

INSIDER

Newsletter for the Employees of Ames Laboratory ■ Volume 18, Number 7 ■ July-August 2007



Field for Ames Lab Director Narrowed to Five

The search committee charged with finding a new Ames Laboratory director has narrowed the field to five finalists.

The committee reviewed more than 100 nominations and invited 10 potential candidates to “airport interviews” before selecting five finalists for the campus interview phase.

“Clearly, we have a very strong field of candidates, representing a wide variety of backgrounds and experience, including national laboratories, academia and industrial research,” says search committee chair, director of the Nondestructive Evaluation Program and ISU Distinguished Professor R. Bruce Thompson

The five finalists are:

Bruce Harmon is currently deputy director of the Ames Laboratory; program director of



Bruce Harmon

Condensed Matter Physics, Ames Laboratory; and professor of physics and astronomy and Distinguished Professor in Liberal Arts and Sciences, Iowa State University. Harmon received his B.S. in physics from the Illinois Institute of Technology and his M.S. and Ph.D. in

physics from Northwestern University. He has been deputy director at Ames Lab since 1995 and director of the Condensed Matter Physics Program since 1983, and an ISU physics faculty member since 1975.

Alex Lacerda is currently director, National High Magnetic Field Laboratory-Pulsed Field



Alex Lacerda

Facility (Los Alamos National Laboratory) and associate director, National High Magnetic Field Laboratory (Los Alamos, Florida State University and University of Florida). Lacerda is also an adjunct professor at New Mexico State University, Colorado State University, Clemson University and the University of Florida. He received his B.S. in physics from Universidade Federal de Pernambuco in Brazil and his M.S. and Ph.D. from University Joseph Fourier, Grenoble, France.

Arthur Ramirez is currently director, Device Physics Research Division, Bell Labs,



Arthur Ramirez

Alcatel Lucent and adjunct professor, Applied Physics & Applied Mathematics, Columbia University. From 2001-2003, he was at Los Alamos National Laboratory, where he served as leader of both the Materials Integration Science Laboratory and the Condensed Matter & Thermal Physics Group, as well as the co-director of the University of California Institute for Complex Adaptive Matter. Prior to that he was a member of the technical staff at Bell Laboratories, beginning in 1984. He received his B.S. and Ph.D. in physics from Yale University.

Alexander King is a professor and head of the School of Materials Engineering, Purdue University, a position he has held since 1999. Prior to that, he served on the Materials Science



Alexander King

& Engineering faculty at the State University of New York at Stony Brook, where he also served as associate vice provost, acting vice provost (1989), and then vice provost for graduate studies (1990). A native of the United Kingdom, he received his undergraduate degree in physical metallurgy from the

University of Sheffield and his Ph.D. from Cambridge University in metallurgy and science of materials.

Wendy Cieslak is currently deputy to the vice president for science and engineering at Sandia National Laboratories. She holds B.S. and Ph.D. degrees in materials engineering



Wendy Cieslak

from Rensselaer Polytechnic Institute. She joined Sandia in 1983 as a senior member of the technical staff in the corrosion division, later worked in exploratory batteries and was department manager in materials interface reliability. Following a stint as a technical advisor for DOE Basic Energy Science’s Materials Science Division, she served as deputy director of Sandia’s Geoscience and Environment Center, the Energy Components and Metrology Center, and the Physical, Chemical, and Nanosciences Center.

