Upstate outlook

News on education, biomedical research and health care at SUNY Upstate Medical University Syracuse, New York

Volume 4, Number 3 Fall 2004

In Her Footsteps

Now filling a healthy one-half of their class, Upstate's incoming women medical students follow a trail blazed by Upstate's first female surgeon, Patricia J. Numann MD '65, recently inducted into the International Women in Medicine Hall of Fame.

Presidential Perspective

Where There's Smoke, There's Danger

The announcement of my proposal to make Upstate smoke-free by August 2005 has won the support of many who feel, as I do, the glaring inconsistency between our mission – preventing disease and improving health – and our acceptance of smoking in designated places on campus.

On the other hand, the plan has elicited opposition from some employees who smoke – and some who do not. "No way, no how," they tell me. "This is an infringement on our rights."

My response to this concern is that I respect the rights of smokers – but not to the extent that they infringe on the rights of others, including the right to breathe clean air.

However harmful smoking may be to someone who smokes, it is not sufficient reason to ban smoking in buildings, as defined by law in this state, and in certain external environments. The rationale for eliminating smoking in indoor and outdoor public environments is the growing evidence that exposure to so-called second-hand smoke is a health risk for non-smokers.

In the past 25 years, scores of studies have shown that exposing non-smokers to such environmental smoke is associated with an increased risk of heart disease, respiratory disorders and lung cancer.

Further, some of the acute physiological effects of exposure to second-hand smoke – such as arterial constriction, increased platelet stickiness and constriction of the airways – can aggravate existing conditions.

Of course, it's been known for centuries that tobacco is not our friend. Two hundred years ago, Philip Freneau wrote, "Tobacco was surely designed to poison and destroy mankind." What I regard as the modern era of combating the harmful effects of smoking began in 1964 when Dr. Luther Terry, surgeon general, issued his now-famous reports, based on more than 7,000 medical studies. Dr. Terry concluded that cigarette smoking is a cause of lung cancer and laryngeal cancer in men, a probable cause of lung cancer in women and the most important cause of chronic bronchitis.

In the late 1980s, surgeon general Dr. C. Everett Koop sounded an even-louder alarm, stating that "cigarette smoking is the leading cause of preventable premature death in our society and the most important public health issue of our time."

UPSTATE MEDICAL PHOTOGRAPHY

Gregory Eastwood MD

Since then, the evidence that smoking is a leading cause of heart disease, lung disease, cancer and a host of other disorders has become irrefutable. Further, the cessation of smoking has been shown to markedly improve health and the prospects for longer life.

All of which inspires our goal to make Upstate completely smoke-free by August 1, 2005. That means no smoking within the buildings or on the grounds we own or lease.

Already we have begun the transition toward that goal: by more thoroughly enforcing our existing smoking policy; by expanding smoking cessation programs for interested employees; by developing educational programs; and by working to gain the support of union leadership.

I hope that we will gradually earn the support of those who now oppose this proposal. Our most recent survey indicates that about 17 percent of our employees are thought to be smokers. In that same survey, 85 percent of those smokers reported they had tried to quit smoking – a figure which I find very encouraging.

I have a personal concern for smokers. I understand that smoking is often a serious addiction, and the cessation of smoking may be associated with troublesome physiological reactions as well as emotional depression and mood changes. We are sensitive to this and will do everything we can to support smokers who want to quit smoking.

As I learned when I first spoke out on this important but controversial issue, the right thing to do is rarely the easy thing to do. But the outcome will be a healthier Upstate and a victory for all.

–Gregory L. Eastwood MD, President
SUNY Upstate Medical University

Upstate outlook

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PUBLISHER
Ronald R. Young
Vice President, Public and Governmental Affairs

EXECUTIVE EDITORS
Darryl Geddes
Director, Public and Media Relations

Melanie Rich
Director, Marketing and University Communications

EDITOR-IN-CHIEF
Denise Owen Harrigan

ACADEMIC/RESEARCH EDITOR
Leah Caldwell

DESIGNER
Susan Keeter

WRITERS
Leah Caldwell
Darryl Geddes
Denise Owen Harrigan
Dan Hurley
Susan Keeter
Doretta Royer

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SUNY Upstate Medical University in Syracuse, NY, is an academic medical center with four colleges – Medicine, Nursing, Health Professions and Graduate Studies – as well as an extensive clinical health care system that includes University Hospital and numerous satellite sites. Affiliated with the State University of New York, SUNY Upstate is one of Onondaga County's largest employers. For more information, visit us online at www.upstate.edu or phone us at 315-464-4836.

For corrections, story suggestions and submissions, contact Denise Owen Harrigan, 315-464-4822 or e-mail harrigad@upstate.edu

For additional copies, call 315-464-4836.

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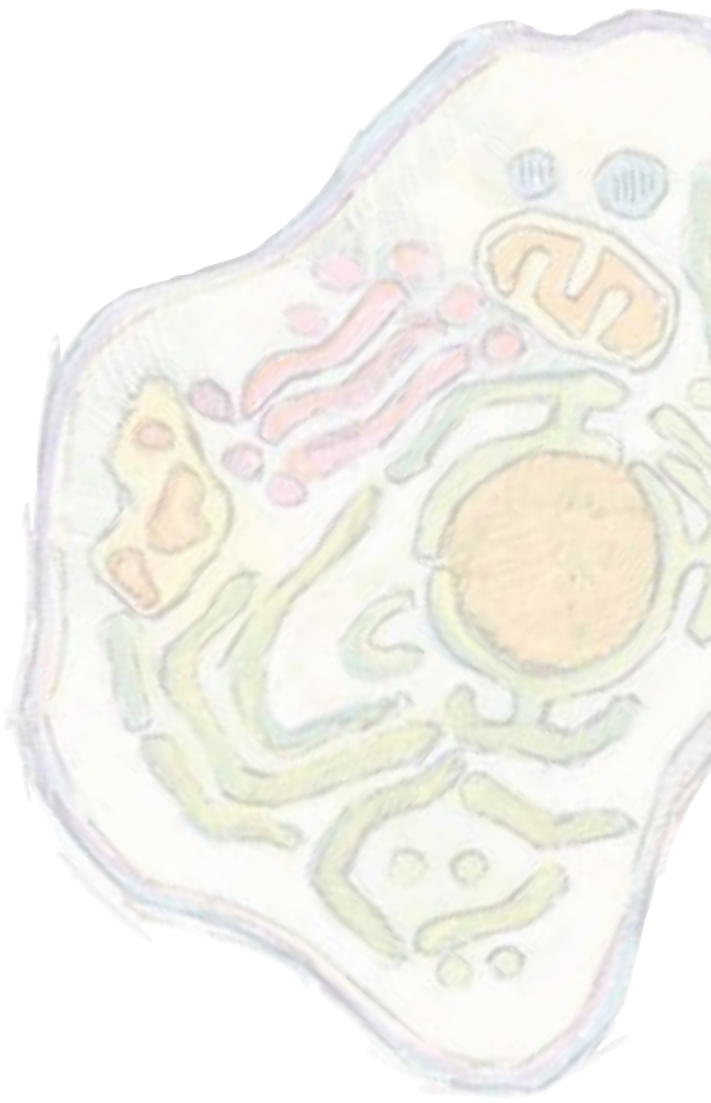
On the cover

Robert Mescavage
Photographer



Upstate outlook

Publisher's Perspective: Civil Matters

Last month, as I listened to our thought-provoking Diversity Forum keynote speaker, Frank Pogue PhD, I was struck by his recurring emphasis on the practice of civility. "Civility is not a stand-alone or an add-on," he insisted. "It must be thoroughly integrated into every discipline and every endeavor."

Dr. Pogue's belief in civility – and its powerful impact on an institution's culture – reminded me of a "vintage" human relations pamphlet I came across recently. In that dog-eared pamphlet, published some 40 years ago, business statesman Clarence Francis wrote, "You can buy a man's physical presence in a given place, you can buy a number of skilled muscular movements per day. But you cannot buy enthusiasm, you cannot buy initiative, you cannot buy the devotion of hearts, minds and souls. You have to earn these things."

And how do you earn these things? To a great degree, by practicing civility, a virtue which in turn communicates fairness and respect.

The civility theme resurfaced once again in a presentation by Ann Sedore PhD, RN, chief operating officer and chief nursing officer of University Hospital, who was reporting on our pursuit of Magnet status from the American Nursing Association and recognition as an employer of choice.

Dr. Sedore noted that hospital morale is certainly heightened by physical upgrades, such as our vertical expansion and children's hospital. But she said that far more influential, in terms of recruiting and retaining employees, is our core culture – and the degree to which it demonstrates civility and respect for colleagues, staff, students and patients, of all ages, backgrounds and beliefs.

The field of modern medicine seems to be rushing forward at blinding speed; it is reassuring, therefore, to find that old-fashioned virtues, such as civility, respect and fairness, remain integral to excellence. The ultimate reward for practicing these virtues is not a prestigious designation, per se. It's higher quality healthcare, a more rewarding work environment – and an exhilarating sense of teamwork for us all.

Ronald R. Young,
Publisher and Vice President
for Public and Governmental Affairs

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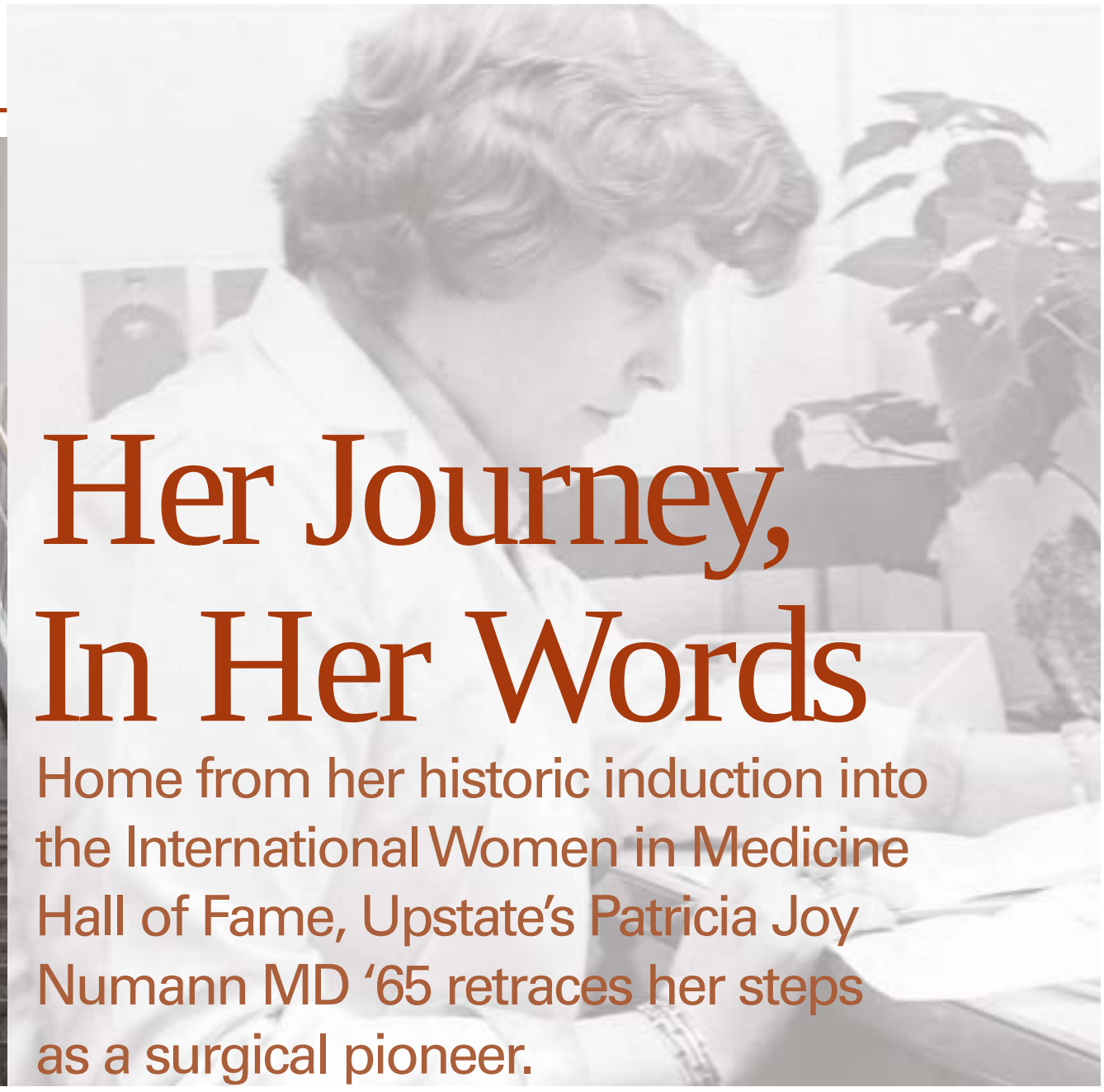
SUSAN KAHN



