National Aeronautics and Space Administration, Ames Research Center, Moffett Field, CA

The Ames Astrogram

Communication for the Information Technology Age

November 5 , 2001

Goldin praises Ames' transformation and leadership

NASA Administrator Daniel S. Goldin, visited Ames recently to say goodbye. He thanked the center for successfully changing its research focus and predicted a bright future for Ames.

"NASA Ames is a very, very special place," Goldin told a standing-room only audience gathered in the main auditorium. "It was a privilege working with people like you who are rewriting the future." Goldin made a special stop at Ames on Oct. 22 enroute to the Jet Propulsion Laboratory to celebrate the arrival of the Mars Odyssey at the Red Planet the following evening.

Prior to his remarks, the NASA Administrator received a signed copy of Dr. Edward Teller's newly published "Memoirs: A 20th Century Journey in Science and Politics." The 93-year old renowned physicist, frail and confined to a wheelchair, attended the farewell speech in order to personally present his new autobiography to Goldin. He inscribed it "To one for whom the sky is the lower limit. Best Wishes, Edward Teller."

photo by Tom Trower

Outgoing NASA Administrator Daniel S. Goldin pauses to reflect during an uplifting and emotional speech to Ames employees on Oct. 22.

Oct. 18, 2001

Dear Dan,
We at Ames have no way we can really express our gratitude to you for your service to the nation and to NASA during the last 10 years. Somehow or other a simple 'thank you' does not seem adequate. Nonetheless, I know that I speak both personally and on behalf of the center when I express my gratitude to you for all of your efforts, your commitment and your contribution to this agency called NASA.

We here at Ames do not know or care to speculate on where this agency may have gone or what it might have become without your leadership. In a time of critical need you gave the agency the direction it needed. You represented the agency to the world with skill and emotion in a most effective manner. We are all in your debt, I more than many others, for being given the opportunity to serve in your administration.

All here at Ames send their best wishes to you for the future along with their thanks for all that went before.

Harry

Recalling a prior visit to Ames made several years ago, Goldin said he was proud of how the center had changed since then. "I remember when I came out here and people said you'll never be able to pry the cold, dead

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An era ends as Goldin resigns

Daniel S. Goldin, who led NASA for nearly 10 years and pioneered the agency's 'faster, better, cheaper' way of doing business, resigned unexpectedly effective Nov. 17, 2001.

During an emotional address televised throughout the agency, NASA's longest-serving administrator told stunned employees gathered in the Headquarters auditorium that it was time to step down from the post he has held since1992. Recalling fond memories of the past decade, the normally brusque Administrator's eyes welled up with tears.

"Being appointed NASA Administrator was the fulfillment of a childhood dream," Goldin said. "This is the greatest job in the world and it is difficult to leave a job you love. But I'll always have NASA in my heart."

The 61-year-old Administrator tendered his resignation in a letter to President George W. Bush, whose father, President George H.W. Bush, appointed him on April 1, 1992. "For nearly a decade, it has been my honor to serve the American people by leading our nation's space program and its dedicated personnel," Goldin wrote. "It was the highlight of my life when your father asked me in 1992 to serve as America's ninth administrator for the National Aeronautics and Space Administration."

Goldin added that he was happy and proud to have served three presidents and considered it an honor and a duty to stay on the job when President Bush asked him to do so during the presidential transition. No

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NASA Administrator launches 'Flags for Heroes and Families' campaign

In a unique extension of a tradition that dates back to the beginning of human space flight, NASA Administrator Daniel S. Goldin announced on Oct. 11 that the next mission of space shuttle Endeavour will honor the victims of September's terrorist attacks in New York, Washington and Pennsylvania.

In announcing the "Flags for Heroes and Families" campaign, Goldin said that thousands of American flags will be carried into space by Endeavor and its seven-member crew and will be distributed to the victims' families and survivors of the September attacks.

"The 'Flags for Heroes and Families' campaign is a way for us to honor and show our support for the thousands of brave men and women who have selflessly contributed to the relief and recovery efforts," said Goldin. "The American flags are a patriotic symbol of our strength and solidarity, and our nation's resolve to prevail," he said.

As part of this NASA-sponsored effort, nearly 6,000 American flags will be carried into orbit aboard Endeavour. The mission, known as STS-108, is currently scheduled for lift-off from NASA's Kennedy Space Center in Florida Nov. 29.

"NASA wanted to come up with an appropriate tribute to the people who lost their lives in the tragic events of Sept.11," said Goldin. "America's space program has a long history of carrying items into space to commemorate historic events, acts of courage and dramatic achievements. 'Flags for Heroes and Families' is a natural extension of this ongoing outreach project."

The legacy of flying American flags to space started in 1961 with the flight of the first American astronaut, Alan Shepard. Students from Cocoa Beach Elementary School in Florida purchased a flag from a local department store. The flag was rolled up and placed between cables behind Shepard's head inside his Freedom 7 Mercury spacecraft.

The flags carried into orbit as part of the "Flags for Heroes and Families" effort will be returned to Earth at the end of STS-108, mounted on specially designed memorial certificates, and presented to the survivors and families of the victims in New York and the Pentagon, and to the families of the heroes killed aboard United Airlines flight 93, which crashed in Pennsylvania.

On Oct. 10, Goldin presented the city of New York and Mayor Rudolph Giuliani with an American flag carried into space on a previous space shuttle flight. The Administrator announced plans to present new flags to each New York fire house and police precinct that has played a role in the rescue and recovery efforts.

"We feel 'Flags for Heroes and Families' is a fitting tribute from our nation's space program to honor those affected by this American tragedy," concluded Goldin. "The entire NASA family has come together with a historic display of unity on a project designed to comfort all who have been touched by these horrific events."

STS-108 will be the 12th space shuttle mission to visit the International Space Station. Endeavour will deliver the Expedition Four crew--Commander Yuri Onufrienko of Rosaviakosmos and American flight engineers Carl Walz and Dan Bursch--and return the Expedition Three crew home to Earth. Dominic Gorie will command STS-108 and Mark Kelly will serve as pilot. Astronauts Linda Godwin and Daniel Tani are mission specialists for this flight.

