UI opera director and world-renowned alum collaborate

By Melissa Mitchell
News Bureau Staff Writer

It ever there were a pair of creative collaborators who could be accused of having way too much fun working together, it would have to be Eduardo Diazmuñoz and Jerry Hadley.

Diazmuñoz joined the School of Music faculty last fall as artistic director of the UI opera program and director of the New Music Ensemble, bringing with him a musical career that has spanned three decades and a reputation as one of Mexico’s leading composers and orchestral conductors. Hadley, who graduated from the music school in 1977 and has performed extensively worldwide in concert, on stage and in three Grammy Award-winning recordings, is one of this country’s most celebrated operatic tenors.

In residence at the UI since late January, Hadley has been working closely with Diazmuñoz on the UI opera program’s production of Leonard Bernstein’s musical adaptation of Voltaire’s satirical comedy “Candide.” Diazmuñoz is conducting the production’s orchestra; Hadley has traded the role of Candide — which he has recorded in 1977 and has performed extensively worldwide in concert, on stage and in three Grammy Award-winning recordings, is one of this country’s most celebrated operatic tenors.

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During a recent break from rehearsals, Hadley and Diazmuñoz talked about the opera program, the UI Opera Ensemble, bringing with him a musical career that has spanned three decades and a reputation as one of Mexico’s leading composers and orchestral conductors. Hadley, who graduated from the music school in 1977 and has performed extensively worldwide in concert, on stage and in three Grammy Award-winning recordings, is one of this country’s most celebrated operatic tenors.

Mutual admiration: Eduardo Diazmuñoz (right), artistic director of the opera program, and renowned tenor Jerry Hadley are collaborating on a production of Leonard Bernstein’s musical adaptation of Voltaire’s satirical comedy “Candide,” which will be staged Feb. 24-27 in the Tryon Festival Theater, Krannert Center for the Performing Arts.

UI research: Why estrogenic hormones produce differing results

By Jim Barlow
News Bureau Staff Writer

New research is shedding light on why estrogenic hormones produce unintended results in women, giving hope to the idea that new drugs might reach their targets and work more effectively. Ultimately it could mean that postmenopausal women would know that hormone-replacement therapy would have only its intended result.

“It’s very difficult right now for women to make a choice about taking estrogen or other estrogen-like compounds, and I think, it’s equally difficult for physicians to try to tell women what they should do,” said Ann M. Nardulli, a UI professor in the department of molecular and integrative physiology.

“The model has always been that the estrogen receptor binds to DNA and, in turn, regulates gene transcription is need of retooling,” Nardulli said. “Nardulli’s team has found four discrete regions of the human progesterone receptor gene that confer hormone responsiveness.

In the study, the activities of estrogen receptor genes were compared in uterine, mammary and bone cell lines. The research found vast differences based on the four regions.

“The model has always been that the estrogen receptor binds to DNA to activate transcription, but now we show that that’s not always the case,” Nardulli said. “Binding doesn’t occur equally well in different kinds of tissues, and it requires a broader vision on how transcription changes the functions in cells.”

The value of hormone-replacement therapy has come under scrutiny because of links to various diseases and deaths.

Nardulli was the principal investigator of a study published in the Jan. 7 issue of the Journal of Biological Chemistry. In the study, Nardulli, doctoral student Jennifer R. Schultz and postgraduate researcher Larry N. Pete added fuel to the argument that the long-held model for how an estrogen receptor binds to DNA and, in turn, regulates gene transcription is need of retooling.

Nardulli’s team has found four discrete regions of the estrogen receptor gene that confer hormone responsiveness.

The study, which appeared in the Jan. 7 issue of the Journal of Biological Chemistry, may help researchers refine drugs used in hormone-replacement therapy so they affect only selected tissues.
February 17, 2005

U.S. Senate: Economic support a priority in 2005

By Sharrta Fornet

An excerpt from a compact with state legislators, Illinois corporations and other economic entities, economic support for the university will be a priority in 2005, according to the university’s new president, Jeu White, who spoke to the media at a press conference last week. The new U.S. Senate “are really three un-

Under the compact, the state will provide a $300 million tax rebate over five years to the university in exchange for specific commitments in the areas of education, research and community service. The agreement was reached after months of negotiations between the UI and the state, and it will be formally signed by both parties later this month.

