Emergency exercise tests campus preparedness

By Sharita Forrest
Assistant Editor

On the morning of June 2, instead of summer campers practicing their layups and free throws, the floor of Assembly Hall was filled with medical workers there for a different type of exercise. Staff members from McKinley Health Center and the Champaign-Urbana Public Health District, along with representatives from the Champaign County Emergency Management Agency and the Champaign County Emergency Operations Center, conducted an emergency preparedness exercise that tested the campus’s ability to distribute medication to masses of people during an infectious disease outbreak.

According to the scenario, Assembly Hall became a distribution site where asymptomatically students and faculty and staff members and their families, played by volunteers from across campus, went to pick up bottles of preventive medication. About 40 volunteers posed as patients. They filed through the southeast corridor of Assembly Hall and completed forms with their medical information, then proceeded to the Assembly Hall’s floor, where about 20 staff members from McKinley and the Public Health District dispensed medication from two lines of tables. An area was curtained off in the Assembly Hall’s corridor for special needs populations unable to use the stairs to receive their medication.

Although the pill bottles were empty and ersatz forms were used, the exercise enabled officials to test the campus’s ability to mobilize quickly, converting Assembly Hall from a recreational facility to a temporary dispensary within a couple of hours.

During a real emergency, the campus would be one of several distribution sites in the area, and the goal would be to get the entire community protected within 48 hours, said Dr. Robert D. Palinkas, the director of McKinley Health Center and one of the co-coordinators of the exercise.

“We would be trying to serve about 63,000 people — students and employees and their families — within 24 hours, running 24 hours a day,” said Dr. David Lawrence, McKinley Health Center’s medical director. “This would be part of the university’s contribution to the distribution of the Strategic National Stockpile. It’s part of the university’s effort to show that it can take care of its own, and helps to offload the burden of distributing medications on the rest of the community.”

Initially, the exercise was to have been part of a statewide drill; however, state officials bowed out to focus their efforts on the recent outbreak of the H1N1 virus. According to the Illinois Department of Public Health Web site, as of June 1, there were 1,448 confirmed cases and two probable cases in Illinois, but no confirmed cases in Champaign County or its surrounding counties. Nationwide, the H1N1 virus has spread to all 50 states and the District of Columbia, with more than 10,000 confirmed or probable cases nationwide and 17 deaths. Currently, there is no vaccine or medication available to combat the virus.

However, heightened concern about H1N1 prompted campus officials to proceed with the exercise, despite state officials’ decision to cancel the statewide drill, Palinkas said.

“This is the second time that we’ve used the building (for a drill), and each time we do, we refine our plan a little bit,” Palinkas said. “Our first goal was to see if we could do the physical setup in two hours and move our employees and assign them tasks. Our setup went very smoothly. We are now testing how quickly people go through the lines to estimate how rapidly McKinley could dispense medication if called upon.”

Self-assembled nanowires could make chips smaller, faster

By James E. Klovep
Physical Sciences Editor

Researchers at the UI have found a new way to make transistors smaller and faster. The technique uses self-assembled, self-aligned, and defect-free nanowire channels made of gallium arsenide.

In a paper that appeared in the IEEE (Institute of Electrical and Electronics Engineers) Journal of Electron Device Letters, electrical and computer engineering professor Xiuling Li and graduate research assistant Seth Fortuna described the first metal-semiconductor field-effect transistor fabricated with a self-assembled, planar gallium-arsenide nanowire channel.

Nanowires are attractive building blocks for both electronics and photonics applications. Compound semiconductor nanowires, such as gallium arsenide, are especially desirable because of their better transport properties and versatile heterojunctions. However, a number of challenges — including integration with existing microelectronics — must first be overcome.

“Our new planar growth process creates self-aligned, defect-free gallium-arsenide nanowires that could readily be scaled up for manufacturing purposes,” said Li, who also is affiliated with the university’s Micro and Nanoelectronics Laboratory and the Beckman Institute. “It’s a non-lithographic process that can precisely control the nanowire dimension and orientation, yet is compatible with existing circuit design and fabrication technology.”

