

SPRING 2009

UNIVERSITY OF COLORADO DENVER SCHOOL OF MEDICINE

CUMEDICINE

Today



*Dr. J.J. Cohen makes medicine
understandable to the masses*

*Student sees reality, reward
in Rwandan orphanage*

*Pediatrics professor deciphers
genetic code that predicts
leukemia relapse*

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Dr. J.J. Cohen's Mini Med School attracts more than 1,600 students per year across Colorado. Over the past 20 years, his students have been as young as age 11, have driven hours to attend class and have gone on to become practicing physicians.

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A conflict of interest

I know no physicians whose professional integrity is for sale for a free lunch or a ball-point pen. Indeed, I will state unequivocally that the overwhelming majority of physicians consider professional integrity a priceless commodity.

Knowing that helps me understand the defensiveness and occasional resentment I encounter when I discuss conflict of interest policies for the School of Medicine faculty. Many people wonder why the school needs policies to fix something that rarely, if ever, breaks.

Think of it as preventive medicine. A policy passed in 2008 generally prohibits our physicians, fellows, residents, interns and medical students from accepting free meals, gifts or anything of value from anyone with a commercial interest in health care. The new standard for relationships with our industry colleagues is not punitive. It affirms, formally, our commitment to evidence-based medicine over marketing.

The need to assure the public that we stand for science stems from a handful of incidents where physicians' personal financial interests *appeared* to conflict with their professional responsibilities. I emphasize the word *appear*. As physicians, we have virtually no margin of error when it comes to public perceptions about competing loyalties. Whether we like it or not, a single physician led out of his office in handcuffs—which happened at another institution in 2008—casts a shadow on every doctor. This is as much about patient-centered care as probability.

The same applies to an ongoing discussion at the School of Medicine. We must decide how much, if any, information we reveal publicly about our faculty's ties to private industry. Several medical schools have already answered this question by posting on their Web sites the names of companies that pay fees of \$5,000 or more annually to individual faculty members.

Some physicians consider this disclosure an invasion of privacy. However, with several schools involved in scandals where faculty members had financial ties to companies that might benefit from the faculty members' clinical trials, we cannot ignore the issue.

We face a demand—if not an obligation—for more transparency.

The LCME reaccreditation site committee visited the school in March. I thank faculty and staff who helped provide the information the LCME needed to decide whether to renew our accreditation. I'll let you know what happened in my next column. I am very optimistic given the great work of our faculty, students and staff.

All of you who graduated in a year ending with the number four or nine: We hope to see you at the class reunions in May. See the inside back cover of this issue for details.

With warm regards,

Richard D. Krugman, MD
Dean, School of Medicine
Vice Chancellor for Health Affairs
University of Colorado Denver

“As physicians, we have virtually no margin of error when it comes to public perceptions about competing loyalties.”

MISSION STATEMENT

CU Medicine Today will keep alumni knowledgeable about and connected with the School of Medicine and the University of Colorado Denver by writing truthful and relevant articles highlighting university news, both positive and challenging, and providing a forum for news and comments from alumni.

EDITORIAL PHILOSOPHY

Alumni play a vital role in the ongoing success of the UC Denver School of Medicine and have a legitimate stake in its future. Moreover, alumni carry forward the mission of the university through responsible participation as educated citizens in their communities and professions. Alumni serve as lifelong ambassadors of the university. Thus, the university has a stake in fostering loyalty, enthusiasm and pride from the alumni for the institution.

In light of these goals, *CU Medicine Today* offers thoughtful, balanced editorial content based on sound judgment and strong journalistic ethics, which reflect the tradition of an outstanding university dedicated to cultural and intellectual diversity. Free inquiry and open discussion of ideas are the guiding principles of both higher education and responsible journalism.

This publication is designed and written in the spirit of the goals and principles of diversity. Therefore, the editors will evaluate material submitted for publication with special regard to that which is offensive or insensitive to those goals and principles. However, if an article is determined to be controversial in nature, this alone will not determine if it shall or shall not be printed. The publication will respect the points of view of others and communicate openly while maintaining diversity as a fundamental value.

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Morbidly obese patients face high risk for complications after colectomy

Ryan Merkow, MD, a resident in surgery, was the principal investigator in research published in the January issue of the *Journal of the American College of Surgeons*. The research shows that morbidly obese patients are at higher risk than normal weight patients for complications after colectomy—surgical removal of all or part of the colon for the treatment of cancer.

“Although recent analyses have suggested that obese patients undergoing colectomy have higher rates of complications after the operation, this is the first major study to examine how body mass index affects the risk of specific adverse events such as infection, kidney failure and blood clots,” Merkow says. “These findings could help medical teams anticipate and manage postoperative risks in morbidly obese patients.”

Obese patients are more likely than non-obese patients to develop and ultimately die from colon cancer, the second-leading cause of cancer death in the United States. Surgical intervention remains the primary treatment for colon cancer, but it carries the risk of serious complications.

“Although recent analyses have suggested that obese patients undergoing colectomy have higher rates of complications after the operation, this is the first major study to examine how body mass index affects the risk of specific adverse events such as infection, kidney failure and blood clots.”

Marion Downs celebrates 95th birthday



Marion Downs, MA, DHS, DSc, who pioneered the first infant hearing screening program in the United States, celebrated 95 years of life in February. Downs, a distinguished professor emerita at the School of Medicine, spent more than

35 years providing clinical services to benefit patients with hearing impairments. She devoted her professional life to promoting early identification of hearing loss in newborns, infants and young children and helping those handicapped by hearing impairment to lead fulfilling lives.

Downs initiated, developed and evaluated techniques for testing hearing in children and fitting them, some as infants, with hearing aids. Her success ultimately resulted in a widespread newborn screening program in more than 40 states and in numerous foreign countries.

Downs loves to live. She wrote *Shut Up and Live! (You Know How)*, which urges people to get off their fannies and celebrate life in spite of the challenges aging can bring.

Fatty diet during pregnancy leads to liver disease in baby monkeys

Jed Friedman, PhD, a professor of pediatrics, biochemistry and molecular biology, was co-senior author of a study showing that even skinny primate moms-to-be can cause fatty liver disease in their babies if they eat a high-fat diet.

It is not how fat nonhuman primate mothers are when pregnant, but how much fat they eat during pregnancy that seems to determine rates of fatty liver disease in nonhuman primate infants, Friedman says. Their finding may have human implications, because fatty liver disease often leads to obesity and diabetes in primate offspring.

Friedman authored the study with Kevin Grove, PhD, of the Oregon Health and Science University's Oregon National Primate Research Center. It was published in the *Journal of Clinical Investigation*.



Michelle and Sophia Whitten (left) celebrate the grand opening of the Linda Crnic Institute for Down Syndrome. Acting Director and Professor Leslie Leinwand, PhD, (right) also attended the event.

Institute aims to eradicate ill effects associated with Down syndrome

Anna and John J. Sie have high hopes for their granddaughter, Sophia Whitten, born five years ago with Down syndrome. Through the largest private contribution in the United States dedicated to people with Down syndrome, the family established the new Linda Crnic Institute for Down Syndrome.

Unveiled at the University of Colorado Denver's Anschutz Medical Campus in September 2008, the institute will be the first to comprehensively address basic research, clinical research and clinical care under one umbrella.

The University of Colorado Denver, the University of Colorado at Boulder and The Children's Hospital in Aurora have committed space, personnel and overhead to the institute.

"Sophia has been such a blessing in our lives and has led us to meet brilliant and huge-hearted scientists, such as Linda Crnic, Leslie Leinwand, Larry Gold and the wonderful new leaders at the University

of Colorado and The Children's Hospital," says John J. Sie. "It has given my wife, Anna, and I a new purpose in life, and Sophia's parents, Michelle and Tom Whitten, have been focused on understanding what we can do better, not just for Sophia, but for generations of people with Down syndrome to come."

The Linda Crnic Institute for Down Syndrome is named for a UC Denver School of Medicine professor of pediatrics and psychiatry who died in a bicycle accident in 2004. Crnic became a friend and mentor of the Whittens when they received Sophia's prenatal diagnosis of Down syndrome.

"We are grateful," says Sie, "that the best place to effectuate real change and discovery happens to be in our own backyard."

Kutner puts a kind face on top docs list

Each year, the School of Medicine is well represented in the annual *5280 Magazine* "Top Doctors" issue. The October 2008 edition was no exception with 110 full-time faculty and dozens of clinical faculty making the cut. Gracing the cover was our own Jean S. Kutner, MD, MSPH, associate professor of medicine and head of the Division of General Internal Medicine. Dr. Kutner's work in palliative care has drawn notice beyond her patients and their families. She is a recipient of a Robert Wood Johnson Generalist Physician Faculty Scholars award, a Paul Beeson Physician Faculty Scholars in Aging Research award, an R01 research grant from the National Center for Complementary and Alternative Medicine and an R21 grant from the National Cancer Institute. She also directs the Population-based Palliative Care Research Network at the university, which she formed as a means for conducting ongoing studies of care at the end of life.



Technology makes glucose monitoring easy for diabetes patients

Max Anger, a 16-year-old junior at Greenwood Village's Cherry Creek High School, enjoyed a trip to New Zealand last summer without having to prick his finger every two hours to check his glucose level. Instead he wore a continuous glucose monitoring (CGM) device, the latest technology to help patients with type 1 diabetes manage their condition.

Researchers at the Barbara Davis Center for Childhood Diabetes at the School of Medicine participated in a multicenter clinical study that began in summer 2007. Anger, a patient since his diagnosis at age four, offered to be a subject.

The study, funded by the Juvenile Diabetes Research Foundation and published in the *New England Journal of Medicine* in October 2008, found that patients with type 1 diabetes who regularly use the CGM device experience significant improvements in blood sugar control. The research, which was 25 years in the making, is "one of the most important findings in clinical diabetes research to date," says UC Denver Professor H. Peter Chase, MD, a co-author on the study.

For Anger, the ability to monitor his glucose level without the common finger prick has made life much easier. The device includes a flexible sensor that stays under the skin of the arm or stomach and transmits data to a receiver that is worn as a patch.

But there's more to continuous glucose monitoring than convenience, says Assistant Professor Rosanna Fiallo-Scharer, MD, co-investigator at the Barbara Davis Center. "Based on the findings of previous studies, better control of glucose levels over the long term could translate to a lower risk of complications for people with type 1 diabetes."

The CGM device gave Anger a better way to manage diabetes—he could enjoy activities while traveling and at home. "The center is fantastic; the docs are fun to work with; and I'm glad I could help and contribute to knowledge."



“Based on the findings of previous studies, better control of glucose levels over the long term could translate to a lower risk of complications for people with type 1 diabetes.”



Dr. Richard J. Traystman

American Heart Association honors Traystman for research

Richard J. Traystman, PhD, FAHA, vice chancellor for research at the University of Colorado Denver, was selected by the American Heart Association as one of its Distinguished Scientists for 2008. Each year this distinction goes to AHA members whose work has advanced the understanding and management of cardiovascular disease and stroke. Traystman has made major contributions to the understanding of how the brain and its circulation respond to clinical disease states such as stroke and cardiac arrest. Traystman received his award at the association's 2008 annual meeting in New Orleans.

"I am honored to be included in such a distinguished group of scientists," says Traystman, who also is professor of pharmacology at UC Denver's School of Medicine.

Traystman has spent more than 35 years working on the regulation of brain blood vessels, cardiac arrest/cardiopulmonary resuscitation and stroke. He has been principal investigator of a program project grant from the National Institutes of Health for more than 24 years and has had continuous NIH funding since 1971.

The heart association noted that "[Traystman's] work is striking for its breadth and application to the adult, neonate and fetal brain."

Voters affirm diversity, defeat measures to benefit state scholarships

In November, Colorado became the first state in the nation to defeat a ballot initiative that prohibited “discriminating against or granting preferential treatment to any individual or group on the basis of race, sex, color, ethnicity or national origin in the operation of public employment, public education or public contracting.” The state constitutional amendment’s narrow defeat came as several groups, including the Association of American Medical Colleges, lobbied against it because of difficulties it might pose for making medical school classes more diverse.

Writing as an individual, not as a representative of the University of Colorado Denver School of Medicine, emergency medicine professor and associate dean for faculty affairs Steven Lowenstein, MD, MPH, summed up the opposition to Amendment 46 by explaining that quotas and “set-asides” were already unconstitutional. In an op-ed piece published online and in print in the *Denver Post* and the *Boulder Daily Camera*, Lowenstein encouraged opposition to the amendment so “the medical school can do its job.”