Her Journey, In Her Words

Home from her historic induction into the International Women in Medicine Hall of Fame, Upstate's Patricia Joy Numann MD '65 retraces her steps as a surgical pioneer.

Patricia Joy Numann MD '65, Lloyd S. Rogers Professor of Surgery, sits in her unpretentious University Hospital office, pondering the question, "What is your most satisfying medical achievement?"

Suddenly, her face brightens. "It has been statistically proven," she announces, "that our greatest achievements are most likely to come after the age of 65, when the consuming work of the day is no longer required. I find that very encouraging.

"At any rate," Numann concludes, "I don't like to spend a lot of time reliving the past, when there is still life to be lived. "

But reviewing the past is more than justified in the case of Numann, whose understated style of leadership has prompted dramatic shifts for women in medicine. In a recent conversation about her 43 years at SUNY Upstate and her experience as its first woman surgeon, the famously matter-of-fact Numann answers a few questions about her journey:

Elizabeth Blackwell MD 1849

You must have been an anomaly when you entered our College of Medicine in 1961.

There were eight women in my class of 83 students – back then, most medical schools had a quota of five to 10 percent women. There was still a strong sense that it was a waste to train woman doctors, because they would soon leave medicine for marriage and families.

I was very familiar with that attitude. Growing up in the poor Catskill community of Denver (population 82), people were always asking, didn't I really want to be a nurse? In my premed program at the University of Rochester, three out of 15 women made it to medical school. I went to medical school after only three years of college (probably because I scored unexpectedly high on the boards) and followed Elizabeth Blackwell (the first American woman to graduate from medical school and also inducted into the International Women in Medicine Hall of Fame) to Upstate's College of Medicine. Not that there was any sign she'd been here – a situation that the medical school's women's group addressed when we had her portrait painted in 1964.

What attracted you to surgery?

I loved the clinical years in medical school and met wonderful residents in my surgery rotation. I didn't know another woman surgeon, but I knew I liked to fix things, that I'm very meticulous and that surgery allows you to accomplish something amazing in a finite period.

To be a surgeon is addicting. It's a delight when you're in the OR and you can focus solely on the operation. But you very seldom have that luxury. The surgeon is the leader of the team. And in a teaching hospital, the surgeon is also teaching through the whole procedure. Surgery is not for the linear thinker – you have to intellectually multitask.

While being kind and caring are not antithetical to surgery, you can't be too nice and be a leader at the same time. You have to hold every person in the operating room accountable. The prototype for surgeons has long been pretty macho, aggressive, controlling. Men in surgery today believe women have changed surgery. Women see themselves as confident, focused, in control but not controlling. It's an attitude shift.

What was your experience, as Upstate's first woman surgeon?

In the 1960s, teaching hospitals routinely sent back residency applications from women. I was grateful to be accepted as a mixed medicine-surgery intern. A deal was made with Dr. C. Barber Mueller to give me a surgery spot if I did well. Dr. Lloyd S. Rogers became the acting chair during my residency, and he became my friend for life.

As a resident, I was more of a curiosity than an outcast. The classes were smaller – about four chief residents per year – and you slowly and steadily got close to the male doctors. I found then, as I have found throughout life, that a good work ethic keeps you in good stead. Yes, a few of the attendings were nasty in those days – and yes, I had to use the service entrance to attend department meetings at the Century Club – but in general it was not that contentious.

When I was ready to practice in 1970, there wasn't a big demand for women surgeons. Male surgeons would make excuses like 'My wife doesn't want a woman in our practice.' I always thought I'd go home to the Catskills and practice, but my parents were gone by the time I was trained. It was never my goal to be an academic, but I accepted Dr. Webb's offer to join the faculty, and I let things evolve.

I knew I would enjoy taking care of patients. I was surprised by how much I enjoyed teaching and mentoring students, female and male. You have a logrythmic influence. Every student goes on to treat thousands of patients and to teach others.

When did women become more of a presence at Upstate?

On the student level, Title Nine in 1973 produced a dramatic increase in the number of women in medical school. But on the faculty level, I remained the only woman surgeon until 1979. Only recently have we reached the point where women steadily join the faculty every year.

Today, I would say that male and female students, who are roughly equal in number, are treated equally. Things are pretty even at the junior faculty level. At higher levels, we need to do more to proactively facilitate women's development and promotion into leadership positions. I think it is important to remember that essentially all important positions in American medicine are held by men. These same men must help women achieve equity. So I am not a male basher. On the contrary, I could never have gotten where I am without well-meaning men.

That said, the women of SUNY Upstate are wonderful.

What they lack in numbers, they make up in quality. They have had a tremendous impact on students, residents and patients. They prove that individuals can make a tremendous difference.

Why did you make thyroid and breast surgery your surgical niche?

Breast surgery, because it needed to be done. Endocrine surgery because I love it, it fascinates me. It will be the last thing I give up. I still do about 200 thyroid surgeries a year. In the past, I would do about 500 surgery cases a year, but last year I gave up taking new breast cancer patients, to make more time for my current patients. I like the fact that these specialties allow you to have long-term relationships. You follow thyroid patients for 10 years and breast cancer patients for life.

It is very gratifying to take care of patients – and a huge responsibility. Patients have complete trust in you. You'd hurt yourself before you hurt them. In the OR, the surgeon is often the only person the patient knows. That's why I'm always there to hold my patients' hands when they go to sleep. The anesthesiologists joke that as soon as I come in and take a patient's hand, the blood pressure drops.

You seem to have a gift for connecting with surgeons across the country.

My first surgery chair, Dr. Webb, encouraged me to not be afraid of the whole system – to make connections, to go to meetings, to serve on committees. So I went. Eventually I became the first woman to serve on the American Medical Association's (AMA) Council on Scientific Affairs, and the first woman vice chair and chair of the American Board of Surgery.

For a long time, I knew that women in medicine were not treated equally, but I didn't politicize it. It just was. I guess you could say that the feminist transition in my life came in 1978, at a leadership program sponsored by the American Medical Women's Association. I met very accomplished women physicians who had been treated poorly, paid less, not promoted. I realized it was happening everywhere, not just in Syracuse. And it wasn't just surgery, it was medicine in

general. At that meeting, we promised we would improve networking for women. A few years later, at the American College of Academic Surgeons meeting, I put up a sign asking other women surgeons to join me for breakfast. Twenty women came. We made a commitment to have breakfast every year. Then we started having breakfast and dinner.

Then we became a true organization, the Association for Women Surgeons. It's not a scientific organization, it's more advocacy-oriented. We want women recognized and represented at all levels in all the medical organizations. We support a fellowship and sponsor visiting professorships. We have a foundation.

Today, 25 to 30 percent of women surgeons – more than 1,600 women – belong to our association, including the most accomplished women surgeons in the country. They know there are still a lot of issues to address. I would say that the Association of Women Surgeons is my greatest accomplishment. It represents a guiding principle of my life: what's unjust to me I won't let happen to others.

Why did you take on the role of medical director at University Hospital?

Because it needed to be done. An administrative position allows a clinical physician to influence a larger segment. You can help the hospital understand how hard the physician's job is. You can encourage the chairs and departments to play a more active role in meeting the community's needs.

I have a history of taking on jobs because they need to be done.

When I first joined the faculty, I ran the student surgical clerkships and Introduction to Clinical Medicine, and – while it was not my primary interest – I did a lot of work on clinical testing, published that work, presented it at a national meeting and helped to establish the Association for Surgical Education. When I became Upstate's associate dean in 1978, I wrote the grant that helped us establish our geriatrics program. Doing those things was just the right thing to do.

With your national reputation, what has kept you tethered to Upstate?

The important thing to me is not so much where I practice but that my personal reputation is impeccable. I've been offered opportunities and large amounts of money at very prestigious institutions. I came close to leaving twice but decided that the people with whom I work closely meant too much to me for me to leave.

My philosophy is to stay put and fix what you don't like. Besides, this institution has allowed me to pursue the dreams for which I'm recognized. And I love Syracuse. I have no clue why people would want to move. You can get to the bank in two minutes, to the airport in six and to work in ten.

Do you have any regrets?

No recurring regrets. Sometimes I worry I may have had a negative influence on women, because I am single and childless and work too hard. But I basically love what I do. I am a happy person. And as I said, I don't think you should spend a lot of time reliving the past.

–Denise Owen Harrigan

Patricia J. Numann, MD

B.A. University of Rochester, 1962

M.D. SUNY Upstate Medical Center, 1965

Residency in Surgery: SUNY Upstate Medical Center, 1970

Professional Highlights

1997

Named Medical Director, University Hospital

2000

Named Lloyd S. Roger Professor of Surgery, SUNY Upstate Medical University

Selected Posts & Honors

1985

- **President, Association for Surgical Education**

1986

- **Founder/President, American Association of Women Surgeons**

1994

- **SUNY Distinguished Teaching Professor**

1995

- **First woman chair, American Board of Surgery**

1998

- **Onondaga County Medical Society Physician Service Award**

1999

- **SUNY Distinguished Service Professor**
- **First woman vice president, American College of Surgeons**

2000

- **SUNY Distinguished Alumnus**

2003

- **Humanitarian of the Year, Carol M. Baldwin Breast Cancer Research Fund**

2004

- **America's Top Surgeons Award**
- **Inducted into International Women in Medicine Hall of Fame, American Medical Women's Association**

The Research Factor

SUNY Upstate is the only institution in Central New York dedicated to large-scale research based solely on understanding the human condition. Thousands of hospitals treat patients, and hundreds of universities teach students. But add biomedical research to these two components, and you have a medical university, of which we are one of only 125 in the nation, and the only one in the region.

