Engineers aim to improve defibrillators

By Tony Fitzpatrick

When it comes to affairs of the heart, love taps are preferred over love oats. That's the result of a team of heart researchers including Igor Efimov, Ph.D., associate professor of biomedical engineering, trying to devise a better implantable defibrillator. Efimov and his colleagues have modeled a system where an implantable heart defibrillator focuses in on rogue electrical waves created during heart arrhythmias and busts up the disturbance, disrupting it and preventing cardiac arrest. The soft is much milder than that produced by presently used implantable devices, in theory sparing the heart any damage from the trauma, lowering the shock to the patient and reducing the amount of energy required for the device to do its life-saving work.

The smaller devices would last longer and be more comfortable to wear. This would free cardiac patients from the discomfort and danger of having to have a device replaced frequently. The largest killer of Americans is heart disease, claiming 1 million annually. About 300,000 of these deaths are attributed to arrhythmias. The first line of defense against arrhythmia is defibrillation, which requires that the patient be near a trained physician and a defibrillator, unless the person is one of 175,000 worldwide who wears an implantable defibrillator.

Improvements in implantable defibrillation devices can save hundreds of thousands of lives, Efimov said. "Consider that 500,000 Americans die from arrhythmia yearly. Of all stricken, only 2 percent to 4 percent of them survive." Under optimal conditions, the survival rate can be brought up to 50 percent to 60 percent.

Efimov and his colleagues Valentin Krintsky, Ph.D., and Alain Purnh, Ph.D., of the Nonlinear Institute of Nice, France, published their results in a recent issue of Physical Review Letters.

Eighty percent of the population wearing defibrillators have had a previous infarction, which plays a role in how Efimov's model works. An implantable defibrillator functions like a computer, comprising mainly a battery and large capacitor, and senses electrical disturbances created during heart arrhythmias.

"Since the disturbance is small, it must be amplified and analyzed to drive the output spike," Efimov said. "This is where we are working to improve the circuitry in our device."

Students open online-sales, bike shops

By Neil Schoenherr

The face of the row of student businesses on the main level of Gregg House has changed slightly this year.

Bears' Bikes, a bicycle rental shop, and Campus Easy Sales, a service aimed at serving customers' items online, have opened in the space formerly occupied by The Mane Location.

"We are very excited to have these two new businesses," said Karen Gettens, operations manager for the Student Entrepreneurial Program. "This brings the total number of student-run businesses to eight, with more than 38 participants. The program is flourishing and gaining in popularity each year."

The Student Entrepreneurial Program was created in fall 1999, and the first few businesses opened their doors in spring 2000.

The two businesses are operated by sophomores Wyeth Killip and Garber, Phil Katz and Wyeth Killip are managers of Campus Easy Sales, located on the main level of Gregg House.
Olin dean search committee formed

Chancellor Mark S. Wrighton has appointed a 15-member committee to consider candidates for the position of dean of the Olin College of Business. Stuart L. Greenbaum, Ph.D., recently announced his intention to step down as dean effective June 30. After a sabbatical, he plans to resume his position as Bank of America Professor at the Olin College.

"Since my arrival at Washington University in 1995, my ad- ministration and appointment for the Olin College of Business has grown," Greenbaum said. "The school serves many important purposes and is one of the University's best link to the business community regionally, nationally and internationally."

"Much progress has been made under Dean Greenbaum's leadership, and I am confident we can identify and attract an outstanding successor. Selecting the next dean is an opportunity for further advancing the visibility, impact and mission of the John M. Olin School of Business." 

Amia V. Thaker, Ph.D., the John E. Simon Professor of Finance in the Olin School, has been appointed chair and spokesperson for the search committee.

The committee is charged with conducting a successful search for suitable candidates, with special attention paid to encouraging women and members of minority groups to apply.

"It is imperative that all final candidates embrace a commitment to this community, realizing the benefits we achieve from diversity," Wrighton said.

The committee will identify a list of suitable candidates and then select finalists for on-campus interviews. After considering candidates' qualifications, the committee will recommend a final candidate to Wrighton. A search committee member list will be published in the next issue of the University Daily.