“A racially, culturally, ethnically, socioeconomically and geographically diverse medical student body enhances teaching and learning about medicine,” Lowenstein wrote.

November’s election also saw the defeat of another measure that significantly affected higher education. Voters defeated an attempt by Colorado Gov. Bill Ritter to increase severance taxes on oil, coal and gas companies that drill and mine in the state. Ritter planned to put the severance tax increase—worth an estimated \$300 million a year—toward scholarships for students at state universities and colleges.

Kappler, Marrack join elite membership

The prestigious Institute of Medicine has elected a pair of School of Medicine faculty into its membership. At its 38th annual meeting in October 2008, the Institute of Medicine voted in John Kappler, PhD, and Philippa Marrack, PhD, who are both professors of immunology. Election to the Institute of Medicine is considered one of the highest honors in the fields of health and medicine.

Kappler and Marrack practice at National Jewish Health, one of the School of Medicine’s affiliated hospitals, and form one of the most successful research teams in the country. The pair discovered the T cell antigen receptor in 1983. They continue to do T cell biological studies that are critical to understanding the body’s immune responses.

The couple join a dozen other School of Medicine faculty who are members of the institute. They are: M. Roy Wilson, MD, MS, University of Colorado Denver chancellor; Richard D. Krugman, MD, UC Denver vice chancellor for health affairs and School of Medicine dean; Frederick C. Battaglia, MD, emeritus professor, Department of Pediatrics; Robert Freedman, MD, professor and chair of psychiatry; Larry A. Green, MD, professor of family medicine; Richard B. Johnston Jr., MD, associate dean for research development and professor of pediatrics; Spero M. Manson, PhD, professor of psychiatry and director of the American Indian and Alaska Native Program; Robert W. Schrier, MD, professor of renal medicine; James Strain, MD, clinical professor of pediatrics; David Talmadge, MD, emeritus professor of microbiology; Paul Nutting, MD, professor of family medicine; and Bernard Nelson, MD, professor of preventive medicine.

Medical scanning equipment scant for the very obese

Americans who are drastically overweight may find themselves unable to get essential medical scans in emergencies, a researcher at the University of Colorado Denver School of Medicine reports in the journal *Obesity*.

Adit Ginde, MD, of the medical school’s Division of Emergency Medicine, discovered that CT scans were generally more available to the obese. Roughly 75 percent of hospitals who answered Ginde’s survey had CT scanners able to accommodate patients who weighed more than 350 pounds. But the number of CT scanners that would accommodate those heavier than 450 pounds was only 14 percent.

Two-thirds of hospital emergency rooms that answered a national survey could not offer MRI scans, for patients weighing more than 350 pounds. Just 10 percent of hospital emergency rooms who responded had MRI equipment that could handle patients who weighed more than 450 pounds.



Meanwhile, Ginde surveyed veterinary schools and zoos and found that most of those with CT scanners that handled heavy animals did not allow those scanners to be used on overweight humans.

There is reason for concern, says Ginde, because the number of super obese Americans continues to grow. From 1988–1994, he reports, approximately 470,000 Americans weighed more than 350 pounds. From 1999–2004 the number grew to 660,000.

“Even though it is a relatively small proportion of the population,” Ginde explains, “many (emergency departments) are not actually able to provide emergency care for these patients.”

Scans are vital in diagnosing life-threatening injuries, infections, blood clots and strokes.

Michael Bristow, MD, PhD

Bristow extends life by studying heart failure

Fresh out of high school in the farming community of McLean, Ill., Michael Bristow, MD, PhD, knew at age 18 that he wanted to spend his life doing research. At first, he opted to follow the typical path of a “farm kid,” studying animal husbandry at veterinary school. But he soon realized the human heart was what intrigued him most.

“I began looking at what causes the heart to become weak and fail,” says Bristow, who published his first research paper in 1970 and graduated from University of Illinois with degrees in medicine and pharmacology in 1971. “The details of that fascinated me.”

Nearly four decades and 350 published papers later, the University of Colorado Denver School of Medicine cardiology professor is credited with not only discovering common mechanisms by which the heart grows weak and enlarged, but also with helping to develop a new class of drugs, beta blockers, to alter those mechanisms. In recent years, he’s also helped develop genetic tests to determine who will respond best to which drugs and created three companies to help bring gene-targeted therapies to patients. In 2008, he was given a Lifetime Achievement Award by the Heart Failure Society of America and named Scientist of the Year by the Colorado Chapter of the Achievement Rewards for Colorado Scientists (ARCS) Foundation.

“He is an academic, but he is also focused on taking research findings and applying them to patient care to improve lives,” says Sherry Berger, a director of the ARCS board.

Bristow’s early medical career began like a scene out of the television show *Northern Exposure*: In 1972, he established the first National Health Service Field Station in Montana and served for two years as the only doctor covering a 75-mile radius in the rugged West Yellowstone Montana region. From there, he returned to Stanford to continue his research and soon developed an interest in transplant medicine that would steer his career through the 1990s. He served as director of transplant programs at the University of Utah from 1984-1991, before joining UC Denver as head of the cardiology division. But as he worked to surgically repair damaged hearts, he was also hunkering down in the lab to try to better understand how they got that way.

In the early 1980s, after experimenting for a decade with animals, Bristow and his colleagues were the first to identify the role that adrenergic stimulation—increased stimulation by adrenaline-like compounds—plays in the failing heart. In essence, when the heart is weak, the body floods it with such compounds to keep it pumping, but this short-term solution often ends up doing long-term damage to critical signaling pathways.



Dr. Michael Bristow is credited with not only discovering common mechanisms by which the heart grows weak and enlarged, but also with helping to develop beta blockers to alter those mechanisms.

“It turns out that it is a standard mechanism for the body to try to support the failing heart and compensate for it becoming weak, but in the long run, it harms it,” Bristow says.

This revelation led to the use of beta blockers, which block receptors in the heart from responding to these fight-or-flight chemicals. Beta blockers are now used to treat everything from hypertension to congestive heart failure.

Since then, his team has been looking at what gene combinations exacerbate the adrenergic mechanism and developing treatments to reverse their expression. He has also been looking at how different sets of gene variants influence whether a person will respond well to beta blockers and developing screening tests and drugs to prevent doctors from wasting time prescribing medications that won’t work. That research, and the intellectual property to come out of it, has led to the founding of three companies aimed at bringing drugs and tests to market—Boulder-based Myogen Inc. in 1996, ARCA Biopharma in 2002 and Miragen Therapeutics, Inc. in 2007.

“It’s not good enough to just do the research and let it sit there, yet it’s very difficult to have a big pharmaceutical company get on to your stuff and do a deal with you to develop it. You can wait your entire life before that happens,” says Bristow. “It is much quicker to get involved in the commercial development yourself.”

With one of his drug discoveries, Ambrisentan (for hypertension), on the market and several in late-stage development, Bristow has enjoyed something many researchers never experience: “Seeing stuff that you worked on actually see the light of day and end up helping patients is very satisfying.”

Cross-disciplinary collaboration offers potential breakthroughs to cancer research

Their collaboration began with a graduate student's desire to determine the crystal structure of Six1, a transcription factor that binds DNA and controls the activity of other genes. This brought together Heide Ford, PhD, associate professor of obstetrics and gynecology, and Rui Zhao, PhD, assistant professor of biochemistry and molecular genetics. What evolved from this interdisciplinary partnership may lead to a novel therapeutic approach to breast cancer treatment with limited side effects compared with traditional therapies. And it could impact treatment of other cancers as well.

Through their research, Ford and Zhao have found that if Six1 is over-expressed in breast cells, it can lead to tumor formation or tumorigenesis. If it is over-expressed in cells that already have tumors, it can cause cancer to spread.

"We have conclusive evidence that Six1 mediates tumor growth and metastasis," Ford says.

Ford and Zhao believe that Six1 requires Eya2, a phosphatase co-activator, to initiate tumor formation and metastasis.

"We already have evidence (from cell culture) that if you decrease the levels of Eya, then some of the metastatic properties induced by Six1 are lost," says Ford. "So Eya is important. Now we must see if this holds true in animal tests."

A further question is at which point in the tumor growth process inhibiting the Six1/Eya2 complex will be most effective. The three possibilities include Six1 binding to DNA; Six1 binding to Eya; or in Eya's enzymatic activity.

With the support of two recent grants, Ford and Zhao are targeting the Six1 transcriptional complex from all possible angles.

In 2008, the interdisciplinary collaborators received a Department of Defense Synergistic Idea Award for their project, "Structural and Functional Analysis of the Six1 Transcriptional Complex for Anti-Breast Cancer Drug Design." The grant provides \$770,000 over two years.

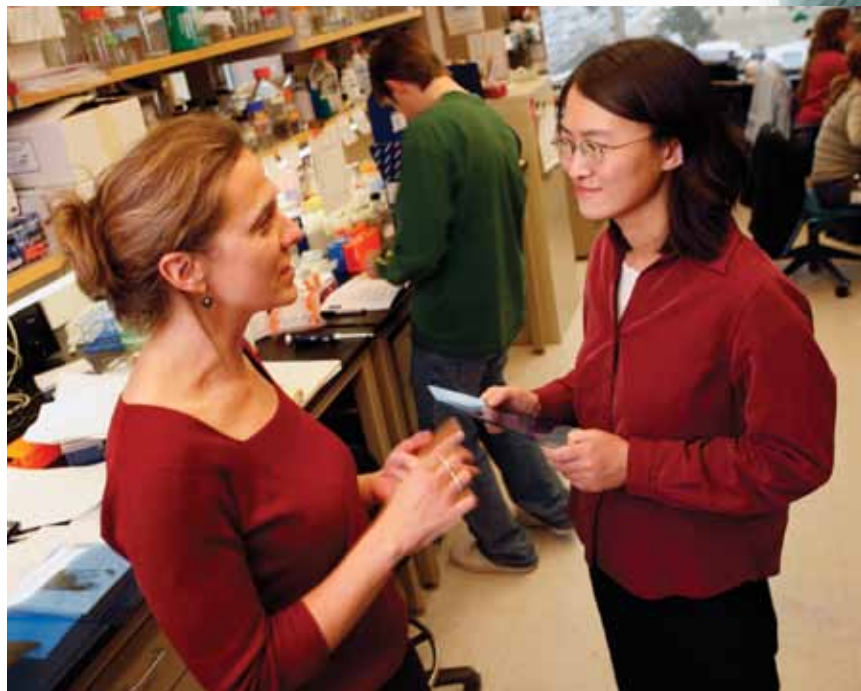
Under this grant project, Zhao is researching inhibitors using structure-based drug design and high throughput screening. She already has preliminary crystals and is in the process of determining the structure that can then be used to screen virtual libraries of small molecule inhibitors. Her lab has designed the high throughput screening assay that will attempt to inhibit the enzymatic activity of Eya and is ready to go into actual screening. Assays to inhibit the binding of Six1 to DNA and to Eya are still in development.

Once Zhao has identified inhibitors on a biochemical level, Ford's laboratory will test them in cell culture and animal models.

The two also received a State of Colorado Proof of Concept grant of \$185,000 that supports their efforts in identifying inhibitors of the Eya phosphatase.

"The beauty of going after transcription factors is that it offers the ability to hit cancer on many fronts," says Ford.

"...We've gone a lot further than what we originally planned," says Zhao. "The more we think about it, the more excited we get. Approaching from a drug development aspect has generated enthusiasm for grants."



Drs. Heidi Ford and Rui Zhao find that researching breast cancer from multiple angles leads to better results.

The DOD Synergistic Awards are given to projects that have two principle investigators (PIs) from disparate fields. Zhao is a structural biologist/biochemist and Ford is a cancer cell biologist. The pair sees cross-disciplinary collaboration becoming more common. "Grantmakers are asking for it," says Ford. "It was instrumental in obtaining our DOD grant."

The researchers are currently writing another multiple PI grant to the National Institutes for Health (NIH). Says Zhao: "We see these multi-PI grants as recognition by NIH that collaboration among scientists with different expertise is becoming an important way to do science."



Dr Timothy Vollmer

Director brings new research, hope for area MS patients

As a young physician, Timothy Vollmer, MD, had a strong interest in multiple sclerosis, but he and his colleagues doubted there would be major advances in treating the disease during the span of their careers. Twenty-six years later, Vollmer plans to put the Rocky Mountain MS Center in the national forefront of MS research, education and treatment. Since joining the center as medical director in August 2008, Vollmer already has established 16 new studies on various agents to treat MS.

"This is in addition to the substantial research that's already been going on here," he says. "MS has received a lot of attention from both the government and the pharmaceutical industry. It's a hopeful time, but also a complex time."

