

## Ames information technology hits new heights

A possible 35 percent budget increase for Ames' information technology efforts during the next three years as well as new programs were highlights of the "state of the directorate" talk given recently by Dr. Steven Zornetzer, Director of the Information Sciences and Technology Directorate.

Zornetzer compared Code I's recent past and near-term future to a ride on a raft in the rapids. He noted that there has been, and will be turbulence, hazards and a rough ride. He also promised the ride would be exhilarating. He assured his staff that he and the Code I leadership have a steady hand on the tiller. He urged his people to adopt an entrepreneurial spirit. He promised he would do all he could to streamline processes and minimize red tape and unnecessary demands on people's time.

"Johnson Space Center is seeking our help," Zornetzer said while commenting about partnering to upgrade the Space Shuttle. "We have a tremendous opportunity to work with Johnson."

He advised that academic and industrial partnerships are also very important for Code I and are "a major new resource for us." He added, "We need to put more energy into partnerships."

To deal with expanded programs, Zornetzer said that there would be an increase of about 30 civil servant employees and a significant number of contract employees over the next 3 years in Code I. In addition to predicting an expected 35 percent Code I budget increase during the next three years, the director said 44 new offices will be added in Building N262, and the directorate is "trying to facilitate a new building in the next few years."

For the new Intelligent Systems program, Zornetzer projected a funding increase of \$18,000,000 in fiscal year 2000 that would increase to \$40,000,000 in fiscal year 2001. The program is expected to level off in future years somewhere between \$45,000,000 and \$75,000,000. He said that about half the money would be spent at non-Ames research institutions.

He reviewed exciting, past achievements and highlighted the future course of Code I. Some of the new research emphasis and expansion areas listed by Zornetzer during his presentation to Code I employees included: integrated vehicle health management, speech recognition/natural language, revolutionary computing, intelligent data understanding, human-centered comput-

ing, advanced software engineering, high-performance, heterogeneous computing/networking and Code M (NASA Headquarters Office of Space Flight) strategic partnerships.

In describing these projected expansion areas, Zornetzer said, "We can bring significant new capability to the agency." For example, in the area of revolutionary computing, he mentioned expanded activities in neurally inspired computing and nanotechnology.

"Neurally inspired computing has barely scratched the surface in terms of extracting principles of biological computation and applying those principles to engineered systems. In the area of nanotechnology, we have the opportunity to completely change the way we conceptualize the computing paradigm. The drivers of low power and low mass will necessitate such a major paradigm shift," he said.

Nanotechnology is the control of matter on the nanometer scale, typically from one-tenth of a nanometer to 100 nanometers; a nanometer is one billionth of a meter. Nanotechnology is also the construction and operation of machines on the nanometer scale.

"The Intelligent Data Understanding effort will provide the agency with enabling capabilities essential to the Earth sciences' enterprise vision for its intelligent sensors web as well as for multiple missions being planned by Code S (NASA Headquarters Office of Space Science) and Code R (Office of Aero-space Technology)," he said.

Human-centered computing is another exciting new field, Zornetzer mentioned. Human-centered computing represents a new paradigm based on the fundamental principle that future information processing technologies requiring human interfaces will be designed from the beginning with full appreciation of human capabilities and limitations. These include sensory/motor, perceptual and cognitive capabilities. The dynamic partnership between human beings and machines will lead to situations where the whole is greater than the sum of the parts. He expects that Ames

researchers will develop a complete new suite of tools to enable human centered computing.

In the area of advanced software engi-



Photo by Roger Brimmer

Dr. Steven Zornetzer

neering, Zornetzer said that he envisions Code I developing advanced automated software development tools as well as techniques to automatically verify, validate and certify software.

Zornetzer listed Code I accomplishments, division by division. For Code IC, the Computational Sciences Division, he mentioned the intelligent flight controller project under Dr. Charles Jorgensen, the remote agent artificial intelligence software experiment aboard the Deep Space 1 spacecraft and Future Flight Central, a virtual reality aircraft controltower simulator.

The intelligent flight controller, is a neural network system capable of "learning to fly" an airplane every sixth of a second as if the aircraft were a new model. Consequently, if there is damage to the airplane such as a partially lost wing, the neural net system is designed to restore control to the pilot so the aircraft will react as normally as possible to commands, greatly increasing

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# Cassen named Ames Associate Fellow for theory of solar system processes

The Sun, Earth, rocks, air and living things all are made of the stuff that was contained billions of years ago in a great cloud of dust and gas called the primitive solar nebula. To better explain the characteristics of that primeval cloud and the early solar system, Ames scientist Dr. Patrick Cassen (Code SST) studied existing meteorite and astronomical data recently obtained from telescopes on Earth and in space. He correlated the old and new information to develop a detailed theory on how the solar system formed from the ancient cloud.

For his work, Cassen won the 1998 Ames Associate Fellow award, which the Ames basic research council presented to him. His theory, the council concluded, resulted in a new "picture" of solar system processes. As an Ames Associate fellow, he was awarded \$20,000 in discretionary research funds, a \$2,000 personal honorarium and \$2,500 for discretionary travel in addition to his normal organizational travel funds.

"We're now certain that planets and other solar system objects like comets, moons and asteroids formed from a disc of gas and dust . . . from the kind of nebulae that we can now see around many young stars," Cassen said. "I used new information about these nebulae that appear to be in the planet-forming stage. With that new knowledge and the data we already have about meteorites, I developed a numerical model that explains some of the broad patterns in the compositions of primitive meteorites," he said.