“Having a compact in place is an important step forward for the university,” White said. “It will provide a strong foundation for our future growth and success.”

White said the compact will help the university attract more students and faculty, improve its facilities and enhance its reputation. It will also provide additional funding for research and outreach initiatives.

The compact includes a commitment to increase the university’s $1.2 billion annual budget by 20 percent over the next five years, with $900 million of that increase coming from state funds. The remaining $300 million will come from the university itself.

White said the compact will help the university maintain its position as one of the top research universities in the world and remain competitive with other universities across the country.

The university will use the compact funds to support a number of initiatives, including:.

• Increasing student aid and scholarships
• Improving facilities and infrastructure
• Expanding outreach programs
• Supporting research and innovation

White said the university will work closely with the state and other stakeholders to ensure that the compact funds are used effectively.

The compact was developed through a process involving university and state officials, as well as a broad range of stakeholders, including students, faculty, staff, alumni and the local community.

“The compact is a testament to the strong partnership that exists between the university and the state,” White said. “It represents a clear commitment to the future of the university and the state.”

The compact will take effect on July 1, 2005, and will remain in place for five years.

More information about the compact can be found at uiuc.edu/compact.

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Tiny superconductors withstand stronger magnetic fields

By James R. Kline

Ultrathin superconducting wires can withstand stronger magnetic fields than larger wires made from the same material, researchers report on now report. This finding may be useful for technologies that employ superconducting magnets, such as magnetic resonance imaging. (MRI).

As described in the Jan. 14 issue of the journal Physical Review Letters, the researchers have created high-quality superconducting wires with molecular dimensions, and measured their behavior in magnetic fields of various strengths. The observational results have confirmed that theories developed for bulk superconductors also apply to molecular-scale superconductors.

Our experimental results show an excellent agreement with the theory of pair-breaking perturbations, even at high magnetic fields," said Arrey Begaye, a professor of physics at Illinois. "The theory takes into account both spin and orbital contributions."

To study this phenomenon, the researchers began by placing a superconducting nanowire across a narrow trench (about 100 nanometers wide) etched in the surface of a semiconductor wafer. The wire was then coated with a thin film of superconducting material (yttrium-barium-copper oxide), which was left bare in regions that replicated the properties measured in the presence of a magnetic field.

The researchers then showed that these wires do not re- fuse any zero resistance, as bulk samples do. They also show that the thinner the wire the higher its electrical resistance is.

Because nanoscale superconductors don't obey the rules of superconductivity, they could prove useful in a variety of superconducting applications. By incorporating nanowires as filaments in ultrathin superconducting wires, for example, more current could be carried without being destroyed by a magnetic field.

One new, or at least a fully supercon- ducting one. A correct balance should be achieved.

The work was performed by Begaye, postdoctoral researcher and molecular magnetic field. But it also should not be too small, however, the detrimental effects of the magnetic field be- come weaker."

The wire would be the thinnest one that can exist without being destroyed. The magnetic field needed to destroy such thin wires is extremely high by comparison with the magnetic field to a supercon- ductor. The field suppresses or even destroys the superconducting state," Begaye said.

The magnetic field was shown to be remarkably weak effect on the superconducting wires, the re- searchers report. Both the orbital and the spin pair-breaking effects were strongly suppressed in the nanowires. The or- bital effect was weak because of the small dimensions of the wire (about 10 nanom- eters in diameter) and the spin effect was weakened by spin-orbit interactions.

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Meet the President

By Jim Barton

Women’s health, tissue regeneration to be focus of collaboration

Women’s health, tissue regeneration to be focus of collaboration

We’re interested in understanding what these microbes are, what they do and how we can stop them. We know there are some of the major microbial players, but there are others that are far more difficult to deal with. We’re doing some of these at the University of Illinois at Urbana-Champaign, some at the VA Medical Center in Chicago and some at the Northwestern University. So everyone is working on different microbe strains such as infections. These are not necessarily pathogens, that is, causing infections whose roles change. We want to know what the changing dynamics are.”

Wilson’s team initially will study healthy samples from women to develop a baseline of the composition of microflora. Later, the researchers will examine the microflora under conditions that occur, for example, with hormonal changes or antibiotic treatment for infections that lead to an infection of the normal vaginal ecosystem, as well as exposure to infections or other sexually transmitted infections.

