Researchers: Early humans had ‘jaws of steel’

By Iodi Guyot

Moms tell their children not to use their teeth as tools to open something hard – and they’re right. Human skulls have small faces and teeth, as such teeth are well-equipped to be worn down forcefully on hard objects. But that was not the case for our earliest ancestors, scientists say. New research published in this month’s issue of Proceedings of the National Academy of Sciences reveals the near-clacking abilities in our 2.5-million-year-old relatives that enabled them to alter their diet to adapt to changes in food sources in their environment.

Mark Spencer, an ASU assistant professor, and doctoral student Caitlin Schrein in ASU’s School of Human Evolution and Social Change are part of the international team of researchers who devised the study featured in an article titled “The feeding biomechanics and dietary ecology of Australopithecus afarensis.” By using state-of-the-art computer modeling and simulation technology – the same kind engineers use to simulate how a car crashes into a front-end collision – evolutionary scientists built a virtual model of the A. afarensis skull. From it, they were able to see how the jaw operated – and what forces it could produce.

“We started with a CT scan of a skull that is one of the most complete specimens of A. afarensis that we have,” says Spencer, a researcher in ASU’s Institute of Human Origins and a lead investigator on the project, which was funded by the National Science Foundation and European Union.

This specimen is a later ancestor of Lucy – who remains ‘the most famous and lovingly known as “Lucy.”’ The skull, discovered in 1947, has struts on the side of the nose, but no teeth.

“We meshed those data with another experimental speci men with teeth to make the virtual model of the bone and tooth structure,” Spencer says. “Then we looked at disproportionately, who share common features with Australopithecus, and took measurements of how their muscles work and added that to the model. We were able to validate this model by comparing it to a similar model built for a species of monkey called macaques.”

(See EARLY on page 6)

Biodiversity Institute
DNA ‘nanotubes’ spark interest

By Richard Harth

ASU researchers Hao Yan and Yan Liu imagine and assemble intricate structures on a scale almost unimaginably small. Their medium is the double-helical DNA molecule, a versatile building material of nanotubes, rings and spirals, each a few hundred-thousandths of a diameter of a human hair.

These DNA nanotubes and other synthetic nanostructures could soon find their way into a new generation of ultra-tiny electronic and biomedical innovations.

Yan and Liu are working in the rapidly proliferating field of structural DNA nanotechnology. By copying a page from (See DNA on page 7)

ASU to study power of affectionate physical contact

By Steve Dees Georges

Forget the chocolates in a heart-shaped box, the expensive dinner at the five-star restaurant and the once-annual bouquet of roses. Two ASU researchers – Mary Burleson, an associate professor of psychology in the Division of Social and Behavioral Sciences, and Mary Davis, a professor in the Department of Psychology – suggest that there may be a better, cheaper and even healthier Valentine’s Day gift: affectionate touch.

And they are about to gather some scientific evidence to help us better understand how such physical contact produces health benefits.

Burleson and Davis, with support from the National Institutes of Health (NIH), are exploring the cardiovascular effects of affectionate touch between spouses.

“I’ve always been interested in how touch and affection interact to affect people,” says Burleson, who received her doctorate in psychology from ASU in 1994 and has taught at the university since 1997. “Touch is a powerful way we regulate our feelings. How can you not be interested? It’s who we are. The more we know about touch, the more we can help people overcome their challenges, their stress, and even mental disorders.”

She also notes that the results of her work have the potential to be useful in developing behavioral interventions for stress management – and to enhance adult health and well-being.

(See PARIR on page 7)

ASU senior’s lab work earns Millennium Scholar award

By Sarah Auffret

When Stefani Baca began her studies at ASU in 2006, all it took was one freshman psychology class to set her heart on a career. She knew she wanted to help families and children, so the following spring, she convinced her psychology professor, Keith Crnic, that she was serious about assisting him in his research lab.

Almost two years later, Baca has proven herself to be such an outstanding undergraduate researcher that she has been selected as a Millennium Scholar by the Society for Research in Child Development. The competitive national award will provide full funding for her to attend the organization’s biennial meeting in Denver for several days next month, paying her meals and travel before, during and after the conference.

The Millennium Scholars Program was designed to encourage undergraduate researchers from under-represented groups to pursue graduate work in child development and related disciplines. Crnic says she may be the first graduate work in child development and related disciplines. Crnic says she may be the first graduate student to receive the award.

“Stefani has been one of the best undergradu ate research assistants we’ve had in the lab,” Crnic says. “She is a natural in the way she understands the nuances of parent-child emotion interactions. She is a wonderful student.”

“Stefani worked in my lab for over a year, and the more we mentored her, the more she was thinking about becoming a researcher,” Crnic says.

(See ASU SENIOR on page 7)
Pancharaman takes lead role in boosting ASU research opportunities

By Janie Magruder

A tuition scholarship of $16,040 was awarded to third-year law student Julie Pasqualino at ASU's Sandra Day O'Connor College of Law's annual alumni luncheon on Feb. 3. The Journal of Law, Science & Technology, a Public Interest Law Journal, awarded the scholarship as part of its 40th anniversary.

The report, prepared by ASU's North American Center for Transborder Studies (NACTS), represents more than a year of consultations by its consortium of leading experts and universities in the three countries.

The report, prepared by ASU's North American Center for Transborder Studies (NACTS), represents more than a year of consultations by its consortium of leading experts and universities in the three countries.

For more information, visit asu.edu/engineering

Report: Officials should grab North American opportunities

By Rick Van Schoik, director of ASU's North American Center for Transborder Studies

As President Barack Obama prepares for his first foreign presidential trip to Canada, Feb. 19, leading experts in the United States, Canada and Mexico are urging his administration to strengthen U.S. partnerships with its neighbor on challenges ranging from border security to global competitiveness and environmental protection.

By Rick Van Schoik, director of NACTS, says that recognition of the "next door" is "required" because a number of significant challenges facing the United States also have created unprecedented North American opportunities for enhancing our nation's competitiveness, security and sustainability.

A $100 billion annual output loss, or the equivalent of 62,000 jobs, between just two border sister cities in 2007 because of border congestion, trade and paperwork.

The prospect of "achieving energy security...and right now," he says.

Mexico's difficult commitment to economic, legal and political reforms, which "offer a vital window of opportunity that must be supported, as potential risks and benefits extend far beyond its borders," he says.

"These challenges also are opportunities," Van Schoik says. He also outlined recommendations that are "highly dubious" in the near or medium-term, including:

- Strengthening the Mérida Initiative in a way that maximizes bipartisan U.S. support and multipartisan Mexican consensus and buy-in.
- Energizing the North American Trilateral Leaders Summit with its potential involvement by the three federal legislators and other key stakeholders.
- Designating a North American and borderer authority to coordinate sustainable security, preferably within the National Security Council, with a focus upon all critical border functions.
- Expanding joint risk assessment and preparedness for enhanced joint defense and better management of natural and human-generated catastrophes.
- Developing an effective North American transportation plan that addresses congestion, bottlenecks and infrastructure in all three countries.
- Raising a North American research fund for infrastructure investments in North America, jump-starting the collective economic engine for global competitiveness.
- Implementing a North American green-house gas exchange strategy to promote emissions reduction and investment in clean energy.
- Establishing joint, practical assessment of progress on key North American initiatives.

