

Ames airport tower simulator wins Popular Science award

In early November, Popular Science magazine editors recognized a NASA airport tower simulator in the aviation and space category of the magazine's "Best of What's New" contest.

Ames Research Center's virtual reality simulator, "FutureFlight Central," can replicate the complete operation of an airport from the point of view of the air traffic

size and capability. The facility is a walk-in, full-scale, 360-degree simulator that can realistically test new patterns of ground traffic, new tower locations and many other

said. "We can measure the impact of a change on the airport's capacity, and let the controllers try it first-hand--before anything is built."

In FutureFlight Central, scenes evolve in the same manner that real-world changes occur. Airplanes come and go, and weather changes. Controllers use a simulated radio system, radar displays and other familiar tools.

A FutureFlight Central display as well as other winners' exhibits were available for media and public inspection during the awards ceremony.

"This year 'Best of What's New' will also extend beyond our pages to millions of computer users on the World Wide Web at Popular Science's site: www.popsci.com," said Popular Science editor-in-chief Cecilia Wessner.

"These viewers will crown one of the 100 winners with the Readers' Choice Award, to be announced on Jan. 5, 2001."

More FutureFlight Central information is on the Internet at: <http://ffc.arc.nasa.gov>

BY JOHN BLUCK



photo by Astrid Terlep

The Popular Science magazine's 2000 "Best of What's New" award for the aviation and space category was presented to Ames' FutureFlight Central.

control tower. The simulator is helping planners test ways to reduce airport delays, increase capacity and maintain safety. The facility was among 100 products and technologies in various categories honored recently during a luncheon and exhibit in New York City's Central Park.

"Airport planners who use our simulator can test solutions to critical problems in the safety of a virtual world," said Nancy Dorighi, manager of the FutureFlight Central simulator at Ames. "FutureFlight Central not only uses modern computer technology, but also permits controllers, pilots and ground personnel to perform their jobs during the simulations. That allows those people to influence decisions that later will affect them on the job," Dorighi said.

FutureFlight Central can house as many as a dozen air traffic controllers, and can represent the busiest U.S. airport towers in



Nancy Dorighi receiving the Popular Science 2000 Award for Aviation and Space presented to FutureFlight Central.

airport factors in a realistic, computerized world.

"We can represent any airfield in existence, or as planned for the future," Dorighi

Ames braces for flu season

-- Center employees get prepared



photo by Astrid Terlep

The Ames Health Unit started giving flu shots on November 16. They were soon mobbed by employees who were keen on getting their immunization in order to prevent any unwanted infections this season. The line for folks waiting for the shot extended outside the Health Unit--nearly all the way to the volleyball courts.

Center Briefs

NASA outlines Mars exploration program for next two decades

By means of orbiters, landers, rovers and sample return missions, NASA's revamped campaign to explore Mars is poised to unravel the secrets of the Red Planet's past environments, the history of its rocks, the many roles of water and, possibly, evidence of past or present life.

Six major missions are planned in this decade as part of a scientific tapestry that will weave a tale of new understanding of Earth's sometimes enigmatic and surprising neighbor. The plans were announced during a press conference at NASA Headquarters earlier this month.

Spacecraft double-team the king of planets

Two NASA spacecraft are teaming up to scrutinize Jupiter during the next few months to gain a better understanding of the planet's stormy atmosphere, diverse moons, faint rings and vast bubble of electrically charged gas.

The joint studies of the solar system's largest planet by the Galileo and Cassini spacecraft will also resemble the passing of a baton from the durable veteran to the promising rookie, say mission controllers at NASA's Jet Propulsion Laboratory (JPL) in Pasadena, CA.

NASA space science education resource directory available online

NASA's Office of Space Science announced October 2 the release of the Space Science Education Resource Directory, an Internet on-ramp to top-quality educational resources produced by NASA's Space Science Education and public Outreach programs.

The web-based directory provides easy access to high-quality, online space science educational resources for teachers and students from kindergarten through high school.

Contacts at NASA Headquarters, Washington, DC are Don Savage, (202) 358-1547 and Sonja Alexander (202) 358-1761).

Fountains of fire illuminate solar mystery

Giant fountains of fast-moving, multi-million-degree gas in the outermost atmosphere of the Sun have revealed an important clue to a long-standing mystery -- the location of the heating mechanism that makes the corona about 300 times hotter than the Sun's visible surface.

Scientists at NASA's Goddard Space Flight Center discovered an important clue while observing immense coils of hot, electrified gas, known as coronal loops. These fiery, arching fountains now appear in unprecedented detail with NASA's Transition Region and Coronal Explorer (TRACE) spacecraft.

Scientists peer into the future via supercomputer simulations

From simulations of tiny molecular structures to visions of supernovae millions of times bigger than Earth, NASA computer scientists demonstrated supercomputing tools and innovations at a recent conference in Dallas.

Visitors viewed these futuristic feats and virtual worlds, as well as other supercomputer advancements at NASA's exhibit during the SC2000 high performance Computing Conference, held November 4 to 10 at the Dallas Convention Center.

"High-performance computing and networking are critical to NASA's quest to expand frontiers on the Earth, in the air and in space," said Dr. Eugene Tu, manager for NASA's High Performance Computing and Communications program at Ames. "Improving our understanding of observational Earth and space data, to incredible computational models of revolutionary aerospace vehicles, our planet, and even distant stars, high performance computing is absolutely critical to advancing our knowledge," he said.

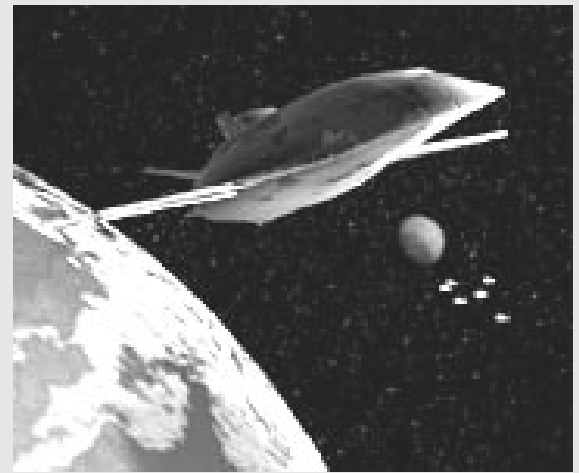
The 50-by-50 ft. NASA exhibit showcased more than 30 supercomputing demonstrations for an estimated 5,000 visitors. Scientists and engineers from Ames and four other NASA centers demonstrated and explained their latest computer simulations. These ranged from medical and geographical imaging, to advanced human-machine interfaces, aerospace vehicles, supernovae and new learning technologies. A variety of collaborative-environment technologies that allow scientists and engineers to develop new procedures and improve existing ones was also on display.