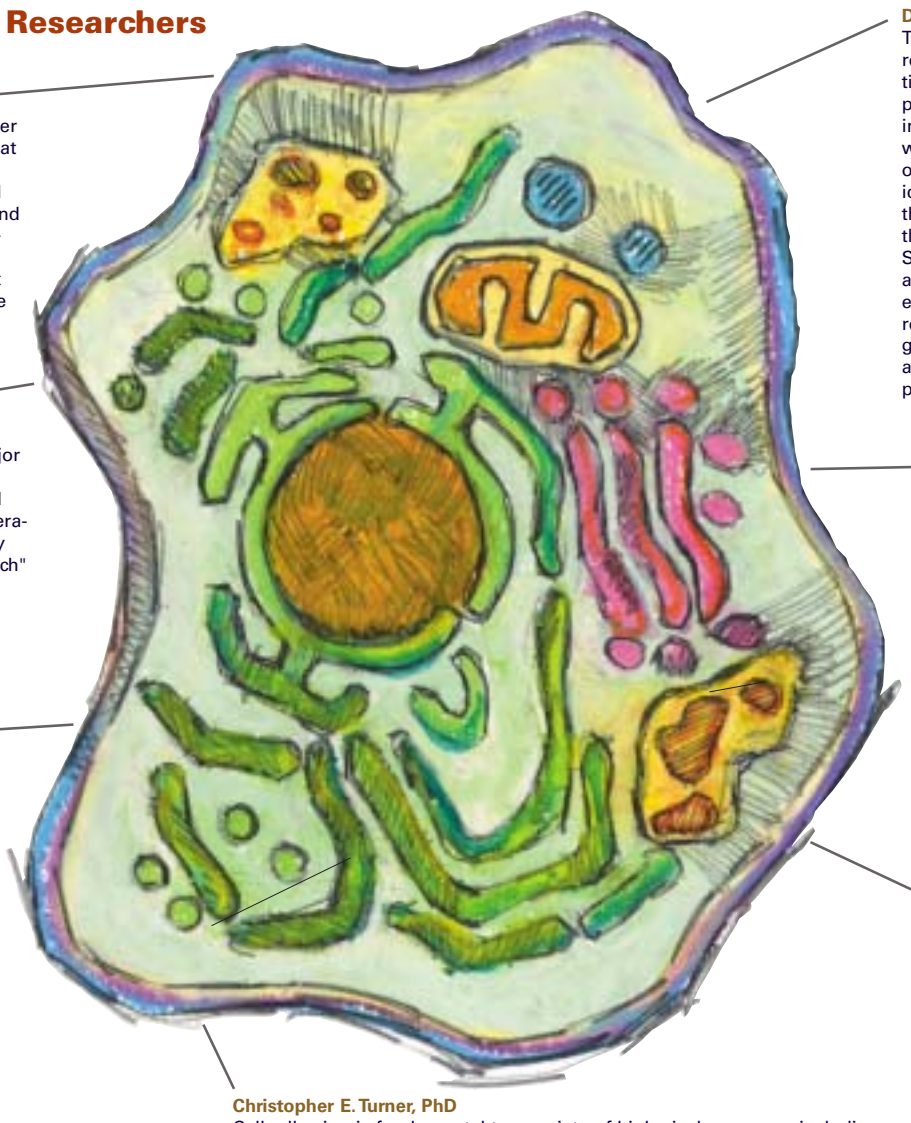
At SUNY Upstate Medical University, there are scores of original research projects in progress right now. Scientists here are probing questions related to cancer, blindness, heart disease, AIDS, brain chemistry, human performance and more. Clinicians and scientists also investigate health care questions outside the lab and conduct clinical trials with the latest disease-fighting protocols.

To place the current impact of research in context, here is a fact to ponder: an investigator in New York City estimated that 85 percent of all the scientists who ever lived are alive today. And those scientists are unlocking mysteries at an unprecedented pace. Each day, they publish tens of thousands of observations that help us better understand life. Most of us will never hear of these discoveries, yet they chip away at solving problems that can affect us all.

The image of the scientist is as prone to clichés as any other profession, and "exciting" may not leap immediately to mind. But perhaps it should. Scientists have creative jobs in which they ask their most intriguing questions and then embark on a quest to find the answers. Sometimes the quest takes them to colleagues in other countries, other times to the microscopic reaches of the human body. Investigators must also approach their work with the enthusiasm that transcends the frustration of blind alleys and the insecurities of funding. Not every experiment leads directly to a cure, but byproducts from funded research include the education of scientists, and the continuing expansion of our scientific knowledge base.

–Leah Caldwell

Selected NIH-Funded Studies By SUNY Upstate Researchers



Huang Ying, PhD
The body's production of cancer cells is a multi-step process that involves activation of proto-oncogenes—which are normal genes that can turn deadly—and inactivation of genes that suppress tumors. One part of our research is to investigate what cellular signals are responsible for this gene transformation.

David Gilbert, PhD
How cells duplicate their genetic material (DNA) is arguably the major remaining mystery of molecular biology. Yet this poorly understood process is central to cellular proliferation, which happens uncontrollably in all cancers. Finding the "off switch" for cell growth would be a key to developing cancer treatments.

Richard Cross, PhD
The ATP synthase, which provides most of the energy your cells need to stay alive, is a tiny molecular motor. Instead of running on a current of electrons, the synthase runs on a current of protons using the energy available to produce an energy-rich molecule called ATP. This research studies the mechanical properties and regulation of the synthase. The results will provide a better understanding of an important biological process and may lead to the use of this rotary motor in developing nanotechnology.

David Amberg, PhD
The actin cytoskeleton is a central player in regulating cell growth as well as cell and tissue shape changes. These complex processes require well-coordinated changes in the architecture of the actin cytoskeleton, which is under the control of a large battery of actin binding proteins. This lab has identified several new actin binding proteins that employ novel mechanisms to regulate the dynamics of actin-containing networks. Since alterations in the actin cytoskeleton are associated with many disease states, it is expected that this research will have broad relevance—most notably in the areas of growth control and spread of tumor cells, and in the prevention of crisis in sickle cell patients.

Mark Schmitt, PhD
Understanding how nucleic acids are imported into mitochondria — the cell's power producers — will help us design methods for gene therapy on patients with mitochondrially inherited diseases. Another study aims to identify the role of mRNA degradation in the pathways controlling when cells divide. It is control of cell division that goes bad in all cancers. Better understanding the mechanism of regulatory controls will allow us to identify new targets for cancer drugs.

Richard Wojcikiewicz, PhD
Our work is designed to investigate how mammalian cells adapt when activated, and in particular how the ubiquitin-proteasome pathway (which plays important roles in a broad array of basic cellular processes) mediates this adaptation. This will lead to a deeper understanding of how cells work and ultimately to better therapies for cancer and neurodegeneration.

Christopher E. Turner, PhD
Cell adhesion is fundamental to a variety of biological processes including embryonic development, metastasis of cancer cells and the targeting of immune cells to sites of injury. This research aims to determine the molecular organization of the proteins that are enriched at cell adhesion sites and understand their roles in a cell's ability to respond to its external environment. By identifying these interactions, small molecule inhibitors may be able to modify cell behaviors—perhaps to promote wound healing or suppress metastasis.

Awards from the National Institutes of Health 2003-2004

NOTE: This list is compiled from sources at SUNY Upstate and NIH. Multiple-year grants show current year's award.

Amberg, David $292,358
Regulation of Actin Dynamics

Barker, Edward $228,000
HIV Evasion of Ctl And Nk Cells By Hla-G

Barker, Edward $76,000
Resistance of HIV-Infected Cells To Natural Killer Cells

Barker, Edward $228,000
HIV Evasion of CTL and NK cells by HLA-G

Barlow, Robert $223,359
Computational Models of Retinal And Brain Function

Barlow, Robert $45,600
Circadian and Efferent Modulation of Visual Sensitivity

Batki, Steven $585,612
Naltrexone Treatment of Alcohol Abuse In Schizophrenia

Batki, Steven $612,502
Improving Hepatitis C Treatment In Injection Drug Users

Beaumont, Jacques NA
Membrane current kinetics in dynamics of vortex-like reentry

Beaumont, Jacques NA
Computer and Electronics

Blystone, Scott $266,000
Beta-3 Integrin Tyrosine Phosphorylation

Blystone, Scott $113,652
Actin Nucleation by Integrin Complexes

Bruns, Marla $30,066
Effect of ethanol on neurotrophin systems in adult brain

Calancie, Blair $514,695
Body Weight Supported Ambulation Training

Cross, Richard $384,581
Structure And Mechanism of F0f1-Atp Syntheses

Damron, Timothy $239,400
Growth Plate Cellular Function Following Radiotherapy

Delmar, Mario $360,240
Ph Regulation of Connexin 43: Intermediary Steps

Delmar, Mario NA
Structure, Function and Regulation of Gap Junction Protein

Friedman, Eileen $279,879
Mirk Kinase In Colon Cancer Development

Gilbert, David $376,811
Specification of Mammalian Replication Origins

Gilbert, David $171,850
DNA Replication during ES Cell Differentiation

Haas, Gabriel $304,000
Detection of Occult Prostate Cancers In Elderly Men

Hodge, Charles $304,000
Cortical Plasticity: Mechanisms and Modulation

Holohan, Peter $190,000
Fenib: A Familial Seizure Disorder

Huang, Ying $152,000
Characterization of A Novel Lysophospholipase

Huang, Ying NA
Characterization of A Novel ER Member Protein

Huda, Walter $312,282
Dose and image quality in adult and pediatric CT

Hwang, Charles $334,000
Fidelity of Herpes Simplex Virus DNA Replication

Jalife, José $387,204
Spatio-Temporal Periodicity In Artial Fibrillation

Jalife, José $1,843,764
Intercellular Communication and Impulse Propagation

Jalife, José $380,000
Molecular Mechanisms In Ventricular Fibrillation

Jalife, José NA
Cardiac Connexins in Impulse Propagation and Arrhythmias

Kane, Patricia $258,400
Subunit Structure and Function In Vacuolar H+-Atpase

Kane, Patricia $212,800
A Skpl-Containing Complex Regulating V-Atpase Activity

Kates, Wendy $268,920
Neuroanatomy and Cognition in Velocardiofacial Syndrome

Kates, Wendy $393,568
Biomarkers For Psychosis In Velocardiofacial Syndrome

Kelley, Grant $241,413
Phospholipase C and Islet Beta Cells

Knox, Barry $265,125
Molecular Mechanisms of Photoreceptor Function

Listman, James $132,300
Regulation of The Il1 Beta Gene By Cmv Ie Proteins

Loh, Stewart $218,738
Intermediates and Protein Folding

Loh, Stewart $273,600
Mutually exclusive protein folding

Malmgren, Leslie $190,000
Human Posterior Cricoarytenoid Muscle Aging Mechanisms

Mann, Kenneth $216,600
Interface Failure In Total Joint Replacements

Massa, Paul $190,000
Regulation of Interferon Activity By Shp-1 In The CNS

McCasland, James $304,000
Development of Cortical Barrels In Gap-43 Deficient Mice

