



University of Colorado Denver  
School of Pharmacy

Fall 2009

# Pharmacy PERSPECTIVES

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### PharmD Class of 2013

1,156

Number of applicants

158

First-year pharmacy students

78

Colorado residents

36

California residents

20

States represented, including Colorado

2

Foreign countries represented  
(Kenya and Brazil)

92

Female students

66

Male students

79%

Earned bachelor degree or higher

26

Average age

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Ensuring  
drugs' efficacy

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pancreatic cancer

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## Back-to-School

Excitement is in the air. Summer's over and school is back in session. For some, summer was not long enough. For others, it was too long. And for others still, the break was "just right."

The beginning of the school year marks a new journey for the incoming first-year pharmacy students and a continuation of learning for second, third and fourth-year students.

Welcome back.



Students – Katie Knapp (P3), Megan Stockton (P2) and Sarah Stroh (P3) – help during student orientation.

### Accreditation

The UC Denver School of Pharmacy was recently visited by the ACPE accrediting team to renew its accreditation. The process includes the development of a self-study submitted prior to a site visit, question and answer sessions, and meetings with the team. Comprised of five members, the accrediting team consists of representatives from various schools of pharmacy throughout the country, as well as representatives from ACPE and an observer from the Colorado State Board of Pharmacy. The school will be notified of its status by January of 2010.

### Keep in Touch

Have you ever noticed how easy it is to lose touch? Life just has a way of getting in the way. With a **FACEBOOK** page, a bi-monthly electronic **NEWSLETTER**, semi-annual **PRINT** newsletter, events and more, we are making it easier to keep in touch. Just **E-MAIL** us at [SOPalumni@ucdenver.edu](mailto:SOPalumni@ucdenver.edu) and we'll put you on the list to receive these informative communiqués. Be sure to update us about your comings and goings as we are always looking to share details with classmates, alumni, students, faculty and friends.

## RESEARCH

### *Bench to Bedside*

From investigating the effectiveness of botanicals on cancer to stabilizing vaccines for transport to developing effective drug regimens to beat pancreatic cancer and ensuring drug safety and efficacy of medications once on the market, faculty from the School of Pharmacy are involved in all phases of pharmaceutical science. The following pages highlight the depth and breadth of research at the School of Pharmacy.



In recent years, funding for research from the National Institutes of Health (NIH) – the world's and America's largest funder of basic medical research – has been significantly reduced and thousands of researchers have been unable to get Research Project Grants. These grants, often in the half million dollar range, are awarded to scientists at university and other labs across the country through the NIH's 27 institutes and centers. The School of Pharmacy has been extremely competitive when applying for NIH grants and has been successful in receiving NIH funding. In fact, for U.S. pharmacy schools the school is third in the nation for individual awards per PhD faculty member and ninth in the nation for total NIH funding.

But, in the last five years, the amount of money Congress appropriated to the NIH fell almost 20 percent. Over the same period, only about one in five grant proposals received funding. Meanwhile, the cost of conducting research – running labs, paying lab assistants, and investing in equipment – rose.

## DIGGING UP botanical treatments

If Rajesh Agarwal, PhD, has his wish, some day the School of Pharmacy will include a center dedicated to botanical research in disease prevention. And if his wish is entirely fulfilled, he will lead it.

Dr. Agarwal, professor of pharmaceutical sciences and associate editor of the world renowned journal *Cancer Research*, has been studying dietary and synthetic agents in the prevention and therapy of cancer for 20 years. One particular agent has long intrigued him and has already shown promise in responding to skin cancer in mouse models – silibinin, which is found in milk thistle.

Agarwal also discovered that compounds in milk thistle extract are effective in the prevention and treatment of skin and prostate cancers, and is investigating their effectiveness in colon, bladder, ovarian and lung cancers.



There may also be application as a liver tonic, demulcent and treatment of hepatic ailments, he says.

When it comes to finding ways to prevent cancer, there are no favorites. "Disease is disease and a sufferer is a sufferer."

In the spring of 2009 Agarwal was named co-leader of the Cancer Prevention and Control Program at the University of Colorado Denver Cancer Center. The center wanted to broaden its cancer prevention and chemoprevention work so it would include more preclinical research, says its interim executive director, Tim Byers, adding that Agarwal's being part of the team strengthens the bridge between translational work from pre-clinical to clinical and community prevention work. And natural products may play an important role in cancer prevention.



Research Associate Dr. Neera Tewari-Singh and Professor Dr. Rajesh Agarwal discuss current research.

## RESEARCH

# Ensuring drugs' efficacy – a matter of **MISSION**



Graduate student James Barnard conducts quality control tests on a sample.

**“It’s sad when a promising drug fails because it wasn’t made properly so it degraded. We’re advocates for patients and we’re very serious about safety.”** 

Imagine a child with hemophilia who develops immunity to the only drug that can save her.

It’s not a fictitious scenario, and John Carpenter, PhD, professor of pharmaceutical sciences and co-director of the University of Colorado’s Center for Pharmaceutical Biotechnology, is on a mission to ensure that such scenarios don’t recur.