Additional information about STS-108 and the International Space Station is available on the Internet at: http://spaceflight.nasa.gov

Ames hosts education foundation

photos by Lucjan Szewczyk (CRM freelance)

On Thursday, Oct. 11, Ames' Education and Communication offices hosted a reception and meeting of the Foundation for College Education (FCE) at the Visitor Center from 5:30 p.m. to 7 p.m. FCE's mission is in keeping with Ames' goal to make the dream of college a reality for students who traditionally have not had the opportunity to go to college. Specifically, FCE strives to increase the number of students of color attending and graduation from 4-year colleges and universities. Many of FCE's students are the first in their families to pursue higher education. For more information about FCE, visit its web site at www.collegefoundation.org.

Ames VPP certification status

In July, the Occupational Safety and Health Administration (OSHA) completed its Voluntary Protection Program (VPP) preliminary assessment of the Ames' safety and health program. Then in September, Gabe Gillotti, the OSHA Director of Voluntary Programs/ Outreach, returned to Ames to complete employee interviews and review our progress on issues identified during the preliminary assessment.

While here, OSHA identified 72 deficiencies, otherwise known as improvement opportunities. While some of these were simple to correct, others are more complex and revealed significant safety program weaknesses. Two of the more complex weaknesses were in the areas on machine safeguarding and chemical management systems. To address these concerns, task forces have been established. Two of these task forces are machine shop safety and chemical management systems. These task forces have been chartered by Deputy Center Director Bill Berry and the Ames executive safety committee. Information about these task forces and other Ames safety committees can be found on the Code Q web site at: http://q.arc.nasa.gov/ Just follow the link to 'safety committees.'

Because of circumstances related to the Sept. 11 tragedy, OSHA has not committed to a date for its return visit but we are hoping it will be in mid-November. While here, they will review progress on previously identified items and work to ensure that we have maintained our commitment to continuous improvement of our safety programs. If we have done the necessary work to meet OSHA's expectations, we hope to receive the VPP STAR certification in early 2002.

Ames' achievement of VPP certification will mark a great success. It is important to remember that OSHA certification is not the real prize--the real prize is everyone going home each and every day at least as healthy as they arrived. We can only do this by intentionally preventing occupational injuries through the active participation of all in a superior safety and health program. Safety is each person's responsibility and should be a primary consideration in all that we do, for ourselves and for others. For this to work, we must dedicate ourselves each day to being thoughtful in our actions, always considering safe strategies.

NASA Ames Engineer, Craig Hange plays the role of Orville Wright

On Thursday, Oct. 18, NASA Ames aerospace engineer Craig Hange played the role of Orville Wright in a webcast with classrooms for NASA Quest. The webcast is located at: http://quest.nasa.gov/aero/chats/ Currently, Hange works in the High Performance Aircraft and Powered Lift Branch, Code APM.

Hange grew up in Ohio and had the chance to visit the Dayton museum at Wright Patterson Air Force Base as a child. When he began working in the wind tunnel area, he attended a meeting about a possible test of the Los Angeles chapter of the American Institute of Aeronautics and Astronautics' (AIAA) 1903 Wright Flyer model. Hange became interested in the research side of the test and worked as the NASA research lead for the test in 1999 in the 40 x 80 tunnel of the National Full-Scale Aeronautics Facility. He was responsible for the data collection and the quality of the data; he also programmed the data acquisition system for the test and ran the system during the test.

Hange also did outreach during the test including newspaper and television interviews, and chats and webcasts. During that test he first chatted, along with Steve Shackleford from the AIAA, as one of the Wright brothers.

"I played Orville and Steve played Wilbur Wright," said Hange. "Judging from the enthusiasm of the students in the chat room, this enactment made history come to life. It was a great use of the Internet, an interactive environment, for learning history."

"Once during the chat a child asked about the brothers' dog's name. I didn't know so I sent a private message to Steve, who was the historian for the AIAA group and he knew the name, Scipio," said Hange.

Another challenge during the chats is remembering that your answer will have an impact on the audience of children. Hange remembered, "One child asked about the Wright brothers' father's approval. I knew that he was asking about Milton Wright, who was a minister and a strict father, but my answer was about the time when Orville took him for a ride in the plane. He kept asking Orville, 'Go higher and higher'."

Hange has done several chats as Orville Wright over the years and he says he finds them very rewarding. "I think it plays to children's fascination with flight and I think that the practice of posing questions to famous historic figures will serve them well in the future."

Ames aerospace engineer Craig Hange is shown at his computer station playing the role of Orville Wright in a web cast with classrooms for NASA Quest.

By Susan Lee

Antarctic/Alaska-like wind turbines could be used on Mars

Wind turbines designed to make electricity at the South Pole and in remote regions of Alaska may someday lead to similar wind machines for Mars bases, according to NASA scientists.

During missions to Antarctica, where there are about six months of darkness each year, NASA scientists first seriously considered modifying cold-weather wind machines so they could make vital electric power for bases on Mars. One reason scientists proposed use of wind power on Mars is that wind turbines still could generate electricity during month-long martian global dust storms that can make days on the Red Planet as dark as night.

"Wind power and solar power may complement each other on Mars. When you have a large dust storm blocking the sunlight on Mars, a wind turbine can still generate electricity," said Ames' David Bubenheim.

"Only during dust storms on Mars is there enough wind energy to operate a wind turbine," said Michael Flynn, another NASA Ames scientist. On Earth about 10 meters per second wind speed is needed to make electricity with wind turbines; on Mars about 30 meters is needed because of the extremely thin air, according to Bubenheim.

"What we are proposing is a hybrid wind-solar system," Flynn said. "This system would use solar cells to generate electricity during sunny periods, and a wind turbine to make electricity during dust storms," he said.

"We've looked at wind profiles based on atmospheric computer models of Mars," Bubenheim said. "A scheme of complementary wind and solar power appears to be an option," he added.