The gallium-arsenide nanowire channel used in the researchers’ demonstration transistor was grown by metal organic chemical vapor deposition using gold as a catalyst. The rest of the transistor was made with conventional microfabrication techniques.

While the diameter of the transistor’s nanowire channel was approximately 200 nanometers, nanowires with diameters as small as 5 nanometers can be made with the gold-catalyzed growth technique, the researchers report. The self-aligned orientation of the nanowires is determined by the crystal structure of the substrate and certain growth parameters.

In earlier work, Li and Fortuna demonstrated that they could grow the nanowires and then transfer-print them on other substrates, including silicon, for heterogeneous integration. “Transferring the self-aligned planar nanowires while maintaining both their position and alignment could enable flexible electronics and photonics at a true nanometer scale,” the researchers wrote in the December 2008 issue of the Journal of Nano Letters.

In work presented in the current paper, the researchers grew the gallium-arsenide nanowire channels in a new way to make transistors smaller and faster. The technique is faster than conventional microfabrication techniques, which require many steps, and produces defect-free nanowires.

Aluminum gallium arsenide nanowires were grown at 300 degrees Celsius and 250 millimeters of mercury on a silicon substrate. The nanowire diameter was controlled by the substrate and certain growth parameters, the researchers said.

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What is your impression of U.S. Appeals Court Judge Sonia Sotomayor?

First and foremost, Judge Sotomayor is a brilliant jurist with broad and deep experience. She is a summa cum laude graduate of Princeton and was an editor of the Yale Law Journal. She has been a prosecutor and a district attorney. She has more than three decades of legal practice before the U.S. Supreme Court, has taught law at the University of Chicago, and has been appointed by President Obama to the Supreme Court. Her judicial philosophy is rooted in the American experience. She is a strong advocate for civil rights and civil liberties, with a commitment to expanding access to justice for all Americans. Sotomayor is a passionate believer in the rule of law and in the importance of judicial independence. She is a strong advocate for diversity in the judiciary and has been a strong voice for the appointment of judges who are committed to representing the interests of all Americans. Overall, I believe Judge Sotomayor is a great choice for the Supreme Court, and I am confident that she will be a strong and effective member of the court.
Award-winning literary arts journal’s look created by students

By Melissa Mitchell
Novel Bureau Art Letter

According to its MySpace profile, Ninth Letter is a 27-year-old Ta-uru from Champaign, Ill., with nearly 600 friends.

So what’s a little fiction – and poetic li-cence – among (literary) friends?

As a group, they then discuss ideas regard-ing. Each student must read every manu-script selected for inclusion in the journal. “When the program started, one of the first things students and faculty wanted was to start a literary magazine,” Stanley said.

“If you think basically stalked Joseph Squier,” Stanley joked. Squier, who founded one of the nation’s first online art galleries, is known for his expertise in new and narra-tive media.

“From there, we are all assigned stories that take shape and get to where they should. We were pretty much the first,” Stanley said. “The journals that came before us were basically the first.”

The work itself starts with a lot of read-ing. “To work on Ninth Letter as an under-graduate is a privilege,” he said.

"We are a publication that features short stories, essays and poetry in a very highly designed format, in such a way that the graphic design illuminates – rather than just pretty or just giving the pages something to look at,’ We are constantly considering how our design can not only interact with the reader’s intent but how to strengthen its meaning. ‘It goes far beyond “making something look good,”’ Stanley said.

“Immediately after that we realized, OK … how can we make this either part of the curriculum or involve students,” she said.

“We are cut off,” Gunji-Ballsrud said. “That’s what was exciting about it.”

New Bureau Art Letter

now in its fifth year, with 10 issues published, the literary arts journal produced collaboratively by UI’s Creative Writing Program and the School of Art and Design receives 3,000 to 4,000 submissions per year. In its short lifetime, the journal has won more than 20 national and regional awards.

