge on a "reservation-only" basis and last between one-and-a-half to two hours. Public tours are scheduled at least one month in advance; groups should call three to six months ahead. Call Visitor Center reception at ext. 4-6497 for tour availability. Specify the number of people and the full names of all non-U.S. citizens in the group.

The basic requirements of the tours remain the same. Minimum grade/age level is fourth grade/ten years old. Tours range in size from a minimum of 15 to a maximum of 70 people, including chaperones, on a space-

available basis.

Tours are wheelchair accessible. If a tour group has special needs, it is advised that they secure a bus for transportation purposes.

Before conducting the group on site to Hangar One, a pre-tour orientation lecture is held at the Ames Visitor Center, Bldg. N-223, to offer historical perspective and insights into the many diverse research projects at Ames.

While the tour venue will change, the main goal remains the same; namely, to communicate how U.S. tax dollars are effectively spent by sharing NASA/Ames research highlights and how tour-goers benefit. The program also attempts to inspire and excite students to pursue technical fields with a math and science emphasis.

Hangar One and its contents will be provided by docents (volunteers) supporting the full-time staff. If you, or anyone you know, may be interested in assisting the tour program by conducting friendly, understandable tours, call Lori Burkart at ext. 4-0494 for more information.

BY PAM DAVOREN 

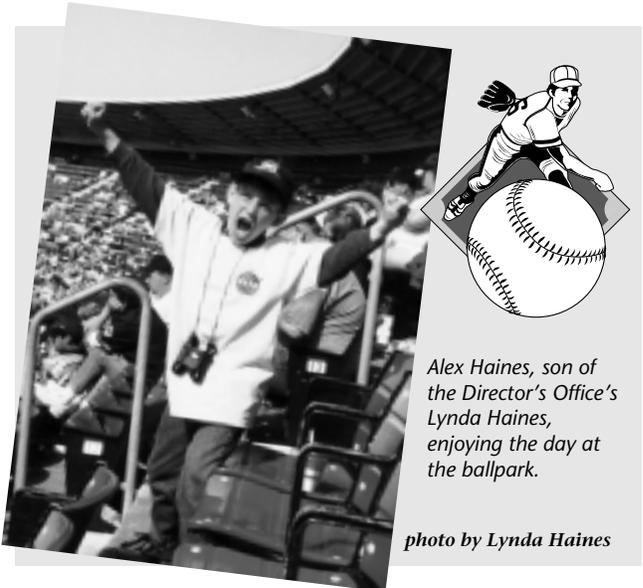
Exchange Day at the Ballpark

AMES GOES YARD!



photo by David Morse

The 3COM scoreboard welcomes the NASA contingent--largest at the game, 600 strong!

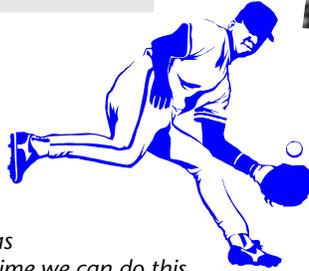


Alex Haines, son of the Director's Office's Lynda Haines, enjoying the day at the ballpark.

photo by Lynda Haines

"Just wanted to drop you a line and thank you and any others that may have been involved in the planning and execution of yesterdays Giant's game. We all had a great time, the food was good, and look forward to the next time we can do this again. (So what say next month... <grin>). It's always great to get together with people from work in a non-work environment. And hey, we won!"

-- Owen Nishioka



"Just wanted to drop a line and thank everyone involved with this event. My family really enjoyed the day out. Since it was our first live game, I'm glad Ames was able to make it such a memorable and pleasurable event."

-- Darrell Williams



photo by Margie Stathes

T.R. Chandler of Ames' Protective Services Office picknicking in the 3COM parking lot.



photo by Margie Stathes

Anthony Radford of Eurest preparing the barbeque grills.



photo by David Morse

Exchange Council Chair, Jim Brass (far left), his Co-Chair Lynda Haines (second from right), and her husband Jerry (center) share a moment with External Affairs' Brenda Collins (second from left) and Laura Shawnee (far right).