Meguid, Michael $225,926
Serotonin/Dopamine Mediation of Early Cancer Anorexia

Miller, Michael $288,491
Experimental Fetal Alcohol Syndrome

Miller, Michael $342,000
Effect of Ethanol On Cell Proliferation

Mitchell, David $260,652
Molecular and Genetic Analysis of Flagellar Dyneins

Moffat, Jennifer $266,000
Cdk Inhibitors: Novel Antivirals For Vzv

Mozell, Maxwell $220,952
Electrophysiology of Olfactory Discrimination

Perl, Andras $226,950
Impact of Hres-1 Endogenous Retrovirus In SLE

Perl, Andras $226,100
Molecular Biology of Transaldolase

Perl, Andras $266,000
Mitochondrial Dysfunction in Patients with SLE

Pertsov, Arkady $589,439
3D Imaging of Electrical Activity In Myocardial Tissue

Pertsov, Arkady NA
3D Vortex Like Reentry In Coronary Perfused Ventricular Wall

Pertsov, Arkady $228,00
Depth-Resolved Imaging of Myocardial Excitation

Satish, Usha $144,506
Simulation Based Mapping of Decision Making in Children

Scerpella, Tamara $76,000
Role of Impact Activity In Peripubertal Bone Accrual

Scheinman, Steven $152,000
Clc-5 Inactivation and Hypercalciuria In Dent's Disease

Scheinman, Steven $301,950
Genetic Mapping in the Hypercalciuric Stone-Forming Rat

Schmitt, Mark $255,889
Control of the Cell Cycle By Mrna Degradation

Schmitt, Mark $255,360
Import of RNA Into Mitochondria

Sheikh, M Saeed $76,000
Cox-2 and P53 Interactions and Cancer Prevention

Sheikh, M Saeed $252,700
Characterization of A Novel Growth Regulator

Shillitoe, Edward $257,210
Herpes Simplex Virus In The Treatment of Oral Cancer

Short, Walter $285,760
Biomechanical Evaluation of Wrist Ligament Injuries

Singh, Bibhuti $380,000
Parasite Cysteine Proteases and Host Cell Apoptosis

Tso, Daniel $342,000
Non-Invasive Assessment of Retinal Function

Taffet, Stephen NA
Molecular Biology and Morphology and Immunology

Turner, Christopher $289,361
Structure and Function of Paxillin

Turner, Christopher $342,000
Ilk-Actopaxin Interactions In Cell Signaling

Vallano, Mary $264,775
Kinase-Mediated Signaling Pathways In Neuronal Apoptosis

Vikstrom, Karen $264,775
Molecular and Functional Impact of Cardiac Fibrosis

Vogt, Brent $281,200
Medial Pain Inputs To Monkey Anterior Cingulate Cortex

Wojcikiewicz, Richard $229,837
Insp3 Receptor Ubiquitination and Down-Regulation

Youngentob, Steven $258,167
Behavioral Analysis of Omps Role In Odor Processing

Zapata, Heidi $25,529
Varicella Zoster Virus Interactions With Human Skin

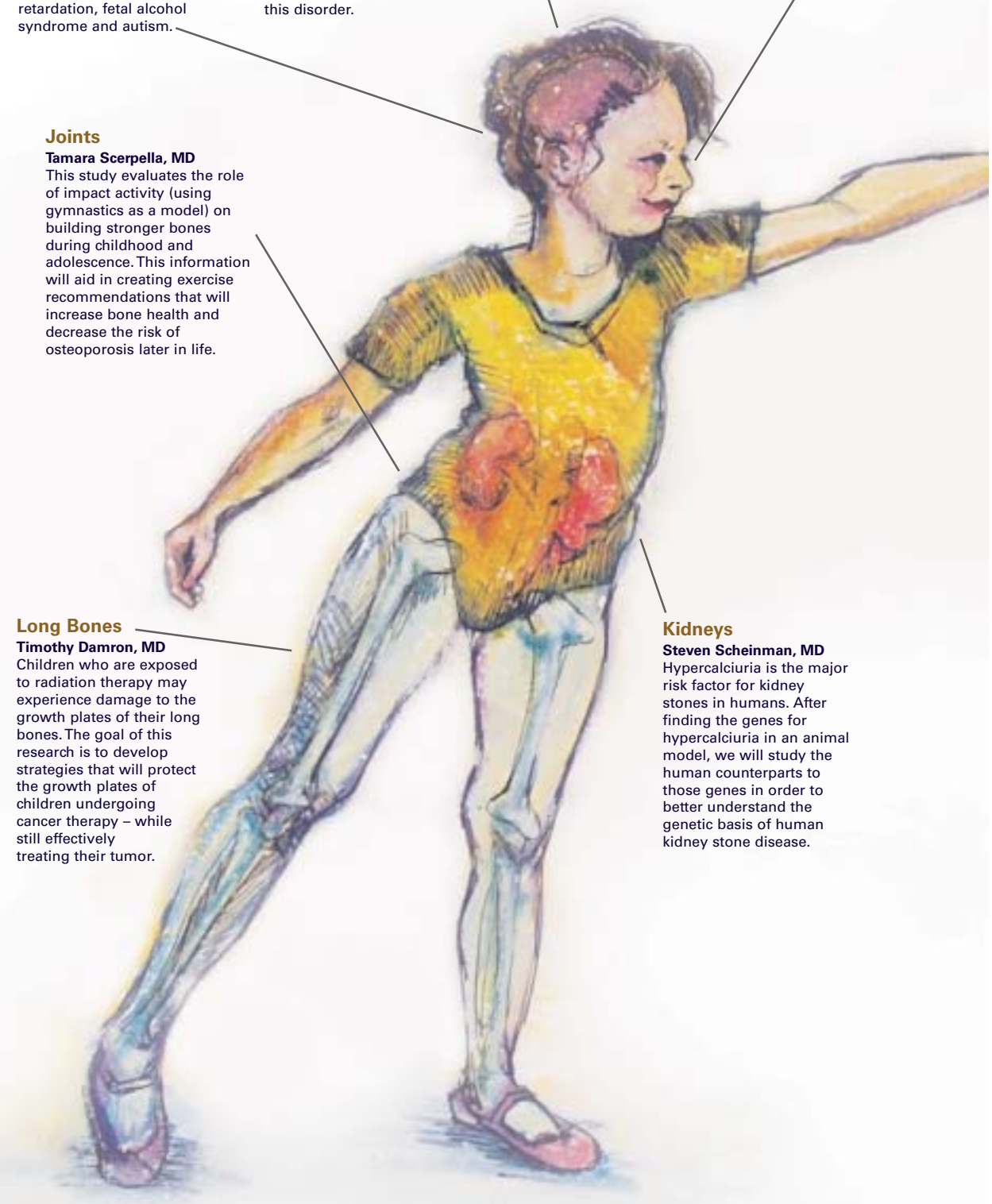
Selected NIH-Funded Studies By SUNY Upstate Researchers

Funded research at SUNY Upstate has tripled in the past decade, and committed funds currently hover at $40 million. Granting institutions include the Centers for Disease Control, the National Science Foundation, the American Heart Association and the American Cancer Society to name a few. Perhaps the most recognized source of research funds is the National Institutes of Health (NIH), which is a standard by which research institutions measure themselves. In selecting which of the hundreds of current investigations to highlight, we begin with NIH grants.

Brain
Michael Miller, PhD
This research has documented that alcohol affects brain cell growth and movement and has identified critical periods for brain development and vulnerability to alcohol. This helps shed insight on the causes of developmental disorders such as mental retardation, fetal alcohol syndrome and autism.

Brain
Wendy Kates, PhD
This project is aimed at identifying risk factors for psychiatric disorders among children with velocardio-facial syndrome — a genetic disorder marked by heart defects, cleft palate, significant learning problems and behavioral disorders. Another funded project is investigating the relationship between learning difficulties and brain structure in children with this disorder.

Chicken Pox
Jennifer Moffat, PhD
Most people in the U.S. have had chicken pox, caused by the varicella zoster virus, or have received the vaccine. This virus remains latent in the body for life and can reactivate as the disease called shingles. Learning how this virus interacts with human cells is the major goal of this research which will hopefully be used to help develop new drug treatments and to improve the vaccine.



Joints
Tamara Scerpella, MD
This study evaluates the role of impact activity (using gymnastics as a model) on building stronger bones during childhood and adolescence. This information will aid in creating exercise recommendations that will increase bone health and decrease the risk of osteoporosis later in life.

Long Bones
Timothy Damron, MD
Children who are exposed to radiation therapy may experience damage to the growth plates of their long bones. The goal of this research is to develop strategies that will protect the growth plates of children undergoing cancer therapy – while still effectively treating their tumor.

Kidneys
Steven Scheinman, MD
Hypercalciuria is the major risk factor for kidney stones in humans. After finding the genes for hypercalciuria in an animal model, we will study the human counterparts to those genes in order to better understand the genetic basis of human kidney stone disease.

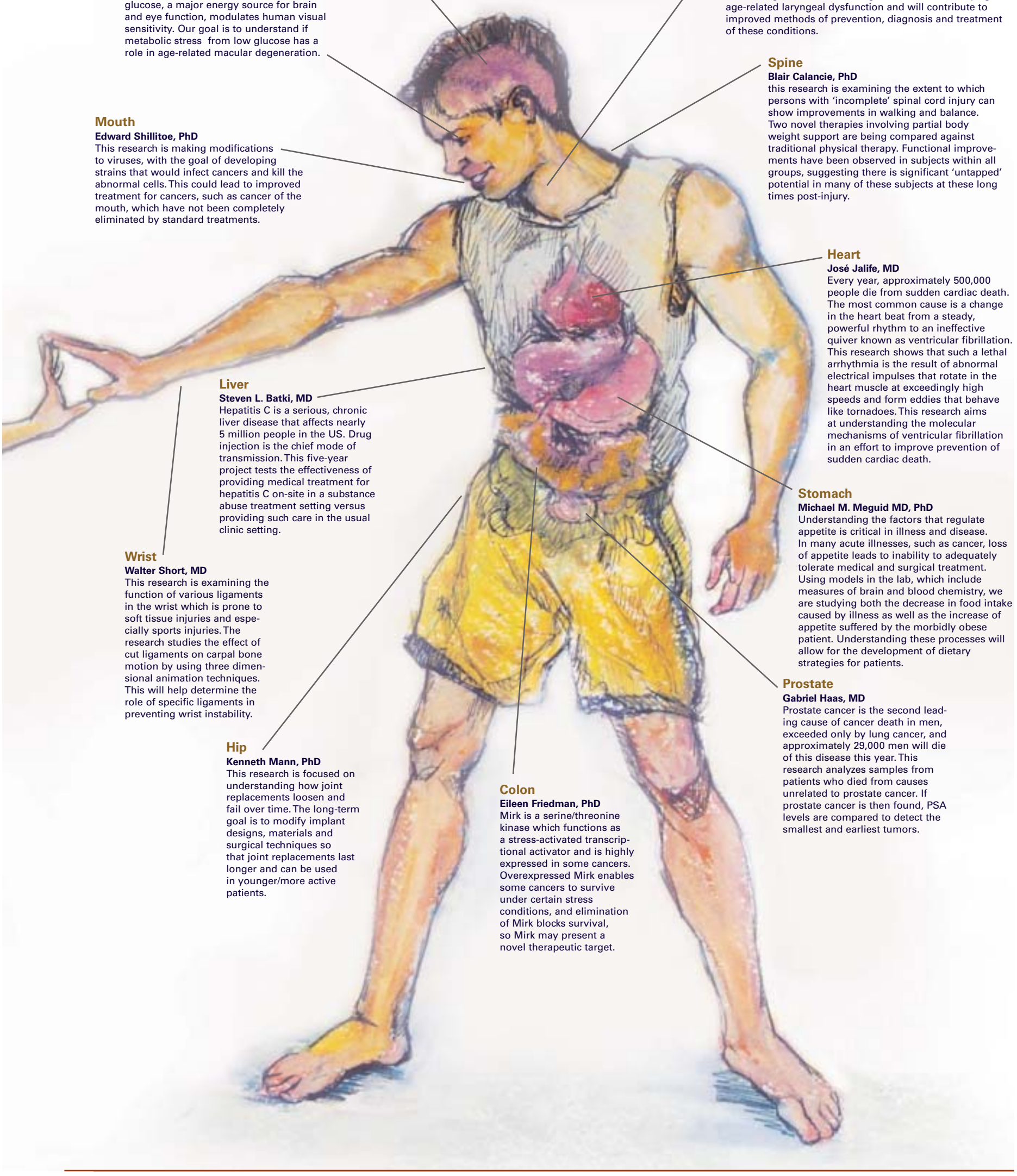
Eye
Robert Barlow, PhD
This investigation is exploring what information the eye sends to the brain when an animal sees. It is also studying how the brain processes the neural codes it receives from the eye. Another study explores how glucose, a major energy source for brain and eye function, modulates human visual sensitivity. Our goal is to understand if metabolic stress from low glucose has a role in age-related macular degeneration.