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“Since “design well done isn’t easy, and it isn’t quick.”

“Immediately after that we realized, OK … how can we make this either part of the curriculum or involve students,” she said.

“Because of some transitions taking place in the graphic design program, there were no available graduate students. So Gunji-Ballsrud recruited some of the most talented undergraduates.

“As they proved themselves,” she said. “That’s what was exciting about it.”

Now, each semester, about a dozen students are selected to work on Ninth Letter for course credit.

“They’re allowed to take it twice, then I have to cut them off,” Gunji-Ballsrud said.

A notable exception to that rule has been Brett Tabolt, a graphic design major from Cliffton Park, N.J., who graduated in December. He worked on four issues.

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Faster protein folding achieved through pressure jump

By Phil Ciciora

A new method to induce protein folding by taking advantage of the pressure of proteins is up to 100 times faster than previous methods, and could help guide more accurate computer simulations for how complex proteins fold, according to research by a team of UC scientists accepted for publication in the journal Nature Methods and posted on the journal’s Web site May 31.

Martin Gruebele, the James R. Eiszner Professor of Chemistry at the UI and corresponding author of the new method, used high-pressure techniques to fold proteins by suddenly removing high pressure (a technique also known as “pressure jumping”) through electrical bursting makes for a “kinder, gentler way” of inducing proteins to fold.

“When you’re increasing the pressure on something, you’re squeezing the atoms and making them come closer to one another,” Gruebele said, “but you’re not necessarily causing the very complicated changes to the microscopic motion that occur when you change the temperature. Pressure is a simpler variable than temperature.”

In order to carry out their biomolecular functions, proteins fold into a chaotic, random coil that looks like spaghetti strands floating in boiling water to their native state as an orderly, well-defined but compact structure. From the point-of-view of the proteins, Gruebele said, pressurizing it to 2,500 atmospheres is much less disruptive than, say, cranking up the temperature by 30 degrees over a short period of time.

“Temperature is a pretty complicated variable in that it involves random motion at a microscopic level,” Gruebele said. “When you perturb a protein by raising its temperature, its chains completely unravel, and it might take longer for it to collapse back down to the folded structure.”

To induce protein folding, a sample contained in a sapphire cube covered by a small steel diaphragm is pressurized to several thousand atmospheres, causing the biomolecules to unfold. A powerful electrical current then bursts the diaphragm, which releases the pressure and produces a sub-microsecond pressure drop. The proteins re-fold, and are monitored using laser- excited fluorescence.

Gruebele’s electrical-bursting method also allowed for a miniaturization of the apparatus, which improved the speed and sample volume of the diagram design. That, in turn, allows for a better comparison between how proteins fold in vitro versus the lab as we now understand it, and a computer algorithm would predict how they would fold.

After the pressure is applied, the proteins were able to re-fold with or “spring back” to state structures “much more readily than if we had heated them and cooled them down,” Gruebele said.

Applying pressure to induce protein folding is not a novel method. According to microscientist Tryggvi Emilsson, “By putting experiments and theory together, we’re going to be able to predict how proteins fold much more accurately and reliably,” he said. The same applies to his co-author, John Hyeon who is also a researcher at the Beckman Institute, believes that scientists will eventually be able to perform computer simulations of protein folding that are accurate enough to predict how proteins fold so that “if you had a protein involved in a disease and its structure wasn’t known, you could go to the computer and model how it behaves.”

For example, when certain proteins in the brain mutate, that can lead to Alzheimer’s disease, Gruebele said.

“The structures of proteins are ultimately what’s responsible for their function,” he said. “If changes to their structure often cause abnormal functions. That’s why we want to understand protein structures, and be able to model how they change.”

Gruebele said that computer simulations already yield a pretty accurate picture of a given small molecule. But with this new method to induce a sub-microsecond barrier, “we’ve just opened up a whole new world of possibilities.”