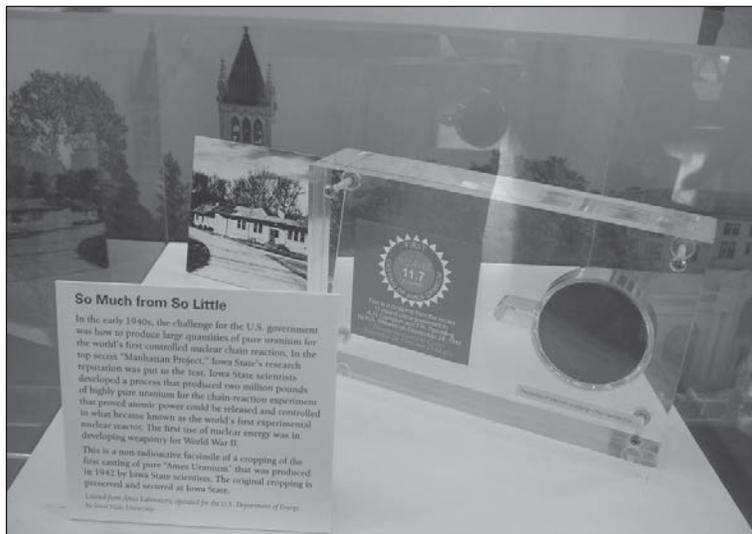
More information on the search, including vitas for all candidates and a candidate evaluation form, is posted on the Ames Laboratory Web site at: www.ameslab.gov/final/Finalists.html. ■



Ames Lab Featured at ISU's State Fair Exhibit

A facsimile of the first casting of purified uranium from Ames Laboratory was featured at this year's Iowa State University exhibit at the Iowa State Fair (see photo below).

Iowa State's exhibit marked the university's sesquicentennial and celebrated major achievements over its 150-year history, including Ames Laboratory's uranium purification work during the Manhattan Project. The establishment of Ames Laboratory in 1947 also occupied a prominent place on the time line of important milestones at ISU. ■



The ISU state fair exhibit featured a facsimile of purified uranium from Ames Lab.



Fair volunteer and Lab employee Cynthia Feller rolls a football poster for an ISU fan.



Fairgoers stop to learn more about Ames Lab's important place in ISU history.

Lin and Smith Talk Biotech on WOI



Victor Lin discusses his nanotechnology research.

Victor S.-Y. Lin, director of the Chemical and Biological Sciences Program, and Emily Smith, chemist, appeared on WOI-AM's "Talk of Iowa" program on July 19 to talk about Ames Lab's bio-inspired technology research. Lin discussed his nanotechnology work in plant biology and agricultural biotechnology, and Smith talked about her use of Raman imaging to determine what crops are best for producing ethanol. ■

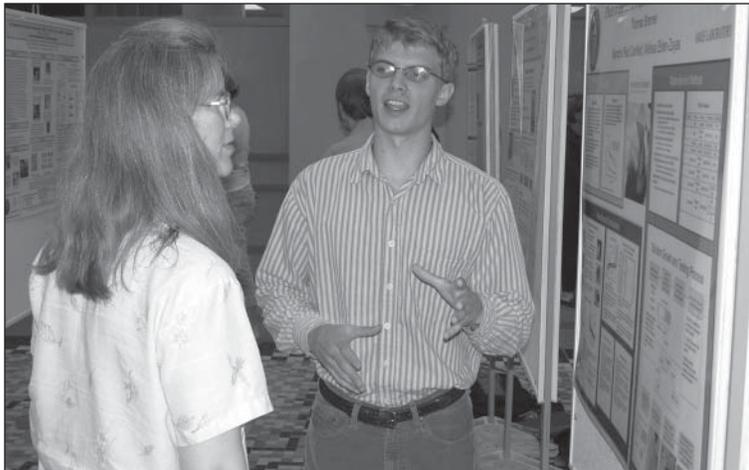
Schulke Wins Safe-driving Award



Keith Schulke (center) accepts his Safe Driver of the Year award from Cindy Baebler, Ames site manager, and Bruce Harmon, Ames Lab deputy director.

Keith Schulke, motor vehicle operator, has been selected by the National Safety Council as the 2007 Safe Driver of the Year for Iowa. The Safe Driver of the Year award recognizes drivers who have driven an outstanding number of miles without a preventable accident. Shulke has been making deliveries for 11 years and has had no motor vehicle accidents. ■

Summer Internship Programs Wrap Up



Thomas Brenner, SULI intern, talks over his research project with Theresa Windus, Ames Lab associate.

Ames Laboratory's SULI, Science Undergraduate Laboratory Internship, and DOE ACTS, Academies Creating Teacher Scientists, programs wrapped up on Aug. 3 with a poster display in the Molecular Biology building.