Hard data from Viking and Pathfinder missions to Mars do not indicate strong martian winds, according to Flynn. "But those missions did not collect data during dust storms on Mars. Global computer models and wind tunnel tests indicate very high winds are required to start and maintain a dust storm on the Red Planet," he said.

"Our goal is to demonstrate that the solar-wind hybrid system can compete with traditional energy production systems in rural environments above the Arctic Circle," Flynn said. "By demonstrating the feasibility of a system on Earth, we are beginning to address the feasibility for a system on Mars."

"We have been working with a private contractor, Northern Power Systems, of Waitsfield, Vt., to develop these types of hybrid wind-solar systems, one of which is called the village power system," Flynn said. "This system is under development for use in rural Alaskan villages."

Wind turbines that are able to operate in extremely cold, windy areas are scheduled for testing in Kotzebue, Ala., location of a wind power test farm. The wind turbine system to be used in the Alaskan village power system won R&D Magazine's 'R&D 100 Editors' Award' in 2000.

"Originally, we were using the Amundsen-Scott South Pole Station, where there are about six months of darkness, as a Mars analog," Bubenheim said.

"We were working with life-support technologies, including growing fresh fruits and vegetables and recycling waste. Then, we thought about using wind machines on Mars, too. People at both the South Pole Station and a space habitat have to be careful to efficiently use electricity," he explained.

Antarctica is sufficiently remote that getting diesel oil in is difficult, according to Bubenheim. The key issue at the South Pole, Mars and Alaska is maintainability in extreme environments. Wind machines must be able to operate in conditions of low temperature, frost and the presence of abrasive materials, such as sand, he said.

by John Bluck

NASA and Stanford form biocomputing collaboration

Under a powerful new partnership agreement, joint research efforts at NASA and Stanford will benefit from computational technologies that have led to recent breakthroughs, such as understanding the genetic basis of diseases.

On Oct. 16, NASA's Center for Computational Astrobiology and Fundamental Biology (NCCAFB), based at Ames and Stanford's Center for Biomedical Computation (CBMC), announced a collaborative partnership to conduct multi-disciplinary research and development in the emerging field of computational biology.

The goal of the collaboration is to develop new methods of computational biology and apply them to explain how cells function, evolve and are affected by diseases, both on Earth and in space. Computational biology is an emerging interdisciplinary field that uses computers and specialized software to solve biological problems and apply the solutions to diverse applications in biology, medicine and space science.

"This collaboration will greatly enhance NASA's research process in astrobiology and the related field of space genetics," said Dr. Andrew Pohorille, director of the NCCAFB at Ames. "It is a unique partnership because we will use new computational methods developed at Stanford and at Ames to interpret the data both from Stanford's laboratory experiments and from experiments in space."

"One early collaboration will be applying the tools of biomedical computing to NASA's space genetics program," said Pohorille. Space genetics aims to characterize the structural, genetic and protein 'footprints' (or signatures) inside cells, tissues and organisms in space. NASA will first test human kidney cells flown on the International Space Station. Unlike conventional cells grown in laboratories on Earth, kidney cells flown in space closely mimic how cells actually interact inside a human body. Good tissue models will greatly aid researchers in finding cures for kidney diseases.

The collaboration also is unique because it will employ NASA's state-of-the-art supercomputers, taking advantage of Ames' role as NASA's lead center in information technology. The NCCAFB currently uses nearly 4,000 processors on SGI supercomputers at the NASA Advanced Supercomputing Division.

"We are excited that this joint effort will exploit our mutual synergies and accelerate progress in the vital new area of computational biology," said Dr. Russ B. Altman, director of the CBMC at Stanford. Stanford initially intends to focus on three projects: the integration of diverse databases, the simulation of physical models, and the development of methods for smoothly moving between images and their corresponding physical models. "These projects are part of a grant we received in October from the National Institutes of Health (NIH) that will kick-start the Center and prepare Stanford for a larger set of projects in the future," Altman said.

Computational biology has become indispensable in modern biology because it lets scientists gather, store and analyze vast amounts of data obtained from gene sequencing, the use of micro-arrays and the study of proteins and cell physiology. For example, computational biology has already led to breakthroughs in identifying and testing for genetic diseases.

Initial collaborative research will focus on cell metabolism, using both healthy and diseased cells cultured from experiments on Earth and in space. In addition, the partnership will develop new information management tools to use on NCCAFB's massively parallel computers.

"This is just the first step," Pohorille said. "The grand vision of the partnership is to create a nucleus for a broad, regional partnership that will eventually include academia, national laboratories and industry."

The Center for Biomedical Computation at Stanford is comprised of faculty who coordinate the university's long-term biomedical computation strategy and design coursework for students. The center uses a Silicon Graphics Origin 3800-class computer, currently the most powerful system in the world dedicated to biomedical research. The center hosted its second annual research symposium on Oct. 20 at Stanford. For more information, see http://bcats.stanford.edu/

The NASA Center for Computational Astrobiology and Fundamental Biology was formed in 1999 to advance the agency's scientific goals in astrobiology and fundamental biology. The NCCAFB leverages Ames' role as NASA's lead center for astrobiology, the study of life in the universe.

Portions of the Ames' research are supported by NASA's Office of Biological and Physical Research, which promotes basic and applied research to support the human exploration of space and to take advantage of the space environment as a laboratory. Additional information is available at: http://spaceresearch.nasa.gov/

The directors of CBMC and NCCAFB will remain at their current institutions. A steering committee comprised of scientists from both centers will provide leadership and implement the collaboration.

Further information about the CBMC and NCCAFB can be found at: http://neurosurgery.stanford.edu/bits/index.php and at: www.cca.arc.nasa.gov

The partnership will be funded through current operations budgets at both institutions.

BY RUTHANN RICHTER AND KATHLEEN BURTON

Committee Room project team

The core engineering and design team behind the N200 Committee Room project, from left to right, Natesan 'Gary' Seshagiri, Antoinette M. Price, Patrick Jacquernet, Mark Allard and.Author 'Glenn' Maynard.