List of referees

Hilltop, West campuses
Frederick Anderson, 20 years; George Beruchs, 35 years; Eliza- beth Davis, 13 years; James Gehm, 23 years; Andrew Hutton, 36 years; Steven Hazeltine, 13 years; Joyce Jayne, 23 years; Marianna Mercier, 13 years; Bruce Miller, 10 years; Jill Olins, 19 years; Darlene Schone, 18 years; Paul Schoon, 17 years; Mary Kay Sheehan, 35 years; Yvonne Simmons, 14 years; Josephine Simpson, 46 years; Leonard Simon, 28 years; Rodney Wegmeyer, 26 years.

Medical Campus
Linda Baldwin, 18 years; Myrtle Barrett, 22 years; Charles Baldwin, 36 years; Andrew Hutton, 36 years; Steven Hazeltine, 13 years; Joyce Jayne, 23 years; Marianna Mercier, 13 years; Bruce Miller, 10 years; Jill Olins, 19 years; Darlene Schone, 18 years; Paul Schoon, 17 years; Mary Kay Sheehan, 35 years; Yvonne Simmons, 14 years; Josephine Simpson, 46 years; Leonard Simon, 28 years; Rodney Wegmeyer, 26 years.

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Hip fracture study needs elderly patients


Artistic expression in the midst: 20 Degrees East, a wood sculpture by Joel Chasis, is on of 10 pieces featured in the St. Louis Spatialastrogeny: Transforming Space exhibit that showcases work by St. Louis artists across the Medical Campus. Chasis's work is located in the courtyard of the Medical and Pediatric Research Building. The exhibit runs through June.

Protein may prevent cells from self-attack

University scientists have identified a protein that can reduce chances that immune B cells will erroneously attack the body's tissues, causing autoimmune disorders such as lupus, arthritis, and diabetes.

The protein is the first of its kind to be identified in B cells and could provide scientists with a new target for treatments of those conditions.

Scientists assumed for many decades that misguidance was the crux of the problem when immune attack cells went awry and attacked the body's tissues, causing autoimmune conditions. But a theory gaining widespread support suggests a more complex picture for new possibilities for treatments that ease or prevent autoimmune disorders.

"We used to think of nature immune cells like T cells and B cells as metabolically inactive when waiting for infections or other signals that trigger an attack," said Stanford L. Peng, M.D., Ph.D., assistant professor of internal medicine and of pathology and immunology. "We're now thinking these resting cells actually are very active but are kept in a quiescent state by genes actively working to shut down activating protein." "leashes" in T cells, now have begun looking for signs of abnormal MITF activity in hu-

In the study, Peng and his colleagues, who earlier this year discovered the first transcription factor "leashes" in T cells, now have begun looking for signs of abnormal MITF activity in human patients.

By Michael C. Purdy

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Jazz at Holmes • William Gass • The Political Process

By NADEGE GOUNEMNA

political analyst and popular
neoconservative thinker
William Kristol will present "The Best in White House Politics...What it Stands For" as part of the Assem-
by Series at 6 p.m. Thursday, Oct. 7, in Crow Hall.
Kristol was named as one of the nation's leading political anal-
ysts and commentators, Kristol
appears regularly as a commenta-
tor on Fox News.

Kristol co-wrote The New York
Times best-selling The War Over
Iraq: Saddam's Dynasty and Amer-
ica's Mission. In it, they explain the importance of U.S. im-
migration policy, which has led to a
war with Iran, and the critical role of foreign-policy decisions in past administra-
tions concerning Saddam Hussein.
Kristol is the founder and pub-
der of the National Review. He has
written for the New Republic. The
Standard, a Washington, DC-
based political magazine.

Kristol is one of Washington's most acclaimed political mag-
azines. He led the Project for the Republican Future, working with
both Republican presidential candidates concerning Saddam Hussein
and Clinton administrations.