"Primitive meteorites formed at the same time that the planets and the rest of the solar system were born. These objects fell to Earth after being knocked off one of the very small planets (asteroids) that are beyond the orbit of Mars," he explained.

"Because these meteorites were never incorporated into a big planet like the Earth, they have retained the characteristics--compositions and physical consistencies--which they possessed when they first formed, four and a half billion years ago. No rocks created on Earth are that old. Most meteorites are believed to represent the kind of solid objects that first accumulated in the solar system's original nebular disk, even before the planets were born."

"The pre-planetary disk was probably once hot. The model I developed describes how this primitive cloud cooled and how the compositions of meteorites and planets could have come about as they formed in the cooling disk."

According to this theory, the material condensed and accumulated from the nebula as the cloud of dust and gas accreted on to the Sun. While our star grew from the nebula, the planets also formed. At different places and times, various classes of

objects formed. The temperature history of the dust and gas cloud at the location where the objects were forming determined their compositions, according to Cassen's model.

An old idea is that gaseous planets like Jupiter and Saturn could only form in cold regions, far from the Sun, and the rocky planets formed nearer the Sun, where the temperature was hotter. Cassen's theory provides a detailed account of the kinds of materials that condensed over a range of distances from the Sun. His theory takes



Dr. Patrick Cassen

into account motions of gas and dust within the disk. The theory also describes the condensation of dust and its accumulation into rocks and planetary bodies, the gradual accumulation of material onto the Sun and the gradual cooling of the whole system that results from the coupled interaction of all these processes.

"I used existing data about the characteristics of meteorites, plus what we have learned about disks around young stars, to infer what the primeval nebula was like," he said. "My object was to synthesize data from two disparate disciplines, meteoritics and astrophysics, and to use the results to put better numbers in the theories of how the solar system formed."

"For example, some types of meteorites contain a greater abundance of volatile elements than do other types of meteorites," he explained. A volatile element evaporates more easily than other elements.

The theory provides a good explanation of why different kinds of primitive meteor-

ites have different compositions. The mix of elements depended on the temperature history of the nebula where the meteorites formed. Scientists know the details of meteorite compositions much better than the bulk compositions of planets, including Earth.

"The meteorite data I used has been available for years. What's new is the astrophysical information that we get from looking at other stars that are in the process of formation. The new information comes from the Hubble Space Telescope and advanced ground-based telescopes. SOFIA (the Stratospheric Observatory for Infrared Astronomy) will provide even more," he said.

"With these telescopes, one can determine how much radiation is coming from a young star and its disk at different wavelengths--that is, how much ultraviolet, visible, infrared and microwave radiation is emitted. This information tells us how hot or cold the disk is and provides a temperature distribution, like a heat map, of the nebula.

"But we're only getting a snapshot of each nebula. So you have to look at a lot of nebulae at different life stages of their evolutions."

"The next thing to do is to apply the theory to other aspects of meteorite data in addition to elemental composition. For instance, meteorites have unique isotopic compositions. Any element might come in a few different forms at the nuclear level. Oxygen on Earth comes in three isotopic forms. The most common oxygen has an atomic weight of 16, but there are also small amounts of oxygen 17 and 18."

"On Earth, almost anything you pick up with oxygen in it has the same ratio of the three different isotopic forms, but different meteorites have different ratios of these isotopes. We don't know why. I want to see if the theory that I developed can explain these meteorite isotopic compositions. Meteorites also contain tiny grains of material which were formed in space, probably around some other star, even before the solar system began to form--pre-solar material. The theory can be tested by figuring out how much of this kind of stuff exists in different kinds of meteorites, and comparing the answers with what the theory predicts," said Cassen.

The Ames Associate Fellow award recognizes exceptional scientific/engineering research by Ames staff members. Ames staff members with five or more years' tenure and who are not division chiefs or higher, are eligible to be Ames Associate Fellows.

Any Ames employee can nominate a staff member for the award. Managers do

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## Community Outreach

# The STELLAR program: we wouldn't think of exploring the universe without taking the kids along!

Giving the joy of science to children is one of the highest aims of the Ames STELLAR program. Since 1994, the STELLAR (Science Training to Enhance Leader-

hopeful.

Yet the work of the 1999 STELLAR teachers is still not done. Their participation in the program requires a year-long commit-

ment on the web, and the teachers will continue to attend monthly meetings and educational workshops. Furthermore, many of the teachers will make presentations to their colleagues at conferences such as the California and National Science Teachers' Associations. Most importantly, though, the teachers have classrooms full of students that they need to reach out to--a job that is never complete. The educational community is grateful to these teachers for their hard work and outstanding dedication.

The STELLAR program accepts applications from all K-12 instructors who teach science. If you or your child's teacher would like to get involved, or you would like more information or to download STELLAR classroom activities, please visit the STELLAR web site at: <http://stellar.arc.nasa.gov/stellar/> or email program director Sonya Cardenas at: [scardenas@mail.arc.nasa.gov](mailto:scardenas@mail.arc.nasa.gov) or call ext. 4-1866 or ext. 4-0820.



photo by Richard Schwerin.

This year's 1999 STELLAR teachers.

ship and Learning through Accomplishments in Research) program has evolved to become a great advancement in the educational field of life sciences and astrobology. It is an innovative program designed to improve math, science, and technology curricula, unique in its efforts and accomplishments.

For five weeks this summer, a select group of sixteen educators, who came from as far away as Michigan, worked in research laboratories with scientists at Ames to develop new, cutting-edge teaching material. At the same time, high school students from the San Francisco Bay Area created an interactive CD Rom on visual perception that will serve to supplement the education of their peers all over the world.