One demonstration showed how Ames scientists used supercomputer simulations to help improve the NASA/DeBakey miniature heart assist pump, leading to human trials with patients awaiting heart transplants. The experts suggested improvements after simulating blood flow through the pump using a NASA computer that normally models airflow around aircraft.

"Travelwulf" which is a five-processor supercomputer that fits within a suitcase, was on hand to illustrate a system that scientists without extensive computer experience can use to develop complex

simulations and data processing. Under development by Clemson University. Travelwulf is part of the "Beowulf" system of remote sensing. NASA's Goddard Space Flight Center, Greenbelt, MD, and its partners are developing Beowulf to help scientists analyze an immense amount of Earth satellite images and other data.

More efficient analysis of Earth science data will help researchers better under-



The Computational Aerospace Sciences (CAS) project is one of five projects within the High Performance Computing and Communications (HPCC) program.

stand problems related to ocean-atmosphere interactions, the weather and environmental changes.

"These problems typically exceed the capabilities of traditional computer workstations. In the past, these studies have required expensive supercomputers to process data and execute simulation models," said Walt Ligon, who leads Beowulf efforts at Clemson University. "Beowulf systems have made high-performance computing power affordable for individual science teams."

Also on display was a simulation of an aircraft engine combustor with a design that will reduce nitrogen-oxide emissions by 50 percent initially, according to engineers. They expect engines with this technology to enter service by 2002. The simulation tool is part of the national combustor code, a joint government-industry effort. NASA Glenn Research Center, Cleveland, is presenting this simulation.

NASA's SC2000 web site, including high resolution images, is located at:

<http://www.nasa.nasa.gov/SC2000>

BY JOHN BLUCK 

NASA to co-sponsor bioengineering workshop

NASA and the Department of Defense announced recently that they are teaming up to co-sponsor a workshop aimed at learning from nature. The workshop, the second in an on-going NASA-DoD "biomorphic explorers" series, will be held at NASA's Jet Propulsion Laboratory in Pasadena, California from Dec. 4-6, 2000.

The new workshop, called BEES-2000 for the "Bio-inspired Engineering of Exploration Systems," is a follow on to the original one held in 1998. The idea behind the workshop is simple enough. First, examine biological processes in nature. Then, find ways to incorporate the successful operating principles that they embody into real-world, human-engineered designs.

In precise terms, workshop organizers refer to the general premise of "biomorphic explorers" as having two components. The first is an effort "to distill the principles incorporated in successful nature-tested mechanisms of selected features and/or functional traits of biological organisms that can enable new endeavors for humankind." The second – the real trick — is to "capture such bio-mechatronic designs and/or mechanisms and minimalist operation principles from nature's success strategies." Translated into layman's terms, that means "determine what nature is doing well — and why, then try to copy it."

The challenge for autonomous robotic systems, whether they are being "tasked" to explore new planets for NASA or enemy territory for the DoD, is the same, according to the workshop announcement. Simply put, it is to evaluate and handle unpredictable situations and environmental conditions with versatility, demonstrating the rapid capability to adapt and respond to unknown situations and events. Hence NASA and the DoD, while having very different objectives, have similar technical obstacles to overcome.

The real value of the 1998 workshop, according to current organizers, is that it performed the valuable service of educating the science community at large about the important concept of bio-engineering. Further, in so doing, it allowed researchers to determine the highest-priority science and technology requirements that are enabling to NASA's exploration needs. In fact, it led to the conceptualization of a number of biomorphic mission scenarios, they say.

Now it is time to push the technology forward. The objective of this year's follow-on BEES-2000 workshop, according to NASA and the DoD, is "to provide a single cohesive forum for the discussion and sharing of

ideas and results in the area of bio-inspired engineering technologies and architectural strategies." It is hoped that this will lead to the realization of "biomorphic explorers" and enabling of the new "biomorphic missions" envisioned, illustrative examples of which can be viewed on the BEES-2000 website at: <http://nmp.jpl.nasa.gov/bees/>

Biomorphic missions may be defined as co-operative ventures that make synergistic use of existing and/or conventional surface and aerial assets along with biomorphic intelligent robotic systems. Such systems can be utilized to address the dual application needs of NASA and the DoD. One example of a dual need is the requirement for close-up imaging. This is of significance to NASA for identifying hazards and slopes and assessing the sample return potential of targeted geological sites. Similarly, close-up imaging is pertinent to the DoD for surveillance and covert reconnaissance. To cite other dual-need areas, distributed multiple-site measurements, both aerial and on the surface or subsurface, and the deployment of payload in a desired distribution are pertinent for a host of both NASA and DoD applications.

Some of the nature-tested scenarios that have been selected as the focus for the BEES-2000 workshop include, the capabilities to:

- negotiate steep terrain readily, like a mountain goat, in order to collect surface geology and stratigraphic information across and over the height of the Mars canyons
- burrow non-invasively, like an earthworm, in order to collect pristine samples from the subsurface
- soar, like a butterfly, with minimal investment of power, utilizing atmospheric energy in a small wingspan flight entity
- deploy and distribute instruments/surface explorers over wide areas, safely and in large numbers — like the dispersal of seeds by plants via seedwing pods, dandelions etc. In this regard, close-up imaging using a wide variety of cameras is one of the key functions of interest
- distill strategies of navigation, communication and mobility control demonstrated marvelously in nature by the insect/invertebrate world (even with low computational resources)
- home in for water/moisture or forage cooperatively for essential resources (as occurs in insect colonies)

The goal of BEES-2000, organizers say, is to generate a crisp roadmap designed to realize and implement the bio-inspired

engineering of exploration systems. This will be achieved by utilizing the information content generated through presentations and focus-group brainstorming sessions. Further, the workshop is intended to lay the foundation for a program in this exciting multidisciplinary subject area that has such huge potential for enabling new endeavors.