Kristol is the founding editor
and publisher of the National
Review. He has written for the
New Republic, The Standard, and
Washington Monthly. He has
written three books: The Right Way,
The Best of America, and The Dis-
covery of Global Leadership. This
movement, propelled by what
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Kristol has enjoyed prominent roles within the government, including
as chief of staff to Secretary of
Education and author of the
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Exhibitions, book trace development of comics

BY LIAM OTTEN

There’s no shortcut from pop- art’s cultural revolution- ary fad, film, television, novels and musicals, jazz, and rock and roll — all spent years in the wilderness of critical, if not commercial, failure. Few have wandered longer than the comic book, a direct descendant of which date back to the early 1800s. But thanks to such acclaimed graphic novels as Art Spiegelman’s Pulitzer Prize-winning Maus (1986-1991) and Chris Ware’s Finch’s Building Stories (The.smart Kid on Earth — 2000) — the form has been brought back to critical and scholarly duty.

The School of Art today is opening The Rubber Frame: Culture and Comics, a pair of exhibitions (and an accompanying book; see separate story) that together examine the comic book from early precursors in England and Switzerland to turn- of-the-century newspapers to the underground comix of the 1960s and ’70s and contemporary alterna- tive comics.

“Comics have long since over- come shifting prejudices about their cultural value, or lack of same,” notes the program’s naturally- known illustrator and professor of visual communications in the School of Art, who organized The Rubber Frame: Culture and Comics, Gail Dowd. “The innovation of the Rub- ber Frame, the term I have coined pri- marily American comics to multi- ple formats, is more evident than ever,” Dowd said. “Those include broader thinking about antecedents; sus- tained research and critical perspec- tivist arguments about the relationship between creative strategy, technology and distribution; and reflections about representations of, and contributions from, African-American and Asian characters and artists.”

The Visual Language of Comics From Minstrel to Millionaire — and beyond — on View in Olin Library’s Great Hall A large, four- show exhibition, Visual Language of Comics From Minstrel to Millionaire — and beyond — on View in Olin Library’s Great Hall (Oct. 7 to Nov. 6, 9 a.m.-9 p.m.), represents a variety of formats, technical processes and their forerunners to modern comics. Highlights of the exhibition are designed by Heather Corcoran, assistant professor of visual communications and principal of Plum Studio. The catalog is provided by The Center for the Visual Arts Council, a state agency, and the Missouri Arts Council, a state agency, and the Regional Arts Commission, St. Louis.

Also opening today — at the Phil- howeiro Prize-winning Maus and Todd Hignite, The Rubber Frame: Essays in Culture and Comics (The Author, 1986-2004 opening at the University today.


Book The Rubber Frame: Essays in Culture and Comics

BY LIAM OTTEN

E dited by D.B. Dowd, professor of visual com- munication at the School of Art, and categorically Todd Hignite, The Rubber Frame: Essays in Culture and Comics (The Author, 1986-2004 opening at the University today.

“Comics were postmodern before the word was invented.... They are at once the most conventional and the most experimental in their playful exploration of the form.” Dowd examines the intertwining histories of film and television, film and television, as well as the American and European underground. The Rubber Frame: Essays in Culture and Comics, 1964-2004.

Finally, Gerald L. Early, Ph.D. — the Merle Kling Professor of Modern Literature at the University of African-American and Afro-American Studies of and English and di- rector of the Center for the Humanities, all in Arts and Sciences — considers “The 1960s, African-American and the American Comic Book.” The piece in- vestigates depictions of African-American in mainstream comics (Fantastic Four, Mad magazine, Pione- er comic, etc.) and explores the ways in which African-American in mainstream comics (Fantastic Four, Mad magazine, Pione- er comic, etc.) and explores the ways in which African-American in mainstream comics (Fantastic Four, Mad magazine, Pione- er comic, etc.) and explores the ways in which African-American in mainstream comics (Fantastic Four, Mad magazine, Pioneer comic, etc.).

The Rubber Frame is published by WUSTL, and designed by Harry Macus with the help of visual communications and principal of Plum Studio. The book is available in the Campus Book Mall in Mall. 2004.

Defib — from Page 1

The National Institute on Aging, call 621-4634.