"Please pass along to the rest of the Exchange Council that they all did a GREAT JOB! I had a great time, can we do it again?"

-- Laura Shawnee

Final Score	
Giants:	8
Brewers:	7
Ames:	600

Exchange Day at the Ballpark



photo by Lynda Haines

The Giants had one of their biggest crowds of the season so far. Rumors of Ames' participation must have leaked out, it had nothing to do with the free baseball caps!



photo by Lynda Haines

Margie Stathes of the Director's Office uses the stadium "lip" and a large hat to stay cool.



"I would like to say Thank You for a fun day at the Giant's game. I took 14 guests with me and each of them would also like to say thanks to you and our team for arranging this event. I hope you will consider a few more Giants games throughout the rest of the season."
-- Carmen F. Park

"I just wanted to thank you for setting up yesterday's baseball game outing at 3COM Park. My family and friends enjoyed the game and the refreshments. And at only \$5 per ticket, it was a very inexpensive way to have a great time.

I think that often we don't take time to express our thanks and I wanted to make sure to do so. Please pass on my thanks to others involved with the planning and execution of this event."

-- Shahab Hasan



photo by David Morse

The players take the field and its time to "play ball."



photo by David Morse

Eurest and the Ames Exchange served free hot dogs, sodas and chips in the 3COM parking area. Naturally, Sharon Mathis (far left) was one of the first in line! Also featured: Marissa Moreno, Ceaser Trevino, and Sherilynn Chock (left to right).

NASA Honor Awards

1998 NASA Honor Awards

The 1998 NASA Honor Awards and SES Presidential Rank Awards Ceremony for Ames Research Center was held on May 13 in the Main Auditorium.

Ames presented NASA Honor Awards to the 26 employees who have been selected for individual medals and to the managers of the 8 groups which have been selected for the NASA Group Achievement Award. In addition, 2 Senior Executive Service Presidential Rank Awards were also presented. The names of the honorees are listed on the enclosure of this memo. For more information you can visit the Ames Incentive Awards Program web site at: <http://huminfo.arc.nasa.gov/Awards/Honorary.html>.



photo by Dominic Hart

Family and friends of Abdel Hanif joined the packed crowd at the main Ames auditorium for the presentation of the NASA Honor Awards by Center Director Henry McDonald and Richard Christiansen, Ames alumnus representing the NASA Headquarters Office of Aeronautics and Space Transportation Technology.

Senior Executive Service Presidential Rank Awards:

Roy Presley
Ralph Robinson

Outstanding Leadership Medal:

William E. Berry
G. Scott Hubbard
James L. Martin
Kenneth A. Souza

Exceptional Engineering Achievement Medal:

Robert W. Meneely
Huy K. Tran

Exceptional Scientific Achievement Medal:

David F. Blake
Timothy J. Lee
Hanwant B. Singh

Group Achievement Awards:

Ames Community Day Open House Team
Ames Mars Pathfinder Support Team
Bion 11 Biosatellite Team
DC-8 Aircraft PACRIM Team
DC-8 Aircraft SONEX Team
Intelligent Flight Control Group
POLARIS Project Team
X-36 Flight Test Team

Exceptional Service Medal:

Warren F. Ahtye
Rodney O. Bailey
Lewis S. G. Braxton, III
Kevin Corker
Michelle M. Eshow
Abdelaziz (Abdul) Hanif
Diane M. Kanally
Matilde P. Shallenberger
Leonard Tobias
Barbara J. Young

Exceptional Achievement Medal:

Ronald G. Lamica, Sr.
John R. Lekashman
Charles C. Jorgensen
S. Scott Santiago
Karen E. Tambua

Public Service Medal:

John S. Bull
Albert Globus, Jr.

Congratulations to all!

The ISO 9001 Certification Plan for Ames

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- Process and product records are produced in order to confirm that products meet requirements and to provide data for management review.

- The ability of the quality management system to satisfy customer requirements is regularly assessed and reported to executive management and corrective and preventive action is based on process and product records and metrics.



Do we have to memorize the Quality Policy, or can we just read it from the ISO badge or a posted sign?