Brain
Charles Hodge, MD
Brain plasticity refers to the remarkable ability of the brain to change in response to things that affect it. This research is investigating mechanisms involved in cortical plasticity and the impact that various commonly used medications have on the biological processes involved in plasticity. The ultimate goal is to improve patient care by better understanding the response of the brain.

Throat
Leslie Malmgren, PhD
The elderly often suffer from age-related swallowing and voice disorders. This project is providing the first data concerning the disease-causing mechanisms underlying age-related laryngeal dysfunction and will contribute to improved methods of prevention, diagnosis and treatment of these conditions.

Spine
Blair Calancie, PhD
this research is examining the extent to which persons with 'incomplete' spinal cord injury can show improvements in walking and balance. Two novel therapies involving partial body weight support are being compared against traditional physical therapy. Functional improvements have been observed in subjects within all groups, suggesting there is significant 'untapped' potential in many of these subjects at these long times post-injury.

Mouth
Edward Shillitoe, PhD
This research is making modifications to viruses, with the goal of developing strains that would infect cancers and kill the abnormal cells. This could lead to improved treatment for cancers, such as cancer of the mouth, which have not been completely eliminated by standard treatments.



Heart
José Jalife, MD
Every year, approximately 500,000 people die from sudden cardiac death. The most common cause is a change in the heart beat from a steady, powerful rhythm to an ineffective quiver known as ventricular fibrillation. This research shows that such a lethal arrhythmia is the result of abnormal electrical impulses that rotate in the heart muscle at exceedingly high speeds and form eddies that behave like tornadoes. This research aims at understanding the molecular mechanisms of ventricular fibrillation in an effort to improve prevention of sudden cardiac death.

Liver
Steven L. Batki, MD
Hepatitis C is a serious, chronic liver disease that affects nearly 5 million people in the US. Drug injection is the chief mode of transmission. This five-year project tests the effectiveness of providing medical treatment for hepatitis C on-site in a substance abuse treatment setting versus providing such care in the usual clinic setting.

Stomach
Michael M. Meguid MD, PhD
Understanding the factors that regulate appetite is critical in illness and disease. In many acute illnesses, such as cancer, loss of appetite leads to inability to adequately tolerate medical and surgical treatment. Using models in the lab, which include measures of brain and blood chemistry, we are studying both the decrease in food intake caused by illness as well as the increase of appetite suffered by the morbidly obese patient. Understanding these processes will allow for the development of dietary strategies for patients.

Wrist
Walter Short, MD
This research is examining the function of various ligaments in the wrist which is prone to soft tissue injuries and especially sports injuries. The research studies the effect of cut ligaments on carpal bone motion by using three dimensional animation techniques. This will help determine the role of specific ligaments in preventing wrist instability.

Prostate
Gabriel Haas, MD
Prostate cancer is the second leading cause of cancer death in men, exceeded only by lung cancer, and approximately 29,000 men will die of this disease this year. This research analyzes samples from patients who died from causes unrelated to prostate cancer. If prostate cancer is then found, PSA levels are compared to detect the smallest and earliest tumors.

Hip
Kenneth Mann, PhD
This research is focused on understanding how joint replacements loosen and fail over time. The long-term goal is to modify implant designs, materials and surgical techniques so that joint replacements last longer and can be used in younger/more active patients.

Colon
Eileen Friedman, PhD
Mirk is a serine/threonine kinase which functions as a stress-activated transcriptional activator and is highly expressed in some cancers. Overexpressed Mirk enables some cancers to survive under certain stress conditions, and elimination of Mirk blocks survival, so Mirk may present a novel therapeutic target.

SUSAN KEETER

Keeping Competitive

Unlocking biomedical mysteries takes curiosity, commitment and a steady flow of research dollars.Competing for these funds demands an ever-evolving infrastructure of research equipment and programs – and the strategic support of advocates like Congressman James Walsh.

Congressman Jim Walsh was a history major at St. Bonaventure, but that hasn't kept him from becoming one of the greatest supporters of academic science in Upstate New York. While the great majority of research funding at Upstate Medical University comes by way of peer-reviewed grants from such agencies as the National Institutes of Health, private foundations and the pharmaceutical industry, Walsh has quietly, systematically and effectively helped the Upstate campus and its scientists through the Congressional appropriations process.

He is one of 13 chairmen of the Appropriations Subcommittees, a group sometimes referred to in Washington as "the college of cardinals" because of their influence on national spending policies. He chairs the subcommittee on Veteran's Affairs, Housing and Urban Development and Independent Agencies.

"Jim Walsh came to campus, listened and asked tough questions."

Richard Cross PhD, Chair, Biochemistry and Immunology, SUNY Upstate Medical University

In the past seven years, he has provided cutting-edge equipment and capital construction funds that have helped Upstate scientists to take their work to a new level. Coming primarily as discretionary items, or "earmarks" in the Labor-Health and Human Services bill, these allocations have helped to transform the research activities of several departments on the Upstate campus.

A $1 million allocation for the purchase and outfitting of an x-ray diffraction laboratory in Biochemistry and Molecular Biology has given the Upstate New York region one of the finest facilities in the country and has propelled the Upstate/SUNY ESF and Syracuse University Structural Biology degree program from idea to reality.

"I was impressed with the way that Jim Walsh came to campus and listened to our needs," said Richard Cross PhD, professor and chair of Biochemistry and Molecular Biology. "He and his staff asked tough questions and sought justification for the investment on the basis of its value to the scientific community as a whole."

More than $1 million has been directed to the Department of Emergency Medicine to establish a Center for Emergency Preparedness. Much of the center's attention has been focused on the innovative alternate Emergency Department being created at the State Fairgrounds, but this allocation will also give the Upstate team the opportunity to expand on their traditional EMS and first-responder training activities in a new facility on campus.

Congressman James Walsh

"One of the best things that came from this investment is that it validated our program," said John McCabe MD '79, professor and chair of emergency medicine. "There are many different approaches to emergency preparedness. The jump start that Jim Walsh gave us moved us to the head of the class."

Michael Miller PhD, professor and chair of Neuroscience and Physiology, had a similar experience. A modest seed grant of $150,000 has allowed him and his colleagues to define the structure and expertise for a Developmental Exposure to Alcohol Research Program. This year Miller has seen new and renewed grants totaling nearly $3 million come into the department and traced, in large part, back to that $150,000 investment.

Other projects that have gained from the appropriations process are the Institute for Cardiovascular Research, the Gait Laboratory at the Institute for Human Performance and the burgeoning Central New York Biotechnology Research Center with SUNY-ESF.

–Dan Hurley

Carol Baldwin

Carol Baldwin: Grass Roots, Hands On

Many people are paralyzed when a devastating illness hits. But Carol Baldwin was mobilized after her breast cancer diagnosis 14 years ago, and at SUNY Upstate her name has become synonymous with raising funds for breast cancer research.

A Syracuse native who raised her family on Long Island, Baldwin founded the Carol M. Baldwin Breast Cancer Research Fund, Inc. in 1996 to support breast cancer research at SUNY Upstate Medical University and SUNY Stony Brook Health Science Center. To date that includes more than 40 projects for more than $2.5 million.

Baldwin is known by many as the mother of the acting Baldwin brothers (Alec, William, Stephen and Daniel). All are active in their mother's campaign, and daughters Elizabeth Baldwin Keuchler and Jane Baldwin Sasso work tirelessly beside their mother. Baldwin's approach is decidedly grass roots…and very hands on. She knows that the cure for breast cancer will be found in the basic science laboratories, and her foundation works to send every possible dollar to those biomedical scientists.

Meeting the Headlines Head-On

Instead of merely reacting to the news, SUNY Upstate and University Hospital tackle the health issues making headlines.

Police Press Hunt for Abductor

University Hospital pediatrician trains peers to assess sexual abuse.

When a Central New York child is abducted, the entire community goes on high alert. But for University Hospital pediatrician Ann Botash MD ’85, the sexual abuse of children is a year-round reality. Botash is an expert in identifying and testifying about sexual abuse – and a leader in educating medical professionals about this highly sensitive issue.

Nationally it’s estimated that one in four girls and one in six boys are subjected to sexual abuse. In the past 15 years, Botash has intervened in close to 4,000 of these cases. As medical director of University Hospital’s Child Abuse Referral and Evaluation (CARE) clinic, Botash works in tandem with a highly experienced team that includes Nancy Mitchell CPNP, RN, Anne Galloway RN and Elizabeth Kinsey MSW.

Because the CARE team can’t evaluate every suspected case, Botash has also developed the Child Abuse Medical Provider (CHAMP) program, a comprehensive course in evaluating pediatric sexual abuse. The program offers an optional mentorship and/or CME credit. Since 1999, more than 75 New York State physicians, physician assistants and nurse practitioners have completed the course.

“Physicians need training in order to ask the right questions, establish trust, develop examination skills and interpret clinical findings,” explains Botash. “It’s rare to have physical evidence after sexual abuse, which more often involves touching than rape. It’s easy to miss the often-subtle signs and symptoms.”

The CHAMP course also addresses physician reluctance – documented in research – to reporting abuse. “Like families,” says Botash, “physicians can go through denial.”

Establishing a supportive environment is a critical part of the evaluation process, according to Botash. “It takes time – sometimes as much as two hours per family. But it’s a good way for the child to begin healing.”

Rural Patients Underserved

IDEATel takes technology to isolated patients with diabetes.

As part of the largest telemedicine effort ever funded by the federal government, SUNY Upstate’s IDEATeL project is addressing the often-detrimental distance between rural diabetes patients and their health care providers. IDEATeL is ultimately designed to measure the potential for improving health care through electronically delivered health-care services.

The IDEATel project, a joint venture of Upstate and Columbia University in New York City, involves more than 1600 Medicare patients diagnosed with diabetes. Half of the patients are provided with telemedicine units equipped to transmit blood glucose and blood pressure data; audio-visual interactions with diabetes case managers and dieticians; and educational materials. These efforts supplement their usual care. The other half of the study participants, who serve as a control group, receive the usual care of their primary care providers.