"When I started 26 years ago, MS was an area that was pretty anonymous from a scientific standpoint," he says. "Imaging technology has fundamentally changed our view of MS, as well as molecular biology and genetic capabilities that have revolutionized immunology in general and MS in particular."

Vollmer earned his doctorate in medicine from Stanford University. A former faculty member at the Yale School of Medicine, he spent the last six years as the Van Denburgh Professor at the Barrow Neurological Institute in Phoenix, where he also chaired the department of neurology and directed the neuroimmunology and MS programs.

He was drawn to the Rocky Mountain MS Center because of its connection with the University of Colorado Denver and the Anschutz Medical Campus in Aurora. He also was happy to relocate to Colorado.

"I was looking for a position that would allow me to work with larger teams, more physicians and the potential for bigger studies that are important to us," says Vollmer, who also joined the School of Medicine faculty as a professor of neurology. "I'm interested in bringing

the Rocky Mountain MS Center and the university groups together in a way that would develop the synergy to allow us to achieve our triple mission of patient care, research and education."

The Multiple Sclerosis Association of America estimates that 350,000 people nationwide have MS, an autoimmune disease that targets the brain and spinal cord. According to Vollmer, about 4,000 to 8,000 people in Colorado have MS. The Rocky Mountain MS Center and physicians at the Anschutz Medical Center will see some 1,500 individual patients who have 5,000 patient visits annually.

In its 30-year history, the Rocky Mountain MS Center has a reputation for innovative programs that treat the whole patient from education, support groups for patients and families, rehabilitation and adult day services, to complementary medicine and more.

In his new role, Vollmer is looking at ways to change the model of care for MS patients. MS is a chronic disease that needs long-term management, yet many patients see multiple physicians and lack continuity of care.

"We want to look at different models of what we call principal care and try to deal with patients' overall health needs in a proactive way."

Vollmer is encouraged that MS now is at a place in which treatment for cancer and HIV patients has evolved. MS patients now can take multiple drug regimens. By combining drugs or changing their sequence, MS patients may get better outcomes in the future.

"Within my professional career we will have very effective therapies, if not a cure for the majority of patients," Vollmer says. "To be able to work in a field where we have 16 studies going on with new agents is rewarding and exciting—there is a lot of hope."

Shandas shapes the business of medicine

Robin Shandas, PhD, believes there is a fundamental difference between making a thing and making a difference.

"I'm not interested in business," Shandas explains. "I'm interested in taking technologies and working with them so they have some commercial possibilities. Then, I let them go."

Shandas—who holds joint appointments as professor of pediatrics at the School of Medicine and professor of mechanical engineering at CU-Boulder—knows how to direct research toward marketable products.

The artificial right ventricle Shandas developed with pediatric heart surgeon Francois Lacour-Gayet, MD, is one example. The axial flow pump gets inserted in the hearts of teenagers with a particular congenital problem.

"The pump is derived from the fuel injector systems NASA used in spacecraft," says Shandas. The only current alternative to fix the inadequate blood flow in the hearts of these teens is a heart transplant, Shandas says.

That's the name of the game in bioengineering—find a better way, a safer way, a more affordable way to do it.

If Shandas has his way, two companies he helped found will do just that.

Endoshape will "commercialize a shape memory (plastic) polymer we're developing," Shandas says. "We're using imaging techniques

to manufacture the shape (of an artificial body part) that is unique to the patient. We scrunch the polymer down with heat and send it into the body through a catheter. We release it, expose it to body heat and it deploys back to its original shape. If the device conforms perfectly to the anatomy, tissue then grows into the device."

Shandas looks for ways to not only "scrunch" his product into smaller and smaller catheters, but also to do body imaging and insert plastic at a lower cost.

His second company, Illumasonix, produces an ultrasound blood-flow measuring system that relies on two concepts: 1. Ultrasound penetrates opaque material. 2. Bubbles injected into an ultrasound machine scatter ultrasound energy."

"I had an Archimedes moment," says Shandas. "It was, 'Eureka!' The bubbles reflect the flow of the blood."

Now, he will test his Illumasonix ultrasound machine against the current method for measuring blood flow—magnetic resonance imaging or MRI. "Our system," he says, "has the possibility of being cheaper, faster and, we believe, more accurate than an MRI."

That, Robin Shandas knows, is what separates true bioengineering from an interesting twist of technology. That is how he is making a difference.



Dr. Robin Shandas combines engineering and medicine to develop life-saving solutions for patients.

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Dr. J.J. Cohen makes medicine understandable to the masses

By Jim Spencer

It is a Wednesday night in November and inside the IMAX Theatre at the Denver Museum of Nature and Science, J.J. Cohen, MD, CM, PhD, lectures to 400 “medical students.” Audiovisual technology beams his image and voice to another 1,000 students around Colorado.



This evening, Cohen talks tumors. Malignant tumors. The big “C”—cancer—one of the most feared words in the lexicon of health care. Cohen coaxes calm, compassion and even a few smiles from his students while giving them important, if arcane details about uncontrolled cell division. The slides flashing on the screen behind him show actual cancer cells embedded among healthy cells and captured photographically under a microscope.

Throughout a 60-minute talk, Cohen does what most teachers struggle to do. He imparts critical lessons while holding the complete interest of his audience. It seems a shame that few, if any, of the students concentrating so hard on Cohen’s words and asking such penetrating questions for 30 minutes after his lecture will ever practice medicine. On the other hand, who wants to be diagnosed or treated for a deadly disease by, say, a salesman?

Welcome to Cohen’s Mini Med School. Established nearly two decades ago, it remains the centerpiece of one man’s crusade to make science accessible, understandable and exciting to the public.

“Someone said if there was a Nobel Prize for science education, J.J. Cohen would be up for it,” says retired elementary school teacher and Mini Med School grad Chris Blakeslee. “I wrote to *Science Friday* on National Public Radio to try to get the host to interview Dr. Cohen.”

That hasn’t happened yet, but the UC Denver Mini Med fills roughly 1,600 seats each year across Colorado and has a waiting list of others who want in. Universities in the United States, Canada and Europe have copied Cohen’s concept, which is an eight-week series of community lectures and question-and-answer sessions that gives an overview of subjects such as anatomy, physiology, immunology, microbiology, pharmacology and cancer.

Mini Med is not the only weapon in Cohen’s arsenal as he wages war on America’s scientific illiteracy. Cohen, a professor of immunology at the University of Colorado Denver School of Medicine, runs a

program called Art in Science/Science in Art that uses the images produced in laboratories and research to show beauty while illustrating scientific principles.

In addition, he hosts the Denver chapter of Café Scientifique. Each month he brings together civilians and scientists at a local brew pub. Over heady mugs of beer, the diverse crowd discusses even headier topics, such as Methicillin-resistant *Staphylococcus aureus*.

Don’t let the title scare you. Cohen allows no PowerPoints at CafeSci and precious little polysyllabic glut.

“I bring people to Café Scientifique,” explains Eric Meer, a 35-year-old telecommunications worker. “I tell them: ‘You’ll get it.’ J.J. encourages people to ask anything they want.”

And if you think the question is too dumb, Cohen advises you to “ask your neighbor to ask it.”

“J.J. is hilarious,” Meer says. “He makes jokes that put people at ease. You’re in a bar drinking beer. It’s non-intimidating. It’s not like a lecture class at Harvard.”

Or at the UC Denver medical school, where Cohen teaches real medical students by day and perennially wins teaching awards. He has been recognized as a University of Colorado system President’s Teaching Scholar. He has won CU’s Thomas Jefferson Award that honors faculty, students and staff who address community needs. Recently, the city of Denver named Cohen one of its 150 most influential, but unsung citizens.

“He’s one of the best teachers I’ve ever had,” says Dylan Jones, a 17-year-old scientific wunderkind, who is now the youngest first-year med student at UC Denver. Jones went to Mini Med School at 11. He already planned to be a doctor. But Cohen put the icing on the cake. “We need to be more open to science in society,” Jones says. “J.J. lets you know that, yes, you can understand it. He enjoys teaching you, and you enjoy being taught.”

"He's the gold standard," says fellow faculty member Tom French. "You don't want to be the lecturer to follow J.J. on the class schedule. It's like amateur hour following Seinfeld."

"I'm basically a really shy person who is overcompensating," insists Cohen, who credits another medical school faculty member, Ricki Ann Saylor, with polishing his style when he came to Colorado several decades ago. "My idea of fun is not to get together with my family. My addiction is to teaching."

If you're a Mini Med student, Cohen hopes to convey enough medical knowledge so your doctor can never "get away with telling you, 'You can't understand this.'"

If you're a physician in training, Cohen supplies encouragement to go with knowledge.

"A few years ago a student came to me and told me he was going to drop out of school," Cohen recalls. "I told him that when I stand before a class, I always look around and say to myself 'That's the person I want taking care of me.' I told him I had picked him. He was stunned. I told him not to quit half-way. If he didn't want to practice medicine when he finished, that was all right. But he needed to finish. He got into the hospital setting in his last two years and blossomed."

Cohen trusts in the intellectual curiosity of the public. He finds it among supposedly average fourth graders who look at his photo of the last known case of smallpox and ask, "If it's called smallpox, why is the pox so big?" He finds it in the remarkably sophisticated audience questions that pepper every physician and PhD who lectures at Mini Med School.

"People don't want stuff dumbed down," Cohen says. "They want it translated. I tell the teachers at Mini Med: 'The audience is just as smart as you. They just don't speak your language.'"

While teaching is Cohen's addiction, science is his love. At 11, he got a part time job counting isotopes in the Canadian hospital where his father worked as an administrator. "The first book I fell in love with was my older sister's chemistry book," Cohen confides. He earned a bachelor's degree in biochemistry, a master's degree in endocrinology and a PhD in immunochemistry before getting his MD degree.

"It's not really goofy to say science is my religion," Cohen explains. "It forms the basis for what I believe."

Trim, energetic and stylishly dressed, with a neatly groomed white goatee and white hair, Cohen looks 20 years younger than his 68 years.



Dr. J.J. Cohen is on a crusade to make science accessible, understandable and exciting to the public.

Indeed, medical students who discover his age are shocked. He projects an enthusiasm that is timeless and a speaking style that engages people of any age.

"He made the complex very understandable," says Patty Gould, who commuted an hour and a half each way from Colorado Springs to attend the fall 2008 Mini Med School in Denver.

Gould and her daughter, Amie Woody, left at 5:30 p.m. and never got home before 10 p.m. "We never missed a class," Gould says. "We sat in the second or third row every week. We stayed until the very last question. You can tell he loves doing this."

Next up for Cohen could be an online Mini Med program designed specifically for junior high and high school students. "We want to catch 'em," Cohen says, "and tell 'em this stuff is totally cool."

Cool enough to have thousands of alumni, including one who begged for a slot in the Mini Med School's inaugural class nearly 20 years ago. "In the first year, after the crush of registration, I got a call from an 11-year-old who didn't get in," Cohen says. "He told me how much he wanted to come. I told him to show up and we'd find him a seat. He called me this summer as he was finishing up his plastic surgery residency."

As a guy who worships science, J.J. Cohen could not have asked for a happier ending.

Fab Four: faculty named 'most influential'

In November, J.J. Cohen, MD, CM, PhD, joined School of Medicine Dean Richard Krugman, MD, and faculty members Francois Lacour-Gayet, MD, and James Todd, MD, as four of Denver's 150 unsung, but most influential citizens. The city officially produced the list to coincide with a celebration of the city's 150th birthday.

Krugman, a professor of pediatrics, also serves as vice chancellor for health affairs at the university and has spent 40 years helping improve health care in Denver.

Lacour-Gayet, a professor of pediatric surgery, is a world-renown heart surgeon practicing at The Children's Hospital. He is widely regarded as one of the pioneers in the current trend toward total repair of complex congenital heart lesions just after birth. His accomplishments won him the Legion of Honor from his native France.



Dr. Richard Krugman



Dr. Francois Lacour-Gayet



Dr. James Todd

Todd enjoys an international reputation stemming from his discovery of toxic shock syndrome. He works as a professor of pediatrics, microbiology, preventive medicine and biometrics at the School of Medicine and practices at The Children's Hospital.

School celebrates anniversary with one-of-a-kind gala

The School of Medicine celebrated its 125th anniversary with a formal fundraising gala held Oct. 4, 2008 at the Colorado Convention Center in Denver. Faculty members, graduate students and undergraduate students provided dozens of interactive exhibits that highlighted the school's many departments, its educational activities and its clinical advances, as well as many of its amazing research projects.