Employees do not have to memorize the policy, but they should be able to state it in their own words. The use of badges, signs, audit booklets and the like has a purpose as a memory jogger, but it should not be the instant default whenever an auditor asks a question.

Dr. McDonald, who will be asked to support the ISO effort at Ames?

We need across-the-board support for ISO at all levels. ISO certification will require tremendous effort. It requires a commitment at the management level, and support from the entire center to really get behind the program and implement it. The commitment must begin with strong support from Ames center management; I assure you, that is in place.

Bill Berry, who is "in" or "out" of the scope of Ames certification?

Ames management reviewed the work being performed in all directorates and selected only those processes and procedures involving Ames core business that effect the quality of our products and services for ISO 9001 certification. However, the obligation of all personnel is to be familiar with the Ames Quality Manual, the Ames Quality Policy, and the documentation structure.

What is the documentation structure?

This includes the Ames Quality Manual, System Level Procedures (SLPs) covering center-wide processes, and Division and Branch level procedures governing local processes. The Ames-wide documents are being posted on the ISO home page.

Are contractors a part of Ames certification?

Contractors whose employees are accomplishing the core business objectives under direct civil service leadership or are utilizing Ames-defined procedures are within the scope of Ames certification.

Rick Serrano, what will be different under ISO 9001?

Although most of our way of doing business will remain, there are a few areas where the ISO requirements are likely to effect change. There will be a single business management

system for the center, and employees will be required to know how their work fits into this quality system. How work is accomplished will be documented, and safeguards will be put in place to ensure that employees follow the current documents. More emphasis will be placed on assuring that only certified personnel perform critical work. Internal audits will be conducted to evaluate whether Ames' systems comply with the ISO requirements, and more emphasis will be placed on taking effective corrective action when problems occur. In general, ISO 9001 will require that Ames' management processes and work procedures be more disciplined, more focused, and better documented.

Under ISO 9001, who is the customer?

For the purposes of ISO 9001 certification, the 'customer' is the purchaser, user or recipient of a product or service provided by an Ames organization. The customer may be either an internal or external entity.

How can I find out more about the Ames ISO certification effort?

Check out the ISO homepage at: dqa.arc.nasa.gov/iso9000 where a broad variety of help is available, including training, answers to questions, news and ISO documentation. The Training Opportunities link to the NASA Site for On-line Learning and Resources (SOLAR) includes a web-based training module for ISO training.

BY JIM BRICKEN

Ames' technology and volunteers to assist the physically challenged

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page turner for bed-ridden individuals on their backs; a technique for automated teller machine access from a wheelchair; adaptation of joysticks to address a range of physical tasks; use of information technologies for voice-activated commands; and the like. Neither Ames nor Tetra personnel anticipate any shortage of projects or clients. And, in most cases, the assistive device that results will be small and relatively inexpensive, particular in comparison to its value to the disabled client.

The agreement was signed by Deputy Center Director William Berry on behalf of Ames, and by Sam Sullivan, Executive Director and one of the original four founding members of Tetra. The organization was started in



1987, and was the recipient of the 1994 Peter F. Drucker award for outstanding non-profit innovation. The worldwide headquarters of the group is in Vancouver, British Columbia (Canada). This is the organization's first venture

into the United States, with the San Francisco office serving as the U.S. national headquarters. Tetra is operated by a Board of Directors, all of whom are severely disabled. Sullivan, a wheelchair-bound quadriplegic, is not only a

Tetra director, founding member and client, he is also a Vancouver City Councillor.

Those wishing to learn more about Tetra or volunteer their services, may contact Maclise at x 4-4084 or via e-mail at: dmaclise@mail.arc.nasa.gov

BY DAVID MORSE

A message to Ames retirees and others

Every Thursday morning at 10 a.m., a group of retirees meet for coffee, tea, etc., at Le Boulanger at the Pruneyard in Campbell on Bascom Avenue about three blocks south of Hamilton.

This started out a few years ago with just two and now we get out as many as 14. The main group consists of Frank Nichols, Fred Bear, Dwight Moody, Don Moody, Norman Zimmerman, Sal Riccitiello, Al Rufiange, Angel Melendez, Ted Passeau, Wendell Love and others. We invite all of those interested to come and join with us and catch up on "what's going on." We haven't seen some of you for quite a while, and it's fun meeting with former coworkers.