"Crossing Network Lines" conference

BY JESSICA MARTIN

The Center for Social Develop- ment (CSD) in the George Washington School of Social Work will host "Crossing Network Lines: Facilitating Partner- ships and Building Coalitions Across Aging and Disability Services to Improve Service Delivery," a scientific meet- ing of national and local school- based professionals, March 2-4 in the Chauncey Park Plaz.

This meeting brings together school- based professionals in an open discussion to examine their work in partnerships and coalitions that are emerging in aging and disability organizations and what we can do to improve our work. The meeting will cover:...Hallie Naumann, Olin Library's editorial assistant, 205-419-HIT.

3:30 p.m. Career Center Event Center. Internship Strategies Workshop. 205-419-HIT. 4:30 p.m. Student Union Educator Year- end Celebration. 205-419-HIT. 4:30 p.m. Political Science. Government and Politics Course. 205-419-HIT.

Tuesday, Oct. 12

3 p.m. The School of Business: The Career Center Event. Lunch With a Pro: Business for Business Students. 205-419-HIT. 5:00 p.m. The Career Center. 205-419-HIT.

Wednesday, Oct. 13

11:15 a.m. The School of Business: The Career Center Event. Lunch With a Pro: Business for Business Students. 205-419-HIT. 5:00 p.m. The Career Center. 205-419-HIT.

Saturday, Oct. 9

7:30 p.m. A celebration of William Gass, reading & exhibition in tribute to the University today. Redfern. The theme of the evening is Gass’s "Comics were postmodern before the word was invented.... They are at once the most conventional and the most experimental in their playful exploration of the form." Dowd examines the intertwining histories of film and television, as well as the American underground. The Rubber Frame: Essays in Culture and Comics, 1964-2004.

Contemporary practitioners include cartoonists Joe McCarty, Burns, Daniel Clowes, Gary Panter and John Holmstrom, who co- founded (with brothers Gilbert and Jaime Hernandez, the latter co- founder of stream comics — at Olin Library’s Great Hall today. The exhibition includes approximately 150 original drawings by 30 images including underground pioneers Robert Crumb, Kim Deitch, Spain Rodriguez, Gilbert Shelton and Frank Stack (aka Foolbert Stur- geon). The exhibit is designed by Heather Corcoran, assistant professor of visual communications and principal of Plum Studio.

The book is available in the Campus Book Mall in Mall. 2004.
WASETNGTON UNIVERSITY IN ST. LOUIS

Health care — from Page 1
care regardless of race, ethnicity and income status, trolling the high and rising costs of health care and striving for efficiency and effectiveness of future health care delivery without sacrificing the pace and promise of medical progress.

For the past year, Peter and Steven S. Smith, Ph.D., director of the Washington University and the Kate M. Gregg Professor of Social Medicine, has been organizing this conference. "Everyone agrees that the day before the presidential debate at the University was — was carefully selected in order to bring awareness about health care policy issues."

"The presidential election is an excellent time to consider and set forth the concerns — and possible remedies — for issues surrounding health care" said Peck. "That's why the question of financing and quality of health care in America and the world is one of the most important issues of our time."

According to Peck, among the most frequently cited health-care concerns are the high cost of health care and prescription drugs. Peck said that identifying uninsured and under-insured Americans, who continue to suffer from other problems requires a collaborative effort by policy-makers, the private sector, the medical profession and government. "This meeting is about the United States has policies, laws, regulations and public-private policies that can help to ensure that the United States with an outstanding health system," he said. "Identifying effective solutions is now among the most difficult and difficult tasks facing our nation."

To help overcome those obstacles, according to Peck, the Health Policy last winter. It aims to bring together these, these health-care issues and public-private policies that will be improved beyond the high cost of health care as well as creating a better health care system for the United States and abroad to undertake meaningful reform. "We are also very interested in the relationship between the medical field and the health care system."

Peck said. "We have to be very clear that we don't impede the spirit of the medical field through the innovation in medical science."

Peck added that in addition to understanding health-care policies and analyses, the University is also dedicated to sponsoring conferences like "Health Care Challenges in the Twenty-First Century with Blue Stars on a White Star Field. This unusual and visual exhibit, which was shown at the妞妞, will be closed. Additionally, dialy parking passes will not be honored on Oct. 8. In the past, all annual parking permits will be allowed to park on campus."