Every teacher, student, and scientist who participates in the STELLAR program goes above and beyond the call of duty in their respective jobs by nobly devoting their time to the task of making learning more exciting and more effective. And they succeed. At the 1999 STELLAR commencement on August 6, more than a few happy tears were shed amid the sentiments of pride and excitement over the STELLAR program's latest accomplishments.

The commencement started off with thoughts from keynote speaker Dr. David Morrison, Director of Astrobiology and Space Research at Ames. The enthusiasm and discussion of his revolutionary line of work set an appropriate and inspiring tone for an event celebrating a bright future for the next generation of scientists. Following Dr. Morrison's speech, poignant and emotional testimonies from STELLAR teachers affirmed that the future is indeed bright and

ment: lesson plans must be evaluated, piloted, and revised before publishing them

## Making a difference

--A message from Terry Morris, National CFC Spokesperson

What would you give to make a difference, to know you've really helped somebody? Your time, your energy, your money? And what would you want in return? Maybe a smile, a handshake, some proof that your generosity paid off? Well that's me. I'm Terry Morris and I'm living proof that you have made a difference. I'm living proof that the Combined Federal Campaign works.

From what I remember most of my life, I've been kicked outside in the cold by my biological parents. Having to eat out of the garbage can because there was no food to eat. From the earliest, I remember, at maybe three years old, being kicked out in the snow. Sometimes weeks, two weeks at a time and then if I cried loud enough and hard enough and very persuasively, they might, you know, let me back in the house.

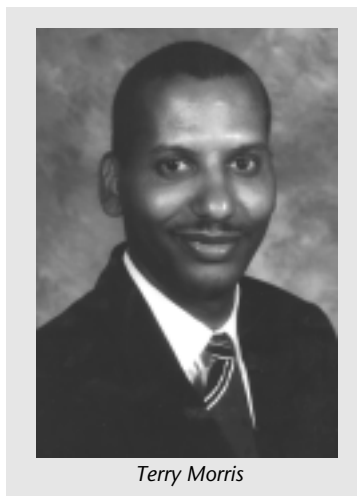
My mother was an alcoholic. I was sexually abused by my parents and the neglect was ... I just got used to the neglect. And I, you kind of think, "Why am I here? Why was I born? It's all your fault." At fourteen, I was abandoned by my parents about five hundred miles from home. And this time had nowhere to go back to, nowhere to turn. So I had to sleep in abandoned cars, abandoned buildings. My choice everyday was am I going to live or

am I going to die? How? What do I have to do to survive? And then eventually I was picked up by the police and put in a foster care home for boys called The Alpha House. And the Alpha House was funded by the Combined Federal Campaign.

The Alpha House was the first place that I learned discipline. That I learned respect for others. That I learned the importance of education. This was the first that I learned, you know, that there can be a future for me.

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BY SARAH GAGE



Terry Morris

### Ames information technology hits new heights

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air safety.

Zornetzer reported that NASA Administrator Daniel S. Goldin said that the Intelligent Flight Controller was one of the most significant recent pieces of NASA work. This kind of neural network "portends very well for other applications we can deliver," he said. "We can develop completely new capabilities in the form of intelligent software."

The remote agent artificial intelligence software experiment conducted aboard the Deep Space 1 spacecraft in May was also a "tremendous success," said Zornetzer. "This software demonstrated that a spacecraft could be autonomously controlled for a significant time with no human controllers in the loop. I think it's the vanguard of the type of software we will be asked to provide the agency in the future."

Future Flight Central, a virtual airport tower simulator in Bldg. N262, will be the only simulator of its kind in the world, the Director said. December 13 is the anticipated day of Future Flight Central's dedication. The facility will become world famous, he predicted. "It represents a new model. We are expecting Future Flight Central will be supported by paying customers." Engineers using the facility will study airport capacity, efficiency and safety. The potential customer base for the facility is quite large, including airports, individual airlines, the Federal Aviation Administration (FAA), NASA, the Department of Defense (DoD) as well as foreign customers.

Turning to Code IN, the Numerical Aerospace Simulation (NAS) Systems Division, three major recent accomplishments he described were the "tera-scale parallel scaling effort," the information power grid and the automatic feature detection effort.

The tera-scale parallel effort involves the development and building of the first 256 central processing unit (CPU), single image, O2K supercomputer. During the next year, there are plans to increase its speed to 100 gigaflops, a very significant increase in computer speed over existing vector machines such as the C 90, Zornetzer told the audience. This represents a price/performance improvement of about 20 times, he added.

The information power grid will enable various kinds of computers across the world to do high performance computing, large-scale data management and allow scientists and engineers to collaborate with one another over long distances. The grid will knit together widely distributed computers and people to do "just-in-time" work, he said.

The first operational power grid will be ready in October 1999. The system will operate at a minimum of 100 megabits per second, while accessing 30 to 100 terabytes of archival information.

"The automatic feature detection effort focuses on the problem of developing programs that automatically analyze massive data sets and extract features or phenomena of interest," Zornetzer said. This kind of computing can be used for aeronautical problems involving shock wave and boundary layer detection, among other things.

Another operation mentioned by Zornetzer is the Software Technology Division, located in Fairmont, WV, that includes the Software Independent Verification and Validation (IV&V) facility. Validating commercial, off-the-shelf software for use on the Shuttle is a very important function of the IV&V, said Zornetzer. "That software can cause conflicts for other software on the Shuttle," he said.

"For example, IV&V personnel identified numerous safety problems with a miniaturized airborne global positioning system receiver for the shuttle," Zornetzer stated.