This was the third year for SULI, which hosted 11 undergraduate students from colleges and universities around the country. Students produced research papers or PowerPoint presentations during the 10-week SULI program. Papers can be published either in the *DOE Journal of Undergraduate Research* or another journal.

This was the first year for the DOE ACTS program, which hosted nine middle school teachers from schools in Minnesota, South Dakota, Kansas and Iowa. The teachers participated in a four-week program in which they learned scientific techniques they can take back and implement in their classrooms. ■



Adventures in Iowa

Andrew Fidler and Fiona Mills-Groninger, SULI interns, canoe down the Des Moines river on a SULI outing in Boone. SULI participants found adventures both in and out of the lab this summer. When work in the lab was through, the interns explored Iowa by visiting local parks, attending concerts in Des Moines, and participating in the Iowa Games competition.

Lograsso Receives Outstanding Mentor Award



Barbara Lograsso accepts her Outstanding Mentor award from Steve Karsjen.

In a ceremony on Friday, Aug. 3, 2007, Ames Laboratory scientist Barbara Lograsso received an "Outstanding Mentor" award from the U.S. Department of Energy's Office of Science. The award is for her work mentoring a student in the Science Undergraduate Laboratory Internship, or SULI, program coordinated by Ames Laboratory.

Lograsso was nominated for the award by her SULI student, Ryan Glamm, who participated in the SULI program at Ames Laboratory in 2006. The program brings students from colleges and universities around the country to Ames Laboratory and Iowa State University to work with scientist mentors in a 10-week research experience. Glamm was from Ohio State University.

Signed by Secretary of Energy Samuel W. Bodman, the Outstanding Mentor award presented to Lograsso reads, "In recognition of your dedication as a mentor. For your willingness to share knowledge and to inspire and instill confidence in the next generation of scientists and engineers by setting high expectations, seeking creative solutions, and immersing inquisitive minds in the world of science."

In making the nomination, Glamm praised Lograsso for her "hard work and dedication to being a mentor in the SULI program." As a student in the SULI program, Glamm said, "It is important for a researcher to work independently and come to conclusions in a timely manner; I believe I have become better at both."

During his internship at the Laboratory, Glamm worked with Lograsso on a project through the Laboratory's Midwest Forensics Resource Center. This marks the third year for the SULI program at the Ames Laboratory and Iowa State University.

"This program is a direct reflection of Ames Laboratory's mission to 'educate the next generation of scientists and engineers,'" says Steve Karsjen, SULI program coordinator. Over the past three years, 31 students have participated in the SULI program. ■

~ Steve Karsjen

“Science” Is an Action Word

Youngsters learn science concepts from hands-on activities

A June 28 visit to Ames Laboratory gave middle-school students taking part in Iowa State University’s Educational Talent Search the chance to brush up on some science concepts the fun way – by getting involved with toys, mirrors and pop cans! As it turns out, these seemingly “unscieney” items can go a long way in driving home some very basic ideas. And if you don’t believe us, just take a look at the kids in action! ■



Having just exerted a powerful stomp, this youngster watches his foam rocket as it’s propelled up, up and away!

Energy Evaluation Team Visits Lab

Team identifies energy-saving strategies



Energy Efficiency Expert Evaluation team members read a temperature using an infra-red thermometer gun.

An Energy Efficiency Expert Evaluation team from the Federal Energy Management Program visited in July to help identify energy-saving strategies. The three-person team from Pacific Northwest National Laboratory in Richland, Wash., toured Lab facilities, making observations and taking measurements.

The E4 team’s focus was on overall building maintenance and operations. Following their visit, the E4 team will compile and forward a comprehensive report on their findings, including a list of methods that Ames Lab can use to improve energy efficiency with an emphasis on low-cost or no-cost, quick-payback improvements that can be made through changes in operations and maintenance techniques.

“The E4 team was very helpful, and their visit proved to be very productive and, in some instances, eye-opening,” says Mike Vaclav, plant engineer, “During the visit the team found several simple adjustments that we have already been able to implement and offered some suggestions of larger changes we might consider in the future. We are looking forward to their final report, which will contain a more comprehensive list of energy-saving activities and projects.” ■

Mathematicians meet materials

Jaws dropped at the high prices of some of the smallest samples of rare earth metals when youngsters from the ISU Office of Precollegiate Programs Talented and Gifted mathematics program visited the Materials Preparation Center on July 26. “You mean some metals cost more than gold?” asked one surprised student.