Guests at the gala watched Noelle, a computerized mom, give birth. They tried their hand(s) at tying sutures through a laparoscope, performing virtual colonoscopies or probing a virtual brain. Guests at the gala, even physicians, marveled at the breadth of knowledge and technology on display, just as 1,200 middle school, high school and college students had marveled during a special exhibition the day before.

A moving video presentation outlined the School of Medicine's four missions—education, research, community service and patient care. A second presentation brought happy birthday wishes from the governor, two U.S. senators, a host of federal, state and local politicians, as well as philanthropist Philip Anschutz.

The exhibits, the videos, a terrific dinner and dance and a wonderful program hosted by Dean Richard Krugman, MD, made the gala a memorable evening for decades to come. The University of Colorado Denver School of Medicine's journey from a couple of rooms in Boulder to one of the country's finest health care training facilities, located at the Anschutz Medical Campus in Aurora, ranks among the most dramatic evolutions in American higher education.

And as many who attended the gala noted, even better years lie ahead.



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1. Students practice CPR at a booth sponsored by the Division of Emergency Medicine.

2. University of Colorado Denver Chancellor M. Roy Wilson, MD, MS, with Suzanne Arkle Wilson at the gala dinner.

3. Gala participants watch Noelle, a virtual mom, give birth to newborn Hal. The exhibit, sponsored by the Center for Advancing

Professional Excellence, showed how using human patient simulators enhances training and allows for crisis simulation exercises.

4. Lariah Palma and her parents LaVelle Fernandez and Roddy Palma were special guests at the event.

5. Lyndsey Crum (center), director of communications/external relations for the Colorado School of Public Health, attempts a virtual colonoscopy.



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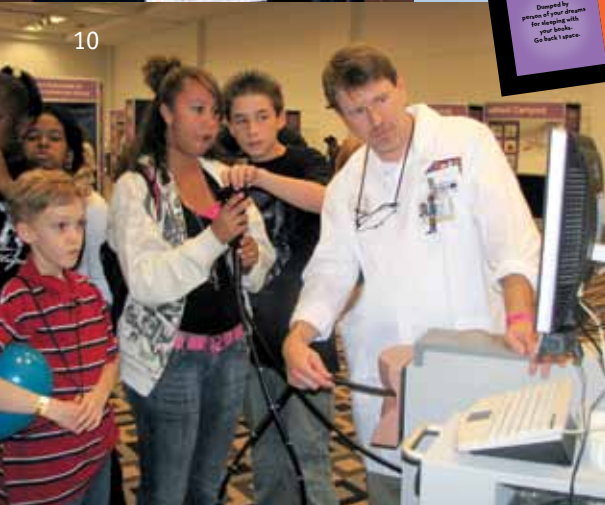
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6. A student practices tying stitches using a laparoscope.
7. Jean Kutner, MD, MSPH, (left), Cari Levy, MD, (center) and Harekia Brackett, RN, MS, ONC, showed participants how palliative care can relieve suffering and improve quality of life for patients and their families facing serious illnesses.
8. Approximately 1,200 middle school, high school and college students were able to visit the exhibit hall the day before the gala.

9. Medical students at the "Butts R Us" exhibit show participants the difference between healthy lungs and those of a smoker.
10. Jack Westfall, MD, explains a colonoscopy to middle and high school students.
11. Dean Richard Krugman, MD, hosted the event, accompanied by his wife, Mary Krugman, RN, PhD, FAAN.
12. Ed and Meg Nichols exit the exhibit hall. Ed is a member of the School of Medicine Council of Advisors; Meg volunteered on the planning committee for the event.

In his own words: ethical decision making

Richard Johnston, MD, the School of Medicine's associate dean for research development, spoke about decision making in health policy and medical practice at Vanderbilt University School of Medicine, Oct. 24, 2008, as he received a distinguished alumnus award.



Dr. Richard Johnston

What is true in basic science fiercely resists change. This conservatism forces strong experimentation. Decisions to accept or reject new findings as true await results of experiments. In contrast, decisions about health policy or patient care may require prompt evaluation of incomplete data.

For the purposes of the arguments posed here, ethical decision making is that which supports the best possible health for the individual patient or the public at large. The starting point for such decision making must be an open mind. German philosopher Friedrich Nietzsche warned about foregone conclusions. "Convictions," he wrote, "are more dangerous enemies of truth than lies."

Ethical decision making in medical policy should depend only on assessment of all available scientific evidence. The evidence should be analyzed with humility and an informed and open mind, free of fixed and certain opinion. Conclusions regarding policy must be articulated with precision and clarity and in terms of the level of evidence. Clinical decisions should be based only on the best available evidence and made while questioning authority. Mere association must be differentiated from causality. For example, autism symptoms may develop within weeks after measles, mumps and rubella immunization at 18 months. This is an association, but research has shown that it is not a cause-and-effect relationship.

Barriers arise to acceptance of science-based conclusions. Chief among them is ignorance of science. Studies show that American 12th graders are below the international average for 21 countries in their knowledge of math and science, and only 20 to 25 percent of Americans are "scientifically savvy and alert." Most Americans do not distinguish between scientific evidence and personal experience—what researchers might call the *n* of 1.

Ignorance of science and the scientific method can sometimes allow religious beliefs to override scientific evidence in determining acceptance of health policy or even a physician's treatment advice. Teaching creationism in science class risks confusing students and can only diminish understanding of the difference between religion, based on faith, and science, based on observable evidence.

Those who are sure they know the truth may feel they own a moral stake in their convictions. The Protestant theologian C.S. Lewis summed up this sometimes misbegotten compassion as follows: "Of all tyrannies, a tyranny sincerely exercised for the good of its victims may be the most oppressive."

Other, darker motives, such as financial, personal and political gain, might also lead to rejection of science-based medical and health-related policies.

Society guards against these wrong turns with education and skepticism. A country that wants its health policy to be driven by ethical decisions must first make science education more relevant and exciting. It must communicate science more clearly, interestingly and widely.

But it must also demand that decisions and actions on health policy and medical practice be based on open-minded and critical analysis of the science involved. When

evidence is not sufficient, say so. When evidence is not sufficient, push for research.

Without data, expert opinions are just that. "Heavier than air flying machines are impossible," Lord Kelvin, president of the Royal Society, opined in 1895. "I think there is a world market for maybe five computers," IBM Chairman Thomas Watson explained in 1943. "Doctors are not paid to think," Jerome Groopman pointed out in 2008.

To make the best decisions as physicians, we must question the authority of our own certainty. Are we current or just comfortable with the familiarity of our own approach? Similarly, we must question the lab/imaging report. Should it carry more weight than our history and physical exam? Question also the status quo. Is it optimal for the situation at hand? And by all means, question the academic pontiff. Ask for the evidence.

"Science," Brian Greene wrote in *The New York Times*, "is the process that takes us from confusion to understanding in a manner that's precise, predictive and reliable."

That has to be the standard for medical decision making. So support research. Support education. And work to develop a system of health care in which doctors are paid to listen and think.

"A country that wants its health policy to be driven by ethical decisions must first make science education more relevant and exciting. It must communicate science more clearly, interestingly and widely."

Clarification—A history of the medical school published in the fall 2008 edition of *CU Medicine Today* referred to "faculty members practicing at University Physicians, Inc." *University Physicians* is not a medical practice. It supports clinical activities of the School of Medicine and bills, collects and contracts for clinical services provided by the faculty.

Correction—Current tuition figures in the table *Then & Now*, published in the fall 2008 issue, were incorrect. Tuition costs of \$23,373 in 2008 were per year, not per semester. Annual tuition for nonresidents in 2008 should have been \$46,575.

GLOBAL HEALTH CARE—

helping people help themselves

Medical student Kate Burge Clair went to Africa in summer 2008, between her first and second years at the University of Colorado Denver School of Medicine. As part of the school's global health program, she worked in a Rwandan orphanage. Burge Clair arrived with a dream of what global health care entailed. After spending tough, but rewarding times in Rwanda and making a couple of harrowing trips to the Congo, Burge Clair returned to her medical studies in Denver with a more realistic view of what it will take to heal the world.

What follows are excerpts from her journals and photographs.



I'm sitting in an ancient Diahatsu

truck, wedged between two men in ill-fitting suits, bouncing down a rough dirt road in western Rwanda on my way to a wedding. The truck doesn't have seat belts, so each time we hit a rock, I find myself plopped into the lap of one of my Rwandese companions.

We pull up to the church at the Mugonero Hospital complex, where the wedding is being held. In 1994, Hutus slaughtered more than 2,000 Tutsi women and children in this church. My driver, Prince, was one of four survivors. He was 12 years old at the time. Prince became one of the original residents of L'Esperance Children's Village, the orphanage where I spent the summer of 2008, between my first and second years at the University of Colorado Denver School of Medicine.



"I arrived at the orphanage with nebulous goals. But within days, I could see so much to be done. The kids here receive little, if any, medical attention."

We pile out of the truck at the church and the 300 wedding guests openly gape at me. "Muzungu," I hear rippling through the crowds; in secluded western Rwanda, a white person is quite a novelty.

I was wearing my last set of clean clothes when I dressed this morning, but now I'm covered in muddy paw prints. Lady, the orphanage dog, jumped up on me as Angée and Gideon screamed in my arms. The two toddlers, like most Rwandans, are terrified of dogs. During the genocide, dogs ate the corpses and became so aggressive that the UN killed off most of the countryside's canine population.

As we file into the church to sit packed together, I realize that among all of the pungent odors, the distinct smell of urine comes from me, thanks to spending my morning in the baby house full of children who can't afford diapers.

I arrived at the orphanage with nebulous goals. But within days, I could see so much to be done. The kids here receive little, if any, medical attention. Few had been HIV tested, despite the fact that so many had lost one or both parents to AIDS. None have ever seen a doctor unless they were terribly ill. They all are covered in fungal infections and have bellies swollen by chronic worm infestations. Regular scrapes and cuts grow infected because of the poor nutrition and lack of basic first aid.

Sustainability is the watchword for all that we do at the orphanage. Victor, the orphanage director, is developing the orphanage's extensive orchards to export fruit, hoping to earn enough capital so the orphanage can run without foreign donations. In principle, it is a noble, important idea. Many people argue that improvements in hygiene, standards of health care or diets aren't sustainable because the Rwandese are unable or unwilling to change. But I feel the concern that the house mothers feel for the children. On the day I trained them in basic first aid—wound care, how to use a thermometer, dosing of Tylenol and a protocol for when it is necessary to get a sick kid to the hospital—the house mothers spent hours asking questions.

Still, kids line up each morning outside of my door to show me each new scrape and to say one of their few English phrases: "Kate, I am sick."

Watching one of my hour-long morning Band-Aid sessions, Victor shakes his head and laughs at me. "They're just looking for someone to fuss over them," he says.

"I like fussing over them, Victor," I reply. "It's why I want to be a doctor."

"But you're making them soft," he argues. "They're tougher than us because they have to be."

"Social Darwinism is a surprising philosophy to find in the director of an orphanage," I reply.

Looking at children in such poor health, it's hard to make sustainability the priority that I thought it would be before I came to Africa. It's wonderful to see 2-year-old Gudu's waist shrink by two inches after she finishes the de-worming treatment that I give to all of the kids at the orphanage. I'm hopeful that they'll continue treating the kids regularly after I've left. In the city of Kigali, I've found a pharmacy that offers us discount rates and a Rwandese pediatrician who has agreed to make annual visits to the orphanage and examine all the kids. But I still must find steady funding to support these projects. As much as I would love to make everything sustainable, I begin to lose my faith in the possibility of lasting change at the orphanage.

"Looking at children in such poor health, it's hard to make sustainability the priority that I thought it would be before I came to Africa."





It takes a few trips out of Rwanda for me to realize how rare the goals of the orphanage are.

In the war-torn Democratic Republic of the Congo I visit the Don Bosko orphanage. There, the staff tends to 1,500 kids with the help of an onsite malnutrition center, daily visits from a doctor, schools for the younger kids and education programs for the older kids in computers and tailoring.

After months living without electricity and running water, it's impressive, but the institutional atmosphere is cold. The grounds are stark and gray with barbed wire separating the sexes to keep the boys from raping the girls. Sustainability, with all of its challenges, will never be discussed in a place of such chaos. In a way it seems so much simpler. "You're just attracted to the sexiness of disaster relief," my friend Katelin, a former Peace Corps volunteer who's spending her summer at a micro-finance nongovernmental organization says upon my return to Kigali. "You can't just run away from sustainability because it's hard."