Law school's alumni group honors trio

By Janie Magruder

Three students received tuition or book scholarships from the Sandra Day O'Connor College of Law's alumni association at its annual alumni luncheon on Feb. 3.

A $100 billion annual output loss, or the equivalent of 62,000 jobs, between just two border sister cities in 2007 because of border congestion, trade and paperwork.

A $100 billion annual output loss, or the equivalent of 62,000 jobs, between just two border sister cities in 2007 because of border congestion, trade and paperwork.

For more information, visit asu.edu/engineering

The report, prepared by ASU's North American Center for Transborder Studies (NACTS), represents more than a year of consultations by its consortium of leading experts and universities in the three countries.

The report, prepared by ASU's North American Center for Transborder Studies (NACTS), represents more than a year of consultations by its consortium of leading experts and universities in the three countries.

For more information, visit asu.edu/engineering

Report: Officials should grab North American opportunities

By Rick Van Schoik, director of ASU's North American Center for Transborder Studies

As President Barack Obama prepares for his first foreign presidential trip to Canada, Feb. 19, leading experts in the United States, Canada and Mexico are urging his administration to strengthen U.S. partnerships with its neighbor on challenges ranging from border security to global competitiveness and environmental protection.

By Rick Van Schoik, director of NACTS, says that recognition of the "next door" is "required" because a number of significant challenges facing the United States also have created unprecedented North American opportunities for enhancing our nation's competitiveness, security and sustainability.

A $100 billion annual output loss, or the equivalent of 62,000 jobs, between just two border sister cities in 2007 because of border congestion, trade and paperwork.

The prospect of "achieving energy security...and right now," he says.

Mexico's difficult commitment to economic, legal and political reforms, which "offer a vital window of opportunity that must be supported, as potential risks and benefits extend far beyond its borders," he says.

"These challenges also are opportunities," Van Schoik says. He also outlined recommendations that are "highly dubious" in the near or medium-term, including:

- Strengthening the Mérida Initiative in a way that maximizes bipartisan U.S. support and multipartisan Mexican consensus and buy-in.
- Energizing the North American Trilateral Leaders Summit with its potential involvement by the three federal legislators and other key stakeholders.
- Designating a North American and borderer authority to coordinate sustainable security, preferably within the National Security Council, with a focus upon all critical border functions.
- Expanding joint risk assessment and preparedness for enhanced joint defense and better management of natural and human-generated catastrophes.
- Developing an effective North American transportation plan that addresses congestion, bottlenecks and infrastructure in all three countries.
- Raising a North American research fund for infrastructure investments in North America, jump-starting the collective economic engine for global competitiveness.
- Implementing a North American greenhouse gas exchange strategy to promote emissions reduction and investment in clean energy.
- Establishing joint, practical assessment of progress on key North American initiatives.

Law school's alumni group honors trio

By Janie Magruder

Three students received tuition or book scholarships from the Sandra Day O'Connor College of Law's alumni association at its annual alumni luncheon on Feb. 3.

A $100 billion annual output loss, or the equivalent of 62,000 jobs, between just two border sister cities in 2007 because of border congestion, trade and paperwork.

A $100 billion annual output loss, or the equivalent of 62,000 jobs, between just two border sister cities in 2007 because of border congestion, trade and paperwork.

For more information, visit asu.edu/engineering

The report, prepared by ASU's North American Center for Transborder Studies (NACTS), represents more than a year of consultations by its consortium of leading experts and universities in the three countries.

The report, prepared by ASU's North American Center for Transborder Studies (NACTS), represents more than a year of consultations by its consortium of leading experts and universities in the three countries.

For more information, visit asu.edu/engineering

Report: Officials should grab North American opportunities

By Rick Van Schoik, director of ASU's North American Center for Transborder Studies

As President Barack Obama prepares for his first foreign presidential trip to Canada, Feb. 19, leading experts in the United States, Canada and Mexico are urging his administration to strengthen U.S. partnerships with its neighbor on challenges ranging from border security to global competitiveness and environmental protection.

By Rick Van Schoik, director of NACTS, says that recognition of the "next door" is "required" because a number of significant challenges facing the United States also have created unprecedented North American opportunities for enhancing our nation's competitiveness, security and sustainability.

A $100 billion annual output loss, or the equivalent of 62,000 jobs, between just two border sister cities in 2007 because of border congestion, trade and paperwork.

The prospect of "achieving energy security...and right now," he says.

Mexico's difficult commitment to economic, legal and political reforms, which "offer a vital window of opportunity that must be supported, as potential risks and benefits extend far beyond its borders," he says.

"These challenges also are opportunities," Van Schoik says. He also outlined recommendations that are "highly dubious" in the near or medium-term, including:

- Strengthening the Mérida Initiative in a way that maximizes bipartisan U.S. support and multipartisan Mexican consensus and buy-in.
- Energizing the North American Trilateral Leaders Summit with its potential involvement by the three federal legislators and other key stakeholders.
- Designating a North American and borderer authority to coordinate sustainable security, preferably within the National Security Council, with a focus upon all critical border functions.
- Expanding joint risk assessment and preparedness for enhanced joint defense and better management of natural and human-generated catastrophes.
- Developing an effective North American transportation plan that addresses congestion, bottlenecks and infrastructure in all three countries.
- Raising a North American research fund for infrastructure investments in North America, jump-starting the collective economic engine for global competitiveness.
- Implementing a North American greenhouse gas exchange strategy to promote emissions reduction and investment in clean energy.
- Establishing joint, practical assessment of progress on key North American initiatives.
ASU Police to conduct regional safety conference
By Marshall Terrick
ASU Police will conduct a regional safety conference to ensure that community members are aware of all the services available to them.

More than 200 campus law enforcement administrators, medical health professionals, residence life professionals, life, legal counsel and human resource employees will attend the ASU Police 2009 "ASU Public Safety Week Conference." In addition to enhancing public safety, the conference will also highlight the local and state level organizations working to ensure the safety of the region.

"This is a conference bringing together all of the top leaders in their respective communities. Participants will network with experts, colleagues and professionals who can serve as valuable resources to combat on-campus issues or to complete the mission of community service," says ASU Police Captain Richard Wilson.

ASU Police to conduct regional safety conference

ASU Police will conduct a regional safety conference to ensure that community members are aware of all the services available to them.

More than 200 campus law enforcement administrators, medical health professionals, residence life professionals, life, legal counsel and human resource employees will attend the ASU Police 2009 "ASU Public Safety Week Conference." In addition to enhancing public safety, the conference will also highlight the local and state level organizations working to ensure the safety of the region.

"This is a conference bringing together all of the top leaders in their respective communities. Participants will network with experts, colleagues and professionals who can serve as valuable resources to combat on-campus issues or to complete the mission of community service," says ASU Police Captain Richard Wilson.

ASU Police to conduct regional safety conference

ASU Police will conduct a regional safety conference to ensure that community members are aware of all the services available to them.

More than 200 campus law enforcement administrators, medical health professionals, residence life professionals, life, legal counsel and human resource employees will attend the ASU Police 2009 "ASU Public Safety Week Conference." In addition to enhancing public safety, the conference will also highlight the local and state level organizations working to ensure the safety of the region.