For the International Space Station, the IV&V staff worked to develop early life-cycle detection and resolution of software errors, faults, discrepancies and anomalies to save large sums of money during that phase, he said.

"For knowledge-based system testing, computer scientists have developed new algorithms to determine the least number of test paths necessary to effectively train and test intelligent systems," Zornetzer said.

One accomplishment of the Human Factors Division, the newest of the Code I divisions, includes evaluation of an advanced aircraft cockpit display and human interface to support the eventual introduction of free flight. Free flight will allow pilots to select routes that are most desirable without requiring inputs from air traffic controllers. Other accomplishments of the division are a new 3-degree-of-freedom patent and a new crew-activity tracking system.

Zornetzer highlighted a three-degree-of-freedom mechanical linkage invention. The linkage provides excellent haptic feedback for virtual reality devices. Haptic feedback is tactile feedback in the form of forces and counter forces used to represent human/device interactions in a simulated or virtual environment. "Until now, haptic

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### Making a difference

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I can do something. My life is worth living. It was like a brand new life. It was like a welcome to what real life is all about. And that made the biggest difference in my life. I went on to high school and finished high school. I went and got my degree from college and I'm currently working on my Ph. D., as I'm working for NASA, working on space-related research. Research such as space station robotics and systems integration.

In a lot of ways, my success is your success. Not only did you help me to help myself, but you also helped me to help others. The Combined Federal Campaign is one way I can do that. It's the best way federal employees can work together to help people who really need help, both here at home in our communities and overseas. It's our campaign and it allows us to direct our support to agencies and organizations we really care about. The ones meeting standards that our fellow workers have reviewed and approved. The convenience of payroll deduction makes it all simple and lets us give more throughout the year while having a small amount drawn each pay period. And for all the combined power of that giving, there's only a small percentage going to overhead and fundraising.

The CFC is a proven way to give, and I know it works. But it doesn't end here with me. The fact is there are still others who need us. It may take time, but the more we work together through the CFC, the more people we'll help and the more problems we can be on the way to solving.

So what would you give to make a difference, to know you've really helped somebody? Whatever you give, do it through the Combined Federal Campaign, today. Your CFC pledge is a powerful way to create hope and opportunity for those who need it most in our community, our nation and in our world.

Take it from me, I am living proof that the CFC works. And for those of you who have helped in the past and those of you who will help in the future, I want to say a heartfelt thank you.

For more information about CFC, send email to [cfc@ace.arc.nasa.gov](mailto:cfc@ace.arc.nasa.gov)

BY TERRY MORRIS 

## Center Briefs

### **New NASA ocean radar watches for breakup of giant iceberg**

A NASA satellite instrument is keeping an eye on an iceberg the size of Rhode Island, the first time this space technology has been used to track a potential threat to international shipping.

NASA's new orbiting SeaWinds radar instrument, flying aboard the QuikScat satellite, will monitor Iceberg B10A, which snapped off Antarctica seven years ago and has since drifted into a shipping lane. Iceberg B10A, which measures about 24 miles by 48 miles, was spotted by the instrument during its first pass over Antarctica, demonstrating SeaWinds' all-weather and day-night observational capabilities. The massive iceberg extends about 300 feet above water and may reach as deep as 1,000 feet below the ocean's surface. It is breaking up into smaller pieces that could pose a threat to commercial, cruise and fishing ships if the pieces are blown back into the shipping lane by high winds.

### **NASA achieves ISO 9001 registration at all sites**

As of Sept. 17, all NASA centers, NASA Headquarters, the Jet Propulsion Laboratory and all of NASA's government operated facilities have achieved ISO 9001 registration or been recommended for registration. With this accomplishment, NASA became the world's first federal or state agency with multiple sites to have all its sites under ISO 9001 registration. NASA Headquarters is among the first corporate headquarters offices in the world to achieve its ISO 9001 registration. The ISO 9001 standard is an internationally accepted set of topics comprising the basic items needed to define and implement a "Quality Management System" for an organization.

### **Perseus B damaged in crash on California highway**

The Perseus B remotely piloted research aircraft was moderately damaged when it crashed near Barstow, CA, during a flight from NASA's Dryden Flight Research Center, Edwards, CA. There was no property damage and no fire or injuries on the ground as a result of the accident. The aircraft came down in the westbound lanes of Interstate 40 about 4 miles east of Barstow. The cause is not yet known. The Perseus B, a developmental vehicle designed to operate at high altitudes for extended periods on scientific sampling missions, is one of several aircraft being evaluated by NASA under the environmental research aircraft and sensor technology program.

## Completion of 1999 US Savings Bond Campaign

The 1999 US Savings Bond Campaign has drawn to a close with the Center increasing its rate of participation to just over 38%. The close of the campaign was marked by a celebration and awards ceremony at the Ames Café on August 18. The Deputy Center Director, Bill Berry, addressed the group of canvassers and coordinators by expressing his thanks for their efforts and congratulations for a job well done, particularly given the economic conditions that made selling bonds very difficult. Mr. Rick Corrigan from the U.S. Treasury Department added his words of praise to the group and gave an "Award for Patriotic Service" to each of the canvassers and each coordinator.

Dougal MacIse, the campaign co-chair, announced the winners of the three competitions of the campaign. Code J received the annual directorate award plaque for the highest rate of participation with a 51% mark. Code Q received the annual Directorate award plaque for the highest rate of new bond participation with 20%. A new award this year, the highest rate of participation for a branch or group, was presented to Sharon Connolly and Code JAC. Sharon was the canvasser for the branch which was able to reach a participation rate of 79%! Besides a certificate commemorating the accomplishment, the branch won a catered barbecue at Chase Park.