Workshop technical sessions are broadly organized around the following topics and areas of interest:

- biomorphic communication and navigation, including novel techniques inspired by bees, bats, dolphins etc.,
- biomorphic surface and subsurface systems, including bio-inspired approaches to crawling, burrowing, jumping, leaping, climbing, rolling, etc. designed to capture specific mobility capabilities and mechanisms for surface and subsurface applications,
- biomorphic flight systems, including bio-inspired approaches to aerial mobility, encompassing soaring techniques of insects, plant-inspired dispersal and deployment techniques, etc.,
- biomorphic sensor fusion and control, including innovative approaches for fusing input sensory data and its intelligent processing for obtaining adaptive control,
- enabling systems for biomorphic missions, including lander and/or rover-base systems, human-inspired systems or robots with human-like capability, launchable and/or deployable robots, and instruments, particularly imaging systems, with high status of technology readiness for near term scenarios, and
- science endeavors and applications enabled by BEES, including presentations by users on applications that are enabled by such systems.

The technical point of contact for BEES-2000 is Dr. Sarita Thakoor, at: sarita.thakoor@jpl.nasa.gov or via phone at: (818) 354-3991. Further information can be obtained at the BEES-2000 web site at: <http://nmp.jpl.nasa.gov/bees>. The registration point of contact is Pat McLane at: (818) 354-5556 or fax (818) 393-4992.

Travel and registration information can be viewed at: <http://nmp.jpl.nasa.gov/bees/regoster00.html>

The e-mail address for registration is: conf.admin@jpl.nasa.gov

BY SARITA THAKOOR
AND DAVID MORSE

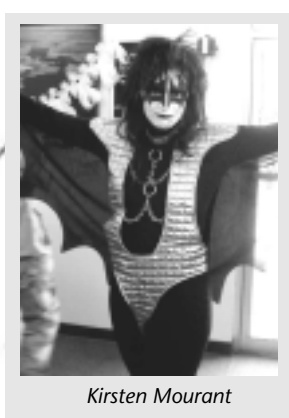


Halloween Sightings at Ames

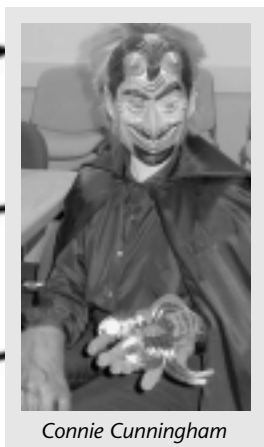
Vampires, witches, goblins and ghouls, sighted at Ames, on Halloween, boo!



Chrisann Patterson-Simmons



Kirsten Mourant



Connie Cunningham



Nancy Johnson



Gail James

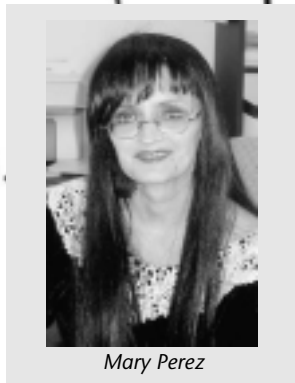
Ames Exchange Halloween costume contest winners



Jonas Diño



photo by Tom Trower



Mary Perez



Lynette Raburn



Astrid Terlep



Lita Que



Mary Bravo



Leticia Hill

photos by Astrid Terlep

Innovative Awards ceremony held

The annual ceremony was held recently with the following research innovators being recognized for their outstanding contributions to the Center. Each awardee received a patent award check.

Masked Proportional Routing
David Wolpert

Method and Apparatus for Teaching Using Exploration of a Virtual Environment
Geoffrey Bruce
Kathleen Burton

Method and System for Design Optimization Using Composite Response Surfaces
Nateri Madavan
Man M. Rai

Doping Method of Semiconducting Atomic Chains
Toshishige Yamada

Photonic Switching Devices Using Light Bullets
Peter Goorjian

Method and Apparatus for Evaluating the Visual Quality of Processed Digital Video Sequences
Andrew Watson

Environmentally Friendly Anti-Icing
Leonard Haslim
John Zuk
Robert Lockyer



photo by Tom Trower

Enthusiastic award recipients share a moment with Ames Director Henry McDonald (center left foreground) in the Committee Room following the recent ceremony.

Method and System for an Automated Tool for En Route Traffic Controllers
Heinz Erzberger
B. David McNally

Triangle Geometry Processing for Surface Modeling and Cartesian Grid Generation
Marsha Berger
John Melton
Michael Aftosmis

Modular Sensor Signal System
Michael Skidmore
John Hines

Advanced Sensor Systems for Biotelemetry
Carsten Mundt
Robert Ricks
John Hines

Characterization of Bioelectric Potentials
Kevin Wheeler
Chuck Jorgensen

ODIN desktop service starts December 1

...Do you know what to expect?

In preparation for the December 1 transition to the Outsourcing Desktop Initiative for NASA (ODIN), the ODIN Project Office and the ODIN Customer Outreach Office (affiliated computer services) will host a town hall presentation entitled "Top ten things ODIN customers need to know." In addition to the presentation portion of the town hall, the ODIN team will provide the opportunity for questions and answers.

Sessions will be offered on multiple days and times in Building 245 Space Sciences Auditorium on November 28 from 10:00

a.m. to 11:30 a.m., as well as on November 29 from 9:00 a.m. to 10:30 a.m.

Interested Ames parties are invited to attend and bring their questions.

If you have any questions prior to the meeting, you can send an email to the ODIN Customer Outreach Office at: ODINOutreach@mail.arc.nasa.gov. The Center's ODIN project is managed by Code JTC, the Information Technology Customer Services Branch.

BY THE AMES ODIN TEAM 



NASA smart surgical probe licensed to commercial firm --BioLuminate device to fight breast cancer

A Silicon Valley start-up company has obtained a license to develop, produce and market an innovative diagnostic device for early breast cancer detection based on technology originally developed by Ames researchers.

San José based BioLuminate, Inc. plans to develop a commercial version of the "Smart Surgical Probe" originally developed at Ames. The probe is a small, disposable needle with multiple sensors. It has the potential to enable physicians to diagnose tumors without surgery, thereby dramatically reducing the number of breast biopsies that women may have to undergo annually.

"This device is being developed to make real-time, detailed interpretations of breast tissue at the tip of the needle," said Robert Mah, the Ames scientist who invented the technology. "The instrument may allow healthcare providers to make expert, accu-

rate diagnoses as well as to suggest proper, individualized treatment, even in remote areas," he said.

"Every week in the United States, approximately 18,000 surgical breast biopsies are performed on women with suspicious breast lesions," said BioLuminate Chief Executive Officer Richard Hular. "By taking the NASA Ames Smart Probe and developing it further, BioLuminate hopes to be able to produce a real-time-measurement instrument that will reduce the need for surgery. If we are successful, the probe will significantly improve women's health care, and could potentially reduce annual health care costs," said Hular.