"This is a conference bringing together all of the top leaders in their respective communities. Participants will network with experts, colleagues and professionals who can serve as valuable resources to combat on-campus issues or to complete the mission of community service," says ASU Police Captain Richard Wilson.

ASU Police to conduct regional safety conference

ASU Police will conduct a regional safety conference to ensure that community members are aware of all the services available to them.

More than 200 campus law enforcement administrators, medical health professionals, residence life professionals, life, legal counsel and human resource employees will attend the ASU Police 2009 "ASU Public Safety Week Conference." In addition to enhancing public safety, the conference will also highlight the local and state level organizations working to ensure the safety of the region.

"This is a conference bringing together all of the top leaders in their respective communities. Participants will network with experts, colleagues and professionals who can serve as valuable resources to combat on-campus issues or to complete the mission of community service," says ASU Police Captain Richard Wilson.

ASU Police to conduct regional safety conference

ASU Police will conduct a regional safety conference to ensure that community members are aware of all the services available to them.

More than 200 campus law enforcement administrators, medical health professionals, residence life professionals, life, legal counsel and human resource employees will attend the ASU Police 2009 "ASU Public Safety Week Conference." In addition to enhancing public safety, the conference will also highlight the local and state level organizations working to ensure the safety of the region.

"This is a conference bringing together all of the top leaders in their respective communities. Participants will network with experts, colleagues and professionals who can serve as valuable resources to combat on-campus issues or to complete the mission of community service," says ASU Police Captain Richard Wilson.

ASU Police to conduct regional safety conference

ASU Police will conduct a regional safety conference to ensure that community members are aware of all the services available to them.

More than 200 campus law enforcement administrators, medical health professionals, residence life professionals, life, legal counsel and human resource employees will attend the ASU Police 2009 "ASU Public Safety Week Conference." In addition to enhancing public safety, the conference will also highlight the local and state level organizations working to ensure the safety of the region.

"This is a conference bringing together all of the top leaders in their respective communities. Participants will network with experts, colleagues and professionals who can serve as valuable resources to combat on-campus issues or to complete the mission of community service," says ASU Police Captain Richard Wilson.

ASU Police to conduct regional safety conference

ASU Police will conduct a regional safety conference to ensure that community members are aware of all the services available to them.

More than 200 campus law enforcement administrators, medical health professionals, residence life professionals, life, legal counsel and human resource employees will attend the ASU Police 2009 "ASU Public Safety Week Conference." In addition to enhancing public safety, the conference will also highlight the local and state level organizations working to ensure the safety of the region.

"This is a conference bringing together all of the top leaders in their respective communities. Participants will network with experts, colleagues and professionals who can serve as valuable resources to combat on-campus issues or to complete the mission of community service," says ASU Police Captain Richard Wilson.

ASU Police to conduct regional safety conference

ASU Police will conduct a regional safety conference to ensure that community members are aware of all the services available to them.

More than 200 campus law enforcement administrators, medical health professionals, residence life professionals, life, legal counsel and human resource employees will attend the ASU Police 2009 "ASU Public Safety Week Conference." In addition to enhancing public safety, the conference will also highlight the local and state level organizations working to ensure the safety of the region.

"This is a conference bringing together all of the top leaders in their respective communities. Participants will network with experts, colleagues and professionals who can serve as valuable resources to combat on-campus issues or to complete the mission of community service," says ASU Police Captain Richard Wilson.

ASU Police to conduct regional safety conference

ASU Police will conduct a regional safety conference to ensure that community members are aware of all the services available to them.

More than 200 campus law enforcement administrators, medical health professionals, residence life professionals, life, legal counsel and human resource employees will attend the ASU Police 2009 "ASU Public Safety Week Conference." In addition to enhancing public safety, the conference will also highlight the local and state level organizations working to ensure the safety of the region.

"This is a conference bringing together all of the top leaders in their respective communities. Participants will network with experts, colleagues and professionals who can serve as valuable resources to combat on-campus issues or to complete the mission of community service," says ASU Police Captain Richard Wilson.

ASU Police to conduct regional safety conference

ASU Police will conduct a regional safety conference to ensure that community members are aware of all the services available to them.

More than 200 campus law enforcement administrators, medical health professionals, residence life professionals, life, legal counsel and human resource employees will attend the ASU Police 2009 "ASU Public Safety Week Conference." In addition to enhancing public safety, the conference will also highlight the local and state level organizations working to ensure the safety of the region.

"This is a conference bringing together all of the top leaders in their respective communities. Participants will network with experts, colleagues and professionals who can serve as valuable resources to combat on-campus issues or to complete the mission of community service," says ASU Police Captain Richard Wilson.

ASU Police to conduct regional safety conference

ASU Police will conduct a regional safety conference to ensure that community members are aware of all the services available to them.

More than 200 campus law enforcement administrators, medical health professionals, residence life professionals, life, legal counsel and human resource employees will attend the ASU Police 2009 "ASU Public Safety Week Conference." In addition to enhancing public safety, the conference will also highlight the local and state level organizations working to ensure the safety of the region.

"This is a conference bringing together all of the top leaders in their respective communities. Participants will network with experts, colleagues and professionals who can serve as valuable resources to combat on-campus issues or to complete the mission of community service," says ASU Police Captain Richard Wilson.

ASU Police to conduct regional safety conference

ASU Police will conduct a regional safety conference to ensure that community members are aware of all the services available to them.

More than 200 campus law enforcement administrators, medical health professionals, residence life professionals, life, legal counsel and human resource employees will attend the ASU Police 2009 "ASU Public Safety Week Conference." In addition to enhancing public safety, the conference will also highlight the local and state level organizations working to ensure the safety of the region.

"This is a conference bringing together all of the top leaders in their respective communities. Participants will network with experts, colleagues and professionals who can serve as valuable resources to combat on-campus issues or to complete the mission of community service," says ASU Police Captain Richard Wilson.

ASU Police to conduct regional safety conference

ASU Police will conduct a regional safety conference to ensure that community members are aware of all the services available to them.

More than 200 campus law enforcement administrators, medical health professionals, residence life professionals, life, legal counsel and human resource employees will attend the ASU Police 2009 "ASU Public Safety Week Conference." In addition to enhancing public safety, the conference will also highlight the local and state level organizations working to ensure the safety of the region.

"This is a conference bringing together all of the top leaders in their respective communities. Participants will network with experts, colleagues and professionals who can serve as valuable resources to combat on-campus issues or to complete the mission of community service," says ASU Police Captain Richard Wilson.

ASU Police to conduct regional safety conference

ASU Police will conduct a regional safety conference to ensure that community members are aware of all the services available to them.

More than 200 campus law enforcement administrators, medical health professionals, residence life professionals, life, legal counsel and human resource employees will attend the ASU Police 2009 "ASU Public Safety Week Conference." In addition to enhancing public safety, the conference will also highlight the local and state level organizations working to ensure the safety of the region.

"This is a conference bringing together all of the top leaders in their respective communities. Participants will network with experts, colleagues and professionals who can serve as valuable resources to combat on-campus issues or to complete the mission of community service," says ASU Police Captain Richard Wilson.

ASU Police to conduct regional safety conference

ASU Police will conduct a regional safety conference to ensure that community members are aware of all the services available to them.