“There are only a handful of proteins that we know about that would fold by temperature jumps or other methods in a couple of microseconds,” Gruebele said.

“Gruebele also shows that there are many proteins that do it in hundreds of microseconds, and that could speed up to a few microseconds by pressure jumps.”

Gruebele said that if you want to improve computer simulations of protein folding so that they’re 90 percent right, you need a medical doctor could trust the results – you need many test cases. And if you have all of these cases, you need to be able to run computer simulations quickly, Gruebele said.

“This experiment enables a greater number of proteins to be tested by simulations and experiments, and that can push forward the agenda of getting computer simulations that are more reliable and faster,” Gruebele said.

Gruebele’s co-authors of the paper are Charles Dumont and Tryggvi Emilsson. Funding was provided by the National Science Foundation.

Contracts adding legal twist to family health care

By Jan Dennis

The expanding role of family caregivers is part of a family caregiver agreement, making them payments for services rather than a gift, said Kaplan, an expert on elder law and member of the National Academy of Social Insurance.

“The biggest motivator for these agreements is the transfer of assets, penalty, and that will only grow if the Obama administration implements its proposal to expand the look-back period from five to seven years,” he said. “I think very few Americans would consider family caregiver agreements were it not for Medicaid.”

Kaplan warns that the agreements have a major downside. Written agreements to provide services for pay – whether an hour rate or the need to a house – make the compensation taxable.

“That’s a tremendous negative – so tremendous that for most Americans it’s the big motivation,” he said. After all, if they provide care on a casual basis and then get an inheritance when their relative dies, this money would be tax free.

But Kaplan says agreements can also limit tax consequences if the Internal Revenue Service ever challenged an inheritance by claiming that the funds stemmed from the caregiver. “If you had a problem with the IRS, it would be a situation where you could prove the agreement was not a gift.”

Kaplan says hours, duties and other components of the agreements are worth considering carefully, as they may have a significant impact on the caregiver’s finances, as well as their own.

“The agreements put more formality into what has typically been a very informal arrangement,” he said. “It lays out their responsibilities and what they will receive for their efforts. For the older person, it specifies the care that he or she can expect from the caregiver.”

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Kaplan says that by making payments for care, the agreement will be considered a gift rather than a services paid to care for parents or other relatives.

“By making payments for care, a government program that covers the financial costs of equipment like a hospital bed? Is the caregiver expected to be available 24 hours a day? What happens if the caregiver is not available 24 hours a day or if the caregiver is not able to provide the care the family needs?”

Caring for family Law professor Richard L. Kaplan says the rise in so-called family caregiver agreements is part of a family caregiver agreement, making them payments for services rather than a gift, said Kaplan, an expert on elder law and member of the National Academy of Social Insurance.

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New system to make HR transactions easier to make and track

By Sharita Forrest
Assistant Editor

A new Web interface for the human resource module of the Banner software system is expected to make it easier for users to execute and track HR transactions as well as enhance data integrity, improve user satisfaction and reduce operating costs. The system will be used at all three campuses.

Known as HR Front End, the interface was developed to resolve some issues that arose with the implementation of the SunGard Banner Enterprise Resource Planning system in December 2003, which included increased workload for HR transaction processors and significantly longer end-to-end processing times.

At the recommendation of the HR/Pay Advisory Group, a task force was formed to examine how Banner was being used and if improvements were needed. The task force recommended developing a Web-based interface.

The HRFE contains modules for processing most of the key HR events that occur during an employee’s career with the university, from being hired through separation. Users can add jobs, end jobs, change labor distribution, enter reappointments and maintain data. The application also offers users a “whole-person” view of an employee’s information, enhanced record-search capabilities, and complete audit trail and transaction histories that enable users to see what data has been changed and by whom.