BY DON MOODY

Celestial Mechanics

continued from front page

political landscape.

Senator Phil Gramm, R-Texas, in acknowledging his delight at the Mark nomination said, "I know of no one in America better qualified." He added, "I strongly support him and congratulate the president and secretary of defense on a superb nomination." U.S. Rep. Lloyd Doggett, D-Austin, concurred, suggesting that Mark's "excellent service . . . will be quickly recognized by the Senate and enable him to serve our country."

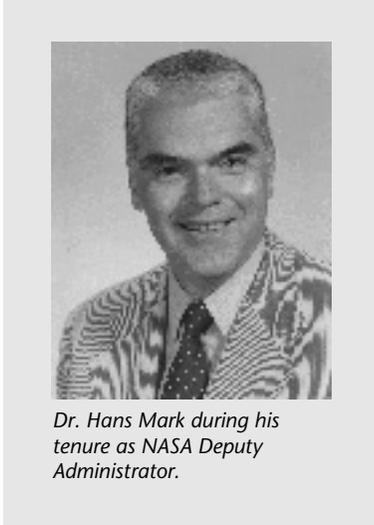
As Director of the DRE, one of Mark's primary functions will be to devise innovative techniques and strategies for dealing with the U.S. stockpile of nuclear materials while, at the same time, developing technical methods for monitoring and preventing the further spread of nuclear weapons.

Mark's selection for this position hardly comes as a surprise given his lengthy involvement with the nuclear industry, and record in Government and military service, with a strong DoD orientation. As Mark himself commented in a recent interview, "I was in the nuclear business from the very beginning, so I know the game from the design stage up."

Most recently, Mark has served as a Professor of Aerospace Engineering and Engineering Mechanics at the University of Texas at Austin. He was Chancellor of the University of Texas system from 1984 to 1992. Prior to that, Mark was the Deputy Administrator of NASA, having been appointed to that position by then President Reagan in 1981. Mark was Under Secretary of the Air Force from 1977 to 1979, and Secretary from 1979 to 1981. Prior to his Washington career, Mark was one of the most popular and effective center directors that Ames has

ever had, serving in that role from 1969 to 1977.

Mark is a major supporter of the civil tilt-rotor, and has been a driving force behind that aircraft's development for well over 20 years. In recent times, he

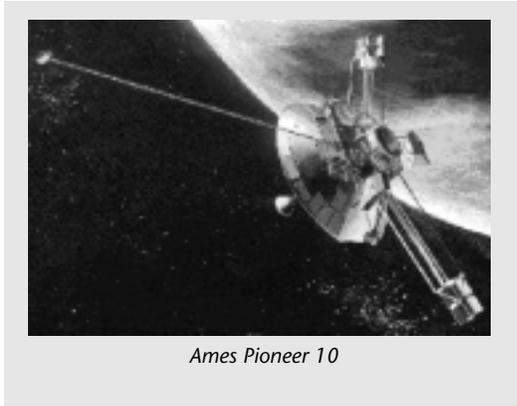


Dr. Hans Mark during his tenure as NASA Deputy Administrator.