Cathy Daw and Ed Fresco, Jr. were commended for their work on the develop-

ment of a web-based database that was used to track the campaign progress and results. In the past, each canvasser has tracked their own progress on paper and turned in the results at the end of the campaign to the co-chair. This year each



photo by Dominic Hart

Jana Coleman (left) and Sharon Connolly (right) received the '99 U.S. Saving Bond campaign's "Highest Group Participation Award/Code JAC" on August 31.

canvasser could enter their data on the web page and the results could be called up at any time as the campaign progressed.

Derrick Thomas of Code CFR will serve next year as the co-chair (with Dr. McDonald) of the 2000 U.S. Savings Bond Campaign.

## Ames information technology hits new heights

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feedback has not been very faithful," according to Zornetzer. Engineers expect this new invention to be used in telerobotics, telemedicine and other devices.

The crew activity tracking system is a computer system to predict desired pilot activities and track their actual actions to determine if and when airplane pilots make errors, according to Zornetzer. Use of the system "will significantly enhance our ability to develop new training systems," he said. Such a system could lead to the development of a commercial pilot's automated associate, capable of providing feedback and advice, if needed. "You might imagine that this capability is similar to that

of R2-D2 looking over the pilot's shoulder and offering help when needed."

Zornetzer ended his talk by acknowledging all the scientists, engineers and support staff within Code I who contributed to positioning Code I as a recognized leader within NASA and the nation. "The division," he said, "is now recognized for its contributions in pushing forward the frontiers of the possible."

BY JOHN BLUCK

## Ames Events/Announcements

### Safety and Quality Week-- free training!

During Safety and Quality Week, October 12 - 15, you will have a golden opportunity to get trained in a variety of special classes.

Some classes are OSHA-required for your job, and others are just simply the smart thing to do, such as CPR, back injury prevention and stress management. CPR can save a life, back injuries are the most common serious injury occurring here at the Center, and although stress may be even more common and quite serious, it is also a well-kept secret.

Other high quality, professional development classes are also being offered such as risk management, system safety and software analysis.

Do you want to have a better understanding of the industry standard for quality? Then take the ISO 9000 class.

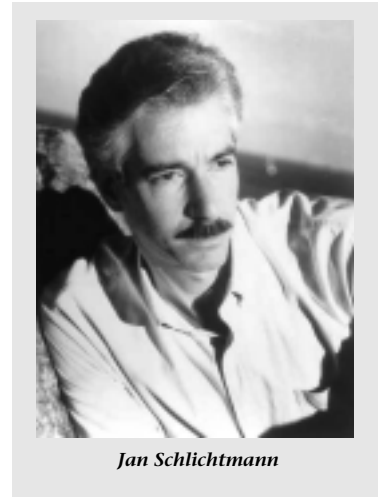
For more information on classes and registration, visit the Code Q website at: <http://q.arc.nasa.gov/>. Click on the Safety and Quality Week star logo located in the upper left hand corner and then click on the Safety and Quality Training link.

### Schlichtmann to speak at Safety Week event

On October 12, attorney Jan Schlichtmann will be the Environmental Services office's featured speaker for this year's Safety and Quality Week's kick-off day activities. He will be discussing environmental risk management and conducting a book signing for the best seller, *A Civil Action*, which documents his most notorious case about the Woburn, Massachusetts cancer cluster.

Schlichtmann's rise to prominence began in 1982 when he became the plaintiff's attorney for eight Woburn families. The liability suit filed against two corporations, Beatrice Foods and W.R. Grace, centered around the alleged contamination of the town's drinking water due to negligent chemical dumping practices. Furthermore, the townsfolk alleged that the companies were liable for the unusually high incidence of childhood leukemia cases, which was four-fold higher than the national average. In 1998, the story was made into a major motion picture, also called *A Civil Action*, with John Travolta cast as Schlichtmann.

Come listen to Schlichtmann's informative 45-minute presentation about mini-



Jan Schlichtmann

mizing civil liabilities from environmental mismanagement. The event will take place in the auditorium of building 201 at 1 p.m. Books will be available for purchase or you may bring your own copy to have signed. If you have questions, please contact Linda Vabel at ext. 4-0924.

BY MICHELLE PERRY

### '99 NASA CFC essay contest begins

This contest is for all children, K-12 grades. Submissions must relate to how a charity has helped you or your family members or friends, or how your family has helped or supported a particular charity. Essays, stories, and artwork which are one page in length or less will be considered.

Be creative. Surprise the judges. Put something of your own personality into your work. Present your material clearly and neatly. Consider how a charity helped

Contest prizes and certificates are:

- K- 3<sup>rd</sup> Grades Prize:  
Two tickets to Paramount's Great America, Santa Clara
- 4<sup>th</sup>- 7<sup>th</sup> Grades Prize:  
Space Camp certificate, Moffett Field
- 8<sup>th</sup>- 12<sup>th</sup> Grades Prize:  
Flight Simulator experience at Ames.

All winning entries will be placed on the CFC website listed above. The flight simulator ride at Ames is available through the flight simulator office, by appointment only. All prizes will be awarded at the CFC awards ceremony at Ames on November 29. All participants will receive a certificate mailed to them by November 30.