Previously, the Urbana campus had entered transactions through a paper checklist process, which made it difficult to determine where a transaction was in the pipeline and what its status was, said Matthew Helm, visiting project director in University Administration, and the HRFE functional project team leader. “With this system, you can look and see the status of a transaction at any time, where it’s going to go next and whether it’s been applied to Banner.”

More than 150 Banner HR/Pay users from all levels of the university community offered feedback about HRFE’s functionality during its development. The extensive user-input process included 39 sessions with the user community, an online survey that gathered feedback from 213 participants, 17 sessions with business teams, and nine sessions of focus groups that comprised 98 users.

“Designing better data” Matthew Helm, visiting project director in University Administration, is the functional project team leader for the HR Front End project, a Web interface for executing and tracking HR transactions in Banner. Developed using an extensive user-input process, the project offers enhancements such as wizards that guide users through complex transactions and business rules that capture common errors to speed data entry and enhance data integrity.

“A key thing about this project is that it didn’t anticipate during the design phase that it would have to manage partnerships or units at a time; the rollout phase should be concluded by the end of June. However, the team continues to make modifications as it encounters errors or situations that it didn’t anticipate during the design and testing phases.

The HRFE project, which is jointly managed by Administrative Information Technology Systems and University Human Resources, is overseen by a group comprising university vice presidents, associate vice presidents and the campus provosts. The project began in December 2004 with a budget of $4.7 million. ◆
**Summary**

The June 2009 issue of *Insideillinois* includes a brief outline of the benefits for SURS retirees, details of the School of Art and Design's summer art classes, and information on the music festival at the University of Illinois. The issue also features articles on the upcoming harp festival and the annual Benefit Choice Period for SURS retirees. The full slate of candidates for the new reorganized board of the State University Retirement System is available online.

**Benefits Brief**

**Benefit Choice enrollment period extended to June 15**

The state Department of Central Management Services announced that the annual Benefit Choice Enrollment period was extended. For all Benefit Choice Options, except Flexible Spending Account enrollees and re-enrollees – the closing date of the Benefit Choice Period has been extended until June 15. The closing date for all FSA enrollments and re-enrollments, however, was May 31.

The full-time employee health insurance fees published in the FY10 Benefit Choice Options booklet, which was mailed to home addresses and also is available on NESSIE, are not changing. Those rates are complete and correct. All Benefit Choice changes will become effective July 1.

There are several ways to make changes to your benefits – the closing date of the Benefit Choice Period has been extended until June 15. The Benefits Service Center Offices will close at 5 p.m. on June 15, but NESSIE can be used until midnight that day. If you do not wish to make any changes to your benefits, no action is necessary.

If you have any questions about your benefit plans or your options, contact the Benefits Center Office at 333-3111 or benefits@uillinois.edu.

**On the Web:**

- [www.nessie.uilu.edu](http://www.nessie.uilu.edu)
- [www.benefits.uillinois.edu](http://www.benefits.uillinois.edu)

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**Music, dance, nature and astronomy on stage at expanded music festival**

By Melissa Mitchell

The setting may be pastoral, but don’t let that fool you. The UI School of Music’s third annual Allerton Music Barn Festival is no turkey in the straw. Once again, the extended Labor Day weekend festival lineup will showcase the diverse talents of the music school’s world-class faculty performers. A select group of music students and guest artists round out the roster.

The festival, which takes place in a reconditioned 19th-century Dutch hay barn on the grounds of the university’s Allerton Park and Retreat Center near Monticello, Ill., runs Sept. 3-7. The 2009 festival has grown by a day, kicking off a day earlier than last year with a Thursday-night performance.

“This year’s festival is a fabulous mix of opera, chamber music and jazz – with a brass band thrown in for good measure,” said Karl Kramer, the director of the music school.

With most performances preceded or followed by a lecture or demonstration, Kramer recommends festival-goers “bring dinner or buy food from our caterer and have a wonderful evening of nature and music.”

Festival tickets are available through the festival Web site; the UI’s Krannert Center for the Performing Arts ticket office; or by calling 217-333-6280 or 800-527-2849. Single-concert tickets are $26; tickets for students and senior citizens are $20.