More than 200 campus law enforcement administrators, medical health professionals, residence life professionals, life, legal counsel and human resource employees will attend the ASU Police 2009 "ASU Public Safety Week Conference." In addition to enhancing public safety, the conference will also highlight the local and state level organizations working to ensure the safety of the region.

"This is a conference bringing together all of the top leaders in their respective communities. Participants will network with experts, colleagues and professionals who can serve as valuable resources to combat on-campus issues or to complete the mission of community service," says ASU Police Captain Richard Wilson.
Lectures

Friday, Feb. 13


"Some Recent Developments in Unconventional HMI and MRL," 3:30 p.m., batman Physical Sciences Center (PSB) room 214. Sponsor: Special Topic Seminar Series, Department of Chemistry, University of California-Berkeley, the annual Ely- Hon Technical Presentation. Sponsored by Department of Chemistry and Biochemistry. Information: (480) 965-2509.


Monday, Feb. 16

There is Nothing More Permanent Than a Posthole: Recent Excavations at Hierakonpolis, Upper Egypt, by the University of British Columbia," 7 p.m., Coor Hall room 170. Thomas Thoma. Assistant professor of Egyptology at the University of British Columbia, and a specialist on stone tools in Egypt and Jordan. Presented by the Anthropological Institute of America, Central Arizona Society. Information: www.centralaia.org.

Tuesday, Feb. 17

"Somatic Evolution as a Unifying Theory of Cancer," 11 a.m., Biodesign Institute Auditorium. Speaker: John Rapaport, professor of Law, Professor of Life Sciences, and Faculty Fellow, Center for the Study of Law, Science and Technology at the College of Law, will describe and discuss "impossible" DNA matches and show that ac- counts in the popular press are misleading. Co-sponsored by the Law and Science Student Association and ASU Center for the Study of Law, Science and Technology. Information: (480) 965-2465 or Sandy. Askland@asu.edu.


"Darwin’s Strange Inversion of Reasoning," 3:30-4 p.m., Paul V. Galkin Playhouse. Author: philosopher and di- rector of the Center for Cognitive Studies at Tufts University. Daniel Dennett presents the Beyond Center for Fundamen- tal Concepts in Science Annual Lecture. Information: (480) 965-2940 or megan.fisk@asu.edu.

Thursday, Feb. 19


Friday, Feb. 20


"100 Million Years of Evolution Meet the Personal Genome," 2 p.m., life Sciences Center (LS) room 104. Speaker: Nele Laffon, assistant professor of English and Com- parative Literature, and former director of the Critical Theory Institute, University of California-Irvine. Information: (480) 965-9696 or Claudia utz@asu.edu.

Friday, Feb. 26

"From Primary Metabolism to Secondary Metabolism and Beyond: A Role for Intragenic Homologs," 3:30 p.m., PS 116. Speaker: Vahe Bandarian, Department of Biochemistry and Molecular Biophysics, University of Arizona. Sponsored by Department of Chemistry and Biochemistry. Information: (480) 965-2093.


Conferences

Wednesday, Feb. 18

Desert Nights, Rising Stars, a writers conference sponsored by the Arizona Literary Alliance, is held in historic quarter of Tempe campus. Continues through Feb. 21. Information: (480) 965-6018 or www.asu.edu/alumni.

Friday, Feb. 27

"Parameters and Typology: Hierarchies, Features, and UC!" 9:30 a.m.-5 p.m., Durham Language and Literature plaza, phoenix (17th Avenue, between Jefferson and Wash- ington). This workshop covers the creation of essay questions, and discusses how reports generated by University Testing Services can be used to inform new essay questions. Sponsored by the Center for Learning and Teaching Excellence. Information and registration: http://ftle.asu.edu.

Saturday, Feb. 14

Oléo’s Storybook Adventures, 10:11 a.m., Deer Valley Rock Art Center, 3771 W Deer Valley Road, Phoenix. The theme is “Following Bird Tracks.” For children ages 3-6. Ad- mission. Information: (623) 582-8007.

Brown Bag Reading, noon-1:30 p.m., Wilson Hall (WULN) room 101. Sponsored by Emeritus College. Information: (480) 965-0002.

"Test Questions II," 12:15-3:00 p.m., Discovery hall room 212. This session covers the creation of essay questions, and discusses how reports generated by University Testing Services can be used to inform new essay questions. Sponsored by the Center for Learning and Teaching Excellence. Information and registration: http://ftle.asu.edu.

Wednesday, Feb. 20

"We Love ASU Collections," 9 a.m.-4 p.m., Tempe campus. Sponsored by the Museums, Galleries and Collections Committee. Information: www.asu.edu/museums.

ASU Day at the Capitol, 10 a.m.-2 p.m., Wesley Bolin Plaza, Phoenix (17th Avenue, between Jefferson and Wash- ington). This event features speakers, panel discussions, and a film about ASU. Sponsored by the Arizona Alumni Association’s Committee of Representatives and see displays of programs offered at ASU. Sponsored by the ASU Alumni Association. Registration: http://asu.alumni.asu.edu.

"Hybrid and Online Teaching II," 12:15-3:00 p.m., Coor Hall room 11-54. This session deals with writing good discus- sion questions, effective group work, and data collection for assessment of student learning. Sponsored by the Center for Learning and Teaching Excellence. Information and regis- tration: http://ftle.asu.edu.

Tuesday, Feb. 17

Research Proposal SharePoint Training, 10:30 a.m.-noon, Center for the Study of Religion and Conflict. Research and Sponsored Projects Administration. Information: (480) 965-1225 or research@asu.edu/trainingworkshops.

Friday, Feb. 20

"Large Lecture Series: Assessment," 12:15-3:30 p.m., Discovery hall room 212. There are alternatives to bubble tests for large classes. The workshop will suggest alternatives to ob- jective exams as measures of student learning. Sponsored by the Center for Learning and Teaching Excellence. Information and registration: http://ftle.asu.edu.
**Locating Funding**: 1:30-4:15 p.m., Academic Center (CC)-155C. The workshop will introduce faculty and staff to the basics of locating funding from government, foundation and commercial sponsors, and the use of the PRIS opportunity development Web site to identify funding opportunities. Sponsored by the Office of Research and Innovation in the Tempe campus. Information and registration: http://researchadmin.asu.edu/trainingworkshops.

An Evening With Fatmih Halam and Alonzo Jones, 7:30 p.m., Old Main Concert Hall. A program of discussion by the executive officer of Life Paradigms, Inc., and Jones is ASU associate teaching professor, multicultural student services. Part of Black History Month at west campus. Information: jenny.davis@asu.edu.

**Wednesday, Feb. 18**

**Classroom Assessment Techniques: Focused Listing and Misconception Preconception Check**,** 12:15-1:30 p.m., Discovery Hall room 212. The Focused Listing CAT is designed to help instructors assist students in focusing their attention on important concepts and ideas in a particular lesson. Sponsored by the Center for Learning and Teaching Excellence. Information and registration: http://lt.info.asu.edu.

Reading by poet Nancy Mairs, 7:30 p.m., Old Main Cannon Ballroom. Part of the “Desert Nights, Rising Stars” writer conference sponsored by the Virginia G. Piper Center for Creative Writing. Admission: $10 at the door. Information: (480) 965-6018.