Dr. Carpenter is focused on analyzing and improving the stability of the proteins on which biopharmaceutical drugs are based. When these products are degraded in the manufacturing process, the proteins’ stability is compromised. That triggers the immune response in patients, which increases the risk of and has actually resulted in death.

“It’s sad when a promising drug fails because it wasn’t made properly so it degraded. We’re advocates for patients and we’re very serious about safety,” he says.

Biopharm therapies – as effective and widely used as they are in treatments of blood disorders, cancer and infectious diseases – entail a highly challenging manufacturing process. “Our goal is to make sure biotech products are as safe and effective as possible and our job is to make sure medicines don’t fail.” He and his colleagues work with the industry and the FDA to set and uphold high standards, and serves as a consultant for numerous pharmaceutical and biotechnology companies.

Carpenter is a co-founder of two start-up companies – AktivDry, which makes powders (microparticles and nanoparticles) of pharmaceuticals, vaccines, monoclonal antibodies, enzymes, and DNA; and BaroFold, which is developing improved biopharmaceuticals for patients suffering from chronic immunologic disorders.

## Seeing Clearly

### RMLEI scientists awarded \$990,000 ARRA Challenge Grant

University of Colorado Denver scientists have been awarded an American Recovery and Rehabilitation Act (ARRA) Challenge Grant to develop new therapeutic agents for prevention or reversal of blinding diseases such as cataract and retinitis pigmentosa.

J. Mark Petrash, PhD and Uday Kompella, PhD, are the co-investigators on the grant. Petrash is professor and vice chair for research in the Department of Ophthalmology at the Rocky Mountain Lions Eye Institute. Kompella is professor of pharmaceutical sciences at the School of Pharmacy and adjunct faculty in the Department of Ophthalmology.

Research in the Petrash laboratory contributed to the discovery that specialized proteins in the lens help to protect tissues against the damaging effects

of protein aggregation. Kompella’s laboratory is well known as a leader in nanomedicine and for developing technologies to deliver pharmaceuticals to ocular tissues. Work to be carried out with funding from the Challenge Grant will marry expertise of the two laboratories. Together, they will develop technology to optimize the formulation and delivery of protective molecules, called heat shock proteins, to the eye.

The ARRA Challenge Grant Program was developed by the National Institutes of Health as a means to stimulate innovative, high-impact research that can move quickly from the laboratory to the clinic. Roughly 2 percent of the 21,000 applications were chosen for funding under this highly selective program. The \$990,000 grant will be funded over a period of two years.

According to Dr. Petrash, “Reviewers of our grant application considered the close proximity of my laboratory to that of Dr. Kompella on the Anschutz Medical Campus, together with the rich environment for collaborative research among schools



Dr. Uday Kompella discusses nanomedicine with a colleague.

at UC Denver, as significant strengths of our grant application. It is an honor to be selected for one of these highly competitive awards.”

# VACCINATIONS

Love 'em or hate 'em – there is no question that immunization programs have saved millions of lives.

Considered one of the great success stories of public health, these programs have proved their worth. So, is there anything we can do to make them better and should we try?

LaToya Jones Braun, PhD and UC Denver School of Pharmacy faculty member says, “Yes.”

New delivery mechanisms, new ways to transport and protect vaccines from damage due to temperature fluctuations, and new stabilizing chemicals are currently being investigated.

Dr. Braun's breakthrough work on protecting hepatitis B vaccine from heat and freeze damage is proof positive that there's still a long way to go to ensuring vaccine potency. Her work – a collaborative effort between the School of Pharmacy, Arecor, Ltd., and PATH scientists – recently published in *Human Vaccines* and *Vaccine* could potentially save millions of lives. PATH is an international nonprofit organization that creates sustainable, culturally relevant

solutions, enabling communities worldwide to break longstanding cycles of poor health.

“Obstacles exist especially in developing countries that boggle the mind,” says Braun. “Access to water, hazardous waste/needle disposal, stable sources of electricity, and the ability to refrigerate or even having adequate storage capacity to keep vaccines at constant temperatures – all can impact the potency of the vaccine. It's not enough to research the vaccine; we have to be culturally cognizant and incorporate culturally relevant solutions into our studies.”

Braun's research addressed one of these obstacles – protecting vaccines from thermal degradation due to fluctuations in temperature – and succeeded in developing a new formulation method that helps to ensure the potency of hepatitis B vaccine from extreme temperatures in areas of the world where the cold chain is insufficient.

World Health Organization guidelines recommend that all vaccines (except oral polio vaccine) be stored at 2°C to 8°C. These temperature requirements necessitate use of a vaccine cold chain – a global distribution network of refrigeration equipment and procedures for maintaining vaccine quality during transport and storage.

Deviations from proper storage of vaccines within the cold chain occur



Dr. LaToya Jones Braun researches new ways to transport and protect vaccines from damage.

in both developed and developing countries. There are documented deleterious temperature excursions in one direction (i.e. freezing) that resulted from attempts to protect vaccines from damage at the other end of the temperature extreme (i.e. heat). Improving the thermal stability of the vaccine sufficiently to even increase the range of stability on one end of the temperature scale could have important implications with regard to vaccine wastage.