Further development of the Smart Surgical Probe is focused on distinguishing cancer tissue types and obtaining real-time measurements. "The probe uses special neural net software developed at Ames that "learns" from experience. This enables the instrument to detect the physiologic signs of cancer and may predict its progress," explained Mah.

The breast cancer tool is being devel-

oped in collaboration with Stanford University School of Medicine. It is a spin-off from a computerized robotic brain surgery 'assistant' previously developed by Mah and Stanford neurosurgeon Dr. Russell Andrews. The larger brain-surgery device is a simple robot that can "learn" the physical characteristics of the brain. It soon may give surgeons finer control of surgical instruments during delicate brain operations.

This commercial venture demonstrates how NASA's commercial technology offices pursue their mission to maximize NASA's research efforts by inviting U.S. industry to benefit from NASA-developed technologies. NASA reaches out to the business community in a way that leverages the Agency's resources with those of the private sector. The objective is to stimulate job growth and increase the competitiveness of American products in the global marketplace.

Transfer of the Smart Probe technology to BioLuminate was facilitated by Ames' Commercial Technology Office (Code DK).

BY VICTORIA KUSHNIR 

Ames directory preparation

Preparation for the year 2001 Ames telephone directory is well underway. To ensure the accuracy of each employee's listing in the personnel pages, we are asking that every employee verify their current locator information. (Locator information is your telephone number; mail stop; building number; room number and organization code.) This can be done by accessing x500 Directory Information via Eudora's Directory Services; Mac Phbook; or the Ames internal web site at <http://arcweb.arc.nasa.gov/>

You can make changes to your locator information through the Business Systems, Directory Services Web site at <https://arcapps.arc.nasa.gov/>. You can email your changes to: directory_custodian@mail.arc.nasa.gov or send a printed copy of an ARC 156 (Directory Change Notice) form to Mail Stop 566-2.

To be certain your changes appear in the new directory, please have your corrections completed and submitted, by no later than C.O.B. December 8, 2000.

For questions, please call Eilene Notley at ext. 4-4222 or email her at: enotley@mail.arc.nasa.gov

Teller visits Ames

World-renowned nuclear physicist and local resident Dr. Edward Teller paid a somewhat-rare visit to Ames on November 17. Teller delivered a thought-provoking presentation to an engaged audience on the topic of solar system exploration. He also speculated about the possible implications of finding traces of DNA, the building block of life, beyond Earth's boundaries. Teller responded to inquiries on a wide range of topics, including his relationship with Neils Bohr and Werner Heisenberg dating back to the early 1930s. He encouraged questions, handling each with his typical directness and aplomb.

Teller is currently Director Emeritus of Lawrence Livermore Laboratory and a senior research fellow at the Hoover

Institution. He has been recognized with many awards for his numerous contributions to the field of physics and for his public service. He has published books on a wide range of topics, from defense issues to energy policy. Asteroid 5006 is named in his honor. Currently, he is completing his autobiography for publication next year, and is active in the Hertz scholarship foundation. Teller was a student of former Center Director Hans Mark's father, and subsequently a mentor to Mark himself during their time together at the University of California.

BY JACK BOYD 

Sexual harassment policy updated

Effective October 25, 2000 the NASA-Ames sexual harassment policy was updated to reflect changes in the regulations implementing the law. The revised sexual harassment policy applies to all federal employees and contractors in workplace affiliations and situations.

All managers and supervisors are required to immediately report any allegations of sexual harassment to Adriana Cardenas, EO Officer, at ext. 4-6510 or 4-6507 or Mail Stop 241-7. Any employee who chooses to pursue an EO complaint

must also contact Cardenas within 45 calendar days of the alleged sexual harassment. The 45-day window begins when the alleged sexual harassment occurred. All actions taken to resolve issues of sexual harassment will be handled in a confidential manner. Retaliatory actions against employees who allege sexual harassment are prohibited and will prompt official action.

The Equal Opportunity Commission defines sexual harassment as follows. Unwelcome sexual advances, requests for

sexual favors and/or other verbal or physical conduct of a sexual nature, constitute sexual harassment when:

- submission to such conduct is made, either explicitly, or implicitly, a term or condition of an individual's employment,
- submission to or rejection of such conduct by an individual is used as the basis for employment decisions affecting such individuals, or
- such conduct has the purpose or effect of unreasonably interfering with an individual's work performance or creating an intimidating, hostile or offensive working environment.

Everyone is responsible for ensuring that the work environment is free of sexual harassment. Any infraction of this policy can result in disciplinary action, including termination from federal employment. Questions regarding this policy may be directed to Equal Opportunity programs office Chief Adriana Cardenas.



Holiday Food and Toy Drive Supporting Local Community Service Organizations December 4 thru 15

All non-perishable food items and unwrapped new toys may be dropped off in the marked bins at the Ames Café between Monday Dec 4 and Friday Dec 15. Your support is greatly appreciated!
For more info contact Angela Ortega at ext. 4-1733 or Charles Tonda at ext. 4-5003
Sponsored by the Ames Exchange

CFC and eScrip help ACCC

Community involvement and support allow for continual program improvement. This is nowhere more true than at the Ames Childcare Center (ACCC). As a non-profit organization, the ACCC participates in the Combined Federal Campaign (CFC) through the Children's Charitable Alliance. Individuals can direct donations in support of the ACCC by specifying the organization #7501. The ACCC encourages everyone to support this year's campaign, regardless of where they divert their donation.

The ACCC also receives benefits via eScrip supporters. In recognition of this, the ACCC is providing a complementary ACCC coffee mug to each new eScrip supporter. eScrip is a program that coordinates contributions from merchants, such as Safeway, based on the amount a supporter spends at those merchants. Merchant contributions have averaged about \$7 per supporter per month. Visit www.escrip.com to sign up and/or contact the ACCC board treasurer, Mark Foster at email mafoster@arc.nasa.gov for more details.

Two other programs that benefit ACCC are SchoolPop and SchoolCash. These are web-purchasing portals that, as with eScrip, coordinate a donation from the merchant based on a percentage of the purchase. These two programs can be accessed on the web at www.schoolpop.com or at www.schoolcash.com.

For more information on the ACCC, visit the web site <http://acc.arc.nasa.gov>

Native American Heritage celebrated in November

November is traditionally designated as Native American Heritage Month. The theme for this year was "Celebrating Native American Culture and Tradition in Science, Engineering and Technology."