Center Briefs

2001 ozone hole about the same size as the past three years

Recent satellite data show the area of this year's Antarctic ozone hole peaked at about 26 million square kilometers -- roughly the size of North America -- making the hole similar in size to those of the past three years, according to scientists from NASA and the National Oceanic and Atmospheric Administration (NOAA). Researchers have observed a leveling- off of the hole size and predict a slow recovery.

Over the past several years, the annual ozone hole over Antarctica has remained about the same in both its size and in the thickness of the ozone layer.

"This is consistent with human-produced chlorine compounds that destroy ozone reaching their peak concentrations in the atmosphere, leveling off, and now beginning a very slow decline," said Samuel Oltmans of NOAA's Climate Monitoring and Diagnostics Laboratory, Boulder, Colo.

More planets emerge with solar system-like orbits

An international team of astronomers has discovered eight new extrasolar planets, bringing to nearly 80 the number of planets found orbiting nearby stars.

The latest discoveries, supported by NASA and the National Science Foundation, uncovered more evidence of what the astronomers are calling a new class of planets. These planets have circular orbits similar to the orbits of planets in our solar system.

At least two of the recently detected planets have approximately circular orbits. This characteristic is shared by two planets (one of them the size of Jupiter) previously detected by the same team around 47 Ursae Majoris, a star in the Big Dipper constellation, and one around the star Epsilon Reticulum. The majority of the extrasolar planets found to date are in an elongated, or 'eccentric,' orbit.

NASA-funded physicist shares nobel prize

The 2001 Nobel Prize for physics has been awarded to three scientists, including a Massachusetts Institute of Technology physicist whose NASA-funded research uses ultracold atoms that form a new type of matter.

The Royal Swedish Academy of Sciences said Dr. Wolfgang Ketterle and two other scientists have caused atoms to 'sing in unison.' Through their research, atomic particles were induced to have the same energy and to oscillate together in a controlled fashion. Laser light has these qualities, but researchers have struggled for decades to make matter behave this way. The breakthrough research has potential uses for extremely precise measurements. The discoveries may eventually lead to microscopic computers and ultra-precise gyroscopes that could dramatically improve aircraft guidance and spacecraft navigation.

SAFETY SNAPSHOTS

This feature is one in a series intended to inform the Ames community about facets of Ames' safety and environmental programs.

Code of Safe Practices

PROFILE

Did you know that all construction contractors (prime, general, and subs) must adopt a written Code of Safe Practices that relate to their contractor's operations? This document needs to be posted in a conspicuous location at the job site. Workers need to be aware of its existence and it must be available to them as well as readily available upon request. Employees need to be familiar with the procedures outlined in their Code of Safe Practices.

CLOSEUP

The Code of Safe Practices is a set of worksite specific rules that stipulate how to perform job duties safely and how to maintain a safe worksite. All new workers must be directed to read the code before beginning their assigned duties. Bill Bramble, Safety Specialist at Ames, says that requirements for construction safety and personnel responsibilities are defined in the Ames Health and Safety Manual, Chapter 27, Construction Safety Management.

The following is an example from an excavation contractor's Code of Safe Practices.
1. All persons will follow these safe practice rules, render every possible aid to safe operations, and report all unsafe conditions or practices to the Superintendent.
2. A "competent person " will be on site at all times.
3. Protective system design will be based on soil type: Type A, B, or C soils. Soil type needs to be classified by a competent person.
4. Trenches will be inspected throughout the shift for potential cave-ins, failures, hazardous atmospheres, or other hazards.
5. The competent person has the authority and ability to take prompt corrective action when conditions change.
6. Trenches over 5 feet deep where an employee will enter, will have cave-in protection.
7. Ladders or other safe access will be provided within 25 feet of work areas in trenches 4 feet or deeper.
8. Employees will be protected from excavated soil or other material by keeping such material at least 2 ft. from the excavation edge.
9. Employees will be protected from falling materials by scaling, installation of protective barriers, or other methods.
10. Barriers or barricades will be erected around excavations.
11. Trenches will be covered or barricaded or both as needed for the location.

'Competent person' is an OSHA term for someone who is, by training, experience, and authority, competent to recognize hazards and take corrective measures at a construction work site. For example, a competent person in trenching operations knows the different soil types and how to conduct trenching safely in each soil type, and has the authority to change or stop the work.

For more information, go to Ames Health and Safety Manual, APG 1700.1 Ch. 32, bloodborne pathogens which can be found on the QH web site at: http://q.arc.nasa.gov, or call the Ames Health and Safety Office at ext. 4-5602 or the Ames Health Unit at ext. 4-5287.

Goldin praises Ames' transformation and leadership

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hands off the wind tunnels," he said. In the ensuing years since that visit, Goldin said there has been "spectacular management of change," and as a result, the center is now operating in a "self-sufficiency mode."

Thanks to changing its mission, Goldin said Ames has emerged as a pre-eminent research center. "You're attracting the very best in the world to come here like a magnet, and you're going to make a difference, because of the spectacular work you're doing in information technology, biotechnology and nanotechnology," he said.

Goldin said he left NASA in 1967 because he didn't think the agency would be able to put astronauts on Mars, and returned to NASA in 1992 when he believed they would. "My life won't be complete until I see astronauts land on Mars, and I will – and you will, too," he predicted.

Goldin, who admitted that he was "tougher on this center than any other," challenged Ames to help solve the International Space Station's biggest problem – software, using computational fluid dynamics and knowledge-based tools. "You have established a world-leadership position in soft adaptive computations, and if you really focus, you can change how the space station is perceived by Americans and people around the world," he said.

During his remarks, the Administrator also lauded the Astrobiololgy Institute at Ames. "Understanding how to fingerprint life is just an unbelievable quest, and the work that you're doing in astrobiology is magnificent," he said. "This is going to produce monumental science and when you integrate it with your information technology and nanotechnology, it could literally change the world."

Goldin said he decided to resign from NASA after visiting the site of the terrorist attacks at the World Trade Center in New York City.