New this year is an “economy-bust- er pass” for $154 ($105 for students and senior citizens). The long-weekend pass provides entry to all eight performances for the price of six shows.

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**Music**

Tuition and lunch are free during the festival. The full slate of candidates is available at www.surs.com/pdf/board/candidates.pdf.

**World premiere among highlights**

**Summer harp events are June 11-13**

The three-day performance schedule opens at 7:30 p.m. on June 11 in the recital hall of Smith Hall, with a concert featuring Chen-Yu Huang playing works by Carlos Salzedo and Lynne Palmer, and Reinhold Gierz’s “Harp Concerto.”

The festival activities will continue into afternoon and evening concerts that are free and open to the public.

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**Notes**

1. **Placement:** The Architecture of David Woodhouse Associates,” curated by Edward St. Keghan, includes imagery representing more than 20 projects by the award-winning firm known for its civic, institutional, commercial, residential and site works.

2. The firm was founded in 1990 by Woodhouse, a UI School of Architecture alumnus, and now employs more than a dozen architects, planners and interior designers.

3. The firm was one of three finalists in an international memorial competition held by the American Institute of Architecture’s Chicago chapter.

4. **Kariann Fuqua:** “Dwellings – the Seduction of Space” features multimedia drawings by the artist, who earned a master’s degree in painting from Illinois. In this body of work, Fuqua focuses on architectural exteriors and interiors, furnishings and decorative objects, many of which appear to float through space.

5. **Assessing the work in an accompanying text, critic Oliver Schiller wrote:** “There is analytic beauty here. Fuqua encourages us to gaze both outward and inward, to unpack what we gasp and also what we inhabit.”

6. An opening reception is planned from 5-7 p.m. June 5 at the gallery, 230 W. Superior St., Chicago.
**Note:** indicates Admission Charge.

**Stage 5 Bar:** Open at 4 p.m. most Thursday and Friday evening; closes 7 p.m. after performance nights and until after the performance on show nights.

Ticket Office: 10 a.m.-6 p.m. daily. lunch: 1-3 p.m. Monday-Friday; 10:30-3:30.

Robert Allerton Park

Open 8 a.m. to dusk daily. "Allerton Legacy" exhibit at Visi-tation Center, 9 a.m.-4:30 p.m. daily; meet in main lobby.

Yoga at Krannert Museum

Friday at noon.

**organizations**

- **Association of Academic Professionals**
  - **Official Site:** www.aapillinois.org
- **Book Collectors’ Club – The No. 44 Society**
  - **Meeting:** Every Wednesday of each month. Rare Book and Manuscripts Library, 344 Main Library, 3rd floor. 3-337777, www.reec.illinois.edu/ter/ no44.htm
- **Council of Academic Professionals Meeting**
  - **Meeting:** Every second Thursday monthly, location varies.
- **UCIL Fall Dance Society**
  - **Meeting:** 8-10 p.m. Tuesday and some Thursday evenings.
- **Italian Table**
  - **Meeting:** Italian conversation Mondays and Tuesdays 11:45 a.m.-1 p.m. third Wednesday of each month. Location varies.
- **KCPA**
  - **Meeting:** First Thursday of each month. Location varies.
- **UIUC Falun Dafa Practice Company**
  - **Meeting:** 6 p.m. Thursdays, Espresso Company, 706 S. Goodwin Ave., Champaign. 
- **RIUAC**
  - **Meeting:** 244-9934.
- **Reec Illinois**
  - **Meeting:** 244-7739.
- **Self-guided of main and un-labeled floors daily. and 10 a.m. through first Thursday and Friday eve-
  - **Schedule:** Closed at 7 p.m. on non-performance nights and until after the performance on show nights.