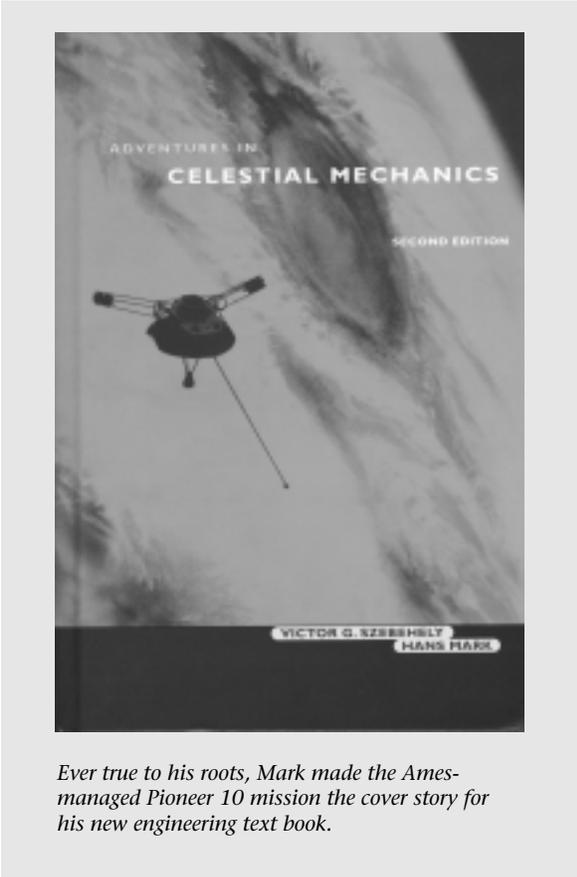
has devoted himself to teaching and revision of a favorite engineering textbook originally authored by one of the professors, now deceased, that he considered a mentor, colleague and friend. It was a labor of love for

Mark to update and revise that text, *Celestial Mechanics*, with the support and encouragement of his formers mentor's family. As co-author of the newly released tome, he signed a personal copy for Ames' current Center Director Dr. Henry McDonald during a recent get-together.

While Mark will be "residing" in Washington during the two-year tenure of his new political appointment, he will retain his UT faculty position while relinquishing his teaching and research



Ames Pioneer 10



Ever true to his roots, Mark made the Ames-managed Pioneer 10 mission the cover story for his new engineering text book.

duties and the UT salary that goes with them. Nonetheless, Mark expects to spend a lot of time "at home," both in Texas and California, while visiting military installations across the country. In fact, Mark and his wife Marion will retain their West Austin residence during this latest phase of his career and the resumption of his Washington "commuter" status. He can also be found on occasion at the Boyd "spa" in Saratoga, CA.

BY DAVID MORSE 

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 Child Care Center Board of Directors Meeting, Tuesdays, 12 noon to 1 p.m., N-213/Rm. 220. POC: Lisa Reid at ext. 4-2260.

Ames Contractor Council Meeting June 3, 11 a.m., N-200/Comm. Rm. POC: Greg Marshall at ext. 4-4673.

Hispanic Advisory Committee for Employees, June 4, 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, June 4, 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, June 4, 11:30 a.m. to 12:30 p.m., N-241/Rm. 237. POC: Antoinette Price, at ext. 4-4270 and Mary Buford Howard at ext. 4-5095.

Nat'l Association of Retired Federal Employees, S.J. Chapter #50, Meeting. June 5, at the Elk's Club, 44 W. Alma Avenue, San Jose. Social hour: 10:30 a.m. Program & business mtg. follow lunch at 11:30 a.m. POCs: Mrs. Leona Peery, President, (650) 967-9418 or Earl Keener, Public Relations, (408) 241-4459.

Professional Administrative Council (PAC) Meeting, June 11, 10:30 a.m. to 11:30 a.m., N-244/Rm. 103. POC: Janette Rocha, ext. 4-3371.

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

Ames Multicultural Leadership Council Meeting, June 17, 11:30 a.m. to 1 p.m., Galileo Rm./Ames Café. POC: David Morse at ext. 4-4724 or Sheila Johnson at ext. 4-5054.

NFFE local 997 Union General Meeting, June 17, 11:30 a.m. to 12:30 p.m., Bldg. 19/Rm. 1040. POC: Marianne Mosher at ext. 4-4055.

Ames Amateur Radio Club, June 18, 12 noon, N-260/conf. rm. POC: Walt Miller, AJ6T at ext. 4-4558.

Ames Asian American Pacific Islander Advisory Group Meeting, June 18, 11:30 a.m. to 1 p.m., N-213/Rm. 261. POC: Daryl Wong at ext. 4-6889 or Brett Vu at ext. 4-0911.

Native American Advisory Committee Meeting, June 23, 12 noon to 1 p.m., Ames Café. POC: Mike Liu at ext. 4-1132.

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.

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

Housing

For rent: Master bedroom in Sunnyvale home, one block from El Camino, 5 blocks from H85. \$550/mo + applied utils., and first and last month's rent. Private bath, full use of kitchen and pots and pans. Big garden. Touran (408) 773-1927.