All native cultures have had a long history of studying the Earth and the stars. Much of this knowledge has been passed down orally through traditional stories, myths and legends. In the summer of 1999, Mike Liu, Ames Native American Advisory Committee Chair, had the opportunity to become exposed to the traditional "Star Knowledge" of the Navajo and Lakota cultures as a result of the Lunar Prospector mission. Mike shared his experience as a member of a NASA team that had the opportunity to meet with spiritual leaders of the Navajo and Lakota tribes. The purpose of this meeting was to discuss the impact the Lunar Prospector mission had with regard to the traditional beliefs and knowledge of the Navajo and Lakota cultures. Ames employees were able to listen

to Mike Liu tell about his fascinating experience on November 13.

The Native American Advisory Committee is seeking new members who are interested in participating. The NAAC is involved with community outreach, cultural awareness, recruiting, and mentoring activities. Members of our committee visit Indian reservations, Indian schools, and various Native American conferences and seminars throughout the year. The focus of this activity is to inspire Native American students to become interested in the fields of math

and science by demonstrating to them, through role models, that there are Native Americans working at Ames. For further

information, contact Mike Liu at ext. 4-1132 or by e-mail at mliu@mail.arc.nasa.gov



photo by Tom Trower

Mike Liu speaking at the November 13 meeting discussed the impact the Lunar Prospector mission had with regard to the traditional beliefs and knowledge of the Navajo and Lakota cultures.

"ODIN on display" a big success

On October 23 and 24, the Outsourcing Desktop Initiative for NASA (ODIN) project opened its doors and invited Ames Research Center employees in for a hands-on perspective of the ODIN equipment and support model. Over 300 Center employees were treated to demonstrations of Mac and PC models similar to the computer systems slated for refresh at Ames.

Provided also were informational booths about the ODIN Catalog, Asset Management, and Customer Outreach. Six lucky attendees received gift certificates to local restaurants. "ODIN on Display" was a big success thanks to the many enthusiastic participants.



Ames employees at the "ODIN on Display" event sample the products and seek answers to their questions.

NASA technologies on display at Inspection 2000

Inspection 2000 was held November 1 to 3 at Johnson Space Center (JSC) in

Houston, Texas. The Ames Office of Communication and Development, Code DXC, facilitated Ames' participation in the event, bringing with them 18 Ames-developed technology displays and a supporting cast of 40 representatives from across the Center.



photo by Sheila Johnson

Inspection 2000 participants try their hand at the neuro-adaptive controller for spacecraft docking as Ames' Robert Duffy (right) looks on.

Events & Accomplishments

Information Power Grid meets key milestone

NASA's Information Power Grid (IPG) team demonstrated a complete version of a grid system at the end of September in fulfillment of one portion of their level one milestone. To demonstrate high-speed data access on the grid's infrastructure, the group employed the IPG Virtual Laboratory (ILab) program used for managing parameter studies. In addition, the program manager called Condor provided access to idle workstations, thereby adding more computing power for executing jobs on the grid.

The IPG is designed to take a large collection of dispersed and heterogeneous resources – computing systems, storage systems, and instruments – and define a standard set of services for accessing those resources for scientific research. NASA's Ames, Glenn, and Langley research centers are collaborating to develop infrastructure for the grid.

ILab is a problem-solving tool designed by Ames' Numerical Aerospace Simulation (NAS) researchers Maurice Yarrow and Karen McCann to manage parameter studies in the IPG environment. Running the ILab program on the grid dramatically reduces turnaround time for complex computations. The system was recently used to manage a parameter sweep study on the X-38 crew return vehicle across a collection of resources using the new IPG infrastructure. The ILab/X-38 test demonstrates uniform access to different IPG resources.

The uniform interface for batch queuing systems, known as the Globus middleware toolkit, was recently integrated into the Condor system manager. Condor utilizes Globus resources to provide more computing power by scavenging central processing unit hours from 60 to 100 Sun and SGI workstations in the Condor pool. "I think

the Condor project is part and parcel of getting the IPG infrastructure integrated into NAS," said IPG project manager Bill Johnston. NAS researcher Al Globus has been taking advantage of Condor to run a collection of genetic algorithms, exploring different molecular structures. In roughly one year, Globus has accumulated nearly half a million CPU hours on this single problem using Condor.

"There are lots of pieces to the IPG and until you take a closer look, it seems like a trivial process to assemble the infrastructure. It takes a lot of work and effort. I would like to thank not only the IPG test bed group, but everyone in the NAS division as well as our outside collaborators for meeting this milestone," said Leigh Ann Tanner, deployment and integration project manager for the IPG.

BY HOLLY A. AMUNDSON

Machine Shop "open house" is big success

The second Open House on October 26 for Ames' (Code FM) Machining and Instrumentation centers showcased their skills, products and facilities. It was a major success. In spite of the rain, a crowd estimated at over 200 came by to tour building 220. Visitors were able to talk directly with the craftsmen who created the hardware on display, view many static displays of recently developed products, and ask questions. Organizers saw familiar faces and were also happy to meet potential new customers.

Please remember we're here to provide support for nearly any project you can envision. If you're unsure of how to proceed give us a call (ext. 4-3044) and we might be able to offer you an approach you hadn't considered.

If you missed this Open House, don't worry Code FM has one more manufacturing center we want to show



photo by Tom Spalding

The machine shop floor was filled with fascinated visitors during Code FM's open house on October 26.

off in the coming year. Our Structural Fabrication group located in building 246 provides support for R&D facility development and modification, and large model development. You don't have to wait for another Open House to drop in at 246 though. We'll work with you to help develop your product, whether it's a bracket or a complex piece of hardware. Come by and talk with us. We want to see you.

A drawing for 8 hours of support was held and won by Dan Rothermel. Dan can redeem his 8 hours from the Machining and Instrumentation centers by contacting Mike Frediani at ext. 4-5177.

BY BOB KING

Chair massage is back on site at Ames

On-site chair massage is now offered at the Ames Fitness Center (Building 221) on Tuesdays and Thursdays from 11:00 a.m. - 2:00 p.m. as part Ames' "Total Wellness Program."

Benefits include relief from many symptoms, including stress and tension, headaches, neck and shoulder tightness/pain,

low back stiffness/pain, and low energy.

A certified massage therapist (CMT) is available for 15-minute seated chair massages. You remain fully clothed and sit in an ergonomically designed chair. The cost is \$15. Introductory massage is offered at a special rate of \$10.

Gift certificates are also available and

make perfect co-worker gifts for the holidays, or any special occasion! De-stress and revitalize for the holidays!