IDEATel was designed to help patients better manage their diabetes, a common, and chronic disease that requires daily self-management and close monitoring by health care professionals. Without close supervision, severe and costly complications – such as kidney failure, blindness and heart disease – can occur.

IDEATeL was launched in the year 2000 and refunded late last year by the federal government. For its segment of the study, Upstate expects to receive $15 million in funding, over the course of eight years.

Ruth S. Weinstock MD, PhD, medical director of Joslin in Syracuse, says the program has dramatically increased these patients' access to timely health care and improved their self-management skills. "When winter comes, patients may not see their health care providers as often as would be optimal," she explains. "With IDEATel, we can keep close tabs on their blood sugar and blood pressure levels and contact their primary care providers about appropriate medication adjustments."

Inflammation: the Silent Killer

Outfoxing inflammation is goal of chronic heart failure study.

As scientists continue to identify inflammation as the culprit in dozens of serious diseases, a University Hospital clinical trial is targeting the chronic inflammation associated with chronic heart failure, the leading cause of hospital admissions in patients over 65.

Cardiologist Robert Carhart MD is leading the Syracuse segment of the 160-center trial titled ACCLAIM, for Advanced Chronic Heart Failure Clinical Assessment of Immune Modulation Therapy.

Chronic heart failure reduces the heart's ability to function as a pump and often leads to frequent hospitalization and premature death.

The ACCLAIM study employs immune modulation therapy (IMT) to reduce the chronic inflammation involved in the development and progression of chronic heart failure. The IMT is designed to activate the anti-inflammatory response in the patient's own immune system. According to Carhart, "In previous trials, this approach has shown real promise for reducing the risk of death and hospitalization and improving the quality of life for patients with advanced heart failure."

Assisted Suicide Appeal Denied

Improving end-of-life care is University Hospital's answer.

While Oregon's legalization of physician-assisted suicide continues to be contested, University Hospital is focusing on the quality of care it provides to terminally ill patients. The hospital's end-of-life – or palliative – services recently placed fourth in a field of 35 hospitals participating in a national benchmarking project sponsored by University HealthSystem Consortium (UHC).

Patricia Knox MSN, RN, clinical coordinator of the hospital's Palliative Care Service, served on the national steering committee for the UHC benchmarking project.

University Hospital's program provides thoughtful, humane and integrated care during this sensitive period. The multidisciplinary service offers pain and symptom management, as well as counseling and support for patient and families – including assistance in the difficult process of deciding to withdraw or continue life-sustaining treatment.

"With the increasing number of patients suffering from advanced chronic illness, palliative care has become a distinct specialty – and a skill set that is required in all specialties and by all caregivers," notes Knox, who adds that educating staff and students in end-of-life care is a major focus for the program.

Fatal Crash Takes Teen

University Hospital trauma experts offer reality education.

News reports of teens dying in motor vehicle accidents are regrettably routine in

Central New York, inspiring University Hospital – designated trauma center for 14 surrounding counties – to develop its Let's Not Meet By Accident program, in conjunction with Rural Metro Medical Services and the Onondaga County Sheriff's Department.

"It's just one of our efforts to tackle the causes of trauma, rather than just reacting to the effects," explains Maryann Fields RN, University Hospital's trauma coordinator and head of the New York State division of the American Trauma Society. "Since the year 2000, we've had more than 8,000 teenagers attend – and a seven percent drop in MVA fatalities in the 19-and-under age group.

"Unfortunately," Fields adds, "We still have the highest teen fatality rate in the state."

Let's Not Meet by Accident is aimed at both trauma prevention and alcohol education, since alcohol and drugs are factor in 70 percent of traffic deaths in the US.

"Let's Not Meet by Accident is a reality-based educational program," reports Fields. "The teenagers come to our Emergency Department and experience the aftermath of a serious motor vehicle crash – the sights, the smells, the medical, legal and financial realities." The teenagers visit the helipad where medical helicopters land with accident victims, the bay where ambulances arrive and the trauma resuscitation room. "We even put a student on a backboard with a cevical collar."

Earlier this year, WIXT taped and aired the Let's Not Meet by Accident program, and several counties in New York State have expressed interest in offering similar programs.

Juvenile Diabetes Linked to Obesity

Local Joslin center addresses urgent questions.

The number of overweight American children tripled between 1980 and 1999. In the wake of this alarming trend has come a steady increase in juvenile type 2 diabetes, which is closely linked to being overweight and inactive, as well as genetically susceptible.

To evaluate the best treatment for type 2 diabetes in children and teens, SUNY Upstate has been selected as one of 12 sites participating in the first NIH-sponsored clinical trial to focus on type 2 diabetes in youth. According to Health and Human Services Secretary Tommy Thompson, "This study will answer urgent questions about which therapy is most effective for the early stage of type 2 diabetes in young people."

Upstate's Joslin Diabetes Center is recruiting about 60 patients, between the ages of 10 and 17, for the clinical trial. The five-year study, known as the Treatment Options for type 2 Diabetes in Adolescents and Youth (TODAY), will explore various aspects of type 2 diabetes in youth, including how well and for how long each of three treatment approaches controls blood glucose levels.

TODAY is the first clinical study to look at the effects of intensive lifestyle changes – including cutting calories and increasing physical activity – in youths with type 2 diabetes.

Researchers Probe Rise in ADHD

Upstate psychologist documents decision-making in kids with ADHD.

As debate swirls about suspected links to attention deficit hyperactivity disorder (ADHD) – links that range from genetics to toxins to too much television – a SUNY Upstate psychologist is seeking to understand how children with ADHD make decisions.

The groundbreaking research, headed by Upstate psychologist Usha Satish PhD, compares the decision-making and problem-solving skills in children with ADHD, Mild Traumatic Brain Injury and normal cognitive function.

By measuring multiple higher-order thinking skills in these children, the study is expected to provide insights into how they assimilate and use information. The insights will hopefully inspire and guide educational innovations.

The Big Picture

A key component of the research is the Strategic Management Simulation (SMS) laboratory, available only at SUNY Upstate's Institute for Human Performance. The highly sophisticated SMS technology has been used – by industry, governments, medical institutions and research organizations – to assess, predict and enhance decision-making performance and cognitive functioning.

Satish's study – the first of its kind – is sponsored by a $500,000 grant from the NIH's National Institute of Child Health and Human Development.

HRT Not Heart-Friendly

Upstate's Outstanding Young Alumna looks to science for final say.

With heart disease the leading cause of death in women, there's no time to be tentative about preventive strategies. That's the position of Lori Mosca MD '84, PhD, MPH, director of preventive cardiology at New York Presbyterian Hospital of Columbia and Cornell Universities – and recipient of Upstate's 2004 Outstanding Young Alumna Award.

Several years ago, Mosca put herself in the hot seat while chairing the American Heart Association (AHA) scientific panel that advised against the use of hormone replacement therapy (HRT) to prevent heart disease in women. It was a highly controversial message – until it was echoed, a year later, by definitive clinical trials completed in the high-profile HRT study called the Women's Health Initiative. That study was abruptly ended due in part to increased cardiovascular problems.

Mosca, also lead author on the AHA's 2004 Evidence-Based Guidelines for Cardiovascular Disease Prevention for Women, says that experience illustrates the importance of developing standards of care based on high-quality science. "It's time to raise the bar for prevention," she says. "We want to distinguish between recommendations based on randomized clinical trials and recommendations based on expert opinion where studies are limited. We should be very clear about what we know, what we don't know and what we think."

Mosca, who spends 60 to 80 percent of her time on research, is challenged to find an extra 10 hours in a typical week responding to media inquiries. She's often interviewed by national media such as the *NBC Nightly News*, *The Washington Post* and *Good Morning America*. "Being in New York – the media capital of the world – is great for getting the message out," she says. "It's a unique aspect of preventive cardiology I had never thought about. It affords the opportunity to translate the research we work so hard on, in a way that's hopefully motivating and clarifying."

Homeless at Highest Health Risk

Upstate's medical students make it their business.

On the one hand, you have patients in difficult straits and in desperate need of routine health care. On the other hand, you have medical students, eager to help and eager to learn. Bringing the two groups together is the idea behind the Salt City Health Outreach Program (SC HOPE), an ambulatory clinic founded 15 years ago by SUNY Upstate medical students in collaboration with the Onondaga County Health Department.

This year, the Association of American Medical Colleges (AAMC) recognized and encouraged their efforts with a $20,000 Caring for Community grant. The money will be used to order more laboratory tests, expand the clinic's pharmacy and underwrite outreach to homeless shelters.

The SC HOPE clinic, directed by Upstate's Peter Cronkright MD, professor of internal medicine, provides care to the homeless as well as to seasonal migrant farm workers. "We are very pleased to be recognized by the AAMC," says Cronkright. "The students have worked hard and are grateful for the opportunity to serve the patients. It is a joy to teach them."

"We are serving a real need," says medical student Michael Hutchinson '05, who wrote the AAMC grant application with Jonathan Mosovich '05. "This is a place where patients without insurance receive very personalized attention, prompt appointments and free medications if needed. And the pace is more relaxed than in a hospital clinic or busy private practice."

Hutchinson estimates that about half of Upstate's medical students rotate through the clinic. "Spots always fill up quickly," he reports. "And in recent years, students have increasingly played leadership roles in process improvement and quality of care issues.

"It's very rewarding," he says, "to see how students' enthusiasm can translate into sustained improvements in the system."

Suicide a Side Effect?

Upstate psychiatrist tracks trend toward psycho-pharmacology for children, adolescents.

Well before Congressional hearings explored the dangers of prescribing antidepressants for children, Upstate psychiatrist Jud Staller MD was documenting the psycho-pharmacological treatment patterns of Central New York children. In the largest chart study of its kind, Dr. Staller and his research team reviewed charts of 1,292 local patients in three private practices and five clinics.

"Today, almost 75 percent of children in ongoing treatment (after full evaluation) are on medication, and 37 percent are on more than one medication – numbers that are generally consistent with national trends," reports Staller. "When I entered practice in the early 1980s, only a handful of children were prescribed antidepressants, stimulants and antipsychotic drugs."

Outside the realm of his carefully documented research, Staller has some personal observations about this trend toward psycho-pharmacological treatment of children. "It's clear that we are increasingly substituting chemical control for residential treatment," he says. "We are seeing very tough cases as outpatients. Psychiatric hospitals and residential treatment facilities are now few and far between, and they are usually full."

In his own practice, Staller often combines psychotherapy, family therapy and medication – if indicated. "Psychiatry today runs the risk of becoming the specialty of psycho-pharmacology," he concludes. "At Upstate, we remain true to our psychodynamic underpinnings. We have a very sought-after residency program, because of its continued focus on psychotherapy, in addition to biological treatments. Residency applicants tell us it's difficult today to find this balance – to train in a place where you still know the names of the patient's family."

–Darryl Geddes
Denise Owen Harrigan
Doretta Royer

Renaissance Students

Inspiring glimpses of Upstate students and recent alumni who excel in both the arts and sciences.

Isaiah, an orthopedic patient, tests Olson's creation.