Transportation

'85 Dodge Ram 250 van conversion. 66K orig. miles. Great shape. AT, PW, PL. Heavy duty towing package. Ready for camping. Asking \$4500 or B/O. Hank (408) 923-2231.

'87 Honda Accord LX-i, 4-dr, automatic, 136K, loaded, gd. cond., \$3,600 or B/O. Walt or Sue (408) 984-3426 on weekends or after 6:30 p.m., on weekdays.

'90 Oldsmobile Cutlass Supreme SL, 96.5k mi., AT, PB, PW, PL, AM-FM cassette stereo, trip computer, alloy wheels, maintenance records, runs well and looks great, \$3,900 or B/O. Martin (408) 369-8199.

Miscellaneous

Hook-on Phonics, new, \$175; cherry sofa table \$150; rock solid maple bedroom full 6-pc set \$400; solid oak sofa table \$70; oak flr/table lamps, both \$45. All O/B. Call (408) 378-5434.

Snapper Lawn Mower, HD 5hp self propelled with mulching deck/blade, includes grass catcher, used 2 seasons, cost new \$600+, asking \$325. George (650) 254-1742.

Good Violins used. Bharathi (408) 446 0959.

Visiting professor interested in renting a room for 10 weeks beginning early June. Call (702) 895-3438.

Moving boxes, gd. cond. Dishpacks, \$2 ea. Other assorted sizes, \$1 ea. Call (408) 735-8909.

Bedroom set, great cond., (Broyhill, white), 9-drawer dresser/mirror, one night stand, king-size hdboard, asking \$799; executive office desk 60" x 30" w/computer shelf/cabinet, (Saunders), wood grain laminate, great cond., \$79. Call (408) 369-9718 eves.

Kittens for adoption. 5 newborns ready for new homes around June 23. Kitten's new family must be caring and responsible. For a sneak preview and to reserve your selection call (408) 779-0803.

Mac 6200cd, Processor: PPC 603, 75 MHz, System: 7.5.1, 7.5.3 RAM: two 72 pin SIMM sockets, 4 MB RAM, Drives: SuperDrive, 4X CD ROM, IDE hard disk Slots: PDS, comm slot, video, video: 1 MB DRAM Audio: 16 bit stereo out, mono in, Network: LocalTalk, \$625, monitor not included. Call (408) 263-0740.

Pair of Bose 901 speakers, \$550; pair of Klipsch Heresy speakers, \$500; Samsung VGA 14 inch monitor, \$75. Call (650) 964-8505.

Curio cabinet, Med French, plain, old 1880-90's, 3ft wide, 5ft. tall, 2ft deep, pd \$2,800, will sell for \$2,100. Call (408) 356-1680.

Brand new, never used. 18.2 c.f. GE Refrigerator/freezer, white, \$400. Couch and loveseat, light colors, each \$100. Maytag Electric dryer, \$150. Call (408) 362-9114.

Vacation rental

Lake Tahoe-Squaw Valley Townhse, 3bd/2ba, View of slopes, close to lifts. Wkend \$400; midwk \$150/night. Includes linens, firewd, cleaning service. Call (650) 968-4155, or email at: DBMcKellar@aol.com.

Houseboat for rent on Claire Engle Lake ("Trinity" Lake in No. CA). Sleeps 8, kitchen, bathroom w. shower. Serene, away from it all. \$1200/week. (650) 941-3396.

So. Lake Tahoe home rental. Ten mins from casinos and skiing. Sleeps 14, 4bd/2ba. Fireplace, cableTV. Rates: \$450/week. \$200/weekend. \$75/per day. Holidays \$100/per day. Call (408)-248-4861.

Car pool

Wanted: Carpool summer ride-sharing from San Francisco to Ames (June 14 to Aug. 18, Mon-Fri). Hours still to be decided. Beto Peliks (415) 668-2961.