To schedule appointments, call Stuart at (408) 295-4609. For more information, contact Miriam Glazer at ext. 4-5172.

Ames firefighters save lives, get awards

Moffett firefighters battled a fire and defeated death late last Labor Day. Nearly two months later, on a very rainy October 26, they assembled in their firehouse to receive awards for their actions during the blaze.

For firefighters, the incident began suddenly at 11:15 p.m., on September 4, when an alarm sounded, and they drove fire trucks, sirens blaring, to a residential fire in Orion Park, east of the Ames Visitor Center.

"Flames were coming from a ground floor window of one of the apartment units in building 705," recounted fire marshal Joe Gippetti during the award ceremony. "When the fire department arrived that night in September, they found a cul-de-sac filled with smoke, and frightened and concerned neighbors."

"We found the two children first, and they were badly burned -- third degree," battalion chief Forest Fernandez said earlier. He was one of ten people to receive letters of commendation. Five other members of the fire department were also presented with awards. "When we got there, the children were being pulled out by the neighbors," Fernandez said. The 7-year-old boy, Michael Knopf, suffered burns on 50 percent of his body, and his 13-year-old sister, Lea, had burns on 25 percent of her body.

"This fire was one of the most tragic things to happen in a long time here at Moffett, and the firefighters should be commended," said chief of protective services Clint Herbert. "You did a helluva job. Because of you, the children will survive," he said to the firefighters.

"The little boy had run through a gauntlet of fire and melting carpeting up the stairs to be near what he thought was the safety of his bedroom and his father," said fire chief Gary Alstrand. The fire was an estimated 800 to 1,000 degrees Fahrenheit, according to Gippetti.

"The neighbors did a lot of heroic things," said Gippetti. Neighbor Melville Hinshaw used a garden hose to fight the fire, according to a fire department report. Neighbors Robert Sage, Rick Smith and B. Cale Stancil entered the burning apartment three times to rescue 7-year-old Michael, the report related.

"Due to smoke, they were forced out twice. On the third attempt, they found Michael Knopf in his bedroom on the floor under, and somewhat behind, a mattress. Stancil used a garden hose to knock down the flames so Sage and Smith could go up the stairs to the bedrooms and rescue Michael," the report continued. It also said that the neighbors "are heroes, one and all, and deserve our thanks and admiration for being there when it counted."

"As Capt. Jeremy Mann stepped from

his vehicle, the 7-year-old boy was immediately placed in Jeremy's care," Gippetti told the award ceremony audience, describing the actions of Moffett firefighters who received letters of commendation.

"Jeremy thought he was going to attack a fire and perform a search, but in an instant he had to switch to patient treatment and triage. His skill and those of firefighters Darren Butler and Tom Connelly paid dividends in relieving pain, while treating for shock and infection," Gippetti said.

Neighbor Carlos Rosario also entered the burning apartment and helped fight the blaze with a garden hose, according to

"He had severe smoke inhalation. They gave him oxygen, and opened his airway."

"The searing heat, just inches above the father, could have killed him, but he was unconscious, just below the heat," said Alstrand, following the ceremony.

"Bonin's crew rescued the father taking him outside to triage where Capt. Mann and firefighter Connelly treated him for smoke inhalation," said Gippetti. The fire department transported the father, Jim Knopf, to Stanford Medical Center, Palo Alto. He is now out of the hospital, firefighters said. Mrs. Tess Knopf, a nurse, was not home at the time of the fire.

"No water could have been brought to bear on the flames if it were not for the efforts of firefighter Dave Broman, responsible for pump operations and equipment staging," reported Gippetti.

Battalion Chief Fernandez managed the incident, and took measures to ensure that the Center still had a fire-response capability.

Like a football coach, Fire Capt. Steve Epperson coordinated the team's fire fighting effort. "This is the most stressful position for a fire officer, but also the most satisfying when you do the job right," Gippetti commented. "For example, Epperson spotted the 13-year-old little girl off to the side, sitting on a step, and he assigned Butler and Rizotto to aid her," Gippetti explained.

"Unlike police officers on patrol who carry out their duties independently and effectively --- fire fighting is a total team effort," Gippetti said.

"Due to their dedication to duty, ongoing training and personal skills, these firefighters rendered medical aid to the severely injured, halted a burning fire, performed a rescue and secured the safety and property of seven other families living in the apartment building," Gippetti told the awardees.

In addition, Fire Capt. Rob Hansen and firefighters Mark Zamparelli and John Ross received certificates of appreciation. Also, firefighters Heather Turman and Nelson Rodriguez were recognized for their help at the fire station during the fire.

After the fire, the Ames Disaster Assistance and Rescue Team sent out a call to members of the emergency services family for donations to assist the Knopf family with medical expenses and household goods. By the beginning of October, more than \$11,000 had been collected as well as household goods.

Contributions are still being accepted by the 129th Rescue Member Foundation. The POC is:

Attention: Major Sabrina
129th RQW
129th Rescue Member Foundation
Box 103 MS-28
Moffett FAF, CA 94035

BY JOHN BLUCK



photo by Tom Trower

Award-winning firefighters with Fire Chief Gary Alstrand (right) and Chief of Protective Services Clint Herbert (second from right).

the fire department account. Sgt. Hester Wesler of U.S. Air Force Onizuka Air Station security police took over one of the garden hoses at the front door until the fire department was ready to go in, according to the report.

"The 13-year-old girl had jumped from the second story into the arms of a neighbor," said Alstrand.

"Mr. Damon Foss who lives in unit 705D Orion Park went to the back of the building and yelled to Lea Knopf to jump from her second story bedroom window," the report continues. "Foss was able to catch Lea, thereby breaking her fall, both crumpling to the ground." The two were able to walk away after the jump, according to the fire department account.

"Firefighter Butler was reassigned to assist the girl and was joined by firefighter Joe Rizotto," said Gippetti. Firefighters say the children face skin graft operations and years of treatment and rehabilitation.

Fire Capt. Bob Bonin and firefighter John Byrne made entry, attacking the fire and making their way to the second floor where firefighter Erik Skupien joined them, according to Gippetti. They wore special protective gear and carried tanks of purified air into the extreme heat. The two men extinguished the fire, and conducted a search of all the smoke-filled rooms.

"The firemen went in and fought the fire and found the father upstairs in the bedroom, unconscious," Fernandez recalled.