Altogether, the heat- and freeze-stabilization of common vaccines, like hepatitis B vaccine, has the potential to help extend immunization coverage by simplifying the logistics and reducing the costs associated with transport and storage of vaccines in regions of the world where the cold chain is insufficient, impractical, or otherwise constrained.

The data indicate that the new hepatitis B vaccine formulation will be better able to withstand disruption in the cold chain and could potentially be stored at room temperature for a significant part of its shelf life. “Just think of the potential positive ramifications. If the vaccine could be stored at room temperature for 30 days, nurse midwives could give babies birth doses right after they are born. This could significantly reduce the number of deaths from the disease,” says Braun. Worldwide, two billion people have been infected with hepatitis B and an estimated one million people die each year from the infection and its complications.

To date, PATH and collaborators have completed additional laboratory and preclinical studies validating the science and technology behind the new heat- and freeze-stable hepatitis B vaccine formulations.

## Eradicating measles one deep breath at a time

The first dry-powder inhalable vaccine for measles is moving toward clinical trials next year in India, where the disease still sickens millions of infants and children and kills almost 200,000 annually.

Robert Sievers, PhD, co-founder of AktivDry with School of Pharmacy faculty member Dr. John Carpenter, leads the team that developed the dry-powder vaccine. Dr. Sievers, University of Colorado professor, says it's a perfect fit for use in back-roads areas of developing countries because those areas often lack

the electricity for refrigeration, clean water and sterile needles needed to administer traditional liquid vaccines.

Although made for developing countries, the technology eventually could become the basis for a new generation of inhalable – and ouchless vaccines – in the United States. So far, an inhalable vaccine is available only for the flu.

The study has been conducted with a grant from the Foundation for the National Institutes of Health as part of the Grand Challenges in Global Health Initiative of the Bill and Melinda Gates Foundation.

## RESEARCH

# A PINCH of this, a DASH of that...

## Finding the formula to manage pancreatic cancer

"I don't obsess about living or for how long. I just live," says Garrison Roots, age 57.

Three years ago, ER docs gave Roots three months to live. Diagnosed with advanced pancreatic cancer, the doctors told him to, "get your house in order." Because there is no screening test for pancreatic cancer and patients are virtually symptom-free until the disease has begun to spread, the likelihood of surviving pancreatic cancer is dismal.

But instead of giving up and succumbing to the disease, Roots has defied the odds and is thriving despite his initial prognosis.

Why?

Placed in a phase 1 clinical trial early after his diagnosis, Roots credits Cindy O'Bryant, PharmD and School of Pharmacy faculty member, and a team of health care professionals at the University of Colorado Cancer Center with saving his life.

Dr. O'Bryant and a multidisciplinary team of colleagues focus on the early, phase 1 studies that take newly developed drugs to human patients for the first time. Patients like Roots who are a good fit for phase 1 studies typically have an obscure or unusual kind of cancer, or a cancer for which standard treatment has been exhausted. "They have very few or no other options," says O'Bryant.

Initially unresponsive to radiation and early chemotherapy treatments, Roots' tumor cannot be surgically removed. For him, "experimentation was the only way to go. I wanted to be at the university, where the research is."

Still, not all patients with the same kind of cancer will respond to the same drug therapy. Finding the right combination of agents takes trial and tweaking, O'Bryant

explains. "You can take three patients with pancreatic cancer and they will all respond differently to the same treatment. It depends on drug metabolism, disease sensitivity, and tumor genetics."

O'Bryant tests therapies that are developed to target cancer cells and to find which drugs may work best for a specific type of cancer or patient. In recent years, progress has been made toward finding treatments that don't poison the entire body while they attack the cancer, she explains.

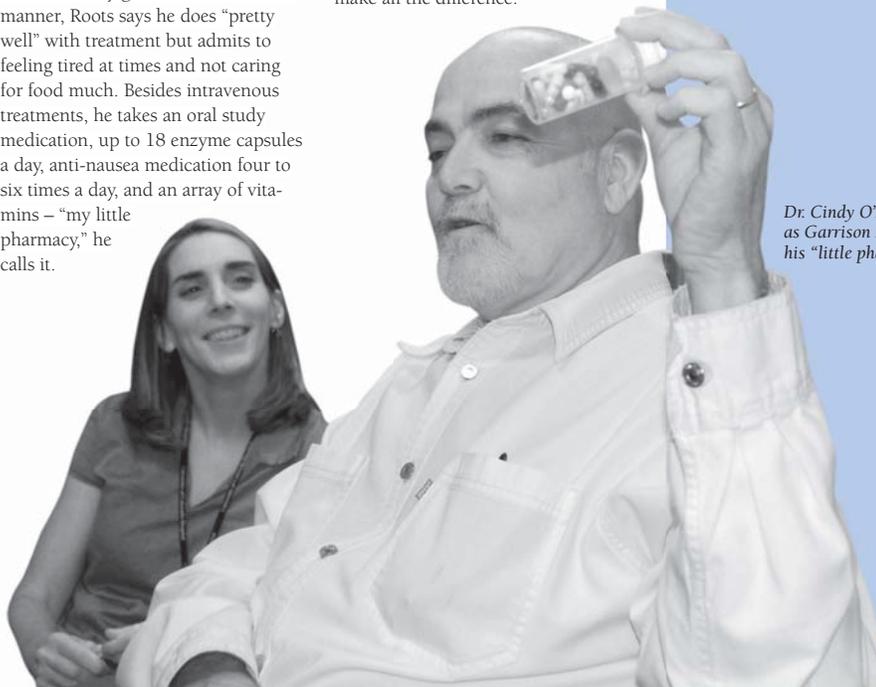
Roots is not only responding to treatment, he's continuing his work as chair of the Department of Art and Art History at CU-Boulder. In addition to his day job, Roots – working alongside his son – has recently installed a major art project at the new Justice Center in Denver (pictured top right). Roots' attitude toward his condition mirrors his artistic philosophy: "My works solicit participation and understanding, while attempting to show the universally precarious nature of our positions within the world."