The OPPTAG students toured Trevor Reidemann’s rare earth materials laboratory and learned about the high-pressure gas atomizer from Larry Jones. At both stops, the young scholars learned new avenues for their interest in math and science, and were impressed by the research and services at Ames Lab. ■

Trevor Reidemann gives the OPPTAG group a tour of the Rare Earth Materials Section of the MPC.

DOE Under Secretary for Science Visits Ames Laboratory

Orbach on campus to deliver commencement address

Dr. Raymond Orbach, DOE Under Secretary for Science, was in Ames Aug. 3–4 visiting the Lab and serving as the keynote speaker at Iowa State University's summer commencement exercises. During his visit, Dr. Orbach spent time with a group of Ames Lab researchers, who provided updates on a number of recent research projects. Orbach also met with ISU President Gregory Geoffroy, Executive Vice President and Provost Elizabeth Hoffman and Vice President for Research and Economic Development John Brighton. ■



Dr. Orbach (center) meets with ISU President Gregory Geoffroy and Executive Vice President and Provost Elizabeth Hoffman.



Dr. Orbach delivers the keynote address at ISU's summer commencement exercises.

Lin to Direct Chemical and Biological Sciences Program



Victor S.-Y. Lin has been named director of Ames Laboratory's Chemical and Biological Sciences Program. Lin succeeds former director Ed Yeung, who will now be deputy director of the program.

Lin credits his predecessor with creating a strong program, and says he plans to build on that base by encouraging more integrated research efforts.

"Ed (Yeung) did a tremendous job of assembling a strong program," Lin says, "and I'm excited

by the opportunity to lead the program at this particular point in time. The Department of Energy's Office of Basic Energy Sciences is in the process of refocusing its efforts in four chemistry-related research areas – bioenergy, hydrogen, solar and nuclear – and I feel we have all the key components to match up nicely with this new emphasis."

"I would like to build a more integrated research effort," he says, "and take a synergistic approach that takes advantage of our state-of-the-art analytical capabilities and our excellent expertise on the theoretical side. We also need to build partnerships elsewhere on campus so we can tap the expertise ISU has to offer, particularly in biorenewables, engineering and biology."

Lin's appointment was effective Aug. 15. ■

Remembering Michael Sevde



Michael Sevde, a 30-year employee of Ames Laboratory, passed away on Wednesday, Aug. 1, at Iowa Methodist Hospital in Des Moines. He was 61.

Longtime Ames Lab employees will, no doubt, remember Mike Sevde, a plant safety patrolman who worked at Ames Laboratory from 1975 to 2005. If you happened to be getting out of work a little late, you would likely have seen Mike patrolling the Lab's buildings, doing the regular evening safety check around 5:30 p.m. He would give you a nod and a brief smile, but he was a quiet person, not someone to chat, and was soon off on the business at hand.

Mike left the Lab in 2005 to help care for his ailing father, Orine "Duke" Sevde, a former Ames Laboratory senior research technician who retired from the Lab in 1986 after 30 years. Together, the father and son gave Ames Laboratory 60 years of service.

After graduating from Ames High School, Mike served in the United States Air Force during the Vietnam War.

Mike is survived by his father, Duke Sevde, of Ames; one brother, Clem (Mickie) Sevde, of Norwalk; and two nieces, Andrea Bartman and Emily Horrell. He was preceded in death by his mother, Lillie (Rowe) Sevde.

Memorials may be made to the Alzheimer's Association (Mid-Iowa Chapter), 700 E. University Avenue, Des Moines, IA, 50316. ■

Letter from the Director

Renewable energy, homeland security, infrastructure problems — these are just a few of the major challenges for research and technology centers in universities across the country. With its two decades of experience in solving complex interdisciplinary problems, the Institute for Physical Research and Technology is well positioned to play a key role in addressing these fundamental problems.