Event Calendar

Model HO/HOn3 Railroad Train Club at Moffett Field invites train buffs to visit & join the club in Bldg. 126, across from the south end of Hangar One. Work nights are usually on Friday nights from 7:30 p.m. to 9:30 p.m. Play time is Sunday from 2 p.m. to 4 p.m. For more info, call John Donovan at (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, Tuesdays, at 6 pm at Palo Alto Bowl. Bowlers needed. POC: Mina Cappuccio at ext. 4-1313 or Carmen Park at ext. 4-1215.

Ames Child Care Center Board of Directors Mtg, Every other Thursday (check website for meeting dates: <http://acc.arc.nasa.gov>), 12:00 noon to 2:00 PM, N269, rm. 201. POC: Katharine Lee, ext 4-5051.

Ames Contractor Council Mtg, Dec 6, 11 a.m., N-200 Comm. Rm. POC: David Lawrence at ext. 4-6434.

Nat'l Association of Retired Federal Employees, (NARFE), San Jose Chapter #50, Mtg, Dec 1, at Hometown Buffett, Westgate Mall, 4735 Hamilton Av, San Jose. Prog. & bus. mtg. at 9 a.m., followed by lunch, \$6.27, in a reserved area. Program starts at 9:30 a.m. followed by lunch. POC: Mr. Rod Perry (650) 967-9418 or NARFE 1-800-627-3394.

Environmental, Health and Safety Monthly Information Forum, Dec 7, 8:30 a.m. to 9:30 a.m., Bldg. 19/Rm 1078. POC: Linda Vrabel at ext. 4-0924.

Hispanic Advisory Committee for Employees, Dec 7, 11:45 a.m. to 12:30 p.m., N-241/Rm 237. POC: Mary R. Valdez, at ext. 4-5819.

Ames African American Advisory Group Mtg, Dec 7, 11:30 a.m. to 12:30 p.m. POC: Robert Finnie at ext. 4-5230. Contact Robert for meeting place.

Professional Administrative Council (PAC) Holiday Party, Dec 14, 11:30 a.m. to 1 p.m., Bldg 262/Rm. 100. POC: Leslie Jacob, ext. 4-5059.

Ames Sailing Club Mtg, Dec 14, 11:30 a.m. to 1 p.m., N-262/Rm. 100. POC: Stan Phillips, ext. 4-3530.

NFFE Local 997 Union General Mtg, Dec 20, noon to 1 p.m., Bldg. 19/Rm. 2017. Guests welcome. POC: Marianne Mosher at ext. 4-4055.

Ames Asian American Pacific Islander Advisory Group Mtg, Dec 21, 11:30 a.m. to 1 p.m., N-237/Rm. 101. POC: Daryl Wong, ext. 4-6889 or Margaret Salas, ext. 4-6755.

Ames Amateur Radio Club, Dec 21, 12 noon, T28-N (across from N-255). POC: Michael Wright, KC6BFX, at ext. 4-6262. URL: <http://hamradio.arc.nasa.gov>

Native American Advisory Committee Mtg, Dec 26, 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 and must be resubmitted for each issue. Ads must involve personal needs or items; (no commercial/third-party ads) and will run on space-available basis only. First-time ads are given priority. Ads must include home phone numbers; Ames extensions and email addresses will be accepted for carpool and lost & 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

Visiting Yale Professor at Stanford Univ seeks Palo Alto/Mtn View area short-term rental, house-sit or home trade (w/rural New Haven home) from 11/6/00 - 1/7/01. Dates flexible/negotiable. Desire to bring well-behaved & quiet golden retriever; can arrange other hsg for dog if presents a problem. Call Stefan & Julaine Rosner (650) 320-0074, email: Stefan_Rosner@yahoo.com

Housing needed for family from Denmark for 1 year period begin Feb. 2001. Both parents will be working at Ames; a 2-3 bdrm size home near Ames & Mtn View. Childcare would be ideal. Contact Bo Thamdrup, e-mail bot@biology.sdu.dk in Odense, Denmark, or Lee Bebout at ARC, lbebout@mail.arc.nasa.gov, or ext. 4-3826.

Temporary housing available 1 Dec - 1 Feb or off and on for up to 6 mo. Simple studio in priv. home, separate entry, shared bath, \$650. 3 mls from Moffett. Call (408) 393-8059.

Sublet nice, clean, furnished Mtn View townhouse for 1-6 months starting Dec 1 - April 30; flexible dates. 5 min to Ames! \$2,500/mo + dep. Jeff or Rhonda (650) 964-0496.

2bd/2ba apartment, six mins from Moffett. Large second-story apt in a private Mtn View home. Newly remodeled w/beautiful hardwood floors. Private kitchen w/brand-new appliances & cabinets. Private laundry room w/brand-new appliances. No pets, no smoking. Month-to-month lease. Call (650) 969-5581. E-mail: placeport@yahoo.com.

1/2 of 1250 sq. ft. house for rent. Located 10 minutes from Ames in Sunnyvale. You get your own bedroom, bathroom, garage, and half of the rest of the house. Lots of storage space. Large kitchen. \$1100/month plus half of bills. No smoking, drugs, or pets. Call (408) 830-0198 or on base 4-0236.

Visiting male computer expert from Brunel University, UK, seeks short-term rental or housesitting from December 27 to January 3, in Silicon Valley. Mountain View area preferred but not necessary. Contact Judy at (408) 992-0335. Email: cyberscribe@usa.com

Temp. housing avail from 22 Dec to 2 Jan in Mtn View. One bdrm apartment, fully furnished, in small quiet bldg. Great for relatives visiting for the holidays. Rent \$200. (Rent is normal rate in exchange for cat sitting loving playful older cat.) Call (650) 969-7876 eve.

Transportation

'85 Mitsubishi 4WD pickup, 105K mls, original owner, BacPac shell, Sony stereo, new carburetor & fuel pump, straight body. \$2,600 or B/O. Call (408) 945-3917, or email: nengim@svpal.org

'86 Chevy Camaro 2.8L engine, automatic, power steering, A/C, t-tops, CD player, mag wheels, new paint (dark brown metallic), orig. owner, runs great & looks excellent. \$2,200. Sean (408) 626-9640 eves/lv msg.

'86 BMW csi black/black, AT, xlnt condition, 117K mls. \$8,900 or B/O. Call (408) 378-3949 lv msg.

'88 New Yorker, 89k mls, orig. owner, power win, locks etc. A/C, exc body/paint, new brakes, Gd radio & 10 disc.cd chngr, 5,200 or B/O. Barry (650) 966-1160.