Such knowledge, Wilson said, could allow the development of new techniques and treatment methods for physicians to recognize and treat warning signs of problems for which symptoms may not be evident.

Schoen’s team includes scientists who have researched genes for proteins, polysaccharides, and in chemical and biomolecules that are specialized, especially those that are grown by members of Schoen’s research group. The biologists and animal scientists who work on the projects can help translate the findings into all of the systems that are used to study the different types of human health.

ERKO scientists will also work on emerging DNA technologies to isolate and identify all of the microbes and their genomes and their interactions with the body. This information can help researchers to better understand patients’ conditions and how to better treat them.

ERKO’s work will focus on developing new therapies and treatments for both common and rare diseases. The goal is to develop new treatments that are minimally invasive and have fewer side effects.

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Six Urbana faculty members named University Scholars

An article from Inside Illinois on February 17, 2005, highlights the recognition of six faculty members at the University of Illinois as University Scholars. The program recognizes excellence in teaching and research at the university. The article features profiles of each scholar, discussing their contributions and the significance of their work. The scholars are:

- Madhu Khanna, professor of agricultural and consumer economics
- Akira Chiba, professor of cell and structural biology
- Wilfred A. van der Donk, professor of chemistry
- Sarita V. Adve, professor of computer science
- Anne D. Hedeman, professor of art and design
- Dale E. Brashers, professor of speech communication

Each scholar is profiled, highlighting their research areas, achievements, and contributions to their respective fields. The article includes quotes and a photo of each scholar, adding context to their stories. The recognition of these faculty members underscores the excellence in education and research at the University of Illinois.
Crane-making project brings cultures together on peace mission

by Melissa Mitchell

Feb. 17, 2005

When Japan House director Kanzo Gunji embarked on a tour of Japan next month, she’ll be doing more than just discovering a group of tourists. She’ll be designing a physically planted peace project.

And in their bags, Gunji and other members of Tennessee’s Friends of Japan House participating in the sakura (cherry blossom) Peace Tour will be packing a few extra items among the usual clothing, camera and film. The group, which will be in Japan March 24-April 5, will be traveling with 1,000 hand-made origami cranes, which they plan to deliver to a memorial park in Hiroshima as part of a project called Paper Cranes for Peace.

“In Japanese culture, the crane is a symbol of longevity and happiness,” Gunji said, explaining that for many years people from around the world have deposited thousands.

Upcoming Japan House events

Feb. 27: Simple Elegance, benefit auction of Japanese and Asian items and staples of art. The event runs from 6-8 p.m. in the Veterinary Medicine Auditorium.

March 3: Public open house celebrating Girl’s Day, plus origami-making session for Japan Peace Project. 1-4 p.m.

March 15: lecture by the Yokota Brothers, Consul-General of Japan. Yokota will discuss “The Japan-U.S. Partnership – Its Significance in the Global Context,” at 4 p.m. in the Law Building auditorium.

March 24-25: sakura Peace Tour to begin by members of Yokota, led by Japan House director Kanzo Gunji. 3 spring open house, 10 a.m. to 4 p.m.

May 21: Children’s Day

of intricately folded cranes at the Children’s Monument in Hiroshima’s Peace Park. The cranes are a “visual representation of the desire for world peace.”

Visits to the memorial were originally inspired to make cranes, she said, by the story of Sadako Sasaki, a young Japanese girl who developed leukemia in 1955 after being exposed to radiation from the bombing of Hiroshima in 1945. Sasaki believed that the gods might grant her wish for restored health if she folded a thousand paper cranes.

Gunji traces her idea to bring the Chane-Urana Community together to make origami cranes and deliver them to Japan as a couple of sources.

“I’m always thinking of some way to be aware of the importance of bringing together the people of the world … to spread seeds of peace,” Gunji said. One source of inspiration, she said, was an old woman she encountered during a visit to Japan about 15 years ago. The woman, whose daughter had died after the Hiroshima bomb, spent her days on the sidewalk, crafting doll bookmarks and giving them away to passersby. She did this as her own personal way of honoring her daughter’s memory, in the hope that others would think of her and remember what had happened.

She was just sitting there, happily making these paper dolls, one at a time,” she said. “I was very inspirational.”