With a healthy glow and an animated manner, Roots says he does "pretty well" with treatment but admits to feeling tired at times and not caring for food much. Besides intravenous treatments, he takes an oral study medication, up to 18 enzyme capsules a day, anti-nausea medication four to six times a day, and an array of vitamins – "my little pharmacy," he calls it.



For him, on top of managing his medications, O'Bryant and the team provide a positive attitude and treat him as "a person – not just a patient." And, more importantly, no one talks in percentages of survival.

That's the way O'Bryant likes it. "I love the science and I love the people, getting to know them and their families. Small victories are huge. If I can't give them three years of life, but I can make their quality of life better, that's what I want to do." And she does that with a big smile and a positive attitude, which for patients like Roots make all the difference.



## Benefits and risks of participating in a clinical trial

### Benefits to participants:

- The ability to play an active role in their own health care
- Access to new research treatments before they are widely available
- Obtain expert medical care at leading health care facilities during the trial
- Help others by contributing to medical research

### Risks to participants:

- There may be unpleasant, serious or even life-threatening side effects to experimental treatment
- The experimental treatment may not be effective
- The study treatment may require more time and attention than would a standard treatment, including trips to the study site, close monitoring, more frequent treatments, hospital stays or complex dosing requirements

*Dr. Cindy O'Bryant looks on as Garrison Roots explains his "little pharmacy."*

## Employment Milestones

### 5-years

Dr. LaToya Braun  
Lin Cheng  
Pam Duval  
Ruth Fulton  
Dr. Numsen Hail  
Michelle Ray  
Biehuoy Shieh

### 10-years

Dr. Laura Borgelt  
Dr. Brian Hemstreet  
Susan Kepner  
Dr. Sunny Linnebur  
Dr. Robert MacLaren  
Dr. Kavita Nair  
Dr. Cindy O'Bryant  
Jeri Rome  
Timothy Tracy

### 15-years

Glenda Tate  
Dr. Robert Valuck  
Jia Hua Zheng

### 20-plus years

Dr. Ralph J. Altieri  
Cindy Austin  
Charlotte Klaus  
Dr. Al Malkinson  
Dr. Dennis Petersen  
Dr. David Ross  
Dr. David Thompson  
Dr. John Thompson  
Dr. David Siegel  
Susan Saunders

## FACULTY & STAFF

### Published Studies

**Rob Valuck, PharmD** and **Anne Libby, PhD**, School of Pharmacy and Colorado School of Public Health, interviewed with the Associated Press, Reuters, WebMD.com, and HealthDay.com about their embargoed study that was published in *JAMA* June 1, around the effects of the FDA warning labels on antidepressants. The study spotlights the fact that the rate of depression diagnosis has fallen and treatment (antidepressants and substitutes) is not being prescribed.

**Sam Ellis, PharmD**, reported at the annual scientific sessions of the American Diabetes Association that the rate of obesity appears to be increasing more quickly among young adults with type 1 diabetes compared with national prevalence data. At the same time, obesity significantly increased the likelihood of having elevated systolic and diastolic blood pressures and LDL cholesterol levels, after adjusting for demographic factors.

### Announcements

#### New Center

Academic and private investigators who wish to incorporate pharmacokinetics and pharmacogenomics into their research will find the newly formed Center for Translational Pharmacokinetics and Pharmacogenomics a valuable asset.

Recently approved by the Chancellor's office, the Center for Translational Pharmacokinetics and Pharmacogenomics brings together the scientific and technical expertise, knowledge, and physical resources to conduct high-level translational research. **Contact Drs. Peter Anderson, Christine Aquilante or Jennifer Kiser at [UCDenver.edu](mailto:UCDenver.edu) for more information.**

#### Medicinal Chemistry Core Facility

A Medicinal Chemistry Core facility has been established through the School of Pharmacy to help validate proof-of-principle target discovery and assist in pre-clinical evaluation. For more information, contact Dr. Michael Wempe at [Michael.Wempe@UCDenver.edu](mailto:Michael.Wempe@UCDenver.edu)

### Faculty Honored

**Sunny Linnebur, PharmD, FCCP**, was recently elected Fellow of the American College of Clinical Pharmacy. Linnebur, one of 23 ACCP members elected for this designation, was acknowledged for demonstrating a sustained level of excellence in clinical pharmacy practice and/or research during a special ceremony at the College's 2009 Annual Meeting in Anaheim, Calif.