**Thursday, Feb. 19**


Readings by novelist Percival Everett and poet Mary Rueffle, 7:30 p.m., Old Main Cannon Ballroom. Part of the “Desert Nights, Rising Stars” writer conference sponsored by the Virginia G. Piper Center for Creative Writing. Admission: $10 at the door. Information: (480) 965-6018.

Reading by fiction writer Meredith Doll and poet Natasha Tretchikoff, 7:30 p.m., Old Main Cannon Ballroom. Part of the “Desert Nights, Rising Stars” writer conference sponsored by the Virginia G. Piper Center for Creative Writing. Admission: $10 at the door. Information: (480) 965-6018.

**Friday, Feb. 20**

Reception for “MOVING TARGETS Breathing is Free: New Works by Jun Nguyen-Hatsushiba” and “Eden Red: The Ceramic Art of Kurt Weiser,” 7:30 p.m., Art Museum.

Readings by nonfiction writer Meredith Doll and poet Natasha Tretchikoff, 7:30 p.m., Old Main Cannon Ballroom. Part of the “Desert Nights, Rising Stars” writer conference sponsored by the Virginia G. Piper Center for Creative Writing. Admission: $10 at the door. Information: (480) 965-6018.

**Saturday, Feb. 21**

Reading by novelist Alice Sebold, 7:30 p.m., Old Main Cannon Ballroom. Part of the “Desert Nights, Rising Stars” writer conference sponsored by the Virginia G. Piper Center for Creative Writing. Admission: $10 at the door. Information: (480) 965-6018.

**Tuesday, Feb. 24**

“Extra Students: Extra Classes: Managing Your Time,” 12:15-1:30 p.m., Discovery Hall room 212. The workshop is designed to assist members of the teaching corps to learn about time management strategies and choices about how they use their time and avoid overload. Sponsored by the Center for Learning and Teaching Excellence. Information and registration: http://lt.info.asu.edu.

**Wednesday, Feb. 25**

**FSA Reconciliation**, 9-10 a.m., CRTFP room 3120B. Sponsored by Office for Research and Sponsored Projects Administration. Information: (480) 727-5769 or ORPA@asu.edu.

**Exhibits@Mon**, noon-1 p.m., Space Photography Lab, International Space University F1-550. Tour the lab, one of a network of 18 regional planetary image data centers established by NASA to archive planetary images for use in research by the scientific and educational communities. Sponsored by Museums, Galleries and Collections Committee. Information: www.asu.edu/museum.


**Wednesday, Feb. 25**

“Family Reunion,” 3-4 p.m., Discovery Hall room 212. The workshop will introduce faculty and staff to the basics of locating funding from government, foundation and commercial sponsors, and the use of the PRIS opportunity development Web site to identify funding opportunities. Sponsored by the Office of Research and Innovation in the Tempe campus. Information and registration: http://researchadmin.asu.edu/trainingworkshops.

Events and Performances

**Exhibitions**

ASU Art Museum, Nelson Fine Arts Center —Regular Events:

- 11 a.m.-5 p.m., Tuesday, 11 a.m.-6 p.m., Wednesday-Saturday, 1-5 p.m., Sunday. Summer hours: 10 a.m.-5 p.m., Saturday-Sunday. Information: (480) 965-2787.

Opens Feb. 14, “Eden Revisited: The Ceramic Art of Kurt Weiser” Reception: Feb. 20, 7-9 p.m. Also: “Friday Conversations in the Gallery” Feb. 20, 11 a.m., featuring Weiser. This mid-career retrospective and accompanying exhibition catalogue examines the stylistic development of Weiser’s ceramic work from the 1970s to the present. The exhibition comprises 50 ceramic objects and drawings. Weiser is a Regents’ Professor of Art in the Virginia G. Piper Center for Creative Writing. Information: Diane Wallace, (480) 965-8014.

Feb. 20, Artist reception 7-9 p.m. “Breathing is Free: 12,756.3; New Work by Jun Nguyen-Hatsushiba” examines the artist’s interest in the evolution of cultures in the face of globalization and interpretations in the idea of “memorial.” Co-organized with the Virginia G. Piper Center for Creative Writing, each venue will serve as a host for the ongoing piece, in which the artist is turning the equivalent distance of 12,756.3 kilometers in cities at the world different times. The accompanying museum installation will include video, photography, maps and other details. The ASU Art Museum is the U.S. premier of the project.

ASU Art Museum Ceramics Research Center —11 a.m.-5 p.m., Tuesday-Saturday.

Through Feb. 22, “Midstream: New Ceramics from the Heartland” uncovers the work of three artists who are def- oining a new generation of clay-workers, reflecting diverse backgrounds working with new issues of identity. Their work is bold in its commentary on global issues and moves to a broader examination of humanity through humor, fantasy or direct honesty.

ASU Art Museum —11 a.m.-5 p.m., Tuesday-Saturday. Information: (480) 965-6912.

Through Feb. 15, Mead-media works by mesa Art League members. Information: (480) 965-2380.

Feb. 16, “PrintmakingAvant! ’” This is a venue for students across artistic disciplines to explore the definition of a print. A centennial exhibition gives the ability for students to see other each work, understand common media ties and to open a conversation about work being created within the ASU School of Art.

Harry Wood Gallery —4 p.m.-5 p.m., Monday-Thursday, 4-5 p.m. Friday, 1-5 p.m. Information: (480) 965-2388.

Feb. 16, “Handle With Care.” by Marcos Rocha. Rocha’s master’s degree in fine arts thesis exhibition will ar- rive in several large cases. In the exhibit, 25,000 multicolored plastic bolas will provide an opportunity for adults to play, have fun and interact.

Step Gallery —noon-5 p.m., Monday-Thursday, 3-5 p.m., Friday, Tempe Center, 10th Street and Mill Avenue. Information: (480) 965-2385.

Feb. 16, “I like to make colorful blobs.” Artists: Sarah Gagliano and Christine Evola. Gagliano incorporates ceramics and beads into her work, often incorporating glass, plastic and metallic techniques. Evola examines fibrous materials such as burlap, felt and yarn in nontraditional uses.

Michael Bolton, Ph.D. Eng., Lit., 4 p.m., Feb. 16, 11-12, 16th St., 2028.

Wen-Jiong Chien, Ph.D., Electro Eng., 11 a.m., Feb. 16, 18, GWCS 203.


Scottsdale. Brad Ritter and Viktor Uzev preview their 8 p.m. concert Feb. 16 at the Miner Music Theatre. Admission: $10 at the door. Information: (480) 965-3464. Brad Ritter can offer campfire or seasoned personal item for Vista del Camino food bank.

Punir Double Bill “Suor Angelica” and “Gianni Schic- Chi”. 7:30 p.m., Evelyn Smith Music Theatre. “Suor Angelica” is the tragic tale of a young girl sent to a convent. Hardships with the nuns’ family and their lack of sorrowness lead Sister Angelica to poison herself. “Gianni Schicchi” is a comic opera in which a greedy family gets what they deserve after they conceal the poison herself. “Gianni Schicchi” is a comic opera in which a greedy family gets what they deserve after they conceal the...
Early humans had ‘jaws of steel,’ researchers say (Continued from page 1)

The finds: a rainbow-colored “virtual skull” that illuminates forces absorbed by the cranial structure in simulated bite scenarios – and how their unusual facial features were ideally suited to support the heavy loads of cracking hard nuts. “The teeth make $57 and $51 come to life,” Spencer says. “This reinforces the body of research indicating that facial structure and the unique neural network are adaptations due to a specialized diet. The enlargement of the premolars, the teeth that early humans had, are adaptations due to a specialized diet. Our research shows that modern humans would have solved with their jaws problems that early humans had with their teeth.”