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Geographic isolation drives evolution of a hot springs microbe

By Diana Yates

Life Sciences Editor

S. islandicus, a microbe that can live in boiling acid, is often hard enough to capture it from the volcanic hot springs where it thrives. In a new study, researchers report that populations of S. islandicus are more diverse than previously thought, and that their diversity is driven largely by geographic isolation.

The findings open a new window on microbial evolution, demonstrating for the first time that geography can trump other factors that influence the makeup of genes an organism hosts.

S. islandicus belongs to the archaea, a group of single-celled organisms that live in a variety of extreme environments including some of the most forbidding environments on the planet. Once lumped together with bacteria, archaea are now classified as a separate domain of life.

“Archaea are really different from bacteria – as different from bacteria as we are,” said UI microbioecology professor Rachel Whitaker, who led the study.

Whitaker has spent almost a decade studying the genetic characteristics of S. islandicus. The new study, in the Proceedings of the National Academy of Sciences, compares three populations of S. islandicus from hot springs in Yellowstone National Park, Lassen National Park in California and the Mutnovsky Volcano on the Kamchatka Peninsula, in eastern Russia.

The extreme physical needs of S. islandicus make it an ideal organism for studying the impact of geographic isolation. It can live only at temperatures that approach the boiling point of water and in an environment that has the pH of battery acid. It breathes oxygen, eats volcanic gases and expels sulfuric acid. It is unlikely that it can survive even a short distance from the hot springs where it is found.

By comparing the genetic characteristics of individuals from each of the three locations, Whitaker and her colleagues were able to see how each of the S. islandicus populations had evolved since they were isolated from one another more than 900,000 years ago.

The complete genetic package, or genome, of S. islandicus contains a set of core genes that are shared among all members of this group, with some minor differences in the sequence of nucleotides that spell out individual genes. But it also contains a variable genome, with groups of genes that differ – sometimes dramatically – from one strain to another.

Whitaker’s team found that the variable genome in individual strains of S. islandicus makes it an ideal organism for studies of variation even between two or three individuals in the same location.

“Some people think that these variable genes are the way that microbes are adapting to new environments,” Whitaker said.

“You land in a new place, you need a new function in that new place, you pick up that set of genes from whoever there is or we are not going to survive there. We have shown that does not occur.”

Whitaker’s team has shown that whereas a single population of S. islandicus can be traced back to plasmids and viruses, Whitaker said. There were also a lot of lost genes, with much variation in the genes lost between the strains.

Most of the genes that are coming and going, at least on Sulfobolus, seem to be on viruses and plasmids,” Whitaker said. The researchers found that about one-third of the variable genes were specific to a geographic location. This is not what we had expected that the genes that lent their genes to Sulfobolus in one site were different from those found in another. Also, much of the variation was found in genes devoted to the microbe’s immune system, indicating that S. islandicus is evolving largely in response to the assault of local pathogens such as viruses.

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Microbial evolution

Microbiology professor Lachlan Whitaker led a study that found that geographic isolation profoundly influences the genetic destiny of a hot springs microbe.

These findings challenge the idea that microbes draw whatever they may need from a near-universal pool of available genetic material, Whitaker said. It appears instead that S. islandicus, at least, acquires new genes from a very limited genetic reservoir stored in viruses and other genetic elements that are constrained to each geographic location on Earth.

Additional exercises will be conducted to ensure that the UI is prepared to handle such crises, said Todd Short, director of emergency planning in the Division of Public Safety, who co-coordinated the exercise.

“We won’t shelf our plan just because we’ve done it once. Our emergency planning functionality can only be measured by these exercises.”

InsideIllinois

Summer 2009 Publication Schedule

Publication Date Deadline for Briefs Advertising Deadline
May 21 June 1, 2009 May 27
May 27 June 4, 2009 May 31
June 16 June 11, 2009 June 24
June 18 June 24, 2009 June 29
June 20 July 8, 2009 July 13
Aug. 6 July 29, 2009 July 30
Aug. 20 Aug. 12, 2009 Aug. 13

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