**Robert Page, PharmD, BCPS, MS**, together with 31 fellow pharmacists was designated "Fellow" by the American Society of Health-System Pharmacists (ASHP) in recognition of the excellence he has achieved in pharmacy practice. The ASHP Practitioner Program recognizes excellence in practice and promotes public awareness of outstanding pharmacists. Each applicant's credentials are assessed against rigorous criteria that include contributions to the scientific literature, research, education, and active involvement and leadership in professional activities. Applicants also must have practiced in health-system pharmacy for at least 10 years. The program has recognized 619 Fellows since it began in 1988.

In addition to the ASHP award, Page was offered and accepted the position of chair of the Clinical Pharmacology Committee for the American Heart Association (AHA). This newly formed committee, comprised of 10 members and one trainee, has the primary responsibility of advising the AHA leadership on a wide range of clinical, research, policy and educational matters related to cardiovascular disease and stroke. This appointment is an important step in recognizing the significant role pharmacists have in the management of cardiovascular disease.

**Wes Nuffer, PharmD**, recently achieved the status of Certified Diabetes Educator. This designation requires 1,000 patient contact hours (face-to-face with diabetes patients) and successful completion/passing of an exam.

### Employee of the Month

Department of Pharmaceutical Sciences staff member, **Lisa Trujillo** was nominated and honored as UC Denver's Employee of the Month at the Anschutz Medical Campus for the month of August. A surprised and delighted Trujillo was definitely taken aback by the accolades of her co-workers. Fellow staff described Trujillo during the presentation as a person "who does more than just her job. She is a person who does things willingly and with a smile, and goes the extra mile for everyone. Never too busy to help anyone, Lisa is a great addition to the department."



## STUDENTS

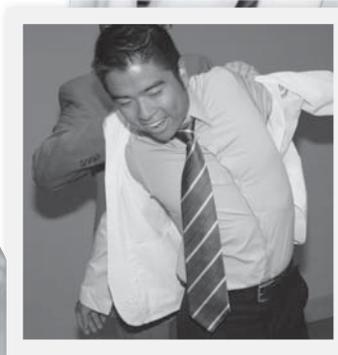
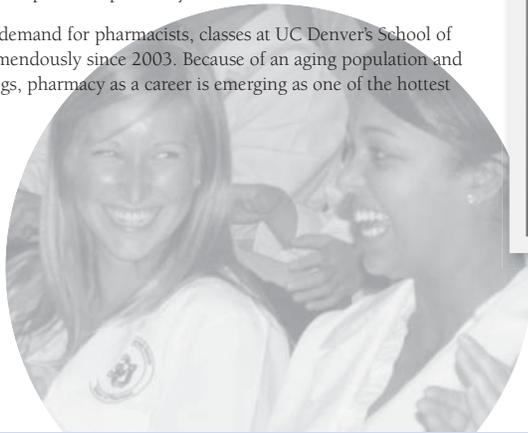
# White Coat Celebration

The University of Colorado Denver School of Pharmacy marked the beginning of the school year with its annual White Coat Ceremony and the largest P-1 class ever in the school's near 100-year history.

With more than 1,100 applicants vying for only 160 spots, first-year pharmacy students were elated by the news they were accepted into one of the top pharmacy schools in the nation.

"This was my second try at getting in here," says first-year pharmacy student Ryan Foll. "I applied at other schools as well, but this was my first choice. I still can't believe I made it." In the meantime, Foll has obtained two undergraduate degrees – a BS and a BA – prior to being accepted into pharmacy school.

Due to local and national demand for pharmacists, classes at UC Denver's School of Pharmacy have grown tremendously since 2003. Because of an aging population and new breakthroughs in drugs, pharmacy as a career is emerging as one of the hottest fields in the country.



Above: Dr. Peter Rice helps P1, Ryan Foll, with his lab coat during the White Coat Ceremony.

Left: Wei-Tak Lee dons his white coat during the ceremonies.

Excited first-year students cheer each other on during the White Coat Ceremony.

## Dean's List

Students who achieve semester grade point average of 3.5 or above are recognized on the Dean's List. Those students for the spring of 2009 are:

### P1 Spring 2009

Jennifer Bae  
Ali Baily  
Rachel Berman  
Joseph Bitto  
Kristin Braschler  
Chad Bratten  
Jennie Brunkan  
Derek Brym  
David Cassidy  
Stephen Cheung  
Ana Delgado  
Ashley Draper

Caitlin Drayna  
Jennifer Duewall  
Kelli Esbaum  
Daniel Fling  
Kristopher Fogo  
Aaron Gard  
Anna Jessup  
Eric Johnson  
Sweta K C  
Robynn Keeley  
Jennifer Konieczny  
Kevin Larson  
Lan Luong