Guyot, with the School of Human Evolution and Social Change, can be reached at (480) 727-8739 or guyot@gcu.edu.

EMPLOYMENT

ASU positions

A complete job announcement for classified, administrative and service professional positions at the University (http://www.asu.edu/hr/careers) is available in the Human Resources online application system. To view job openings, go to: http://www.asu.hr/careers/

The following positions are available as of Feb. 13 and are subject to change. All positions will be advertised in the Arizona Republic, Arizona Daily Sun and online. Dates listed are application deadlines, and application material is due by 11:59 p.m. on that date. For more information, contact ASU at (480) 965-7668.

Osher Lifelong Learning Institute sets courses

The ASU Osher Lifelong Learning Institute is continuing its Polytectic campus offerings to those 55 and older with lectures and short courses for those with Osher Lifelong Learning Institute,

In BRIEF

Retirees association program set for Feb. 21

The ASU Retirees Association will conduct its 16th annual Retirees Day Program on Monday, Feb. 16, in the Memorial Union, with Congressman Harry Mitchell as the keynote speaker.

Following the welcome and announcements at 9:30 a.m. by H. Val Peterson, president of ASURA, attendees will have the choice of six workshops in two time slots.

Speakers and topics for the first session, from 10 to 11 a.m., are:

• Feb. 15 – David B. J. Small, LaVerne College, on “The Future of the American University and Student Loan Debt.”

The second session, from 11:15 a.m. to 12:15, includes:

• Feb. 16 – H. Val Peterson, president of ASURA, on “The Original ASU: The First 50 Years.”

For more information, contact ASU at (480) 965-7668.

In Brief

ASU Morrison Institute offers scholarship awards

ASU’s Morrison Institute for Public Policy is accepting applications from high school seniors for the Young Stewart for Public Policy scholarship program.

Officials at the institute want to hear from high school seniors with creative ideas about and solutions to Arizona’s greatest challenges. This distinctive ASU scholarship offers a first-place award of $1,500 and a second-place award of $1,000.

The Young Stewart scholarship program invites Arizona high school seniors to think about public policy and to promote “stewardship” – public leadership committed to doing what is best for Arizona regardless of political affiliation, philosophy or personal policy positions.

Young Stewart awards are based on an essay about a public issue of critical importance. Applicants are invited to address a community or public policy issue they are passionate about and offer solutions on that issue to Arizona leaders. Essays must include specific recommendations or frameworks on how the issue should be addressed.

In addition to the second-place awards, winners are invited to publicize their work in the Arizona Republic and Tucson Citizen newspapers.

Applications and additional details are available at the Web site www.morrisoninstitute.org by clicking on the “Public Policy Scholarship” link, or by calling (602) 496-0900. Award recipients must attend ASU to receive the award. The deadline for application is March 10.

ASU Gammage solicits artist proposals

Arizona visual artists are invited to submit proposals for an exhibit during the 2009-2010 art season. Work will be considered in any medium that can be displayed by hanging from the ceiling. Artists must be prepared to hang their own works and remove them when the exhibit is over.

Proposals from interested artists should include a statement about their work, a résumé that includes contact information (address and telephone), and no more than 10 slides or digital images in JPEG format, representative of the work proposed for exhibition at ASU Gammage.

Slides or CDs will be returned upon completion of the jury process. Application forms can be found at the Web site www.asu.edu/gammage. For more information, contact ASU Gammage, c/o Brad Myers, Exhibit Coordinator, P.O. Box 871005, Tempe, AZ 85287-0105.

For more information, call Myers at (480) 965-6912.

21st annual World Festival set for Feb. 26

ASU will celebrate the heritage and traditions of global cultures at the 21st annual World Festival, which takes place from 10:30 a.m. to 2:30 p.m., Feb. 26, on Hayden Lawn above Hayden Library.

“The World Festival is an unparalleled educational experience that combines the best of the Tempe community, as it celebrates and showcases countries and cultures from around the world,” says Mason Murphy, international student advisor and World Festival coordinator.

International student organizations will set up booths to sell food, distribute information, and display crafts and artifacts from their various countries and cultures.

Professional and student group entertainers will perform on the main stage of Hayden Lawn from 11:30 a.m. to 2 p.m.

This free event is open to the public, and it is sponsored by ASU’s International Student Office. Paid parking is required.

For more information about the event, or to find out how to become involved, contact Mason Murphy at (480) 727-7663 or mason.murphy@asu.edu.

Correction

The CORA Spring Religious Fair at Danforth Chapel will take place from 10 a.m. to 2 p.m., Feb. 19. The event feature free pizza and soda.

Couple donates art collection to Herberger College

By Jeffrey Burns

A romance that bloomed at ASU 40 years ago has come full circle.

Alan and Linda Brecher met and married as ASU students in the late 1960s. While they lived most of their lives on the East Coast, the non-retired School of Art professors recently gave back to the university of which they have such fond memories.

The Brechers’ extensive collection of Haitian, surrealist and American art, valued at $15 million, will be shared as a planned gift to the ASU School of Art and the Arts at Herberger College.

The Brechers say this transformational investment in Herberger College was the culmination of a journey than anything else.

“The reality of retiring, not having children and accumulating a collection over 40 years led us to push us to find an appropriate home for our art,” Linda Brecher says. “Our foundations for ASU, where we began our journey together, will now help close the circle (of life) for us.”

During the time that the Brechers made a life with each other, the ASU Art Museum also has grown to be an accessible and significant resource for its artists.

“The impact the Brechers’ collection will have on museums patrons is far-reaching,” says Heather Lineberry, acting director of the ASU Art Museum. Their gift not only is generous, but it also reinforces the museum’s commitment to serve a diverse community of artists and audi- ences through innovative programming that is interdisciplinary, educational and relevant to life today.”

The Brechers met early in their studies at ASU. Alan played on the tennis team and graduated from business school, while Linda earned an education degree. They both say they enjoyed their English professors, Helen Nebecker. Linda Brecher credits ASU’s excellent preparation for her 38-year success as a teacher in Great Neck, NY, where her husband family business took them until 2005. Over the years, they fell in love with accumulating 150 paintings, wa- trcolors, photography, gravures and sculptures. In an economic climate where funding for the arts often is neglected, this gift is significant as a reminder that philanthropic support can take on many forms and can continue through any economic climate.

Alan Brecher, a former owner of a family-operated toy store, has been a loyal ASU donor since 1970, and has contributed to other funds, including the Old Main restoration and was a member of the President’s Club.

In the case that any of the donated collections end up being sold, the funds received will be used to establish the Linda and Alan Brecher Scholarship Fund. With, the ASU Foundation, can be reached at (480) 727-7300 or phbo@asu.edu.