Submissions must have the name, address and grade of the child submitting the entry to the competition. Submissions must be made in hard copy. The deadline for this year's essay competition is November 12. Contest rules and requirements are as follows:

- Send a hard copy of your work to:  
NASA Ames Research Center  
Attn: Janette R. Rocha, CPS  
Mail Stop: 269-1  
Moffett Field, CA 94035  
(650) 604-3371

### Get your flu shot at the Safety Fair

Flu season is almost upon us again, and it's time to get your influenza vaccine at the Ames Health Unit, Bldg. N-215. Health Unit staff will be administering the vaccine to all resident staff (contractors and civil servants) and retirees (no spouses) from October 14 through November 5. The Flu Clinic will be kicked off during Safety Week at the Safety Fair on October 14 from 11:00 a.m. - 2:00 p.m. You may go to the Health Unit at that time and get your shot.

The vaccines will also be given on the following dates and times:  
Oct. 19, 10:00 - 11:45 a.m., 1-3:00 p.m.  
Oct. 21, 10:00 - 11:45 a.m., 1-3:00 p.m.  
Oct. 26, 1-3:00 p.m.  
Oct. 28, 1-3:00 p.m.  
Nov 2, 1-3:00 p.m.  
Nov 5, 10:00 - 11:45 a.m.

Appointments are not required, however, vaccines will be administered ONLY during the specific clinic hours given above.

The Health Unit staff requests that you wear short or loose fitting sleeves to eliminate the need for privacy.

The information sheets/consent forms will be available at the Health Unit. Please arrive a few minutes early to allow yourself enough time to read and sign the forms.

For more information, contact the Health Unit at ext. 4-5287.



someone you know, family or non-family member.

Results of the '99 CFC essay contest will be published on the CFC website after November 19. The CFC website address is: <http://grail.arc.nasa.gov/cfc/>

# Calendar & Classifieds

## Calendar

**Ames Bowling League** will be starting the 99/00 season at Palo Alto Bowl every Tuesday at 6pm on Sept. 7. The season is 33 weeks long and ends April 25 with a banquet the week after. The league is in need of bowlers to join teams, as well as substitutes. POC: Mina Cappuccio, mcappuccio@mail.arc.nasa.gov, at ext. 4-1313 or Mike Liu, mliu@mail.arc.nasa.gov, at ext. 4-4357.

**Ames Ballroom Dance Club**, Tuesdays: Hustle 8/31, 9/7, East Coast Swing 9/14, 9/21, 9/28. 3 levels of classes, from Beg. to Int., 5:15 - 6:45pm. Moffett Training and Conference Center, Bldg. 3/Showroom. Women dancers are especially encouraged to join. POC: Helen Hwang, hwang@dm1.arc.nasa.gov.

**Model HO/HOn3 Railroad Train Club at Moffett Field** invites train buffs to visit and join the club in Bldg. 126, across from the south end of Hangar One. The club is in particular need of low voltage electricians and scenery builders and maintainers. 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 (work) or (408) 281-2899 (home).

**Jetstream Toastmasters**, Mondays, 12 noon to 1 p.m., N-269/Rm. 179. Guests welcome. POC: Jenny Kahn at ext. 4-6987 or Karen Matsuoka at ext. 4-6184.

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

**Professional Administrative Council (PAC) Meeting**, Oct 14, 10:30 a.m. to 11:30 a.m. Location TBD. POC: Janette Rocha, ext. 4-3371.

**Ames Sailing Club Meeting**, Oct 14, 11:30 a.m. to 1 p.m., N-262/Rm. 100. POC: Greg Sherwood, ext. 4-0429.

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

**Ames Amateur Radio Club**, Oct 21, 12 noon, N-260/Conf. Rm. POC: Mike Herrick, K6EAA at ext. 4-5477.

**Ames Asian American Pacific Islander Advisory Group Meeting**, Oct 21, 11:30 a.m. to 1 p.m., N-241/Rm. B2. POC: Daryl Wong at ext. 4-6889 or Brett Vu at ext. 4-0911.

**Native American Advisory Committee Mtg**, Oct 26, 12 noon to 1 p.m., Ames Caf . POC: Mike Liu at ext. 4-1132.

**Java User Group**, Oct. 27, 10 am, Bldg. 258, Rm. 127. Topic: Testing Java Programs - Tools and Tips. POC: Sharon Marcacci, ext. 4-1059; http://jug.arc.nasa.gov

**Ames Contractor Council Meeting**, Nov 3, 11 a.m., N-200 Comm. Rm. POC: Jack Stanley at ext. 4-2345.

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

**Hispanic Advisory Committee for Employees**, Nov 4, 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 Meeting**, Nov 4, 11:30 a.m. to 12:30 p.m. POC: Robert Finnie at ext. 4-5230. Contact Robert for meeting place.

**Nat'l Association of Retired Federal Employees, San Jose Chapter #50, Meeting**, Nov 5, at the Elk's Club, 44 W. Alma Avenue, San Jose. Social hour: 10:30 a.m. Prog. & bus. mtg. follow lunch at 11:30 a.m. POCs: Mr. Rod Peery, Pres., (650) 967-9418 or NAREF 1-800-627-3394.

## Ames Classifieds

Ads for the next issue should be sent to [astrogram@mail.arc.nasa.gov](mailto: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

Furnished room. Share bath/kitchen/garden/laundry. Easy transport: bus/train + El Camino + H101/237/85 + Central Expressway. Rent: \$560/mo. Call (650) 969-3932 or email at: [solemate@best.com](mailto:solemate@best.com)

Available immediately for commuter and/or intern; a semi-private temporary space in the same location as above. Weekly \$100 (+ one month). Call (650) 969-3932 or email at: [solemate@best.com](mailto:solemate@best.com)

Master bdrm available in Mt. View. Large apartment of professional lady; El Camino & Rengstorff. Gated bldg w/pool; convenient to bus 20 mins to downtown Palo Alto. Safe. \$750. Fontella (650) 962-8411.