Edward Mang'eni  
Luke Markham  
Kelli Metz  
Melissa Meyer  
Kristen Morrow  
Ofir Nevo  
Diana Nguyen  
Caleb Oh  
Brigitte Peterson  
Christine Pham  
Emma Ross  
Melanie Sauerman  
Matthew Schenk

Amanda Stahl  
Linsey Thompson  
Tom Vang  
Andy Wang  
Aleksandra Wolanin  
Diana Wu

### P2 Spring 2009

Anita Abata  
Mary Alger  
Jessica Bannon  
Cynthia Beckett  
Paula Bliss

Alexander Block  
Jordan Califano  
Jonathan Caughran  
Jeffrey Clark  
Emil Dezia  
Morgan Ehlers  
Jeremy Gradisar  
Kyle Hammond  
Kevin Henderson  
Gregory Hofer  
Lashell Holland  
Ria Johns  
Alexander Kanack

Aaron Lee  
Charles Needle  
Nicole Peterson  
Joanna Puszka  
Paul Reynolds  
Jennifer Schwab  
Samantha Sedillo  
Sara Settje  
Stacey Smith  
Karen Thoresdale  
Rebecca Tyler  
Jessica Vaughn  
Christopher Walton

3.5



STUDENTS

Third-year pharmacy student, Candido Chacon on the right, supervises a student in the summer enrichment program.

## STOUT STREET provides valuable resource for students and patients

Lena could no longer endure her husband's violence. Seven months pregnant, suffering from a chronic genetic disorder requiring medication, and with \$29.40 in her pocket, she had few places to turn. The Colorado Coalition for the Homeless' Stout Street Clinic and Pharmacy were the support she needed.

Afflicted with Graves Disease, which requires regular medical attention, eye care and prescription medication, Lena was forced to choose between filling her prescriptions or feeding her kids. The choice was clear. "I went a few years without meds. At \$145 per month, I said my kids need to eat and they need a roof over their heads." Fortunately for Lena and thousands of others like her in the Denver metro area, the Stout Street Clinic was there for her.

Filling anywhere from 500 to 750 prescriptions per day at no cost to the patient, the pharmacy dispenses nearly 230,000 medications per year. "That's nearly triple the number we filled just three years ago," says pharmacy director and SOP alumnus, Dr. Ozzie Ramirez, PharmD '06. "With the recession, we have seen needs skyrocket." And, with the increased demand for medications, there has been an increase in the need for "skilled people" to dispense those medications.

That's why the clinic serves as an experiential training site for students currently enrolled in the PharmD program and those seeking entry into the

program. During the course of the school year, students rotate through Stout Street and fulfill their experiential requirements. Last summer, 18 pre-pharmacy students vying for a berth in future doctor of pharmacy classes volunteered their time to help fill prescriptions at the clinic. "Their assistance was a Godsend," says Ramirez.

Under the supervision of third-year pharmacy student Candido Chacon, Dr. Ozzie Ramirez and a staff of three pharmacists and pharmacy technicians, students were provided with an opportunity to earn valuable skills and "face time" during the two-month summer enrichment program. Because of the competitive nature of pharmacy school, many of the students in the program have already applied multiple times to numerous pharmacy schools throughout the country without success.

"I was once in the same boat," empathizes Chacon. After receiving his undergrad degree in molecular biology from the University of Colorado Boulder in 2003, Chacon decided to pursue his PharmD. He applied to the school of pharmacy, but was not accepted. So, he was offered an opportunity to enroll in the summer enrichment program, which provided him the opportunity to become familiar with the faculty and requirements. As a consequence, he was able to re-apply the following year and was accepted. "This is an extremely competitive program. But if you work hard and keep trying you can eventually make it." Chacon is proof that persistence pays off.

### House Speaker Nancy Pelosi visits Stout Street Clinic

Speaker of the U.S. House of Representatives, Nancy Pelosi, joined U.S. Representatives Diana DeGette and Jared Polis, to highlight the impact of the economic recovery funds on healthcare services at the Colorado Coalition for the Homeless on Thursday, August 6, 2009.

Speaker Pelosi and Members of the Colorado delegation visited the Coalition's Stout Street Clinic and saw firsthand how the Coalition will be able to meet increased need, improve healthcare systems and create 25 new jobs with \$7.8 million in federal recovery funds.

"We see a place of dedicated professionals, working with volunteers, to give the respect that the clients who come here deserve," said Pelosi. "We see a holistic approach where you can't talk about ending homelessness or addressing it, unless you address the health needs and mental health needs of the clients."

Part of the funds will enable the Stout Street Clinic to purchase an Electronic Health Records System. A second grant from the U.S. Department of Health and Human Services will help the clinic meet the unprecedented increase in demand for mental health services. The largest grant is through the U.S. Department of Housing and Urban Development to assist families at risk of losing their homes and create a more coordinated strategy to rapidly re-house families who do end up homeless.

The Coalition has requested additional recovery funds to expand the Stout Street Clinic, to help families at risk of homelessness across the state, and to proceed with a shovel-ready affordable housing development in downtown Denver. If approved, these recovery funds would create another 149 jobs and help the Coalition reach even more homeless individuals and families in need of services.