I return to the orphanage for my final weeks with her words ringing in my head. After months of red tape, I've finally managed to get all of the orphans HIV tested and I apprehensively approach the testing center to get the results. When I hear the 75th and final "negative," I burst into tears, leaving the flustered nurse to hurriedly explain that in Rwanda, negative is good.



I spend my last weekend in Africa in Goma in the Congo with Katelin and two other American friends. We visit a refugee camp. Distracted by the squalor, I barely notice the soldiers at the camp entrance, staring at us suspiciously.

Five hours later, the police still hold us. Our interrogator confiscates our cell phones and refuses to let us call the American consulate. He finally loads us into an SUV with a soldier gripping a machine gun and sends us to meet a Congolese UN colonel at our hotel.

"Who do you think you are going into refugee camps for fun?" the colonel yells. "Angelina Jolie?" He strongly advises us to get out of the country when the border opens at eight the next morning.

After nearly a year back in Colorado, I again am used to daily showers and a full fridge. But I itch to return to Africa. The oppressive loneliness and discouragement that set in after my first month alone at the orphanage are a distant memory and the ringworm that I had on my forearm became less a nuisance than a badge of honor—"something I picked up in a Congolese refugee camp," I can say casually.

The biggest surprise for me about last summer was the magnitude of the adventure of global health. In all those moments thinking about what a difference I was going to make, I never thought about how much fun I was going to have. And that, along with the choked up feeling I get every time I look at a picture of the gorgeous kids of L'Esperance, is why I will continue in this career path—maybe even finding a way to that elusive sustainability.

Watch a slide show of Burge Clair's experience in Rwanda:
www.uchsc.edu/som/kateburge.htm



Dr. Stephen Hunger

New discovery helps predict the effectiveness of cancer treatments in children

By Jim Spencer

On a computer monitor, the sequence of nucleotides in a gene appears as a series of colors arranged in no particular order. Stephen Hunger, MD, knows better. Hunger, a pediatrics professor at the University of Colorado Denver School of Medicine, knows that in the cancer cells of a child with acute lymphoblastic leukemia, the order of nucleotides in individual genes can spell the difference between life and death.

Hunger is among a group of doctors who discovered how changes in individual genes of children with acute lymphoblastic leukemia can predict whether or not those kids' cancer will get better with current treatments.

This discovery represents the first step in a sequence as critical as the order of the nucleotides. Without new therapies, some children will suffer a relapse of their cancer, and within five years, 70 percent of them will die.

Given his specialty, Hunger, section chief of pediatric hematology/oncology and the Ergen Family Chair in Pediatric Cancer at The Children's Hospital and associate director for pediatric cancer at the University of Colorado Cancer Center, knows better than most physicians the onus of science. Knowledge is a window viewed from both sides—you look in and find the problem; you look out and solve it. In diseases such as acute lymphoblastic leukemia, the space between discovering what goes wrong and what makes it right is a void that can turn into a child's grave. The medical acronym for acute lymphoblastic leukemia is ALL. It might as well be ALL or nothing.

A sense of urgency exists in the research in which Hunger participates with other physicians from the international Children's Oncology Group, the staff at St. Jude Children's Research Hospital, the University of New Mexico Cancer Research and Treatment Center and the National Cancer Institute.

These researchers found that children whose leukemia cells have mutations in a gene called IKAROS have a very high risk of relapsing. "At the current time," says Hunger, "there are no specific therapies targeted at IKAROS mutations. Analyses are ongoing that are looking for specific mutations in [other] genes that might suggest a special kind of therapy that could be used for these patients."

This is the ultimate goal of the National Cancer Institute's Therapeutically Applicable Research to Generate Effective Treatments (TARGET) initiative (<http://targetcancer.gov/>). The initiative tries to use genetic studies to develop more effective treatments for childhood cancers. The first two cancers being studied in the TARGET program are ALL, a cancer of the white blood cells that is the most common childhood cancer, and neuroblastoma, a cancer that arises in immature nerve cells and affects mostly infants and children.

Hunger chairs the Children's Oncology Group committee on ALL. He has been the organization's lead investigator in the recent study. But this is a collaborative effort that has used patient data from both the Children's Oncology Group and St. Jude and the genomic technology at the University of New Mexico.

"The big hope is new therapies that are better, safer and have fewer side effects," he says.

"Between the early 1980s and the late 1990s, physicians and scientists found out a lot about what made cancer cells different," he says. "Over the last 10 years, we've learned how to take that information and use it."

Michelle Garcia shares that hope. Doctors diagnosed her 5-year-old daughter, Trinity Zamora, with acute lymphoblastic leukemia on May 21, 2008. Garcia, 34, remembers the day because it changed her life.

“It was like getting hit by a bus,” Garcia says. “I couldn’t grasp that a five-year-old could have cancer.”

Trinity is now in remission. But she faces two and a half more years of maintenance chemotherapy.

“If I found out a gene change meant the cancer was going to come back, I don’t know how I would manage,” Garcia says. “But I would want to know.”

Sitting in his office in the Academic Pavilion of The Children’s Hospital, Hunger, 49, explains that the acute lymphoblastic leukemia project is only in “the discovery phase.” “We look at patients who have already been treated and we know what their outcomes are.”

In the case of young patients whose leukemia cells show changes in the IKAROS gene, the outcomes are mostly bad, regardless of what kind of therapy the kids receive. Complicating matters is the fact that several types of changes in the IKAROS gene of these leukemia patients seem to signal a bad therapeutic outcome. Sometimes nucleotides change sequence. Sometimes parts of the gene are deleted.

All of it makes the search for a treatment more complex and time-consuming.

Fortunately, children with IKAROS changes do not represent the majority of children diagnosed with ALL. In fact, they make up a reasonably small minority. But Hunger and his colleagues know their lives are as valuable as the 80 percent of kids with ALL who can now be successfully treated.

To figure out what makes them different, Hunger says, researchers took samples of healthy tissue right after diagnosis, froze and stored them and later compared them with leukemic cells drawn from the same patient’s body.

“We know the normal nucleotide sequence in a normal gene in a normal cell,” he says. “What we’re looking for are changes [in the normal sequence] in a gene in a cancer cell.”

They also look for recurring changes. Mathematical analyses determine if the recurring changes correlate with poor responses to cancer therapy.



Trinity Zamora, age 5, (accompanied by her father Ezekiel Zamora) receives chemotherapy at The Children’s Hospital. She could benefit from new therapies developed through Dr. Hunger’s research.

“One possibility could be to discover a genetic mutation that you didn’t know existed and apply an existing treatment,” Hunger says. “For instance, there might be a drug used in lung cancer or colon cancer that we never thought to use in leukemia.”

A drug called Imatinib is the “poster child” for the kind of applied science that Hunger and others crave. The drug, he says, “interferes with a protein that is mutated” in cancer cells of patients with chronic myelogenous leukemia. Imatinib “revolutionized” treatment for this type of leukemia. “What we used to treat with bone marrow transplants that were risky and sometime didn’t work, patients now treat by taking a pill every day with few side effects,” Hunger says.

It is the kind of breakthrough that keeps him going. But it is also the kind of breakthrough that takes time that some youngsters don’t have. What keeps Hunger pushing is knowledge of history. In 1970 fewer than 10 percent of kids diagnosed with ALL lived

five years. Today, more than 80 percent live that long.

“Between the early 1980s and the late 1990s, physicians and scientists found out a lot about what made cancer cells different,” he says. “Over the last 10 years we’ve learned how to take that information and use it.

“When I first started training in pediatric oncology 20 years ago, what we did was take the available chemotherapy drugs and increase the doses or combine them.”

It was, in Hunger’s own words, “trial and error.”

Today, Garcia says she has complete faith in the science that shows her daughter’s doctors what dosage to give and what chemotherapy to use.

And with physicians like Hunger targeting therapies to nucleotides in a single gene, the deadly gap through which young cancer patients can slip may soon grow even more narrow.

Educational debts endanger school's primary care focus

Some experts rate the School of Medicine's primary care program among the top five in the nation. This places the University of Colorado Denver at the leading edge of the struggle to fill a shortage of primary care physicians. At the same time, the lack of financial aid for students who choose UC Denver puts the school's primary care mission in jeopardy.

A recent survey of UC Denver medical students showed that debt may drive the school's newly graduated physicians away from primary care and into specialty care for salaries that will help pay off their educational debts faster.

Norma Wagoner, PhD, associate dean for admissions, just shakes her head as she details the stats about the class of 2008: of 132 graduating students, 94 percent (124) had debt with a cumulative total of more than \$17 million. The vast majority of those (104 out of 124) had debts of more than \$100,000, with this group posting an average debt load of nearly \$145,000.

Wagoner quickly points out that this is not the complete picture—40 percent of students report they brought more than \$25,000 of undergraduate debt with them when they enrolled in medical school.

"There are some things," says Wagoner, "that aren't usually included when overall debt is calculated. They may have to get alternative loans to go through residency interviews. Those are private funds, so they're not usually calculated. It's not surprising that 56.2 percent of students in the class of 2008 have medical school debt totaling more than \$150,000, compared to 43.3 percent of medical students who graduated in 2008 in all other U.S. medical schools. We're obviously on the high side for debt."

It doesn't look like it's going to improve anytime soon. Wagoner notes that while the average annual scholarship level in private schools is around \$20,000, and about \$8,000 to \$10,000 in other public schools, UC Denver School of Medicine students can count on only about \$3,000 to \$4,000.

As a result, debt repayment is a real problem, especially for primary care physicians, whose current average annual salaries generally range from \$140,000 to \$160,000. Conservative estimates put the four-year cost of attendance at the School of Medicine at approximately \$192,000 for Colorado residents and nearly \$265,000 for out-of-state students. Paying back those sums, whether it's on a 10-year or 30-year plan, means staggering monthly payments, massive amounts of interest and medical school debt obligations stretching conceivably to the dawn of retirement.

As one UC Denver faculty member wrote to the dean of the medical school recently: "I graduated 15 years ago with \$130,000 in debt that turned into more than \$300K with interest. I am still paying it off like a second mortgage."

That's where the Student Financial Aid Committee, the CU Foundation and the School of Medicine Medical Alumni Association can help. Brandon Fain, second year medical student and chair of the student committee, says the three entities have been working together to take the first steps in trying to turn the situation around.

He notes that while increasing state funding is critical, it gets even more complicated because of the TABOR (Taxpayer's Bill of Rights) Amendment. A more realistic approach to the problem, says Fain, rests in trying to catch up to many of the other public universities that have very healthy endowment programs.

"We don't have a call center," admits Fain. "Yet we have to find the time to get some students to sit around for six hours a night, five nights in a row, to call people (for contributions). But the alumni office is already understaffed, and we have a relatively small student body that's consistently consumed with their studies. Needless to say, it's tough to organize right now."

Nevertheless, Fain knows the school has to reach out to the alumni in a more concerted, effective way. While the alumni's scholarship fund is only \$4,000 away from becoming endowed (which would allow one \$1,000/year scholarship each year), there's a lot of work to be done to make UC Denver's scholarship funds even close to competitive with other public universities.

"We want to speak to alumni," says Fain, "who appreciate the value in primary care and respect the importance of doctors being able to practice the medicine that inspires them."

"Unfortunately, it's difficult to pay off \$200,000 of debt with the average primary care salary. Most feel forced into a more lucrative specialty. It's too late for my class and the handful of classes after us. We're asking for donations because, like many alumni, we have a vested interest in how medicine will be practiced by the generations to follow."

Contact Joy French, director of the Office of Alumni Relations at 303-724-2518 or joy.french@ucdenver.edu for more information on how you can help.



As one UC Denver faculty member wrote to the dean of the medical school recently: "I graduated 15 years ago with \$130,000 in debt that turned into more than \$300K with interest. I am still paying it off like a second mortgage."

Connecting to the underserved

In his brief post-college career, Jess Bartley, MD, used his undergraduate degree in mathematics crunching numbers in an office cubicle as an actuarial analyst for a big consulting firm serving a big insurance company. But calculating life expectancy was “a little dry,” he says with a wry smile. Bartley wanted to feel more connected to people.

So now, instead of serving a big insurance company, he serves patients—underserved patients in places like the Stout Street Clinic, which is operated by the Colorado Coalition for the Homeless, and the High Street Clinic, both in Denver. Serving the underserved is close to Bartley's heart, which is why he works extra hours at Stout Street. In his third year of residency, during which he switched from surgery to primary care medicine, Bartley also rotates at the VA Hospital in Denver.

“I believe in God, and believe that our responsibility as humans is to help those in need,” he says from a quiet corner of the VA Hospital cafeteria.