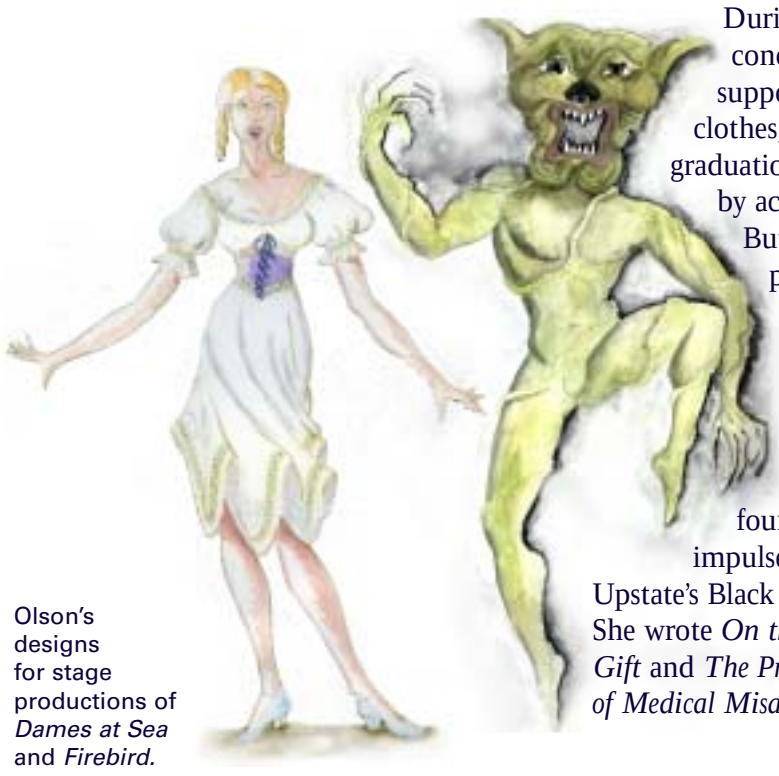
Above: Olson's tribute to Leonardo daVinci's study of a horse.
Left: Anna Olson MD '03

"The Amazing Anna O"

Anna Olson MD '03 isn't sure she deserves the nickname but acknowledges that the late Dr. Bonnie (St. Andrews), who gave it to her, made her feel worthy of it.

Olson thinks she may be the only person who ever dropped out of art school to become a doctor. She left a master's program in costume design in North Carolina to work as an emergency medical technician for a couple of years while she studied for the MCATs and applied to medical schools.

Since she was a child, Olson thought she wanted to become a doctor. But she was also pulled in many creative directions. Olson plays the saxophone, flute and trumpet; does wood working; sings; and loves to sew, draw and write. And she has the commissioned work, performances and publications to prove her abilities.



Olson's designs for stage productions of *Dames at Sea* and *Firebird.*

During college, Olson concentrated in pre-med, but supported herself by designing clothes, which she loved. By graduation, Olson was burned out by academics but loved design. But two years into a graduate program in costume design, she realized that she was never going to love any artistic pursuit as much as she loved medicine.

At SUNY Upstate, Olson found outlets for her creative impulses. In 2001, she sang at Upstate's Black History Month celebration. She wrote *On the Subject of the Anatomical Gift* and *The Princess and the Plum: A Tale of Medical Misadventure* and won first place in the 2001 and 2002 Bruce Dearing Writing competition. Her *Inside Out* essay appears in the Fall 2003 *Healing Muse*, the literary journal founded by St. Andrews and published by Upstate's Center for Bioethics and Humanities. And on University Hospital's pediatric wing 4B, she left an extraordinary legacy. She created a toddler-height mural comprised of a series of moveable wooden puzzles, colorful spinners and sliding picture panels.

Olson is now an emergency medicine resident at the Denver Health and Hospital System. It's a perfect fit, she says. "My temperament is well suited for emergency medicine. At home, I've always got a bunch of projects going at the same time... a sketchbook drawing, a woodworking project, story notes scribbled on envelopes and piles of fabric everywhere. Emergency medicine demands that you move quickly from one patient to another. Each encounter is different and intense and requires total concentration and a particular set of skills. And at any moment, you have to be able move on to the next patient."

As for other connections between medical practice and the creative arts, Olson says, "I think all those years of sewing fabric trained me to make beautiful cosmetic sutures."

The Dance of Life

Graduate student Isabel Alverez DeMora loves to play the cuatro and the maracas, sing traditional South American songs such as *El Espanto* and dance the Joropo.

But there was no time for music when she first arrived at SUNY Upstate to pursue a doctoral program in microbiology and immunology. For more than three years, deMora worked daily from 8 a.m. to midnight, tackling her coursework, improving her English, studying for exams and conducting experiments.

BILL MUELLER

Now that she is working on her dissertation, deMora has found time to perform at student talent shows and community events and to organize Latin Awareness Week celebrations at Upstate.

DeMora's dissertation research on gene regulation in macrophages (a type of white blood cell) may lead to cures for infectious diseases. Her work is very personal. "I come from a very poor area in Venezuela. Children are dying every day from infectious diseases," explains DeMora, who was raised by her grandparents along with 11 aunts and uncles and is the only person in her family to go to college.

What is the relationship between her music and her research? "Both are connected to home," DeMora explains, "and both make life better. My research will help people, and music is pure joy."

After graduation in 2005, DeMora will return to teaching microbiology and conducting research at Universidad Centrooccidental Lisandro Alvarado in Venezuela. She will still be working hard...but she'll continue find time for music.

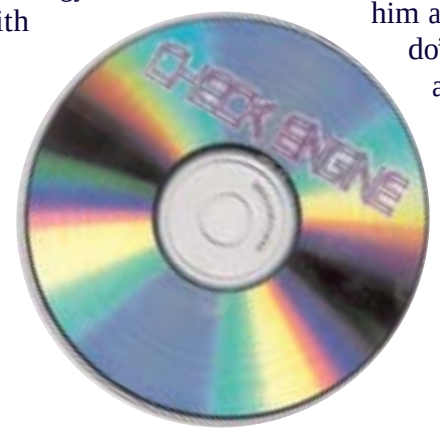
Newton's Law

COURTESY CHECK ENGINE

Hard rock may not appeal to all, but Timothy Newton '04 BS sees it as an unstructured art form with plenty of room for creative expression. Newton is the guitarist, vocalist and lyricist for the Ithaca-based band, Check Engine. A recent graduate of SUNY Upstate's Medical Imaging Sciences program, Newton now spends his days doing MRIs in a mobile health van. But when the day's work is done, and his kids are in bed, he turns to music. His band has a new promotional CD and is performing regularly.

Check Engine is Newton's second band, and Upstate is his second university. He played in another rock band in 2002 and earned a bachelor's degree in biology from Cornell. But he was dissatisfied with the jobs available with that degree. His wife, mother and sister – all nurses – encouraged Newton to look for a career that combined his love of science with his wish to care for people. Their advice steered him to Upstate for a second bachelor's degree.

Now, both his day job and his music allow Newton to connect with people: patients and medical staff by day, musicians and audiences by night. How does Newton fit it all in? "Once my job and family are taken care of, I'll play my music," he explains. "I can get by without much sleep."



COURTESY DAVID TUMBARELLO

David Tumbarello, number 1101 at right, and his brother, Joseph, in the 2002 New York City Marathon.

Marathon Man

David Tumbarello, a graduate student in cell and developmental biology at SUNY Upstate, ran on his high school track team, played intramural sports as an undergraduate student and jogged for exercise. But his father's heart attack inspired him to run marathons. When Tumbarello's dad took up long-distance running after the heart attack, his sons started running seriously to show their support. The three men run now together whenever they can and check on each other's training by phone and email. Tumbarello, his brother and father ran together in the 2002 NYC Marathon, and the two sons are training to run in New York City again in November. They have also run together in the Chicago and Boston marathons.

How does long-distance running affect Tumbarello's research on focal adhesion proteins and their role in cell migration? His first marathon, which he almost quit in exhaustion, taught him "to work harder, prepare better and look at challenges differently," he says.

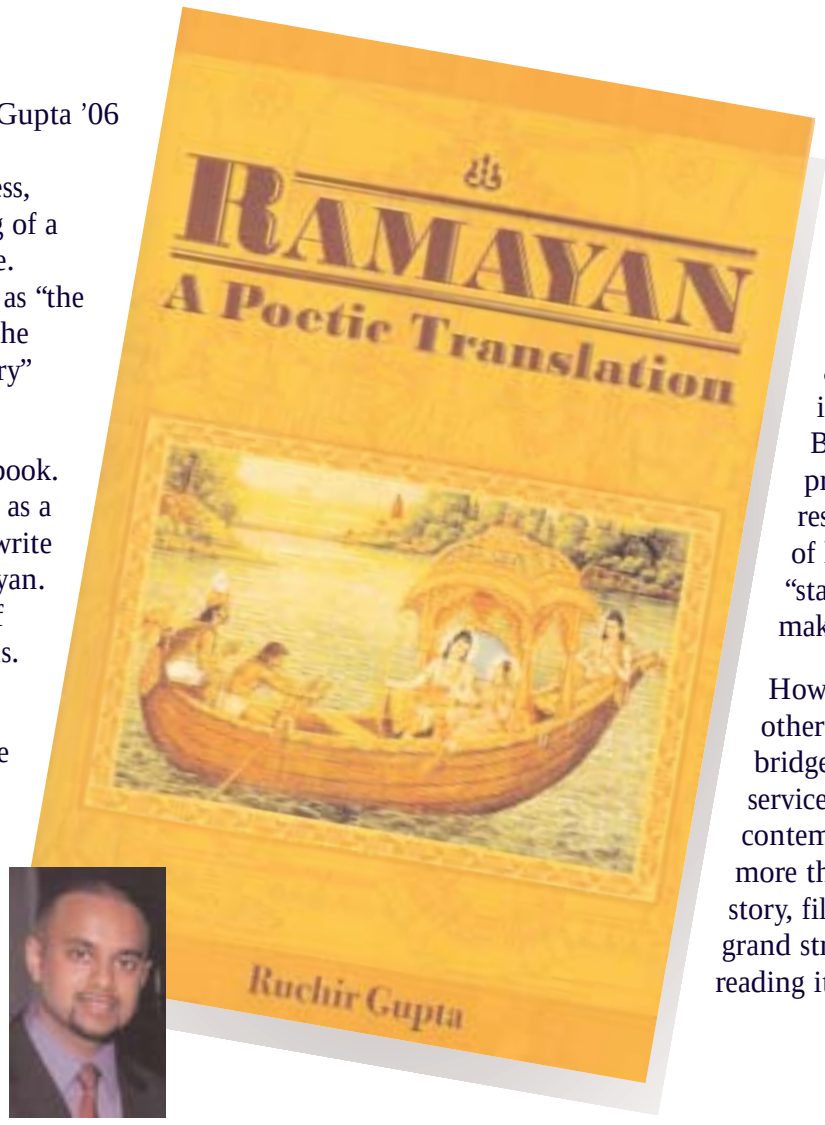
Tumbarello finds his eight- to 12-mile daily run is mentally refreshing and gives him a chance to make a mental "to do" list for the lab. Sometimes, as he concentrates on the run, stray thoughts pass through his mind, then sort themselves out and offer surprising insights into his research.

Hero's Journey

Third-year medical student Ruchir Gupta '06 is the author of *Ramayan: A Poetic Translation* (Global Humanities Press, 2003), an English-language retelling of a 3,000-year-old Hindu holy scripture. Reviews on amazon.com describe it as "the only English translation written in the same poetic form as the original story" and "a classic for our times."