NASA Inter-center Competition

The results from last year's Spring 2-mile walk/run & 10 K competitions are in and Ames was in front of the pack. Ames placed first in the 10 K running competition by beating Goddard by the very narrow margin of only 10 points. Goddard placed first in the 2 mile competition, and Ames took second over the rest of the centers. As you can tell, Goddard is Ames' main competition.

The results are posted at the Fitness Center N-221. Please come and check out how you placed in your age and gender category.

Thank you to all those who participated in last year's runs and your contribution in helping Ames place so well in this fun competition.

BY NANCY DUNAGAN

Astrogram deadlines

All Ames employees are invited to submit articles relating to Ames projects and activities for publication in the *Astrogram*. When you submit stories or ads for publication, make sure to check the publication deadline and submit your material by e-mail to astrogram@mail.arc.nasa.gov on or before the deadline. Stories should be sent as enclosures in MS Word.

If you have questions about items for publication, contact the editor at the above email address.

DEADLINE	PUBLICATION
MON., JUN 1	FRI., JUN 12
MON., JUN 15	FRI., JUN 26
MON., JUN 29	FRI., JUL 10
MON, JUL 13	FRI, JUL 24
MON, JUL 27	FRI, AUG 7
MON, AUG 10	FRI, AUG 21
MON, AUG 24	FRI, SEP 4
MON, SEP 7	FRI, SEP 18

Miscellaneous News

NASA college scholarships awarded

This year's winners of the NASA College Scholarship Fund are Katie Lynn Davis, daughter of Daniel J. and Susan W. Davis, who work at the Marshall Space Flight Center; Joseph M. Comberiate, son of Goddard Space Flight Center employee Anthony B. Comberiate; Joyce Won-Kai Yue, daughter of Langley Research Center employee, Glenn K. Yue; Jennifer Autumn Stuckey, daughter of NASA Headquarters employee, Ronald K. Stuckey; and Saurabh Bansal, son of Lewis Research Center employee (and brother of previous scholarship winner, Gaurav Bansal), Narottam P. Bansal. This brings the total number of recipients to 78, of which 41 have currently graduated.

The NASA College Scholarship Fund, Inc., Board of Directors has determined that six scholarships will be awarded next year. Each scholarship will be renewable annually for a maximum of

\$8,000 over 6 calendar years.

The fund was established to award scholarships agencywide to qualified dependents of NASA and former NASA employees. The fund was endowed as a direct result of a substantial unsolicited gift by the noted Pulitzer Prize winning author, James A. Michener. Many NASA employees have contributed to the fund directly or through the Combined Federal Campaign. Other major contributors include the Freedom Forum (to honor the Hubble crew members in 1994, and again in 1997 to honor Shannon Lucid) and the JSC Chapter of the NASA Alumni League.

Fifteen applications were received from Ames Research Center. Those students who weren't chosen this year are eligible to apply again next year.

By JANINE CIFFONE 

New Employee Orientation Schedule

The Ames Career Center and the Human Resources Development group will be offering a New Employee Orientation Session on June 9 from 8:30 a.m. to 11:30 a.m..

The Orientation will consist of an introduction and overview of the center, and information on Equal Employment Opportunities, Training, and Career Development. There will be a walking tour of the center in the afternoon for those who wish to participate.

All new employees who have arrived at the center in the last 17 months are encouraged to attend. Supervisors of new employees are also invited. Sign up via ARC form 301. For more information call Ken Rossi at ext. 4-1819.

Flight Line Security

There is still considerable aircraft flight activity on the NASA ramp adjacent to Hangar 211 and throughout the airfield even though NASA Flight Operations (Code O) has been abolished. At this time, the airfield perimeter fencing is not 100% complete although the goal is for the active airfield to be completely fenced.

For security purposes, the Airfield Management Office is requesting that all COTR's and supervisors of airfield work parties coordinate with the Airfield

Management Office, ext. 4-0685 or ext. 4-0931, or Base Operations in N-158 (control tower building), ext. 3-9213/14, prior to performing any work or when requiring access to any aircraft movement area.

Airfield groups that already utilize the radio net for airfield access may continue as normal; but ensure that radio contact with the control tower is maintained and your intentions for movement on the airfield are made clear to the tower.

THE AMES Astrogram

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

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