"When I visited Ground Zero in New York, I began to understand that my life was out of balance," Goldin recalled. "Seeing that twisted steel, seeing all that devastation, not only to the World Trade Center, but to the whole area, and the thing that I'll never forget is that pungent smell in the air, and it was the integration of senses that said it was time."

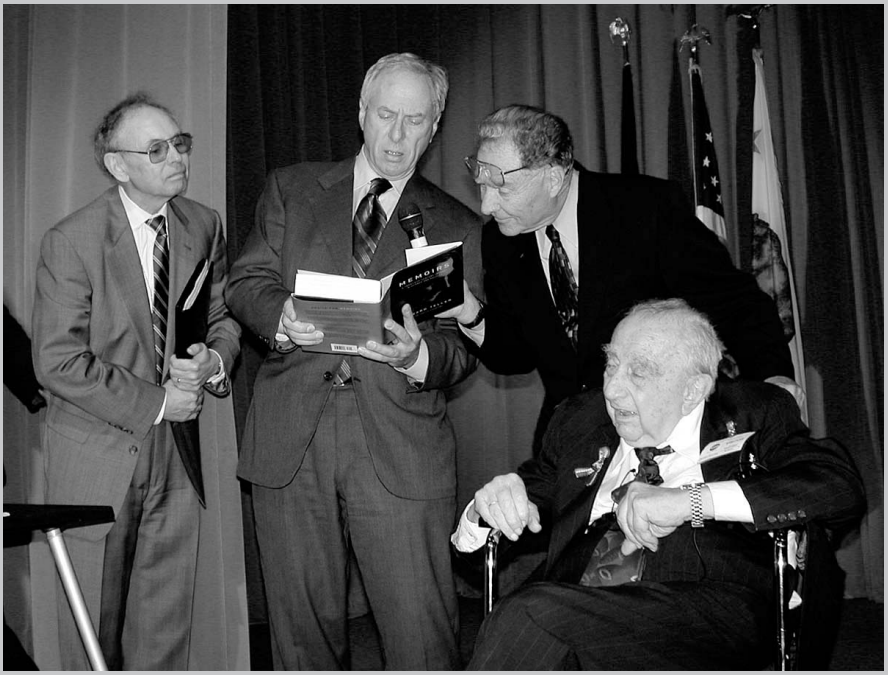
Goldin, who has accepted an unpaid position as a Senior Fellow for the Council on Competitiveness in Washington, said he wouldn't forget Ames.

"It was bittersweet leaving, but I do not want you to think I'm leaving you, because what you're doing is critical to this country," Goldin told the overflow audience. "I'll be in the stands rooting for you because you're the very best."

At the conclusion of the Administrator's remarks, Ames Center Director Dr. Henry McDonald thanked him for his service to the agency and presented him with a framed cartoon, "So Much Universe, So Little Time," that was drawn by former Ames employee Roger Arno.

Goldin, whose abrupt manner and stern demeanor often intimidated agency employees, received a standing ovation at the conclusion of his remarks. He then left for a private meeting with McDonald, before adjourning to a dinner with senior management staff at a local restaurant.

BY MICHAEL MEWHINNEY



photos by Tom Trower

From left to right: Center Director Dr. Henry McDonald, NASA Administrator Daniel S. Goldin, Executive Assistant to the Center Director Jack Boyd and renowned physicist Edward Teller at Goldin's farewell speech to the center. Teller presented his new autobiography to Goldin with the inscribed words "To one for whom the sky is the lower limit. Best wishes. Edward Teller."

Ames' Disaster Assistance and Rescue Team (DART), along with their search dog, Lucy, listen attentively during Goldin's speech on Oct. 22 at Ames. Goldin dropped by Ames enroute to JPL to celebrate the arrival of the Mars Odyssey and orbit insertion the following evening. Goldin thanked the Ames' DART team for their assistance in the recent search and rescue effort in New York City, following the Sept. 11 terrorist attacks.

An era ends as Goldin resigns

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replacement has been named.

During his remarks, Goldin commended agency employees for their excellent work during his tenure. "I just think that you're the greatest," Goldin said. "I cannot tell you how outstanding you are; this team is unbelievable."

Goldin was particularly effusive in his praise of Ames, saying the center was successfully transitioning from "working on wind tunnels, to conducting research in biotechnology, information technology and nanotechnology. "That's going to change the way we live," he said. Goldin, who once told Ames employees to stop hugging wind tunnels and change the center's mission, now calls Ames "the finest research center in the world."

Ames Center Director Henry McDonald and his Executive Assistant Jack Boyd both praised Goldin fervently for the job he has done as NASA Administrator.

"This agency and nation owe Dan Goldin a heartfelt thanks for all his effort, commitment and contributions made over the nearly 10 years of his administration," McDonald said. "He has provided the vision and the leadership to help transform Ames into a world-class research facility whose mission is now universally recognized as vitally important, not only for the agency as a whole, but the entire world."

"I have known and worked for all of the NASA administrators," said Boyd. "Dan Goldin is unique among this esteemed group. He came to NASA at a critical junction in the agency's history. Thanks to his unending commitment to the use and exploration of space for the benefit of all of us, he has inspired Americans of all ages to dream the impossible dream and take the bold steps necessary to achieve it. He was a friend, a leader and a man of incredible vision."

As he transitions back into the private sector, Goldin will serve as a Senior Fellow for the Council on Competitiveness in Washington, D.C. The council's mission is to develop a strategy for boosting the United States' competitiveness and leadership in world markets, raising the standard of living for all Americans, and strengthening domestic innovations, upgrading the workforce and benchmarking national economic performance.

Goldin became the agency's longest-serving administrator on March 5, 2001, surpassing the previous record of James Fletcher, who served nearly nine years in two separate terms.

As NASA administrator, Goldin successfully reduced NASA's annual budgets by a cumulative total of $40 billion. Under his leadership, NASA's total civil service numbers were cut by about a third, and NASA Headquarters staffing was reduced by more than half. Despite the reductions in personnel, NASA's overall productivity climbed 40 percent.