Gunji said she seriously entertained thoughts about how to involve Americans from her adopted community in the international crane-making militar observing how UI students were affected by the memorial in Hiroshima. She then began taking students to the site during intercultural study tours to Japan when she served on the staff of the university’s Campus House Program. Students were allowed by it, “she said.

“If you were very serious and talk softly, I thought. “These are students who are eventually going to be leaders. When dealing with top-notch students … and when you consider that one person can change a whole history, I wanted to find a way to get them into the system, to recognize that they can change history.”

To prepare for the upcoming peace tour, Gunji has hosted crane-making sessions at Japan House. Participants included art teachers, who took the project back to their schools and involved students as well. Among them was Sherrill Polaniecki, who teaches art to sixth-graders at Mahomet-Seymour Junior High and takes her students to Japan House each quarter to study tea ceremony.

“A final crane-making session will take place during Japan House’s open-house celebration of Girl’s Day, from 11 a.m. to 3 p.m., on March 5, at Japan House. As part of the Girl’s Day celebration, traditional Hina dolls also will be on display.”

Inside Illinois

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library and information science

Betsy Heaume, professor of library and information science and director for the Center for Children’s Books, chaired the 2005 Caldecott Award Committee. The 2005 John Newbery and Randolph Caldecot medals honor outstanding writing and illustration of books published in the Unit ed States in the previous year.

Local social

Jesse McDonald, clinical professor, was awarded the Exemplar Award by the National Network of Social Work Managers.

Nancy Slade-Saunders, clinical professor and co-director of Promoting Results in the Children and Family Research Center, has received the Girl Scout Illinois Crossroads Council Community Woman of Achievement Award.

Mark Testa, professor and director of the Children and Family Research Center, received a Blue Bird Award from the Children’s Home and Aid Society of Illinois for leadership and research to improve systems of care for children in Illinois’ foster-care system.

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Chemical analysis of mushrooms shows nutritional benefits

By Jim Barlow

Mushrooms analysis: carbohydrate profile of mushrooms.

...sales of mushrooms show that these fungi (Fig. books of fungi) could be intro-
uced into dietary plans to help fill some voids in what dieters consider missing.

The findings appear in an advance of regular publication by the Journal of Agricultural and Food Chemistry. The same re-
search was published last year in the same journal the carbohydrate profiles of selected fresh, raw and cooked products. The findings will be-
come part of the U.S. Department of Agriculture’s National Nutrient Database.

“We’ve repeated in these papers the two carbohydrate profiles of these two lines of popular foods,” said George C. Fahey Jr., a professor of nutri-
tional sciences in the department of animal sciences at Illinois. “These profiles include the digestible car-
obhydrate, the starch, the indigestible fiber, the fermentable fibers that reach the large intestine. This work was impor-
tant to the other commodity farmers that funded this research, because they had little information on these components.

It was already known that mushrooms offer high-quality protein, vitamins, unrefined fiber and fats, but a precise carbohydrate breakdown had been elusive.

The mushroom studies were white button, crimini and portabellas, all of which represent different maturity levels of Agaricus bispo-
nis, and portobello (Grifola fras-
dina), shiitake (Lentinus edodes) and enoki (Flammulina velutipes). The two mushroom varieties were analyzed only in the fresh and cooked form.

The mushroom stalks and mushrooms tended to be very similar in their mushroom-related components, but different than the others, said Cheryl L. Dikeman, a doctor-
al student in Fahey’s lab and lead author on both papers. “Portobello’s were on the same run to under and contain all of their constituents of oligosaccharides, beta-glucans and chitin.”

Chitin concentrations were 8 percent in raw, 6 percent in the cooked mush-
rooms and 6 percent in raw, immature, fresh. When cooked, chitin fell to 2.7 percent in both forms, but that level of total dietary fi-
ters went up significantly. Also showing the same pattern were raw mushrooms, which had a 7.7 percent chitin content; cooking also lowered it to 2.7 percent but total dietary fibers jumped from 20.3 percent raw to 41.6 percent cooked.

Raw, mature white buttons and cooked, mature mushrooms showed chitin concentrations of 3.5 percent and 3.6 percent, respectively.

Raw, mature portabellas also had the highest level of beta-glu-
cans (0.2 percent), while most of the other mushrooms had 0.1 percent. Portobello and mature had no relatively small amounts are required to provide cardiovas-
cular benefits, Fahey said.