The WUSTL shuttle system will be running regular schedule through Oct. 7 but will be reduced and changed routes and changed conditions after. The WUSTL will be delayed and rerouted on the campus.

Exhibits — from Page 1

University of Missouri annual Pictures of the Year international photo competition.

The images have been designed into a traveling exhibition of 16 3-foot by 4-foot panels. National Public Radio's Scott Simon moderated the forum, which is featured on the first face. "Solving these and other problems has been organized this conference."

"As we go about today, we need to speak on the 'Impact of Medical Care Reform'" said Peck. "The images will be placed in the state Capitol and the Missouri Foun-...

A third exhibit, featuring 16 3-foot by 4-foot panels, covers and lobbies surrounding the debate venue. "We have your parking location on the Hilltop Campus is being advise.

For the most recent information regarding the debate, go online to debate.wustl.edu/debate/updates.
The Department of Physics in Arts & Sciences is presenting its annual series of lectures aimed at a general audience. The talks, which will focus on a series of papers published in 1905 by Albert Einstein, will be held at 10 a.m. each Saturday in October in Crow Hall, Room 201. The schedule is as follows:


This talk will explore the nature of gravity and its relation to other forces in nature. This is still a puzzle and is one of the most important areas of astrophysical research.

**Oct. 16 — "General Relativity," by Clifford M. Will, Ph.D., professor of physics in Arts & Sciences.**

Einstein went beyond special relativity to consider the nature of gravity and its relationship to other forces in nature. This is still a puzzle and is one of the most important areas of astrophysical research.

**Oct. 30 — "Brownian Motion," by Andreas E. Carlsson, Ph.D., professor of physics in Arts & Sciences.**

This talk will discuss the interaction of electromagnetic waves and the surface of a pond, where the molecules of water move in irregular ways. Einstein showed how this Brownian motion was an example of how wave interference can occur. His theory provided the first clear demonstration of the reality of molecules and their movements.

The lectures are free and open to everyone. For more information, go online to physics.wustl.edu.

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**Statistics**

The football team suffered a 32-28 loss at North Central College on Oct. 23 in Naperville, Ill. North Central (3-0) took the opening kickoff 72 yards on seven plays to gain the 7-0 advantage, but WUSTL answered with a 77-yard drive of its own. Senior Adam Meranda connected with senior Zak Clark for a 6-yard touchdown strike.

Early in the fourth quarter, North Central held a 25-21 lead before Brad Dursing had a 43-yard TD reception, his second score of the game. But that was all the Bears could manage to bring their leading to 2-1. Meranda finished the day with 305 yards passing and four touchdowns; Dursing had nine catches for 154 yards.

The Navy's soccer team posted a 2-1 record last week, picking up a pair of shutouts. The Bears blanked Westminster College, 2-0, Sept. 24 in Fulton, Mo. Senior Rob Haws led with his third goal against the Wildcats. He tallied his second goal two plays later in a 1-0 win over Millikin University. He scored all three goals as WUSTL defeated the Fighting Frogs, 2-1, Sept. 21 when the Bears fell 2-1 at Illinois Wesleyan University. Sophomore Meghan Marie Fowler scored late in the second half to prevent the shutout. On Sept. 24, the Bears thumped Blackburn College, 11-0. Freshman Cami Pope paced the Bears with two goals and a record-breaking five assists.

The Bears' 11 goals were the most in a game since Sept. 4, 1999, when they defeated Anderson, 12-0. WUSTL's eight second-half goals were a school record, and its 12 assists tied a school mark. Wash-U's 19 goals are tied for first place with the Titans.

The No. 11 women's cross country team and No. 25 men's squad sent representatives to the Roy Griak Invitational in Minneapolis, Minn., and the Miner Invitational in Rolla, Mo. The women placed seventh at the Roy Griak, paced by Maggie Graczyk, who finished 11th in a field of 191. On the men's side, WUSTL finished 11th. The women took fourth at the Miner Invitational, while the men placed fifth.