In medical school at the University of Texas at San Antonio, Bartley wanted to work in a medical clinic overseas. His church had ties to a physician who was running a clinic in a small village in Belize, which borders southern Mexico and Guatemala on the east. Belize offered what other needy countries didn't: “an opportunity to work with an actual physician.”

Bartley says the experience met his expectations in some ways and surprised him in others. The community was mired in poverty and had little access to medical care, but it offered a wealth of opportunities that many medical students in the states don't have—like suturing machete wounds. He also scrubbed in on several surgeries.

Closer to home, he says, “It's important to be involved in the neighborhood and in the



Dr. Jess Bartley chooses to work extra hours at the Stout Street Clinic for the homeless. He's committed to being involved in his community.

community, to have a connection and responsibility to those I'm living around.”

Bartley believes in “the dignity of all humans,” and speaks quietly about a patient who came into the High Street clinic fighting the withdrawal symptoms of heroin addiction but refusing to rely on methadone.

“He presented typical symptoms—nausea, trembling... We told him to take over-the-counter antihistamines and pain relievers, and he asked what it would cost. ‘About \$20,’ we said. He looked in his wallet and found three dollars, and told us he'd have to wait.”

Another time, a woman came into the clinic complaining of her “teeth not matching up.” Bartley could see a deformity and discovered a badly broken jaw. The patient wasn't sure when the injury had occurred—three days earlier, maybe—and couldn't remember if she had been drinking or not. “It was sad that she had this broken jaw for three days and didn't even know it.”

Bartley is married to a Presbyterian minister and has a 1-year old, whose smiling image he readily shares from his cell phone. He plans to continue working with underserved populations. “I'd like to replicate the experience I had in Belize.”

Next fall he'll leave behind 30-hour shifts and 80-hour weeks. But, he says, he'll take away a commitment to lifelong learning. “Numerous physicians in the residency program have been excellent role models with a commitment to keeping abreast of the latest developments in medicine—and a commitment to teach others this information.”

In the meantime, it's time to start a new shift at the VA Hospital.



CLASS ROUNDS

Class of 2009

By Heather Cassidy



Among the infinite lessons of medical school, one stands out clearly: time does fly. It seems it was just days ago that we were being introduced to the University of Colorado Denver Medical Alumni Association and were writing our first *CU Medicine Today* class update.

We have thoroughly enjoyed the past four years at the School of Medicine and we are excited to start the next chapter of our medical careers.

Today I write this from Denver International Airport as I await a flight to yet another residency interview. The last few months have been busy ones for our class as we criss-crossed the country for away rotations, international electives, residency interviews and, yes, vacations. Do you remember this time? As we approach the deadline for submitting our rank lists and the reality of Match Day (March 19) stress levels are up, matched only by excitement for what awaits. Wish us luck!

Class of 2010

By Lisa Foley



The class of 2010 is currently scattered among the many clinical sites for third-year rotations. With the new curriculum, third year now begins in April and consists of six two-month blocks. We are well past the halfway point, loving life on the wards and out of the classroom!

With the end of third year rapidly approaching, we are planning for fourth-year clerkships and starting to make specialty decisions. The end of third year is a dynamic time, as we watch each other bounce around and hopefully begin to settle into our respective career paths. It is also a fun time of year as we celebrate the accomplishments of our fourth-year friends and hear of their travels along the interview trail.

The next step is to plan our fourth-year schedules, which will be a bit busier for the class of 2010 as we are the first class with the mentored scholarly activity (MSA) requirement. The MSA will provide us with research experience and hopefully make us better candidates in the 2010 residency match. We will finish our third year, complete the MSA projects, take the USMLE Step 2 board exams and complete a sub-internship before November. Wish us luck!

Class of 2011

By Jesse Smith



The class of 2011 returns to school for the spring semester ready for our last block in the classroom and are anxious to begin clinical clerkships in late April. Before entering the hospital, though, we must study for and take Step 1 of the USMLE, the much-dreaded finale of the preclinical years. The second-year class has taken the initiative to schedule weekly classwide review sessions this spring and has also been extremely collaborative in efforts to prepare for the upcoming exam. Resources are constantly shared over e-mail and on a Web site accessible to every student, a far cry from the horror stories of overly motivated medical students absconding with the only copies of precious reference books in the library. In fact, the class of 2011 has, throughout its time at the School of Medicine, managed to be extremely high achieving while still supporting an atmosphere of collegiality and sharing. As the second-year students become third-year students this spring and make the jump into the hospital, we will bid farewell to the lecture-study-exam lifestyle we have all grown accustomed to and stake out new territory. Finally, we can all look forward to something more than an exam.

Class of 2012

By Annelise Sterne



As our first year of medical school comes quickly to a close, my classmates and I are both exhilarated by the knowledge we have gained thus far and humbled by the years of learning that lie ahead. Though it is daunting to think that we are no longer able to claim total ignorance (“Don’t ask me—I’m just a first year medical student!”), it is rewarding to watch as our understanding increases and we are actually able to answer some of the questions posed to us. The 2009 school year started with the human body block. We have the privilege of being the first medical school class to use the new anatomy laboratory—enjoying mountain views and sunshine-filled workspaces as we completed cadaver dissections. In the subsequent molecules to medicine block we explored topics in biochemistry, molecular biology and cellular biology. The new year brought the beginning of two blocks with a welcomed clinical focus—the disease and defense block and the blood and lymph block. We are now finishing the cardiovascular, pulmonary and renal block and are finalizing plans for our last true summer vacation. It has been a busy and fruitful year and we are all excited by the experiences and possibilities that the future will bring.

The stethoscopes given to all entering medical students are made possible through generous donations to the Stethoscope Fund. If you would like to make a contribution to help support this program, please fill out the gift form in this magazine and send your donation in the enclosed envelope.

Pictured from left to right are Lela Gonzales, Allyson Wood and Crystal Medina (Class of 2011).

THANK YOU

To the University of Colorado Denver Medical Alumni Association,

Warmest greetings from the School of Medicine class of 2012! We’ve been welcomed with open arms, enthusiasm and respect by the faculty, our senior students and especially by the Alumni Association. When we were accepted to our fine school, we never imagined that we would enjoy relationships with so many alumni so early in our medical school careers. It has been obvious from our very first day that we have the finest alumni a university could hope for, and we’re excited to be lifelong members of the Alumni Association.

The most appreciated and unexpected gift we have received was given to us in our white coat ceremony; not our short white coats that we’re eager to trade for the longer version, but our stethoscopes that were given to us thanks to your generous contributions.

We have already used them extensively, first as the primary prop in the pictures that our families sent to everyone we’ve ever known, and afterward as the most important tool we’ve begun to appreciate while learning physical examination skills and primary care practice. The money spent on our stethoscopes represents a significant proportion of the Alumni Association’s budget, and it shows in the quality of the instruments. Our preceptors even borrow them to examine patients. We’re certain that we’ll use these stethoscopes for many, many years to come.

It’s your generosity and the obvious commitment that the School of Medicine has to its students that make us proud to be here and to speak so highly of our experience so far. On behalf of the class of 2012, thank you so much for your contributions to the stethoscope fund.

With thanks and warmest regards,

Wes Cain and Annelise Sterne
Class of 2012 – Student Representatives
(On behalf of the entire class of 2012)



MATCH DAY

Med students match dreams with reality in residency placements

Match day marks a milestone in the journey that started four years ago for most students, longer for some, when they sat in the classroom on the Ninth Avenue campus for their first anatomy class as medical students.

A year ago, the students had just completed all of their required basic science and clinical curriculum and started the process of taking clinical electives and sub-internships in order to hone in on their final career choices. During the spring and early summer, they completed resumes, personal statements, collected letters of recommendation. During the fall and winter, they sent out applications and traveled around the country for personal interviews with programs. Then in February, both students and programs turned in their preferred rank order list and everyone waited for this moment.

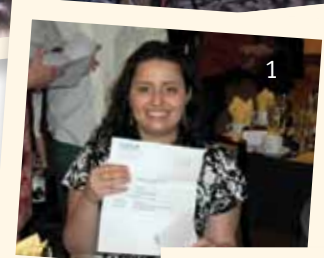
At 11 a.m. on March 19, 2009, Associate Dean of Student Affairs Maureen Garrity, PhD, came to the podium and gave the class an Irish toast, "May the roads rise to meet you and may the wind be always at your back," before inviting them to open their envelopes. After a brief moment of silence, the quiet transformed to pandemonium and cheers. For the next hour, students moved around the room, hugging and congratulating their classmates, talking with their families and the faculty who were present to help them celebrate and using their cell phones to call family who were not present. A slide show of images of the students' activities during the past four years played in the background as lunch was served. Dean Richard Krugman, MD, shared stories of his own match day experience as he congratulated the class and their families. The class selected two speakers for this special day: Dan Bessessen, MD, from the faculty and their classmate Jo O'Connell-Romero.

This year, 132 students participated in the match, including two members of the class of 2008 who had deferred match for one year. Fifty-four (41%) of the students will stay in Colorado for at least their first year, with some of these leaving after this to complete specialty training in another state. An additional 23, (14%) will stay in the West and the remainder of the class will head for states across the

nation. Internal medicine was the specialty that captured the most students, with 36 choosing this discipline. An additional 18 students chose family medicine and 15 chose pediatrics, making a total of 52% of the class starting their training in primary care fields. Emergency medicine with 13 students and anesthesia with 11 were also very popular choices with this class. The class of 2009 also had a number of students who matched in the competitive subspecialties of dermatology (2), otolaryngology (4), neurosurgery (2) and radiation oncology (1). Several members of the class of 2009 knew before arriving where they would be going, including the students who had matched with the military, one who had matched in ophthalmology, one in urology and one student who had matched in child neurology.

In May, the class will celebrate with its traditional "senior skit," an irreverent look at medical school times, the Honors Convocation and Silver and Gold Banquet, and finally, graduation and hooding on May 22, 2009. The graduation and hooding will be held on the educational quadrangle at the Anschutz Medical Campus.

Photos: 1. Jeanette Brown, pulmonary critical care, University of Michigan
2. Tiffany Richason, Exemplar St. Joseph Hospital, Denver
3. Dusty Richardson, neurosurgery, University of Colorado Hospital
4. Third from right, Nassrene Elmadhun, Beth Israel Deaconess Medical Center, Boston



School hires associate dean for alumni relations

This spring, the University of Colorado Denver School of Medicine hired alumnus Bill Maniatis, MD,

as associate dean for alumni relations. Maniatis graduated from the School of Medicine in 1965, and after a tour of duty in the Army, returned for residencies in general surgery and urology.

Maniatis is a Denver native and is in private practice in general urology in Aurora, Colorado. He has a long history of service to the University of Colorado and the School of Medicine. He was president of the Medical Alumni Association in 1986-1987 and was on the Class of 1965 reunion committee. Maniatis also serves on the board of trustees for the University of Colorado Foundation, as well as numerous community boards.

In his new role, Maniatis will work with the School of Medicine, University of Colorado Denver and alumni to help strengthen the school's alumni network and involvement. He will also work closely with the Office of Alumni Relations and the Medical Alumni Association board of directors in supporting and enhancing alumni-related programs.

In addition to hosting alumni events beyond the Denver area and working with alumni groups, Maniatis is interested in building school spirit among current students. To raise school spirit and establish a tradition, Maniatis wants to establish a campus totem—a statue or other artwork—that each graduating class of medical students can decorate or something similar for their final year. Send your ideas for a campus symbol that can be temporarily altered by each class to William.Maniatis@ucdenver.edu.



Dr. William Maniatis

Dear alumni,

It has been a warm winter, and we are excited that with the spring comes many alumni events and activities in the next few months. Alumni weekend, May 20-23, will bring together classes ending in fours and nines including the celebration of the Class of 1959's 50th anniversary since graduation. We always look forward to the renewing of friendships and the connections these events bring. The Convocation ceremony on Friday, May 22, symbolizes the accomplishments of the past four years, just as Match Day, March 19, symbolized bright futures for all of the 2009 graduates.

For this year's reunion, we're excited to have Chancellor M. Roy Wilson, MD, MS, host our inaugural welcome reception on Wednesday. The Silver and Gold Banquet is a wonderful opportunity for graduating seniors, alumni, and alumni award winners to mingle and celebrate together on Thursday evening. We are honored to have former U.S. Senator and CU President Hank Brown as the featured speaker at the 1883 luncheon on Friday. All the weekend's events are outlined on page 32 of this issue. Don't miss it.

This spring we were pleased to welcome the new Associate Dean for Alumni Affairs for the School of Medicine William Maniatis (MD '65). We look forward to partnering with him to make the school-alumni connection stronger than ever.