## PhD student breaks new ground

**As the first member** of her immediate family to graduate from college, and the first to pursue a PhD as well as a career in pharmaceutical science, Nicole Payton is used to breaking new ground.

An only child, Payton saw her parents struggle to make ends meet. Recognizing at a young age that an education would allow her to be the mistress of her own destiny, she earned a bachelor of science degree in biology from the University of New Mexico (UNM).

“Graduating from college was a very big deal for my family. I was the first to be accepted into college, and the first to graduate,” she says modestly. Her first foray into academia fueled the fire to continue with her studies. After graduating magna cum laude from UNM, she began researching graduate programs in bio-

medical science throughout the Rocky Mountain region, and selected UC Denver three years ago and loves it.

According to Payton, “The program is challenging and rewarding. The faculty is great. The labs ... beautiful. This campus has everything you need. And, you get to do lab work from day one!” Added to that, “there’s a sense of social responsibility that the faculty instill in students that is refreshing.”

Currently working in Dr. Anchordoquy’s lab, Payton says “I love science, exploration and discovery. I’ve been provided with a unique opportunity that will open up other doors for me in the future.” Half-way through the program, Payton is considering breaking more ground in the future by pursuing a career in academia.



**Nicole Rubalcaba-Lopez and Hanna Gurara** grew up in rural communities; Lopez in Pueblo, and Gurara in a small town in Ethiopia.

Less than a year away from graduating with their doctor of pharmacy degrees, both are contemplating where they will begin their practice, and with a little encouragement from scholarships have decided to return to their rural roots.

Gurara and Lopez have received two-year \$30,000 scholarships to assist with completing their pharmacy degrees. Open to graduate level students from a variety of health disciplines (medicine, physical therapy, nursing and pharmacy) that plan on practicing in rural communities, the Colorado Trust Health Professions Scholarship Program is making it possible for students to pursue careers in healthcare.



Hanna Gurara

Ethiopian native and American citizen, Gurara says "I am so grateful. I still have trouble believing I was selected for this." Gurara and Lopez agree that these scholarships have taken some of the pressure off the cost of their education. On average, pharmacy students graduate \$100,000 in debt. The ability to have 30 percent of the debt covered in one fell swoop is significant, says Lopez. In order to qualify, students must be enrolled at least half-time in a graduate level health professional program, but also must agree to serve in a rural setting for at least two years after graduation. As Gurara says, "Really, what's two years?"

But for a tremendous number of students pursuing advanced health care degrees, working in rural communities for any amount of time is considered a hardship and less than desirable. Mix that with a nationwide shortage of pharmacists and you have a recipe for disaster. The shortage is particularly troublesome in rural states such as Colorado, where reports show at least six counties have no pharmacies and 31 have only one. Several factors have helped contribute to the pharmacist shortage including unprecedented increases in the volume of prescriptions and the growth in our senior population, which uses a disproportionately high share of prescription drugs. Fortunately though, some students like Lopez and Gurara are thrilled by the prospect of being on the frontlines in these smaller communities.

For both Lopez and Gurara, pharmacy is in their blood. Lopez, whose father graduated from the School of Pharmacy with a BS in 1985, was indoctrinated into the profession at a very young age. She recalls, "My father would take me to work with him as part of 'Take your daughters to work day.' I discovered that I really liked the science and the environment."

Inspired by her uncle, a pharmacist back in her native country, Gurara wants to follow in his footsteps and help those in need in rural Colorado. Growing up in a small town in Ethiopia has made her fully aware of the challenges and opportunities rural providers face and how an industrious and welcoming nature can be a tremendous asset in a small town.

In addition to scholarships like these, a new \$2.4 million grant from Kaiser Permanente is making it possible for students like Gurara and Lopez to either return home or strike out and practice in a rural setting. The grant will be used to establish the university's Interdisciplinary Rural Training and Service Program, where students from a variety of health care disciplines will practice together, gain a greater appreciation for each specialty, and collaborate – all in an effort to improve patient care.



Nicole Rubalcaba-Lopez

...a new **\$2.4 million** grant from Kaiser Permanente, is making it possible for students like Gurara and Lopez to either return home or strike out and practice in a rural setting. 🌿

## STUDENTS AND ALUMNI

# Saving lives by **PREVENTING** medication errors

### Pharmacists and students working together

Not long ago a patient entered the emergency room at Porter Adventist Hospital complaining of nausea and vomiting. The record indicated the patient was taking two pain medications, but the fourth-year UC Denver School of Pharmacy student reviewing the case was concerned about the dosage of one of the medications – Roxanol, a highly-concentrated form of morphine – and contacted a staff pharmacist. After persisting with phone calls, the student and the Porter pharmacist learned that an outpatient pharmacy had incorrectly filled the prescription. The dosage was corrected, the patient's condition was resolved and he was discharged.

Medication errors are the fourth leading cause of death in the United States and Ryan Stice, PharmD '06, is determined to do what he can to prevent them. According to a June 2007 Institutes of Medicine publication, about 1.5 million hospital patients suffer medication errors annually. Overall medication errors are estimated at \$200 billion per year, including costs for extended stays or additional treatments, says Dr. Ralph Altieri, dean of the School of Pharmacy.