Correction

The CORA Spring Religious Fair at Danforth Chapel will take place from 10 a.m. to 2 p.m., Feb. 19. The event feature free pizza and soda.

ASU Insight

February 13, 2009
DNA ‘nanotubes’ spark attention of Biodesign Institute research team

(Continued from page 1)

Yan and Liu’s work in *Science* responds to one of the fundamental challenges in nanotechnology and materials science: the construction of molecular-level forms in three dimensions.

To do so, the team uses gold nanoparticles, which can be placed on single-stranded DNA and compelling these flexible molecular tile arrays to bend away from the nanoparticles, curling into closed loops or forming spring-like spirals or nested rings tightly coiled in 180 nanometers in diameter.

The gold nanoparticles, which cohere DNA strands to arc back on themselves, produce a force known as “steric hindrance,” which magnifies depending on the size of particle used.

By using this steric hindrance, Yan and Liu have shown for the first time that DNA nanotubes can be specifically directed to curl into closed rings with high yield.

When 5-nanometer gold particles were used, a mild steric hindrance directed the DNA tiles to curl up and join complementary neighboring segments, often forming spirals of varying pitches. Depending on their size, these 10-nanometer gold particles, however, exerted greater steric hindrance, directed and forced the constrained curling that produced mostly closed tubules.

Yan says the particle not only participates in the self-assembly process, but also is a precursory to act as an active agent, inducing and guiding formation of the nanotube.

With the assistance of Anhui Cheng and Jonathan Brownell at the Scripps Research Institute, they have used an imaging technique known as electron cryotomography to provide the first glimpses of the elusive three-dimensional architectural nature of DNA nanotubes.

“Your quickly freeze the sample in vitreous ice,” he says. “This will preserve the native conformation of the structure.”

Subsequent imaging at various tilted angles allows the reconstruction of the three-dimensional nanotubular conformation, with the gold particles providing enough electron density for crisp visualization.

DNA nanotubes soon will be ready to join their carbon nanotube cousins, providing flexible, resilient and manipulatable structures at the molecular level. Extending control over three-dimensional architectures will lay the foundation for applications in photography, photovoltaics, touch screens and flexible displays, as well as for far-reaching biomedical advancements.

The ability to build three-dimensional structures through self-assembly is really exciting,” Yan says. “It’s exciting to think of the possibilities.”

Burleson says that he believes that tubular nanostuctures bearing nanoparticles can be applied to the design of electrical channels for cell-cell communications or used in the construction of various nanoelectronic devices.

Harth, with the Biodesign Institute, can be reached at richard.harth@asu.edu.

3 artists to exhibit 3 different forms of art at ASU Gammage

By Judith Smith

Visitors to ASU Gammage will have a variety of art expressions to view Feb. 18-April 12, when the work of Tom Stephenson, Edie Daldrup and Carlos Encinas will be spotlighted.

Stephenson, of Tempe, will exhibit acrylic on Plexiglas and canvas; Daldrup, from Tucson, will show oil on canvas; and Encinas, also of Tucson, will show archival digital photographs and pigment prints.

Stephenson has titled his part of the exhibit “Morphing.”

“The paintings I’m currently working on are a lot of images put together to make a painting,” he says.

Stephenson, a self-taught artist, was born in Phoenix and has been a lifelong Arizonan, except for two years in Peru.

Daldrup, whose paintings are titled “Liaison,” says her paintings explore “our interaction with others and the eXistence of nature of our observations.”

“My use of color allows for the idea of dichotomy within the human psyche,” she says.

Stephenson adds that his work “reflects my desire to confront not only the viewer, but myself as well.”

Encinas says his artworks consist of “my digital photographs and assorted found objects manipulated on an Apple Mac computer using Adobe Photoshop and Corel Painter.”

His images are printed in New Jersey, where the company uses a Durst Theta 76 HS to “image the files down to true silver halide photographic paper via LEDs and fiber optics, which are then processed in RA-4 chemistry.”

Exhibit hours at ASU Gammage are 1 to 4 p.m. Mondays, 1 to 7 p.m. Tuesdays, 1 to 9 p.m. Wednesdays, 1 to 8 p.m. Thursdays, 1 to 7 p.m. Fridays and 1 to 6 p.m. Saturdays.

For more information, contact Brad Myers at (480) 965-6912, or steph.smith@asu.edu.

ASU senior Stefani Baca

(Continued from page 1)

Baca’s curiosity and drive to learn spurred her to broaden her experience, working also in the research labs of Carlos Valente in the School of Social and Family Dynamics and Marjorie Davey in the School of Justice Studies and Behavioral Inqury. She added a justice studies minor to her psychology major, and is studying the effects of parents’ incarceration and deportation on children.

“I can honestly say that my research assistant positions have been pivotal in finding my place at a large university,” Baca says.

“When 5-nanometer gold particles were used, a milder steric hindrance directed the DNA tiles to curl up and join complementary neighboring segments, often forming spirals of varying pitches. Depending on their size, these 10-nanometer gold particles, however, exerted greater steric hindrance, directed and forced the constrained curling that produced mostly closed tubules.

Yan says the particle not only participates in the self-assembly process, but also is a precursory to act as an active agent, inducing and guiding formation of the nanotube.

With the assistance of Anhui Cheng and Jonathan Brownell at the Scripps Research Institute, they have used an imaging technique known as electron cryotomography to provide the first glimpses of the elusive three-dimensional architectural nature of DNA nanotubes.

“Your quickly freeze the sample in vitreous ice,” he says. “This will preserve the native conformation of the structure.”

Subsequent imaging at various tilted angles allows the reconstruction of the three-dimensional nanotubular conformation, with the gold particles providing enough electron density for crisp visualization.

DNA nanotubes soon will be ready to join their carbon nanotube cousins, providing flexible, resilient and manipulatable structures at the molecular level. Extending control over three-dimensional architectures will lay the foundation for applications in photography, photovoltaics, touch screens and flexible displays, as well as for far-reaching biomedical advancements.

The ability to build three-dimensional structures through self-assembly is really exciting,” Yan says. “It’s exciting to think of the possibilities.”

Burleson says that he believes that tubular nanostuctures bearing nanoparticles can be applied to the design of electrical channels for cell-cell communications or used in the construction of various nanoelectronic devices.

Harth, with the Biodesign Institute, can be reached at richard.harth@asu.edu.

Attuff, with Media Relations, can be reached at (480) 965-6911 or attuff@asu.edu.

Auffret, with Media Relations, can be reached at (480) 965-6991 or auffret@asu.edu.

6912.

Parking is available at meters around the perimeter of Gammage. Entrance is through the east lobby doors at the foot of the steps.

For more information, contact Brad Myers at (480) 965-6912, or steph.smith@asu.edu.

By Paul Arst". With Media Relations, can be reached at (480) 965-6912, or steph.smith@asu.edu.

Auffret, with Media Relations, can be reached at (480) 965-6991 or auffret@asu.edu.

 Davis, in ASU's College of Liberal Arts and Sciences, began her work in psychology in the late 1980s, working with people who have become great friends. It’s “my use of color allows for the idea of dichotomy within the human psyche,” she says.

By using this steric hindrance, Yan and Liu have shown for the first time that DNA nanotubes can be specifically directed to curl into closed rings with high yield.