Share furnished 2-bd/1 ba condo in Palo Alto near California St, w/professional male who works in Silicon Valley. Available 10/15. Rent \$900/mo plus dep (covers cable TV and utils, except electricity and phone). No pet, non-smoker, prefer 1-yr lease. Call (650)321-9008.

Roommate wanted to share 3bd/2ba house in Sunnyvale (near Lawrence Exp. and 101). \$740/mo+utils. Available 10/15. Duc (408) 732-7751.

Roommate wanted (N/S, prof) to share a great, sunny, 2 MSTR BDRM/2 BTH end-unit condo (Sunnyvale) with gar, W/D, lrg rooms, storage, central air, low/mod utilities, jac/pool, balcony, 3 mi from Ames, \$675 plus 1/2 util's (approx \$25). Steve (408) 737-1924.

Condo for sale, 340 Auburn Way #13, in West San Jose, Cupertino schools. 2bd/1ba, end unit with 2 patios. \$175,000. Lloyd (408) 345-3015.

House to share w/ 1 other adult; Fremont. Own room & bath. Quiet, N/S only. Share kitchen/garden/laundry facility. No cats/dogs, please (cats present). Carpool possible; near Dumbarton bus. \$500 + 1/2 util/mo. + deposit. Call (510) 226-2444 (Kathie) or (510) 797-7442.

Apartment for rent in Sunnyvale fourplex: 2 bd/1ba located just 3 miles from Ames. Remodeled kitchen, new carpets and carport with extra storage. Available Oct 6th for \$1070/mnth with \$700 deposit. No pets, N/S, Call (408) 245-0944.

### Miscellaneous

Glass (rectangle) dinette table w/4 black upholstered high back chairs \$350 or B/O. Denise (408) 280-5856.

Two Great America tickets, good on weekends before Oct 31, \$15 each. Call (650) 321-9244.

Is your child's birthday between 2/1/98 and 6/15/98? Are you looking for childcare for two days a week? The Ames Child Care Center may have an opening that works for you. For more information, call Starr at (408) 737-0988. For more information regarding this ad or the Ames Child Care Center, call Gabrielle at ext. 4-4184.

EvenFlow stroller; very clean, dark blue/white, \$25, Call (408) 295-2160.

Scuba, mens BC, regulator (1st, two 2nds + gages) \$150 or B/O. Call (831) 427-2788.

Washer/dryer: top-loading (basic) electric washer, gas dryer. Both work perfect, \$150 each or B/O. Chris (831)427-2788 (can bring in truck to show/deliver).

Medium-size parrot, beautiful Sun Conure for sale. Healthy and very tame. Likes to ride on shoulders. 7 years old female with designer white cage and lots of extras. \$495 or B/O. Call (650) 969-7505 or [mishis@earthlink.net](mailto:mishis@earthlink.net)

Redwood City family looking for another family to share our nanny with. Full-time nanny at our home looking after our fun-loving, 2 1/2-year-old son. We would like to share her with another family (32 hrs. min). If you have a child between 2-3 years of age and are interested in sharing our nanny, call (650) 369-9944.

Dream housesitters available. East coast retired couple who like to clean are available for housesitting in Bay Area to visit grandkids. Will suit your schedule. Call (408) 985-4256 or email at [harper135@aol.com](mailto:harper135@aol.com)

Hallicrafters SX-42 shortwave receiver and matching R-42 bass-reflex sound reproducer, late 40s vintage, includes owners manual. Make offer. Brian (650) 940-1673 or [brian@landsurfing.com](mailto:brian@landsurfing.com)

Furniture for sale: solid oak twin bed with 3 drawers and bookcase headboard and matching dresser \$300.; futon sofa bed \$150; stereo cabinet \$75. Pictures on web at [www.best.com/~tfreeman](http://www.best.com/~tfreeman). Call (408) 734-5769.

Pali convertible crib/toddler bed with drawer, solid wood and including all bedding (skirt, bumper, sheets, converter, etc). \$200. Call (415) 664 5076.

Wanted: Camping trailer, 1993 or newer, at least 26' long, no 5th wheel or pop-up tent. Call with asking price. Call (408) 263-2109 before 8pm

### Transportation

'90 Toyota 4-Runner, mnf silver w/grey interior Excellent condition, pwr everything, alarm system, cell phone, New top of the line Michelin tires. 160K mls, \$9,000. Call (510) 790-7640.

'92 Pontiac Sunbird, great condition! White with red trim; A/C, ABS brakes. Low mileage (83K mls; I am the 2nd owner since 16K mls). Qualifies for "high-book" but will sacrifice at \$4,750 or B/O. Eileen (408) 616-7708 or [ebaumgardt@imagecounts.com](mailto:ebaumgardt@imagecounts.com).

'92 Acura Integra LS, 4-dr sedan, 150K mls, 5 speed, A/C, AM/FM cass, alarm, one owner, \$6,750. Call (408) 738-6634.

'92 Mercury Sable station wagon; excellent condition, fully loaded, 69K mls, seats 8 and very well maintained. \$6,250. Harry Swenson (650) 368-8979.

## Ames Retirements

Name	Code	Date
Dr. Douglas O'Handley	Code SS	9/03/99
Dr. Muriel D. Ross	Code SL	9/30/99

'93 Nissan Altima SE clean, excellent condition, runs great. Well maintained vehicle w/all receipts. 87K mls, Power brakes, power steering, power door locks, power windows, cruise control, AM/FM radio cassette, driver-side air bag asking \$6,500. John (408) 559-6490.