Be sure to read the President's Message on pages 26 and 27 of this issue. Dr. Farrington outlines some important changes in the association, as well as some exciting opportunities—such as the chance to help completely fund an endowment for student scholarships. This comes at a critical time to help with the tuition crisis currently facing School of Medicine students. If you are interested in giving or in serving on the Medical Alumni Association or on one of its committee, please contact the Office of Alumni Relations at 877-HSC-ALUM or e-mail healthalumni@ucdenver.edu.

I look forward to seeing all of you during Alumni Weekend in May.

Sincerely,

Joy B. French, MPH

Director, Office of Alumni Relations



Joy B. French, MPH

“Be sure to read the President’s Message on pages 26 and 27 of this issue. Dr. Farrington outlines some important changes in the association, as well as some exciting opportunities—such as the chance to help completely fund an endowment for student scholarships.”



Dr. John F. Farrington

“With the decrease in state support of the School of Medicine, scholarships are becoming increasingly important. Students frequently leave medical school with debts in excess of \$150,000. Because of this, students are selecting specialties based largely on compensation.”

The state of the University of Colorado Medical Alumni Association, 2009

The past 18 months have been a dynamic time for the University of Colorado Denver Medical Alumni Association. Many changes have occurred, including our name. Probably the most significant change happened when Joy French, MPH, came aboard as director of alumni relations for the health sciences programs. Shortly thereafter Layna Forrester, assistant director of alumni relations, came to us from the Board of Regents bringing sound management skills to our association. Prior presidents were severely hampered by a constant turnover of staff, but this dynamic duo has provided the Medical Alumni Association with continuity in superb staff support and has enabled us to move forward efficiently and effectively.

With this vital staff support, the board has become a *working board*. Over the past 18 months we have welcomed: Harvey Cohen, MD '57; Rudolph deLuise, MD '57; David Gordon, MD '67; Gerald Hickman, MD '65; James Mitchell, MD '56; Matt West, MD '06; and Rolan Zick, MD '55. Students from the two newest classes have also joined the board: D. Wes Cain, class of 2012, Annelise Sterne, class of 2012, Ramnik Dhaliwal, class of 2011, Jeunesse Grenoble, class of 2011, and Jesse Smith, class of 2011. Along with the other student representatives, these students are hard workers and contribute a great deal to our deliberations and actions.

One of the major tasks of the past 18 months has been to review and update the association's bylaws. The entire board now votes on changes to the bylaws, not just a majority of those present at a meeting as in the past. Also, a policy manual is being developed so there will be continuity of action from one year to the next.

All committees of the board are now functioning. Activities of three of these committees—the membership committee, alumni/student committee and heritage committee—are detailed below.

The membership committee has developed, and the board has implemented, a comprehensive plan to increase membership. The first step was to extend membership to all new graduates. Alumni will pay no dues for the first four years after graduation then pay dues at a 50 percent discount for the next four years. This discount has been extended to members of classes graduating over the past eight years on a prorated basis. These recent graduates will be full members and entitled to all of the privileges and benefits available to all members. Class representatives are being identified so all classes can be actively represented in our recruitment of new members.

During the past year, the alumni/student committee has hosted students and alumni for evening discussions on “If I Could Do It All Again: Advice from Alumni” and “The Business of Medicine.” These are well-attended and give the students the opportunity to talk informally with alumni about the profession of medicine in the real world. All alumni are welcome to participate. If you are interested in volunteering your time, please contact the Office of Alumni Relations.

The association, through the heritage committee, is becoming involved with other campus organizations to develop and implement plans to renovate the old Red Cross Building on the Anschutz Medical Campus in Aurora. This will be used for office space; as a meeting place for alumni, students and faculty; and to preserve the history of the Fitzsimons Army Base. Renovation of the Red Cross Building will be a major undertaking, certainly beyond the ability of the association alone. We are taking a leadership role in moving this project forward.

Your financial gifts and gifts of time go a long way.

Your dues and gifts are what make it possible for the Medical Alumni Association to function. You are our only source of support for the association's programs, and it is important for you to know that 100 percent of your gifts go to the programs you designate.

Your gift of time is very important to us. If you wish to participate in the association, please let us know. We are actively seeking nominees for the board and members who are willing to serve on committees and participate in the alumni/student functions.

With the decrease in state support of the School of Medicine, scholarships are becoming increasingly important. Students frequently leave medical school with debts in excess of \$150,000. Because of this, students are selecting specialties based largely on compensation. This limits how they will practice medicine. The association has a scholarship fund that we are trying to develop

into an endowment. Through the years, the fund will grow and its income will be used to support an increasing stream of scholarships. We are within \$4,000 of starting an endowment that would fund one \$1,000 per year scholarship. I call on each of you to donate to this fund and create more scholarships. Although fundraisers are always looking to the big donors, I can assure you that even a small gift will help provide a scholarship.

Additionally, the Stethoscope Fund is an important program for first-year students. At the matriculation ceremony, all first-year students are presented with a white coat and a stethoscope by the president of the Medical Alumni Association, dean of the School of Medicine and members of the faculty. This is their introduction to the association and is solely supported by alumni gifts. One of our goals is to raise enough money (above the \$18,000 annual cost for the stethoscopes) to start an endowment fund to support this program. Again, small gifts add up rapidly.

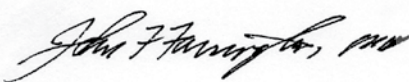
We have a solid relationship with the University of Colorado Foundation—the official fundraising arm for the university. The foundation went through some difficult times, but under the leadership of Wayne Hutchens, it is back on track and doing well. To get more information or make a donation, contact Emily Washburne at 303-813-7920 or emily.washburne@cufund.org. If you are contemplating a gift to the University of Colorado Denver as part of your estate planning to provide future support to the School of Medicine, please contact Marsha Dawe at 303-813-7925 or marsha.dawe@cufund.org.

The key to success is commitment and hard work. We ask each one of you to join us in this endeavor.

As this issue of *CU Medicine Today* reaches you, I end my term as president of the Medical Alumni Association. I turn over the leadership of the association to Clara Winter (MD '66). Dr. Winter has been a hard working member of the board. In her capable hands, your association will continue to move forward in service to the School of Medicine, its students and its alumni.

It has been with great pleasure to serve you all as president of the Medical Alumni Association. Thank you for the opportunity.

Sincerely,



John F. Farrington, MD '52
President, Medical Alumni Association



John Farrington (MD '52)
President

Christine Petersen (MD '71)
Past president

Max Bartlett (MD '54)
Ex officio

William Buchanan (MD '59)

J. John Cohen, MD, CM, PhD
Honorary

D. Wes Cain
Student rep for class of 2012

Heather Cassidy
Student rep for class of 2009

Rudolph deLuise (MD '57)

Ramnik Dhaliwal
Student rep for class of 2011

Richard Eliason (MD '60)

Larry S. Fisher (MD '70)

Lisa Sue Foley
Student rep for class of 2010

Layna I. Forrester
Alumni relations assistant director, ex officio

Joy B. French, MPH
Alumni relations director, ex officio

J. Raym Geis (MD '80)

David Gordon (MD '67)

Jeunesse Grenoble
Student rep for class of 2011

Richard Harvey (MD '58)

Gerald Hickman (MD '65)

Richard Krugman, MD
Dean, ex officio

James Mitchell (MD '56)

Asa'ad Mubarak (MD '62)

James Neisler (MD '58)

Luke Perry
Student rep for class of 2009

Angelo Sambunaris (MD '87)

Jesse Smith
Student rep for class of 2011

Annelise Sterne
Student rep for class of 2012

Emily Washburne
CU Foundation liason, ex officio

Arthur Waldbaum (MD '74)

Matthew West (MD '06)

Barbara Wilson
Student rep for class of 2010

Clara Winter (MD '66)

Medical Alumni Association Board of Directors

MEDICAL ALUMNI ASSOCIATION MEMBERSHIP FORM

PERSONAL INFORMATION

Name: _____

Maiden Name: _____ Year: _____

Street: _____

City: _____ State: _____ Zip: _____

Phone Number: _____

E-mail Address: _____

MEMBERSHIP

\$ _____ **Resident Member** (*alumni from 2001-2004*) \$50
 I would like to automatically renew my membership every year using the credit card below.

\$ _____ **Annual Member** (*alumni from 2000 and before*) \$100
 I would like to automatically renew my membership every year using the credit card below.

\$ _____ **Donation** (*Optional*)
 In addition to my membership, I would like to make a donation to the Medical Alumni Association.

\$ _____ **Total Payment**

PAYMENT OPTIONS

- Check enclosed
(Please make checks payable to the Office of Alumni Relations)
- Please charge my credit card:
 - VISA MASTERCARD AMERICAN EXPRESS

Card Number: _____

Expiration : _____

Signature: _____

The purpose of the Medical Alumni Association is to foster the involvement of alumni in the life of their alma mater and its students.

Membership dues are the association's main source of revenue. Medical Alumni Association programs and activities include the contribution of stethoscopes to first-year medical students, alumni events such as reunions, our HOST program for fourth-year medical students and scholarships. Your membership, while advancing the success of the Medical Alumni Association, also provides you with a variety of benefits including access to the beautiful new Health Sciences Library at Anschutz Medical Campus.

If you are not yet a member, or if you wish to renew your membership, please complete the membership form and return it in the enclosed envelope. You may also visit us at www.uchsc.edu/alumni to download a membership form.

We hope you will join us and support your Medical Alumni Association.

Thank you!



Hard work, practical results: the cowboy way of academic medicine

His colleagues recognize him as one of America's outstanding researchers in thyroid physiology, but for E. Chester Ridgway, MD, MACP, "All the medical research in the world is only fascination until it is translated into clinical care that helps our patients."

Ridgway, who received his medical degree in 1968 from the University of Colorado Denver School of Medicine, has spent his career serving patients through research, teaching, clinical practice and, most recently, overseeing the state-of-the-art development of his alma mater's new Anschutz Medical Campus in Aurora.

Following a residency and fellowship at Harvard Medical School, Ridgway, an endocrinologist, joined the faculty at Harvard in 1973. He headed the thyroid unit. The Cody, Wyo. native happily returned to the West when recruited back to the University of Colorado Denver in 1985 as head of its Division of Endocrinology, Metabolism and Diabetes.

"I wanted my children to know the West," says Ridgway, who once broke horses on his family's ranch.

His kids have grown up and gone their separate ways. Emily, 35, is a neurosurgeon in Boston. Eli, 33, just opened an art gallery in San Francisco. Abi, 25, is a Fulbright scholar in Mexico City. They all embody their dad's frontier ethos—hard work that delivers practical results. Ridgway's family still operates its Wyoming ranch. Children from around the world come each summer to experience life on a working ranch. Ridgway, meanwhile, continues to bring the same no-nonsense, hands-on approach to his job as a physician.

In 1995, School of Medicine Dean Richard Krugman, MD, appointed Ridgway senior associate dean for academic affairs. He also serves as vice chair of the school's Department of Medicine and is a professor.

A past president of the American Thyroid Association (ATA) and the Endocrine Society, Ridgway has been recognized as a "Top Doctor" for endocrinology in the Western region of the United States by *Women's Health* magazine and



E. Chester Ridgway, MD, MACP

Alumnus Dr. E. Chester Ridgway helped oversee the development of both research towers on the new Anschutz Medical Campus.

as one of *Good Housekeeping's* "Best 400 Doctors in America." In 2008, he received the ATA's John B. Stanbury Thyroid Pathophysiology medal, recognizing outstanding research contributions to the understanding of thyroid physiology or the pathophysiology of thyroid disease.

For more than three decades, Ridgway, known to friends as Chip, has focused his research on human thyroid disorders, including thyroid cancer. His laboratory also studies the production of glycoprotein pituitary hormones by pituitary tumors. Another of Ridgway's main interests is the ways thyroid hormones act to control metabolism.

"The science of molecular genetics is wonderful and exciting," he says. "But ultimately it's about translating that into improved health for the population."

His work with thyroid-stimulating hormone—also known as TSH—is an example.

Ridgway's TSH research translated into simple, inexpensive diagnostic blood tests that became standard in health screenings for the past 30 years. These tests, he says, "have huge impact for individuals with thyroid disorders. That includes 5 to 10 percent of the general population and up to 20 percent of those over

age 65, which is more than the number affected by diabetes or high cholesterol."

Ridgway's research also has expanded the understanding of thyroid cancer and its treatment.