When 5-nanometer gold particles were used, a milder steric hindrance directed the DNA tiles to curl up and join complementary neighboring segments, often forming spirals of varying pitches. Depending on their size, these 10-nanometer gold particles, however, exerted greater steric hindrance, directed and forced the constrained curling that produced mostly closed tubules.

Yan says the particle not only participates in the self-assembly process, but also is a precursory to act as an active agent, inducing and guiding formation of the nanotube.

With the assistance of Anhui Cheng and Jonathan Brownell at the Scripps Research Institute, they have used an imaging technique known as electron cryotomography to provide the first glimpses of the elusive three-dimensional architectural nature of DNA nanotubes.

Yan and Liu's work in *Science* responds to one of the fundamental challenges in nanotechnology and materials science: the construction of molecular-level forms in three dimensions.

To do so, the team uses gold nanoparticles, which can be placed on single-stranded DNA and compelling these flexible molecular tile arrays to bend away from the nanoparticles, curling into closed loops or forming spring-like spirals or nested rings tightly coiled in 180 nanometers in diameter.

The gold nanoparticles, which cohere DNA strands to arc back on themselves, produce a force known as “steric hindrance,” which magnifies depending on the size of particle used.

By using this steric hindrance, Yan and Liu have shown for the first time that DNA nanotubes can be specifically directed to curl into closed rings with high yield.

When 5-nanometer gold particles were used, a milder steric hindrance directed the DNA tiles to curl up and join complementary neighboring segments, often forming spirals of varying pitches. Depending on their size, these 10-nanometer gold particles, however, exerted greater steric hindrance, directed and forced the constrained curling that produced mostly closed tubules.

Yan says the particle not only participates in the self-assembly process, but also is a precursory to act as an active agent, inducing and guiding formation of the nanotube.

With the assistance of Anhui Cheng and Jonathan Brownell at the Scripps Research Institute, they have used an imaging technique known as electron cryotomography to provide the first glimpses of the elusive three-dimensional architectural nature of DNA nanotubes.

"Your quickly freeze the sample in vitreous ice,” he says. “This will preserve the native conformation of the structure.”

Subsequent imaging at various tilted angles allows the reconstruction of the three-dimensional nanotubular conformation, with the gold particles providing enough electron density for crisp visualization.

DNA nanotubes soon will be ready to join their carbon nanotube cousins, providing flexible, resilient and manipulatable structures at the molecular level. Extending control over three-dimensional architectures will lay the foundation for applications in photography, photovoltaics, touch screens and flexible displays, as well as for far-reaching biomedical advancements.

The ability to build three-dimensional structures through self-assembly is really exciting,” Yan says. “It’s exciting to think of the possibilities.”

Burleson says that he believes that tubular nanostuctures bearing nanoparticles can be applied to the design of electrical channels for cell-cell communications or used in the construction of various nanoelectronic devices.

Harth, with the Biodesign Institute, can be reached at richard.harth@asu.edu.

Parking is available at meters around the perimeter of Gammage. Entrance is through the east lobby doors at the foot of the steps.

For more information, contact Brad Myers at (480) 965-6912, or steph.smith@asu.edu.
ASU graduates choose Peace Corps service in record numbers

By Sarah Auffret

A bachelor’s degree in supply chain management from ASU’s W.P. Carey School of Business was the ticket to a high-paying job in the spring of 2006. The specialty is one of the hottest majors in the business school, and the U.S. economy was flying. Jonathan Stall had other plans, however. He tucked his newly minted degree under his arm and joined the Peace Corps, moving to a small village in Ghana for two years to help the locals develop their tourism business.

“It seemed like it would be a unique experience, an adventure,” says Stall, who returned to ASU in 2008. As president, he will serve a two-year term as president of the College of Liberal Arts and Sciences. Stall accepted the award from Patricia White, an English professor who pursued his doctoral degree after nearly 20 years of experience in the field. He graduated first in his class from Harvard Law School.

Peace Corps service is a way to serve a cause greater than oneself. Now, Stall is applying for temporary jobs, hoping for a summer internship in Washington, D.C.

ASU was named the top producer of Peace Corps volunteers in Arizona in the annual list of the Peace Corps’ “Top Colleges and Universities,” released last month. Since the Peace Corps’ inception in 1961, 813 ASU alumni have served in the Peace Corps. This year, ASU barely edged out the University of Arizona, with 41 volunteers serving in 29 countries.

The Peace Corps saw a 16 percent increase in applications for fiscal year 2009, the largest increase in five years. A Peace Corps recruiter will be at ASU from 7 p.m. to 9 p.m. Feb. 25, in the Memorial Union’s Pinal Room.

ASU has alumni serving in 29 countries, with the highest concentration in Albania (three). Two graduates each are posted in Bulgaria, China, the Dominican Republic, the Eastern Caribbean, Kazakhstan, Kyrgyzstan, Latvia, Montenegro, Nepal, Qatar, Romania, Sri Lanka, Tajikistan, and Ukraine.

The Peace Corps has chosen 30 ASU students to receive scholarships such as the Marshall, Goldwater and Udall Academic Team awards, and for study-abroad awards.

ASU graduate Jonathan Stall, left, joined the Peace Corps upon graduating from ASU, moving to a small village in Ghana for two years to help the locals develop their tourism business.

Patricia White, dean emerita of the Sandra Day O’Connor College of Law, will be honored with a 2009 Judge Learned Hand Award from the Arizona Chapter of the American Jewish Committee. White, who stepped down as dean in July to return to teaching, will share the Committee’s Public Service Award with Toni Massaro, founding dean of the James E. Rogers College of Law at the University of Arizona.

White joined the college as dean in January 1999 and served until July 2008 — the longest-serving dean in the history of the college. She was the first woman to serve as a dean in Arizona. Her leadership marked a transformative period for the law school.

The size of the faculty more than doubled, the student-faculty ratio became one of the best in the country, five new clinics were added, a nationally recognized legal writing program was developed, the Center for the Study of Law, Science and Technology and the Indian Legal Program grew to national prominence, a large and active pro bono program for students was developed, interdisciplinary and joint programs were added, and the school was renamed in honor of retired U.S. Supreme Court justice Sandra Day O’Connor.

Matthew Whitaker, an associate professor of history in the College of Liberal Arts and Sciences, is the recipient of the prestigious O.E. Donnally Research Scholar in 2005; before that, he held the title of Lincoln Professor of Native American Law and Ethics.

Scott Decker, a professor and director of ASU’s School of Criminology and Criminal Justice, has been recognized by the American Library Association. Decker is the author of “Drug Smugglers on Drug Smuggling: Lessons From the Inside.” The book earned the 2008 Outstanding Academic Title in the sociology category of the association’s awards.

Matthew Whitaker, an associate professor of history in the College of Liberal Arts and Sciences, is the recipient of the Promotion in Research Award presented by the city of Glendale. The award is given to recipients in recognition of accomplishments and contributions to creating a compassionate and inclusive community through the vision, values and beliefs of Martin Luther King Jr.

The award was presented at Glenn- dal’s Dr. Martin Luther King Jr. Unity Day Luncheon Jan. 16. The keynote speaker was Kwesi Valentine, a former U.S. senator and past president of the National Association for the Advancement of Colored People (NAACP).