Goldin played a key role in redesigning the International Space Station and reducing space shuttle costs by about a third. He was a vigorous proponent of increased exploration of Mars and expanded opportunities for public and educational participation in space exploration. But of all the agency's many accomplishments during his tenure as administrator, Goldin said the one he is most proud of is NASA's excellent safety record.

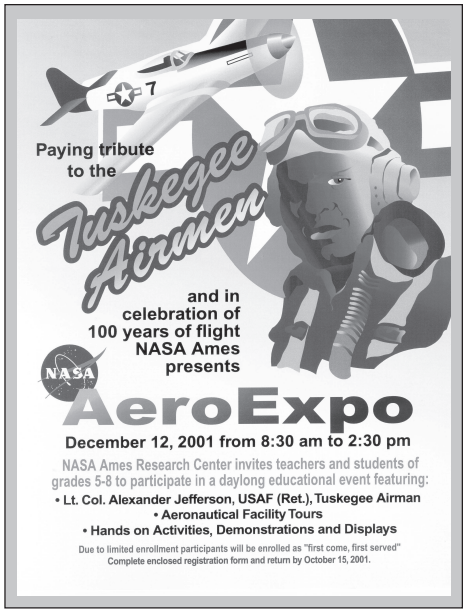
"The thing that you do best is protecting human life," Goldin declared. "During my time as the NASA Administrator, we've had 57 shuttle missions, and we've never had a serious injury." The agency's strong commitment to safety demonstrates that "human life is more precious than any research that we do," he added.

"There have been 171 missions to space launched during my time as Administrator, and we've only lost 11," Goldin said, adding that of the $23 billion spent to launch space missions, only half a billion dollars has been lost during his tenure. "I take personal responsibility for all the failures, that's the job of the NASA Administrator," Goldin said, "and you can take the credit for all the successes. You've done a spectacular job."

Prior to joining NASA, Goldin served as vice president and general manager of the TRW Space and Technology Group in Redondo Beach, Calif. He began his NASA career in 1962 at Lewis Research Center, now known as Glenn Research Center, in Cleveland.

Looking toward the agency's future, Goldin predicted that "NASA's mission of discovery will continue." Personally, he will enjoy more time with his wife, Judy, his family, and young grandson. "When I told him that his grandfather would now be able to spend more time with him, helping him build model airplanes and rockets, his yelps of joy told me Judy had me make the right decision."

BY MICHAEL MEWHINNEY



VPP STAR Tip:

"Both the requirements for the VPP and the methods by which the government determines if the requirements are met have pushed VPP employee involvement to the cutting edge in safety and health. Employees are expected to be actively and meaningfluly involved in the structure and operation of the safety and health program."
...Margaret Richardson, in Preparing for the Voluntary Protection Programs, Copyright @ 1999 by John Wiley & Sons, Inc. Reprinted by permission of John Wiley & Sons, Inc.

2001 Ames Honor Award and Turning Goals into Reality (TGIR)Awards Ceremony held Oct. 17

The 200 Ames Honor Awards and Turning Goals Into Reality Awards ceremony was held in the Ames main auditorium on Oct. 17. A reception followed immediately afterward. A list of those honored and their award category is provided below.

2001 Ames Honor Awards

Administrative Professional
Lisa L. Lockyer
Maria-Elena Lopez

Administrative Technician
Femy D. McGrath

Best First Paper at Ames
Tori M. Hoehler

Commercialization/Tech Transfer Award
Robert W. Mah

Community Service/Volunteer
Doris Chow

Contractor Employee
Mary P. Conway, Foothill-DeAnza College District Internship Program
Paula M. Dumars, Lockheed Martin Engineering and Sciences Co.
Sonja Jones-Shin, Quantum Services, Inc.
Julie M. Nottage, Quantum Services, Inc.
Claire Smith, Quantum Services, Inc.

Craftsman/Technician
Gary H. Palmer

Equal Employment Opportunity
Michel Liu

Supervisor/Manager
Edwin W. Aiken

Technology Development
John E. Finn

Engineer
Daniel L. Dittman
Shawn A. Engelland
George W. Sutton

Mentor
Emily M. Holton
Jonathan D. Trent

The 2001 Ames Honor Awards and Turning Goals Into Reality Awards recipients patiently wait on stage Oct. 17 to receive their awards presented to each of them by Center Director Henry McDonald.

photo by Tom Trower

Technical Support
Robin M. Orans

Group/Team
Aviation Safety Reporting System (ASRS) Team
Aerospace Education Development Team
International Space Station (ISS) Testbed Centrifuge Upgrade Project Team

Safety and Environment
Thomas A. Spalding

Scientist/Researcher
Andrew S. Ackerman
Douglas M. Hudgins

Secretary/Administrative Support
Merle D. Simbe
Jennifer M. Whalen

Student
Marianne Shelley
Nguyen Trang

Headquarters Employee
Paula M. Cleggett
Neal R. Newman

2001 Turning Goals Into Reality (TGIR) Awards

Administrator's Award
Aircraft VOrtex Spacing System (AVOSS) Team

Increase Capacity Objective
Future ATM Concepts Evaluation Tool (FACET) Team (Ames led)

Mission Safety Objective
Highly Maneuverable Crew Transfer Vehicle Development Team (Ames led)

X-33 Mission Affordability Objective
Thermal Protection System Development Team (Ames led)

Engineering Innovation Objective
Control Designer's Unified Interface Development Team (CONDUIT) (Ames led)

Aircraft Revolutionize Aviation Goal
Icing Project Team

Airframe Noise Reduction Objective
Noise Reduction Team

Pioneering Technology Innovation Goal
Numerical Propulsion System Simulation (NPSS) Team

Commercialize Technology Goal
Broadband SatCom/Ring Buffer Network Team

Event Calendar

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

Jetstream Toastmasters, Mondays, 12 noon to 1 p.m., N-269/Rm. 179. Guests welcome. POC: Samson Cheung at ext. 4-2875 or Lich Tran at ext. 4-5997.