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**Employment**

**For the Record**

**Oblictory: Burrus**

Harry Burrus, tennis coach and athletics director at the University in the 1960s, died at 82. His obituary in The Daily Django, the student newspaper, will be an important part of the file. The Daily Django, the student newspaper, will be an important part of the file. The Daily Django, the student newspaper, will be an important part of the file. The Daily Django, the student newspaper, will be an important part of the file. The Daily Django, the student newspaper, will be an important part of the file. The Daily Django, the student newspaper, will be an important part of the file. The Daily Django, the student newspaper, will be an important part of the file. The Daily Django, the student newspaper, will be an important part of the file. The Daily Django, the student newspaper, will be an important part of the file. The Daily Django, the student newspaper, will be an important part of the file. The Daily Django, the student newspaper, will be an important part of the file. 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Richard L. Axelbaum sets world aflame

BY TONY FITZPATRICK

We're also able to have control of the nanoparticle range. The SFE technology is faster and cheaper than existing commercial processes. We are also able to have control of particle size and shape. Our present focus is tantalum metal for electronic capacitors. The nanopowders will allow for smaller, faster and more sophisticated electronics.

Richard L. Axelbaum with his wife, Maurie, and children (from right) Aaron, 16, Ari, 14, and Adira, 11, at Art's Bar Mitzvah last year.

"Material production is accomplished in a single step with our technology," Axelbaum said. "The key feature of the process is that we're able to produce stable, high-purity particles in large quantities. We're also able to control particle size and shape. Our present focus is tantalum metal for electronic capacitors. The nanopowders will allow for smaller, faster and more sophisticated electronics."

"Science is evolving all the time," he said. "It has evolved into a position today much more compatible with religions than it was 100 years ago. For instance, instead of a steady state view of the universe totally inconsistent with the creation scenario, science now recognizes that there was a beginning to the universe. The fact that science can make such radical change to conform with religion shows that science and religion don't have to be at odds."

"I've always been good in math and science and I loved building things," said Axelbaum, whose father was an industrial engineer. "I really wanted to do was apply engineering to create commercial process, to make stable metal powders."

"I always meant to be a practical person," he said. "I've always been someone who is good at practical and doing."

Axelbaum has developed a patented process that makes nanoparticles smaller and more pure than competing technologies. And the process is faster and cheaper than existing commercial processes. He calls his technology the sodium/halide flame and encapsulation technology (SFE)."We use a very intense, turbulent flame and flame reactor, Axelbaum uses sodium reduction of metal halides, such as boron trihalide and titanium tetrachloride, to make emerging ceramic nanoparticles. bolts.

Richard L. Axelbaum, Ph.D., graduate student Ben Kumfer and postdoctoral researcher Sun Zhou, D.S., watch السوق form on a piston in Axelbaum's Uburn Hall laboratory.

Richard L. Axelbaum, Ph.D., professor of mechanical engineering, for more than 20 years in his career as teacher and researcher in combustion, materials and environmental science.

"Rich is a marvelous professor of materials and environmental science, but he has also been very innovative in combining that with materials science."

"Rich is one of our most popular teachers, and is central in our courses on thermodynamic, combustion, and heat transfer. He is great at combining practical and theoretical knowledge into a coherent story."

Axelbaum also has played a vital role in reestablishing the Environmental Engineering Science program. He credits his colleagues, particularly Pravin Biswas, program chair, with much of the success, but is proud to be part of this team.

In the early '90s, Axelbaum was part of an interdisciplinary Washington University team comprising chemist William Beben, Ph.D., physicist Kenneth Kelton, Ph.D., and mechanical engineer Shankar Sastri, Ph.D., to study nanoparticles. They were in the vanguard of the burgeoning nanotechnology field, sponsored by a new initiative by the National Science Foundation. He credits his colleagues for designing the experiments that allowed him to do this work.

"Science is evolving all the time," he said. "It is evolving into a position today much more compatible with religions than it was 100 years ago. For instance, instead of a steady state view of the universe totally inconsistent with the creation scenario, science now recognizes that there was a beginning to the universe. The fact that science can make such radical change to conform with religion shows that science and religion don't have to be at odds."