'93 Honda Accord EX, green ext/tan interior, automatic, fully loaded, sun roof, faithfully maintained, no rips, no scratches, non-smoker, 88k miles. \$10,500. Call (408) 263-2109 before 8pm

'95 Ford white Aspire 2DR Hatchback, air, automatic transmission, AM/FM Radio CD player with detachable face (Kenwood) with warranty, 91K mls. \$4,200 or B/O Denise (650) 578-0557.

'95 Chevy Blazer 4x4, LT, leather int. ,c/c,a/c,roof rack, tow package, off road package,fully loaded. 74K mls. Asking \$15,400. Bob (408) 736-4039.

'97 Chevy Blazer LT 4WD in excellent condition. Emerald green and gray metallic. Loaded w/leather seats, CD, AC, cruise, computerized trip info., 6-way power driver seat, privacy glass, remote key-less entry. 44K mls. \$21,500 or B/O. Call (510) 653-2325 or (510) 366-2944.

### Carpool

Carpool partners needed to join carpool from San Francisco, Daly City to Ames, compressed schedule. Call Benny at ext. 4-5432.

Riders needed now for a vanpool from San Francisco to Moffett Field/Mt View area. Work hours are 7 a.m.-4 p.m. Reduce the stress, cost, and pollution caused by commuting. Ruth at ext. 4-5247 or email: [rglobus@mail.arc.nasa.gov](mailto:rglobus@mail.arc.nasa.gov).

### Vacation rental

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

San Juan, Puerto Rico, 3 bdrm ocean side apartment. School headmaster wishes to trade for a 3-4 bedroom home/apartment in the Menlo Park/Palo Alto area for Dec 21, 1999 -Jan 7, 2000 inclusive. Call Joe (650) 969-6119 or Russ (787) 726-5745 or email [beecher@caribe.net](mailto:beecher@caribe.net)

### Lost & Found

**Found:** Free information. If you have recently lost an answer, and would like to retrieve it, please go to: <http://mainlib.arc.nasa.gov>. Positive identification required.

**Lost:** gold colored earring for pierced ears on Sept. 28, 1999 on walkways around Ames. Earring consists of 3 gold rings free-swinging within each other from its post. Yvonne Russell at ext. 4-3479 to leave message where I can retrieve it - with thanks.

## Astronomy lecture series set

Ames staff are invited to attend the first lecture in the six-part Silicon Valley astronomy lecture series "Finding Other Worlds: The Search for Planets around Nearby Stars." The lecture will take place on October 13 from 7:00-8:30 p.m. at the Smithwick Auditorium, Foothill College, Los Altos Hills, California.

Andrew Fraknoi, Foothill College astronomy professor, will serve as moderator; Dr. Geoff Marcy, U.C. Berkeley, will deliver the lecture. The event is free and open to the public. Please arrive early to ensure a seat.

The second lecture in the series will take place on November 17. Dr. Jill Tarter, president, Project Phoenix at the SETI Institute, will discuss "Making Contact: The Search for Extra-Terrestrial Intelligence."

There will be time for questions and answers after each lecture.

Look for announcements of upcoming Winter/Spring 2000 lectures in the Astrogram.

If you have questions regarding the Silicon Valley astronomy lecture series, contact Kathleen Burton at email: kburton@mail.arc.nasa.gov.

## Quality--what's next?

As part of the Center's Safety and Quality Week events, the American Society for Quality and Ames are sponsoring Quality Forum '99 on October 13. Three thought provoking speakers will share their perspectives on quality – as risk reducer, competitive advantage and safety imperative.

With ISO 9001 certification behind us, we might think that all the necessary improvements to our systems and processes have been made. But ISO 9001 only provides the most basic quality elements--it also has continuous improvement built-in. Our registrar Det Norske Veritas, Inc. (DNV) will look for those improvements when they return every 6 months – starting in November.

Fortunately, there are many easily ap-

## Cassen named Ames Associate

*continued from page 2*

not have to concur with the nominations. The requirements and guidelines for submitting nominations are available from the Chair of the Ames Basic Research Council, Dr. Stephanie Langhoff, ext. 4-6213.

There is an official call for nominations during the October/November time frame. The Ames Basic Research Council and the Center Director select no more than three Ames Associate Fellows per year. Selection is based on the nominees' work during the three to five years preceding nominations. The tenure of this honorary designation is two years.

BY JOHN BLUCK 

plied tools, tactics and techniques available. These methods are widely used by public and private enterprises, though many were developed by firms like Xerox, Toyota and Motorola in response to rapidly expanding global competition. More than buzz words or "initiatives," these simple or sophisticated practices improve products, services and operational effectiveness to increase customer satisfaction.

- Quality Forum '99 - October 13
- Bldg. 3 Ball Room
- 8:00 Registration/Continental Breakfast
- 8:30 Richard Allen, Solectron, Inc.  
*Twice Winner of National Quality Award*
- 9:30 Col. Mike Mullane, Shuttle Astronaut  
*Lessons From Challenger*
- 10:30 Refreshments / Networking
- 11:00 Ray Davies, DNV, Inc. *Safety and the Bottom Line*

Seating is limited. To register, contact Beverly Sauler - bsauler@mail.arc.nasa.gov

### THE AMES **Astrogram**

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

*We can be reached via email at: astrogram@mail.arc.nasa.gov or by phone (650) 604-3347*

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