'88 VW Fox, \$2,000, stick shift, gd condition. Noemi (408) 738-5626.

'90 Kawasaki Ninja 600R, black/red, new batt., good cond, helmet incl. \$2,495. Mike (408) 828-9148.

'93 Dodge Shadow Hatchback 63Kmls, 2 door, automatic, 4 cyle, A/C, AM/FM cassette, sun/moon roof. Excellent Condition. \$4,000. Judy (408) 263-3806.

'94 Saturn SC2 Coupe, 5-spd manual, ABS, pwr wndws, dr locks, snroof, AM/FM, cass, AC, 109K mls. \$4,700 or B/O. Selling since going to Europe. Arjen (408) 732-2953; email: arjen_oving@hotmail.com

'96 Toyota Camry LE, only 54K mls, gold, automatic, lks good, runs great. \$12,000. Call (408) 956-1941.

'98 Moulton ATB full suspension bicycle. Separable "X"-frame, rack, fenders, many extras \$1,100 or B/O. Joe (650) 969-6119.

Miscellaneous

Epson Stylus Photo color printer model 870 Used twice. \$195. Richard (408)578-9616.

Seasoned wood tree rounds, concrete chunks, wood and old pipe pieces available. No charge. Arrange for pickup. Robin (650) 968-6102.

Counter stools- Verdigris metal stools-oak tree design with cloth seats. Purchased from Home Decorator's Catalogue. \$35 ea or \$120 for all four. Sheryl (408) 259-4114.

Spinet piano, excellent condition, \$400 or B/O. Call (650) 369-0578.

San José Sharks season ticket (1 seat) for remainder of 2000-2001 season (starting with 11/28 game). Seat is located in Section 219, Row 14, Seat 13, \$544. (32 games face value). Derrick (408) 446-0750.

Little Tykes Country Kitchen, exc. condition/many extra food and dish sets, \$50. Fisher-Price dollhouse with many extra playsets, \$40. Lori (408) 274-3169.

Weight Lifting Machine (Smith) w/over 300 lbs. of free Olympic weights, 3 separate weight-lifting bars& dumbbells. Do squats & military presses safely w/o assistance. Four nice cable pulley assemblies for lateral cross-overs or simple upward of downward vertical lifts w/your selected weight. New, over \$800. Now \$300 or B/O. Call (408) 529-9911.

Computer Programming help wanted: I am working on a 3-D computer graphics project that requires the use of Microsoft Visual C++, C/C++, OpenGL, and OpenGVs. I am looking for a mentor/tutor in any or all of these to help me with my error message and debugging challenges. I am willing to repay your help and kindness with airplane rides. Call ext. 4-5648.

Vacation rental

Lake Tahoe-Squaw Valley Townhse, 3br-2ba, View of slopes, close to lifts. Wkend \$490, midwk \$180 nite. Includes linens, firewood. (650) 968-4155, DBMcKellar@aol.com

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

Lost & Found

Moffett Field Lost and Found may be reached at ext. 4-5416 at any time. Residents and employees at Ames may also use Internet browser at: <http://ccf.arc.nasa.gov/codejp/pages/lostFound.html> to view a list of found property and obtain specific instructions for reporting lost or found property and how to recover found property. Call Moffett Field security police investigations section at ext. 4-1359 or email at: mfine@mail.arc.nasa.gov.

Ames public radio

1700 KHz AM radio -- information announcements and emergency instructions, when appropriate, for Ames employees.

Carpool

Carpool wanted from Mission San Jose area of Fremont to Ames. Hours flexible. Contact Nancy at ext 3258 or ndorighi@arc.nasa.gov.

Carpool from UC Santa Cruz carpool to Ames Bldg. N236. Work hours: 8 a.m. to 5 p.m. flexible. Joel Ramirez ext. 4-6378 or home at (831) 460-0160.

Carpool: Existing 3 person carpool would like to add 4th person with car. We take turns driving, Oakland/Berkeley to Ames, leave at 8:00 a.m., return at 5:30 p.m. David, ext. 4-4164 or email hollenbach@ism.arc.nasa.gov.

Astrogram deadlines

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

Deadline	Publication
Fri, Dec 8	Mon, Dec 18
Fri, Jan 5	Mon, Jan 15

On-site Services

Families benefit from Ames Child Care Center

The Ames Child Care Center (ACCC) provides full-time care and development for infant, toddler and preschool children of employees at Ames. The focus is on creating a nurturing, caring environment that enhances individual growth and encourages group interaction. The center is

ACCC comes from tuition paid by the parents.

The center is housed in aging modular buildings. Planning has begun for a new facility. Through fundraising and charitable donations, the center is able to provide staff appreciation events, tuition assistance, and save for the needs of the new facility. "We have a fundraising goal of \$100,000 to allocate toward our new facility," said Kathy Lee, president of the ACCC board of directors. "Without this money, the new facility will not have sufficient equipment, furniture, or supplies. We have made a lot of progress, but we still have a way to go to meet our goal."

Camala O'Reilly, ACCC director, indicates there are significant financial challenges for daycare organizations, particularly in the Bay Area. "We have found it challenging to attract and retain teachers. The support of contributors and sponsors makes the task a little easier since it enables us to provide special events and training for the teachers."

The devotion and quality of the ACCC staff is reflected in the recent accreditation by the National Association for the Education of Young Children (NAEYC). NAEYC



photo by Brad Bebout

Fire fighters at the Moffett Field Fire Department discussed safety and demonstrated some of their equipment capabilities to ACCC children and their parents in a recent visit to the fire station in October..



photo by Joan Walton

Julie Korsmeyer, Ben Walton, and Brett Jobe light up a giant pumpkin during a pumpkin patch field trip. Children from the Gemini, Apollo, and Vanguard rooms selected pumpkins and enjoyed wagon rides on the trip. They later had fun pumpkin carving in their classrooms before a Halloween celebration.

staffed by professionals who are dedicated to early childhood development; many have training and degrees that target the unique needs of young children. The ACCC has been in operation since 1985, supported by facilities provided by NASA Ames. The funding for the operational expenses of the

accreditation is a rigorous, voluntary process by which early childhood programs demonstrate they meet national standards of excellence. This prestigious recognition has been achieved by only an approximated 7% of early childhood programs nationwide. Children's language and social skills especially benefit from the better quality found in NAEYC-accredited programs. "These are critical areas for children's success in school as well as in life," said Gabrielle Babin, former executive director and now consultant to the center.

BY MARK FOSTER

THE AMES *Astrogram*

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