I am honored to be the new director of IPRT. I believe that its network of diverse cutting-edge research centers, the application of this research to economic development through IPRT Company Assistance, and the educational outreach efforts of Science Bound combine to make this enterprise unique. Each year, hundreds of Iowa companies, both large and small,

benefit from the expertise in IPRT. Despite this record of success, I believe we need to continue our efforts to make new connections. I intend to disseminate the “IPRT message” to as many groups as I can in the coming years.



George Kraus

As we celebrate the 20th anniversary of IPRT, you can look forward to a series of events, including some IPRT-sponsored lectures by leading researchers.

— George Kraus, IPRT Director

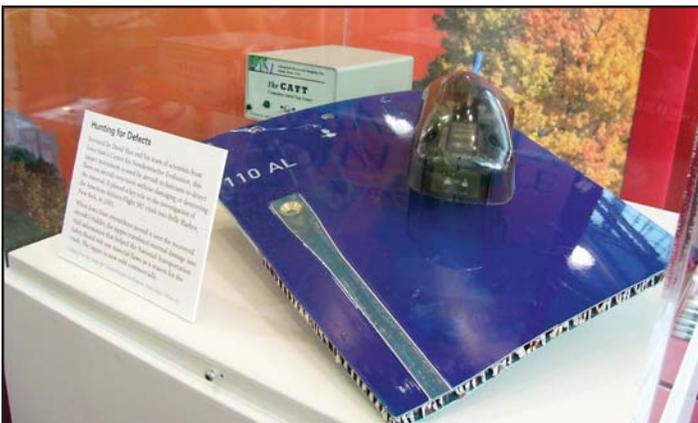
CNDE Tapper Goes to the Fair

The “tapper,” a nondestructive evaluation system invented by researchers at IPRT’s Center for Nondestructive Evaluation, was featured as part of Iowa State University’s 150th anniversary exhibit at this year’s Iowa State Fair.

The display explained how the tapper played a role in the investigation of the crash of American Airlines Flight 587 into the Belle Harbor, New York, in

November 2001. With the tapper, researchers with ISU’s Center for Aviation Systems Reliability mapped out damages on the aircraft’s entire rudder (approximately 28 feet tall), which was recovered from the crash site. The resulting data provided vital information to investigators at the National Transportation Safety Board.

Designed by David Hsu and a team of researchers at CNDE, the tapper replaces the traditional method of tapping a coin on honeycomb and composite aircraft parts to inspect for damage. The tapper is inexpensive, requires little training to operate and provides a reliable method of inspection that isn’t hindered by aircraft hangar noise. Attached to a computer, the tapper’s accelerometer translates the stiffness of a part’s surface into digital information displayed on a monitor. A commercial version of the tapper is offered by a CNDE spin-off company called Applied Structural Imaging, Inc., located in Ames.



The tapper, a nondestructive evaluation system created by CNDE researchers, was on display at the Iowa State Fair in Des Moines.

The IPRT LINK is published four times per year by the Institute for Physical Research and Technology at Iowa State University. Editor: Robert Mills. Please direct questions and comments to: Robert Mills, IPRT, 111 TASF, Iowa State University, Ames, IA 50011; rmills@iastate.edu.

CNDE Conference a Hit

IPRT's Center for Nondestructive Evaluation held its annual "Review of Progress in Quantitative Nondestructive Evaluation" in July at the Colorado School of Mines in Golden, Colo. Considered by many the premier research meeting in the field, the conference attracted over 325 attendees. IPRT scientific adviser Don Thompson held a special panel discussion session on the Perspective on NDE Education, focusing on young engineers.

The conference also included a pre-conference short course on the measurement of residual stress. The World Federation of NDE Centers, of which Iowa State serves as the permanent secretary, held a post-conference meeting.



Review of Progress in Quantitative
Nondestructive Evaluation

The conference also held its annual student poster competition. CNDE reports that over 40 percent of attendees were from outside the United States, representing 22 countries. Some 78 students were also at the conference. Attendance was up slightly from the previous year's event held in Portland, Ore. For more information, see www.cnde.iastate.edu/QNDE/QNDE.html.