"This cancer can be very complicated," he says. "We've recently come to recognize how prevalent it is." Ridgway credits the School of Medicine's multidisciplinary program with offering highly effective treatment for thyroid cancers.

"This cancer requires treatment by a team including endocrinologists, surgeons, pathologists and specialists in nuclear medicine," he says. "We're blessed in having those things here at the Anschutz Medical Campus."

Creation of the Anschutz Medical Campus is a special point of pride for Ridgway. He served as chair of the oversight committees for the development of both new high-rise research buildings on the new campus. He co-chaired the committee to develop research space principles, which became the guide for assigning departmental research space.

"I'm so proud of this campus," he says. "I wish alumni would come back to see what's happened to their medical school. These educational facilities are top in the world."

Notes

1950s

Ira Gelb (MD '56), Boca Raton, Fla., on January 16, 2008 received an Opal Award for health and medicine. The Opal Awards honor outstanding people and leaders and benefit local youth scholarships in the Boca Raton area. Dr. Gelb is an affiliate professor of medicine at the University of Miami Miller School of Medicine and an assistant dean and clinical professor in the Charles E. Schmidt College of Biomedical Science at Florida Atlantic University. ☺

Carl G. Nugent (MD '57), Edmonds, Wash., has been retired for more than 20 years and is "engaged in research and rabble rousing regarding Lennox-Gastaut syndrome and child abuse." He would appreciate hearing from the epileptologists who have interesting stories about Lennox-Gastaut syndrome. "Health wise, things are a bit precarious," he says. "I had surgery for rectal cancer last September, following prostate surgery the year before. I'm generally coping, but had to forgo the pleasure of returning for my 50th [reunion] last year." ☺

1960s

Darwin L. Palmer (MD '60), Albuquerque, N.M., says that after finishing his residency and fellowships (one in infectious diseases) at the School of Medicine, he worked for the Department of Medicine at the University of New Mexico for 29 years. When he retired in 1995, he went to Zimbabwe, where he worked as a full-time volunteer at the University of Zimbabwe School of Medicine. He has two boys (ages 38 and 40), and will become a grandfather at age 77. ☺

S. Eugene Margolis (MD '64), Sonora, Calif., is 69 years old and has two great grandchildren. He is still practicing cardiology, is chief of staff at Sonora Regional Medical Center and president of the Tuolumne County Medical Society. ☺

1970s

J. Corwin Vance (MD '71), Excelsior, Minn., continues to practice dermatology in a suburb of Minneapolis and to teach dermatology residents and students at Hennepin County Medical Center. His daughter, Chardon-Julia, graduated from UC

Berkeley with a PhD in biochemistry and is currently applying to medical schools. His son, Karl, will graduate from UC Denver's School of Medicine in the spring and is applying for a residency in dermatology. ☺

Richard L. Vogt (MD '74), Latrobe, Pa., received the 2008 "Pump Handle Award" from the Council of State and Territorial Epidemiologists (CSTE) at their national convention. A longtime member of CSTE, Dr. Vogt served two terms as the organization's president and was a member of their executive committee for eight years.

Dr. Vogt began his career in Colorado, but worked in various public health positions across the nation. In 1997, he joined the Centers for Disease Control and Prevention (CDC) as a medical officer and was assigned to work with the World Health Organization as polio eradication advisor to the Egyptian Ministry of Health.

After three years in Egypt, he returned to the United States and became a consultant to the Denver Public Health Department in the CDC-funded Denver Center for Advanced Public Health Preparedness.

In 2001, Dr. Vogt joined Tri-County Health Department as executive director, where he has led efforts to increase immunizations among medically underserved children. He has also encouraged the growth of chronic disease and injury prevention services, as well as increasing HIV/AIDS and tuberculosis prevention efforts. ☺

Nancy Foote (MD '76), Seattle, Wash., is volunteering on the USS Kearsarge with Project HOPE. The ship is participating in Continuing Promise 2008, an effort of the U.S. government to provide medical care and other services to countries in Central America and the Caribbean. Read her travel blogs at: <http://www.travelblog.org/Bloggers/footeloose/> ☺

Thad F. Waites, MD (resident, internal medicine, '76), New Orleans, La., a cardiologist with Hattiesburg Clinic and Medical Director of Forrest General's Cardiac Catheterization Lab was recently inducted as governor for the Mississippi chapter of the American College of Cardiology (ACC). In this position, Dr. Waites will serve on the ACC Board of Governors in an advisory capacity to the Board of Trustees and also serve as a liaison between ACC members and leadership. ☺

Gregory Higgins (MD '78), Haines, Alaska, journeyed to Africa in October 2008. Over the past several years, she has been working in clinics in remote Kenya. This year, she added a trip to Sudan with a stop in Uganda to look at an orphanage as well. ☺

LOST? Do your former classmates wonder whether you've been stranded on a desert island, captured by a yeti or sheltered by the Witness Protection Program? Send us an alumni note and tell them what you've really been doing. E-mail your news to healthalumni@ucdenver.edu or fill out and return the form located inside the flap of the envelope in this issue.



1980s

Susan Lewallen (MD '80; '85 resident, ophthalmology),

Moshi, Tanzania, Africa, together with her husband, Dr. Paul Courtright, have won the prestigious International Blindness Prevention Award for 2008 from the American Academy of Ophthalmology. The International Blindness Award, established in 1992, honors individuals who have made significant contributions to the prevention of blindness or restoration of sight.

Dr. Lewallen and Dr. Courtright, an epidemiologist, currently live and work in Moshi, Tanzania, where they have established the Kilimanjaro Center for Community Ophthalmology (KCCO). KCCO, founded in 2001, is dedicated to reducing blindness in Africa. ☺

2000s

Jeff Gagliano (MD '02),

Thornton, Colo., recently completed the Steadman-Hawkins Sports fellowship and began a private practice sports orthopedics job at North Suburban Medical Center in November 2008. ☺

Amy Cook, (MD '05), Denver, Colo., graduated from Exempla Saint Joseph Hospital Family Medicine Residency in Denver in June 2008. She works three days per week at Ponderosa Family Physicians in Aurora, Colo., where she practices outpatient medicine only without OB. She had her first baby in November 2008. ☺

Jeremy Newman (MD '05), Las Vegas, Nev., is working as an emergency physician with St. Rose Dominican Hospital. ☺

In Memoriam

Robert James Beveridge (MD '49), Salt Lake City, Utah, passed away on Sept. 4, 2008 of natural causes incident to age. 'Doc' as he was affectionately known by his children and their friends, was born on July 7, 1924.

A pioneer in the field of pulmonary and cardiovascular surgery, he recognized early on that there was a strong link between cigarette smoking and cancer of the lung. He lectured on the dangers of tobacco in every high school and many of the junior high schools in the state. Dr. Beveridge was the founder and national president of YTAC (Youth Tobacco Advisory Council), the first major organization against smoking. He was an instructor at the Sheriff's Academy and the U.S. Army General Staff and Command College.

Dr. Beveridge served in the Marine Corps in World War II and as Chief of Surgery of the 8225 MASH unit in Korea. He was in private practice at LDS, "U of U" and Cottonwood Hospitals. He was later joined in practice by James Webster, MD. He served as the assistant director of the Medical Review Institute of America.

Dr. Beveridge is survived by his wife, Jean, six children, 18 grandchildren and nine great-grandchildren. ☺

Clayton James Bennett (MD '54), Venice, Fla., died Nov. 14, 2008. Clayton was born Feb. 4, 1929, in Oak Creek in the mountains of Colorado. He graduated from high school in Yuma, Colo. After interning at Ohio Valley General Hospital in Wheeling, W.Va., he practiced medicine with his father in Yuma.

His practice was interrupted by the "Doctor Draft" at the end of the Korean War. Dr. Bennett served for eight years in the Navy and retired as a medical corps lieutenant in 1958. He was a lifetime member of the U.S. Naval Institute and belonged to many veterans' organizations including the American Legion, Paralyzed Veterans Association and the Disabled Veterans of America. He also belonged to many medical organizations including the American Academy of Family Practice, Minnesota Academy of Family Practice, the American Medical Association and the Minnesota State Medical Association.

Dr. Bennett lived in Pennsylvania, California, Maryland and Kentucky before settling in Rochester. He joined the Olmsted Medical Center, where he enjoyed practicing family medicine for 25 years. He is survived by his beloved wife of 54 years, Mamie, two sons and four grandchildren. ☺

Louis Richard Kurland (MD '65), Hollywood, Fla., died Nov. 14, 2008 after an inspirational battle with a brain tumor. Dr. Kurland was born in Denver, Colo., and trained as an ophthalmologist in Washington, D.C. at George Washington University and the Washington Hospital Center.

After serving in the Air Force as a major at Offutt Air Force Base, he moved to Hollywood, Fla. A fellow of the American Academy of Ophthalmology and the American College of Surgeons, he was also a member of Florida Society of Ophthalmology, where he served on the executive board several terms. Dr. Kurland practiced ophthalmology for 34 years, was on staff at Hollywood Memorial Hospital where he served as chief of ophthalmology, as well as on the attending staff of Bascom Palmer Eye Institute.

Dr. Kurland retired from practice nine years ago. He relished spending time with his grandchildren. He is survived by his beloved wife, Roslyn, his two daughters and four grandchildren. ☺

Patricia E. Coen (MD '81), Lancaster, Pa., passed away on July 1, 2008. She was retired from practice. After graduating from CU School of Medicine, she had completed her internship and residency at Penn State Medical Center. She was past president of the Lancaster chapter of the American Diabetes Association. She is survived by her husband, Paul, and her son. ☺

ALUMNI WEEKEND

2009

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SCHEDULE OF EVENTS

WEDNESDAY, MAY 20

5 p.m.

Welcome Reception with Introduction by Chancellor M. Roy Wilson, MD, MS, Anschutz Medical Campus, \$25 per person

THURSDAY, MAY 21

8 a.m.-noon

All Class Breakfast and Dean's State of the School Address, Anschutz Medical Campus, \$15 per person

12:30 p.m.

Tour of the Anschutz Medical Campus, departure from the front of Building 500, \$10 per person

4:30 p.m.

Honors Convocation, Sewell Ballroom, DCPA, free

5:30 p.m.

Silver and Gold Banquet, Sewell Ballroom, DCPA, \$75 per person (free for class of 1959)

FRIDAY, MAY 22

10:00 a.m.-noon

School of Medicine Convocation Ceremony, Anschutz Medical Campus, free

12:30-2:30 p.m.

1883 Society Luncheon (classes of 1959 and before) with former Senator and CU President Emeritus Hank Brown, Anschutz Medical Campus, \$35 per person

2 p.m.

Denver Museum of Nature and Science featuring Expedition Health, \$10 per person

Individual Class Activities

1949 5:30 p.m.

Dinner at the Wellshire Inn, \$40 per person

1954 6 p.m.

Dinner at the Radisson Stapleton Plaza, \$45 per person

Individual Class Activities (continued)

1959 8:30-10 a.m.

Continental Breakfast, Anschutz Medical Campus, free

10:00 a.m.-noon

Hoarding and Oath Ceremony, School of Medicine Convocation Ceremony, Anschutz Medical Campus, free

5:30 p.m.

Dinner at the Radisson Stapleton Plaza, \$35 per person

1969 Noon

Golf Outing, Denver Country Club, \$125 per person (non-country club members), \$20 cart rental

7 p.m.

Dinner, Denver Country Club (cocktails starting at 6 p.m.), \$55 per person

1984 6 p.m.

Dinner at Maggiano's Little Italy--Downtown Denver, \$55 per person

1989 6 p.m.

Dinner at Strings, \$50 per person

1999 5:30 p.m.

Dinner at The Avenue Grill, \$40 per person

2004 5:30 p.m.

Dinner at Rialto Cafe, \$35 per person

SATURDAY, MAY 23

11 a.m.

Lunch and Golf at Fitzsimons Golf Course (noon tee time), \$65 per person

Individual Class Activities

1964 6 p.m.

Dinner at Rialto Cafe, \$45 per person

1969 Noon to 4 p.m.

Lunch hosted by Carol Rymer, (MD '69) Indian Creek Park Ranch, Evergreen, Colo., \$35 adults, \$10 kids

1974 6 p.m.

Dinner at Strings, \$40 per person

1979 5:30 p.m.

Dinner at The Avenue Grill, \$40 per person

1984 Noon to 4:00 p.m.

Picnic at Generals Park, \$25 adults, \$10 kids

1994 6 p.m.

Dinner at Maggiano's Little Italy--Downtown Denver, \$50 per person

2004 Noon to 4 p.m.

Picnic at Generals Park, \$25 adults, \$10 kids



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