Ames Bowling League, starts Sept 4. Palo Alto Bowl on Tues nights. Seeking full-time bowlers and substitutes. Pre-league meeting at Palo Alto Bowl on Tues, August 28 at 6 p.m. Questions to sign up: Mike Liu at ext. 4-1132.

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

Ames Child Care Center Board of Directors Mtg, Every other Thursday (check website for meeting dates: http://accc.arc.nasa.gov), 12 noon to 2 p.m., N-269, Rm. 201. POC: Joan Walton, ext 4-2005.

Ames Sailing Club Mtg, second Thursday each month, 11:30 a.m. to 1 p.m, bldg. N262/Rm 100. Brown bag lunch, usually includes a special speaker. Come learn about sailing. Everyone welcome. POC: Stan Phillips, ext. 4-3530 or Joyce Barrett, ext 4-3816.

Environmental, Health and Safety Monthly Information Forum, Nov. 1, 8:30 a.m. to 9:30 a.m., Bldg. 19/Rm 1040. URL: http://q.arc.nasa.gov/qe/events/EHSseries/ POC: Julie Quanz at ext. 4-6810.

Nat'l Association of Retired Federal Employees, (NARFE), Nov. 2, S. J. Chapter #50 mtg, 9:30 a.m., Hometown Buffett, Westgate Mall, 4735 Hamilton Avenue, San José. Lunch at 11 a.m. $6.27 pp. Program at 10 a.m. Discussion of changes in federal health plans and the new long-term health plan. POC: Earl Keener (408) 241-4459 or NARFE 1-800--627-3394.

Ames Contractor Council Mtg, Nov. 7, 11 a.m., N-200, Comm. Rm. POC: Paul Chaplin at ext. 4-3262.

Ames Amateur Radio Club, Nov. 15, 12 noon, N-T28 (across from N-255). POC: Michael Wright, KG6BFK, at ext. 4-6262. URL: http://hamradio.arc.nasa.gov

Ames Federal Employees Union (AFEU) meeting, Nov. 21, 12 p.m. to 1 p.m., Bldg. 19, Rm 1042. Info at: http://www.afeu.org. POC: Marianne Mosher at ext. 4-4055.

Native American Advisory Committee mtg, Nov. 27, 12 noon to 1 p.m., Building 19, Rm 1096. 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 first Friday 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 a space-available basis only. First-time ads are given priority. Ads must include home phone numbers; Ames extensions and email addresses will be accepted for carpool and lost and found ads only. Due to the volume of material received, we are unable to verify the accuracy of the statements made in the ads.

Housing

3 bd/1.5 ba, 2-story twnhs on Luz Avenue, San José. Freshly painted inside, dishwasher, gas heat, w/w carpet, outside child play area/large patio. 1 car port. Easy access to H101/680/280. $259K. Azucena (408) 559-2881.

For rent: furnished room with kitchen privileges in Mountain View. Only 5 minutes from Ames in quiet neighborhood off Middlefield Rd. Available now. Catherine (650) 938-8893.

Townhouse for sale: 2 bd/1.5 Ba, 4 mls from Ames; best area of Sunnyvale; large patio w/private hot tub, complex pool, fireplace, close to Hwys 85, 280 and El Cam. Real, W/D and refrig. can stay (along with dishwsher); new carpets, paint; $325K. Call (408) 245-8256.

Furnished/unfurnished bdm for rent in 1,700 sq foot home in the Los Gatos/Campbell corner of San José for prof, N/S. Cable, own phone jack, A/C, hrdwd floors, fireplc, safe, quiet family nghbrhd. Shared ba/kitch. Close to freeways. Max. drive to Moffett is 25 mins. Lease/deps required. Call (408)266-7272 lv. message.

For rent: Quiet 2 story townhouse available 11/1 in south San José. 2 master bd/2.5 ba, wet bar, 2 car garage, balcony, fire place, back yard, new appliances and carpet. $1,800/mo, plus 1st & last. Call (408) 559-5050.

For rent: Menlo Park cottage, convenient to Ames. Priv. flag lot. 2 story, bdrm plus office upstairs, LR, kit, bath downstairs. Carport, W/D, n/s, n/p. $1,750/mo. plus utils. Email hipskind@sbcglobal.net or call (650) 325-1174.

Miscellaneous

New roof shingles in retail packs: Pabco Premiere 40-year composition, Color: Weathered Wood, 6 bundles (150 sqft) $20. Call (408) 295-2160.

One brown couch and matching chair, and an additional chair turquoise. Very good condition. Barrie (408) 252-5802.

PC scanner, Scanport SQ300 parallel port, flatbed, 300dpi/600dpi, 36bit color, for win95/98/NT, works fine, inc software & cables, $15. Call (408) 295-2160.

Two matching pairs of double, prairie-style casement windows removed from 1923 California Bungalow home. Good condition, Call for pics, $95. Call (408) 295-2160.

Beds: 2 adjustable XL twin size beds, excellent condition, $400 each or B/O. Brass bed, king size $500 or B/O. Call (408) 779-3102.

Klein road bike. 21 speed, new triple crank and derailleurs. Great, light weight sport bike. $450. Email hipskind@sbcglobal.net or call (650) 325-1174.

San Francisco Opera -- single ticket for sale. All Saturday 8 p.m. shows (3-4 hours long). One-hour opera talk before show time (except 6/8/02). 11/03/01 Tosca; 12/01/01 Jenufa; 01/19/02 Merry Widow; 06/08/02 Carmen; 06/29/02 Guilio Cesare. Upper balcony single seat, $25 per ticket. Email: LiuHsinMei@aol.com.

Transportation

'70 VW convertible classic, original owner, no smog needed; transmission ok; needs work on top & possibly engine. $1,600. Esther or Art (650) 961-2732.

'87 Toyota Corolla SR5, maroon, 5 speed, 71k mls. More than excellent condition. Orig. owners. $4,000. John (408) 779-6041.

'87 Toyota 4Runner 4WD, white, 5 spd. AC, good condition, 4.5K. Call (209) 835-6351.