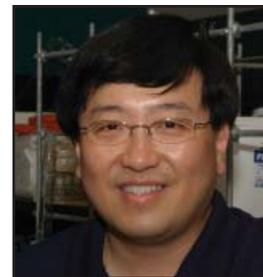
The event was held in cooperation with the Air Force Research Laboratory, the American Society for Nondestructive Testing, the U.S. Department of Energy, the Federal Aviation Administration, the National Aeronautics and Space Administration-LaRC, and the National Science Foundation (Industry/University Cooperative Research Centers).

IPRT's Joiner Certified

Stacy Joiner, IPRT Program Coordinator for company assistance, recently passed the Certified Research Administrator exam administered by the Research Administrators Certification Council. The designation of Certified Research Administrator, or CRA, signifies an individual has demonstrated a level of knowledge necessary to be a professional research or sponsorship programs administrator.

Lin Named CCAT Director

Victor S.-Y. Lin has been appointed director of IPRT's Center for Catalysis. Lin, who also is a professor of chemistry at Iowa State, replaces George Kraus, who was recently named IPRT director. "We could not have found a better director for the center than Victor Lin," Kraus says. "Victor is one of the world's experts in the basic science of catalysis as well as the application of catalysts in agriculture, industry and even medicine."



Victor Lin

Lin has done research at the center since its inception in 2001. He was recently named director of the Chemical and Biological Sciences Program at the U.S. Department of Energy's Ames Laboratory. "I hope to build on the excellent foundation laid down by George Kraus," says Lin, adding that the Center for Catalysis will continue to explore and develop innovative catalysts, which are substances that speed up chemical reactions. In addition, Lin recently founded a company called Catilin, Inc. to commercialize catalysts aimed at making biodiesel production cheaper, faster and less toxic.

IPRT News in Your Email Inbox

This is the last issue of *The Link*. All IPRT employees will now receive IPRT News via email, starting with a copy of this issue. "I hope you like the IPRT newsletter in electronic form. It offers expanded options for describing the exciting projects underway in the Institute," says IPRT director George Kraus.

A copy of the newsletter will be posted on the IPRT Web site for reference and archival purposes. *IPRT News* will also be made available to non-IPRT employees at Iowa State University and the Ames Laboratory. Let us know what you think: Robert Mills, rmills@iastate.edu, 294-1113.

Correction

In the May 2007 issue of *The Link*, the caption for the photo of VRAC's C6 should have mentioned that the application shown is *Meta!Blast*, an interactive virtual reality application designed to help students understand cell biology and its diverse biochemical processes. Researchers on the ISU-LAS and National Science Foundation-funded project include Eve Wuertle, Julie Dickerson, Diane Bassham and Steven Hermsstadt, all Iowa State University professors.

Using Their Melons

Metals Development holds annual seed-spitting contest

The folks in Metals Development spit for the gold during their annual watermelon-seed spitting contest on July 26. The proclaimed "Olympic" competition did not disappoint with some seeds soaring over 30 feet through the air. Asked about the secret to spitting success, Brian Housholder, research assistant at the MPC, said, "it's all in the pucker of the lips." ■



(Left to right) Brian Walleser, Brian Housholder, Iver Anderson and Lanny Lincoln spit for the win.

60th Anniversary Shirts Available

Two shirts left over from the 60th anniversary shirt order are available for purchase:

Extra-large gray cotton pique polo (\$20)

Large dark denim, long-sleeved button-down (\$25)

If interested, contact Cynthia Feller at (515) 294-2770 or feller@ameslab.gov.



Brian Housholder points out a seed he nearly sent onto Pammel Drive.

INSIDER

Volume 18 / Number 7 / July-August 2007

Ames Lab Insider is published 11 times a year for the employees of the Ames Laboratory by the Office of Public Affairs and Information. Ames Laboratory is operated by Iowa State University (ISU) for the U.S. Department of Energy (DOE) under Contract DE-AC02-07CH11358.

Address comments to:

Editor, ***INSIDER***

111 TASF

Ames, IA 50011-3020

515/294-9557

FAX 515/294-3226

Address correction requested

P-208-9

Editor Breehan Gerleman Lucchesi

Layout Laura Peterson



Printed on
Recycled Paper