Gupta did not intend to write this book. The summer before medical school, as a personal reflection, he sat down to write a page or two on the story of Ramayan. But "the story literally flowed out of me and onto 141 pages," he explains.

Encouraged by his sister, Gupta edited what he had written, with the thought of having it published. Soon, he was navigating the first year of medical school at Upstate as well as the publishing world. A year later, he had found a literary agent and a publisher.



Ruchir Gupta '06

Writing the book has deepened Gupta's understanding of the ancient story, with its complex lessons about good and evil and their relevance in contemporary life. He says that writing the book has tempered him. An admittedly ambitious student who is now studying at Upstate's Binghamton clinical campus in preparation for an anesthesiology residency, Gupta finds that thoughts of loyalty, responsibility and justice "stay in his head" and guide him as he makes decisions.

How does he hope the book will affect others? "For Hindus, it provides a bridge between the traditional religious services conducted in Sanskrit and the contemporary world," he explains, "But, more than that, Ramayan is an exciting story, filled with heroic characters and grand struggles. Anyone could enjoy reading it and find inspiration."

Sister-Healer

Sharon Snover BS, RN '03 was a full-time nurse and divorced mother of three girls when she began working on a bachelor's degree in nursing at SUNY Upstate 14 years ago. The coursework seemed overwhelming, and when Snover failed the required math exam, she dropped out, as she explains it, "paralyzed by fear."

Ten years later, Snover enrolled in a humanities course at Upstate, where Bonnie St. Andrews PhD told her, "You've got real writing talent." That gave her the courage to return to college. Snover was tested and diagnosed with learning disabilities, yet – with strong faculty support – she completed her bachelor's degree, with honors.

Snover is now a contributing writer to LD Online, a learning disabilities website (www.ldonline.com) which connects her with people from around the world. As a graduate student, Snover also organized the Sisterhood of Healers, a small writing group which provides nurses with an outlet for creativity and a rejuvenating release from job pressures.

As Snover explains, "Nurses are sponges. We soak up the pain, concern and fear of our patients. Writing gives us a release."

Snover's recent essay in ***The Healing Muse*** describes the benefits of that immersion: "The gift of nursing, bestowed daily: to touch the lives of strangers...to celebrate the brief entwining of our lives, and then to move on, forever changed..."

–Susan Keeter

Sharon Snover BS, RN '03, holds a scrap of paper with a phrase that may serve as a writing prompt for the Sisterhood of Healers. In the background are writing group members Roberta Rolland BS, RN and Janice Colemen NP, RN. Snover and Rolland are graduate students at Upstate Medical University's College of Nursing.

Medication Evolution

New Pharmacology Program Earns DOH Recognition for Increased Patient Safety.

Driving the new Pharmacology Program: clockwise from left, Director David Lehmann MD, PharmD; Senior Administrative Assistant Ava (Niki) Sullivan; Patient Service Manager Karen Hirschman BS, RN; Quality Assurance Coordinator Maria Lumbrazo RN; Pharmacy Director Roy Guharoy PharmD; and Nursing Practice Coordinator Nancy Page MS, APRN.

University Hospital is reducing both medication risks and medication costs with new systems for prescribing, transcribing, dispensing and monitoring drugs.

Rolled out in phases during the past five years, the University Hospital Pharmacology Program was recently recognized by the New York State Health Department for its positive impact on patient safety. The program was also featured at the 2004 annual meeting of the National Association of Children's Hospitals.

In addition to promoting safe drug delivery, the program is credited with reducing the hospital's drug costs (by an estimated $3 million between 2001-2004) and with dramatically increasing the self-reporting of adverse medication incidents, according to David Lehmann MD, PharmD, director of the program and vice chair of the Department of Medicine.

System Overhaul

The carefully orchestrated program required no additional personnel or technology, but it involved intensive effort, major changes in the drug-delivery infrastructure – and the full support of hospital administrators, physicians, nurses and pharmacists.

Lehmann says the first challenge was reaching consensus on the most cost-effective, efficient drugs, "When the program was launched, University Hospital had an open formulary. Physicians prescribed medications according to individual preference," he explains. In the interest of increased patient safety, the physicians have since relinquished some of that autonomy.

"Now we have a closed formulary system that prevents duplication," reports Lehmann.

Literature-Driven

Through exhaustive reviews of the medical literature, University Hospital's clinical pharmacists and physicians identified high-cost and high-volume drugs – such as anticoagulants – which could be replaced with drugs that are less costly but no less effective. Additional literature reviews led to protocols developed by physicians and pharmacists.

"One of our program's major themes is empowerment," reports Lehmann. "A doc-does-everything system doesn't work efficiently. When you empower nurses and clinical pharmacists, the patient receives better care. We have the data to show that."

Under the new system, clinical pharmacists are authorized to interchange drugs within classes, according to established protocols. They also staff a consult service for University Hospital physicians, issue computer alerts about potential drug interactions and monitor therapeutic drug activity.

Center Stage

The new Hospital Pharmacology Program underscores the pivotal role of pharmacology in patient care and significantly raises the stature of Upstate's clinical pharmacists – the first in the nation to have their own promotion track at a medical college.

According to William Darko PharmD, assistant professor of medicine. "In addition to didactic teaching, I round daily with the inpatient cardiology team and offer opinions on evidence-based, cost-effective therapy. This role has moved the pharmacist to the doorstep of the medical and nursing staff and casts the pharmacist not only as a dispenser but also as an important part of the healthcare team."

Nurses Empowered

Nurses are also empowered to adjust their patients' medication doses, if indicated. "With some of these drugs, such as heparin, you've got to get the dose exactly right," explains Lehmann. "Too much heparin, and the patient bleeds. Too little, and the patient clots. If laboratory tests show the dose needs adjusting, the nurse can refer to the protocol and make the adjustment, without adding the extra layer of complexity and involving already-busy house officers."

A cornerstone of the program is a new system for reporting adverse medication incidents. "We divorced the former punitive process of random reporting," Lehmann explains. "Under-reporting of medication errors substantially limits our ability to analyze and address their root causes. It allows for the continuation of unsafe practices.

Culture Change

"One goal was to change the culture regarding medication error reporting," he says. " We made the new medication-event reporting system anonymous and non-punitive. As a result, self-reported medication events increased from 15 to 175 per month."

Handwriting & Errors Reduced

The program also streamlines the process of writing prescriptions. "When humans do more than a couple of steps, they're prone to mistakes," notes Lehmann. "We've taken a process that requires 72 handwritten numerals and reduced it by more than two-thirds. Again, we have data to show that the more people are required to write, the more mistakes they make."

–Denise Owen Harrigan

Hospital Expansion Changes Skyline

CNY Children's Hospital Caps Project

In keeping with its family-centered focus, the Central New York Children's Hospital at University Hospital will be a state-of-the-art facility which features such amenities as a teen lounge, performance center, cafés, family resource room and an indoor park.

These are some highlights from the final design plans for University Hospital's $99 million six-story vertical expansion, which, in addition to the two floors dedicated to the children's hospital, features patient care floors for cardiovascular, neurology and oncology services.

"The proposed design of our vertical expansion brings to Central New York a health care facility that will enhance and enrich the care of patients and provide their families with a welcoming and warm environment," said Ben Moore III, vice president for hospital operations and executive director of University Hospital.

Private Rooms and Baths

The children's hospital will feature 50 private patient rooms with sleeping and bath facilities for parents who wish to spend the night in their child's room. There will also be separate family sleep quarters on the 11th floor of the children's hospital. Individual nursing stations will be installed between each room. A 15-bed pediatric intensive care unit will be located on the 12th floor.

Looking south: Architect's rendering of the vertical expansion, crowned by the Children's Hospital. Karlsberger Architects, Columbus, Ohio

Other highlights include a meditation room, breast-feeding rooms, age-appropriate play spaces, family activity rooms and a family resource center.

Parent Input

Design discussions have involved input from staff and various stakeholders, including parents and patients. According to Parent Advisory Council member Sue Navagh, who participated in numerous design meetings for the Children's Hospital, "Hospital administrators and the architects have listened carefully to the needs of the families, and the design reflects that."

The two-story children's hospital will increase the space dedicated to pediatric medicine from 18,000 square feet to 87,000 square feet. Construction on the project is expected to begin in Spring 2005, with an opening date set for December 2007.

University Hospital will finance the construction through bonding. Additional funds for the children's hospital are also being raised through a community-wide fundraising campaign which has raised $10.6 million of its $15 million goal. The children's hospital campaign will cover the costs of the entrance, endowed research professorships, equipment and special features.

–Darryl Geddes

Vascular Surgery Growing...Again

The arrival of vascular surgeon Michael J. Costanza MD continues the growth of the Vascular Surgery Section at University Hospital. The section was established last year with the arrival of Vivian Gahtan MD as chief. At the end of 2004, a third vascular surgeon, Kwame Amankwah MD, will join the staff.

Endovascular Emphasis

Dr. Costanza, who recently completed a fellowship in vascular and endovascular surgery at the University of Maryland in Baltimore, offers minimally invasive procedures such as endovascular repair of abdominal aortic aneurysm (AAA). The procedure, which is ideal for high-risk patients, employs a collapsible tube – known as an endograft – which is threaded through the blood vessels to the abdomen. Once in place, the endograft expands to seal off the aneurysm and protect it from bursting.

"The use of a graft to repair aneurysms has been accepted practice for about 50 years," explains Costanza. "What's relatively new here is threading the graft through the arteries. This approach requires only two small leg incisions, instead of the long abdominal incision required by the open AAA repair, and patients recover much more quickly."

Costanza also performs a full range of open vascular procedures as well as renal artery balloon angioplasty and peripheral artery balloon angioplasty.

Treatment options will further expand later this year when Kwame Amankwah MD joins the Vascular Surgery Section and the Division of Interventional Radiology. Amankwah completed his vascular surgery fellowship at Yale University School of Medicine and is receiving additional fellowship training in endovascular surgery and general interventional radiology at Texas Tech University Health Sciences Center. He will also be performing a full range of open vascular surgery and endovascular procedures.

Foot Note

Upstate Volunteers...like Mary

Mary Nelson, Radiology

KATHLEEN PAICE

...Make a Major Difference!

Three years ago, Mary Nelson was mourning the violent death of her nephew, Darryl Patterson, when she decided to turn her family's grief in a positive direction. To help keep kids in school, Nelson threw a big back-to-school barbecue and gave away backpacks filled with school supplies. The barbecue has become a larger-than-life event: this year it drew 2,000 guests, and close to 1,000 students – from preschool to college – left with backpacks custom-filled according to grade level. Nelson recruited 65 volunteers to help with this year's barbecue, but she still devotes most of her free time, year-round, to soliciting donations, thanking donors, planning the festivities and customizing backpack contents. "A new backpack is like a million bucks to these kids," says Nelson, whose 'day job' is receptionist for Upstate's Department of Radiology.

As one of Central New York's largest employers – and its only academic medical center – SUNY Upstate makes more than a high-profile contribution to health care. Like Mary Nelson above, our 7,000-plus employees and students volunteer their time to countless community causes. Upstate's Volunteer Council is conducting a survey to see who is volunteering where and what causes are closest to our hearts. Watch for the results in the winter issue of *Outlook.*

State University of New York
Upstate Medical University
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