'93 BMW 850 Ci V12, $27,000. Approx 82,000 mls, New tires, dual side-by-side A/C, dual 8-way power heated lther seats, ster cass/6 CD chnger, cruise cntrl, snroof, kyless access, traction cntrol, automatic/'manual sport mode' trans, fast, great handling, 'Awesome.' Call (408) 285-9616.

'93 Nissan 240SX, charcoal gray, 5spd, A/C, killer stereo, low miles, single owner, excellent condition. Asking $6,799 or B/O. Howard (408) 924-0722.

'94 Infiniti J30, excellent gas mileage.Excellent condition. $8,500. Call (408) 733-1906.

'98 Ford Ranger XLT, ext cab, automatic, V6 3.0, AC, Vista camper shell, carpet kit, AM/FM stereo, cassette, 25K mls, $12,000. Deanna (408) 260-1180 between 5-9 p.m.

'99 Chevrolet Suburban LT 2500, 3/4 ton, $32,000, 454 cu V8, elect. actuated 4X4 & limited slip posi, "all power", ABS, 32,000 mls, new tires, dual A/C, dual 8-way power heated seats (front), 8 psngr lther seating, ster. cass/CD, cruise cntrol, tow pkg, kyless access, sec sys, balance of new vehicle warranty = 6 mos to 36,000 mls. Call (408) 285-9616.

'00 Kawasaki Concours (997cc), red, 12K mls, all services by factory authorized technicians (all records available), 7.5 gallon tank, detachable hard cases, full faring, excellent condition $5,995. Chuck (925) 216-3918.

Ames Public Radio

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

Astrogram deadlines

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

Deadline	*Publication*
Fri, Nov. 9	*Mon, Nov. 19*
Fri, Nov. 23	*Mon, Dec. 3*
Fri, Dec. 7	*Mon, Dec. 17*

Exchange Information

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

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

Ask about NASA customized gifts for special occasions. Check centerwide emails for special sales and events. Make your reservations for Chase Park.

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

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

Visitor Center Gift Shop N-223 (10 a.m. to 4:00 p.m.) ext. 4-5412

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

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

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

Oct 31, 11:30 a.m. to 1:30 p.m., Pumpkin Carving & Costume Contest at Mega Bites. For more information, call Jodi Bulaich at ext. 4-0818.

NASA Lodge (N-19) 603-7100

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

NASA Swim Center (N108) 603-8025

New winter hours are in effect. For info call Tana Wilson at ext. 3-8025.

Vacation Opportunities

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

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

Vacation rental, Bass Lake CA 14 mls south of Yosemite. 3 bd/1.5 ba, TV, VCR, MW, fireplace, charcoal BBQ, priv. boat dock, great lake view. Sleeps 8. $1,050/wk. Call (559) 642-3600 or (650) 390-9668.

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

Ames seeks volunteers for month-long bed rest study

Ames is looking for people willing to spend a month in bed, as part of a study of how long-term space flight affects the human body.

The upcoming study, which will begin in January 2002, will require that volunteers lie in beds tilted head-down at a six-degree angle for 30 days, 24 hours a day. Bed rest in the six-degree head-down tilt position is considered the best Earth model to simulate the effects of prolonged microgravity on the human body.

"Head-down bed rest simulates weightlessness and induces many of the physiological changes similar to those seen with space flight," said Fritz Moore, Ames' project manager for the Countermeasures Evaluation and Validation Project (CEVP). "These effects include cardiovascular deconditioning, muscle atrophy, decreased bone strength, and shifts in fluid and electrolyte balance," he explained.

The goal of the project, which is managed by Johnson Space Center, is to sponsor space flight and ground-based analog campaigns that facilitate evaluation of promising countermeasures for future flight validation. A countermeasure is a drug, exercise or other intervention that minimizes the changes that occur during space flight and that impede normal functioning after people return to Earth. Ames manages the facility where the bed rest studies are carried out.

Male and female volunteers between the ages of 25 and 55 are needed for the study. Candidates must be non-smokers in good health and not participating in a highly competitive or rigorous exercise program. They should have no history of cardiovascular or musculoskeletal disease or hernia. Female volunteers must not be pregnant.

Participants will be housed in Ames' Human Research Facility in Bldg. N-239 for 45 days. They will lie in bed for 30 of those days. In addition to bed rest, these studies will involve a standardized battery of integrated physiological and cognitive tests called the Integrated Testing Regimen (ITR). These tests measure changes in physical and mental performance before, during and after bed rest. Currently many of these tests are performed on astronauts before and after space flight to measure the changes caused by extended space travel.

"This regimen tests many physiological systems and will be used to evaluate the efficacy of medical interventions for specific problems that occur during space flight," said Moore. The majority of the tests will be conducted in the Human Research Facility and Human Exercise Laboratory using both traditional and special physiological test equipment.

Most of the changes that occur during space flight are a normal acclimatization to the space environment, Moore explained. A successful countermeasure limits this acclimatization, so the astronauts can return to Earth without any persistent physiological or psychological impairments.

The first countermeasure to be tested is a regimen of resistance exercises performed with a machine called the interim Resistive Exercise Device (iRED). The iRED exercise regimen will be compared with a no-exercise regimen to determine which is more effective at preventing losses in muscle volume and strength, as well as losses in bone mineral density that occur during bed rest. Testing will occur both before, during and after the 30-day study period.

Participants will be temporary employees of an Ames contractor and will be required to refrain from alcohol and caffeine consumption during the study. Limited overnight fasting also will be required at times. Certified personnel will draw blood samples. A medical monitor will be present, along with certified equipment and test operators, during maximal exertion testing. A thorough medical examination will be provided to verify the health status of all selected volunteers.

This study has been evaluated and approved by the institutional review boards at Ames and at the Johnson Space Center.

For more information about becoming part of this space station-related study, contact Heather Wilson at ext. 4-5551, or e-mail her at: hwilson@mail.arc.nasa.gov.

BY ANN HUTCHISON

The Ames Astrogram

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