Cooking tended to increase starch, total dietary fibers and fat contents and to decrease chitin concentrations in all of the mush-
rrooms. “Some nutrients went up after cooking; some were seen down,” Dikeman said. “Part of that you don’t expect to happen as water is cooked out.”

Mushrooms were analyzed on oligosaccharide contents. These sugar mole-
cules are partially digestible, but the digested components are considered preference in that they

direct growth of healthy bacteria in the colon.

Raw immature portabellas had a total oligosaccharide concentra-
tion of 2.7 micromoles per gram, high. Also found to have more than 1000 mg/kg were raw, mature portabellas and cooked, immu-
rable corn. None were detected in, crater, mushroom or shiitake.

Most of the total oligosaccharides were found in the form of glucosyl-saccharides, beta-glucans, fructo-saccharides (FOS) accounted for the total concentrations in cooked, immature white buttons. FOS did not appear in other samples.

In other findings, white mus-
shrooms had the highest levels of ad-
hexose was highest in mushrooms and white, and undigested components are

research was published last year in the same journal the carbohydrate profiles of selected fresh, raw and cooked products. The findings will be-

international collaboration

Cultural events highlight 10-day event

A 10-day “celebration of all things international” is planned for Feb. 23 through March 2 at Illinois, the annual University-wide International Week program. This year’s theme is “cultural exchange.” Events will be held on campus and at local community sites.

As part of the celebration, a series of events geared to cultural exchange includes an open house Feb. 24.

No prior registration is required for the open house. From 10 a.m. to noon, visitors will be able to browse through a cultural exchange exhibit, enjoy hors d'oeuvres, wine and live entertainment in the Union Ballroom, and try different international foods from around the world.

The open house will feature traditional foods and performances from around the world. The event will also include cultural and international information packets and information about the University’s many international programs.

The celebration will also include a series of programs across campus. The events highlight the University’s rich diversity and cultural exchange.

The open house will be held in conjunction with a series of community events. The theme for this year’s celebration is “cultural exchange.” Events will be held on campus and at local community sites.

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looking for a crime-solving cockroach? Cat’s claw the buzz

keeling off the back of a “pre-concert” talk by Kentish at 7 p.m. on March 2 in Plym Auditorium. The talk, free and open to the public, is co-sponsored by the Leonie Tate Leadership on Art and the Center for Advanced Study.


From 11 a.m. to 2:30 p.m. on Feb. 20 there will be a second session of “Understanding Sites: An Introduction to Site Planning,” led by Peter Griffin, a landscape architect at the University of Illinois. The session will focus on the history of landscape architecture and the role of landscape architects in today’s world.

The Sousa Archives and Center for American Music is located in Room 240 of the Fine Arts Building, University of Illinois. For more information, please contact the Sousa Archives and Center for American Music at 216-624-5288 or visit their website at www.sousa.uc.edu.
CALENDAR
Continued from page 15

FRIDAY
Dinner and Chamber Orches- 
26 Saturday Pardesi, Rituals Annual Ini- tial Drill Meet. 10 a.m. UI Union Ballroom.
International Festival: A World of Culture Under One Roof. 11:30 a.m.-4:30 p.m. Loyol Center, Krannert Center Student Association.
National Dinner: German. 6 p.m. Cosmopolitan Club, 307 S. Fourth St. Champaign. www.allerton.uiuc.edu or call 244-1035. Allerton Park and Conference Center.
28 Monday Center for Chinese Children’s Books. Fourth Annual Book Sale. 10 a.m.-4 p.m. Room 24 GSLIS. Contact the Center for Chinese Books/Graduate School of Library and Info- rmation Science.
29 Tuesday Economics Faculty/Staff Seminar Series. 8:30 a.m.-9:30 a.m. Illini Union. Call 333-7344 for registration.
30 Tuesday/Seven Workshop. "Body Image: Self-Improvement or Self-Destruction?" 7 p.m. 209 Illini Union. Counseling Center Services/Professionals.
Survey Research Seminar.
Survey Research Seminar.
30 Thursday Seminar. "Faculties of Gold From South East Asia."
30 Thursday "Dispute: Textiles of South East Asia."
30 Thursday "Wrongful Punishment for Process."