Most hospital errors are caused by incomplete records of patients' medications. Some have been caused by medical staff giving the wrong medication or wrong dose because of poorly marked packaging. Other errors result from patients leaving the hospital without understanding how to take their prescriptions.

The student's intervention in the emergency room case was "quite remarkable," recalls Dr. Stice, who directs Porter's 42-member pharmacy and is preceptor to students at the inpatient pharmacy, the ApotheCare Retail Pharmacy, Porter Travel Medicine Clinic, and the Anticoagulation Center.

Stice spearheaded the Medical Reconciliation Program at Porter, incorporating fourth-year pharmacy students' training into the program, which has garnered industry awards for Centura Health, the hospital's parent company. "It's absolutely critical that pharmacists work closely with physicians, nurses and other health care providers to ensure that medication errors don't happen," Stice says.

In addition to the program at Porter, the school pairs fourth-year pharmacy students with hospitals throughout the state. The students perform what's known as medication reconciliation; they interview patients about their medications and reconcile the list with physician's orders. The program includes 207 participating sites in Colorado, with 18 sites dedicated to performing reconciliation as a major component of the students' work. These sites include six Kaiser facilities, Longmont United Hospital and Porter.

Before the student program was implemented, only about 35 percent of patient medication records at Porter were accurate, said Stice. "With the program, that accuracy rate has risen to more than 90 percent."

One of the biggest stumbling blocks to prevent medication errors is that most hospitals do not have a full-time pharmacist assigned to conduct medical reconciliation. So, students have become invaluable to patient care, says Altieri. "Traditionally, nurses collected information about a patient's medication. Nurses have so many responsibilities when admitting a patient that this role of medication reconciliation might not be their top priority," says Altieri. The pharmacist is in the best position to prevent medication errors, analyze and review the medications a patient is taking, and ensure that the patient is not at risk for a fatal interaction. With drug therapies becoming more complex and their use more widespread (nearly half of Americans are on medication), pharmacists' roles are expanding.



Ryan Stice, PharmD '06, spearheaded the Medical Reconciliation Program at Porter Adventist Hospital.

**“Before the student program was implemented, only about 35 percent of patient medication records at Porter were accurate. With the program, that accuracy rate has risen to more than 90 percent.”** 

*In The News...* During the last six months, the School of Pharmacy has been included in numerous news stories. Highlighted in the *Denver Post*, *Longmont Times Call*, the *Aurora Sentinel*, 9NEWS, KMGH-Channel 7

and *Clinical Endocrinology News*, stories have focused on ways to beat the recession by reducing medication costs, the White Coat Ceremony, the potential protective link between Vitamin D and H1N1, the Stout Street

Clinic and rural health care. Future stories include ways to help seniors manage their medications, flu shot clinics, and safe disposal of medications.

## ALUMNI

# Alumni Notes

**Oddy Jacobsen, BS '66**, recently retired from a 22-year career with King Soopers. Prior to King Soopers, Jacobsen bought and owned his own pharmacy. As he says, "When I went to pharmacy school, everyone wanted their own drug store. But after more than a decade of being my own boss, I realized that there were some advantages to working for someone else." So, after 12 years as an independent pharmacist, Jacobsen closed up shop and began working for King Soopers. "I have no regrets. It was a good decision." Now that he is fully retired, Jacobsen is weighing several volunteer opportunities. Should you wish to reach Oddy at [oddyjan@comcast.net](mailto:oddyjan@comcast.net).

After a 26-plus-year career as a sales representative for Eli Lilly and three years as a staff pharmacist with North Colorado Medical Center, **Budd Pippin, BPharm '65**, has retired and is living in Venice, Florida with his wife, Judi. Budd may be reached at [buddjudi@aol.com](mailto:buddjudi@aol.com).

**Lori Fitzgerald, BS '99**, and her husband, Tim, welcomed their first child, Delaney Grace in April '09. She is a beautiful 2-year-old, who was born in Kolomna, Russia. Lori is currently a staff pharmacist at Kaiser Permanente. Lori can be reached at [Lori.A.Fitzgerald@kp.org](mailto:Lori.A.Fitzgerald@kp.org).



Since leaving the university in '92, **Glenn Appelt, PhD and RPh '63**, and his wife Jennifer, have built their dream home on the Gulf of Mexico in South Alabama. "We've gotten to shore it up several times after a few big storms!" says Dr. Appelt. After having worked as a consultant/staff pharmacist at a Mobile infirmary while teaching part-time at the University of South Alabama in the cardiorespiratory care department, Dr. Appelt now teaches basic biology and chemistry for an accredited distance education university (Columbia Southern University in Orange Beach, Ala.). Presently, he and his wife divide their time between the beach in the sunny south and a condo in an historic lodge in Estes Park, Colo. Classmates and former students may contact Glenn at [gulfgator@aol.com](mailto:gulfgator@aol.com).

**Anna Nguyen, PharmD '04**, who works and lives in California dropped by the SOP while visiting her sister, Thuy, a first-year UC Denver pharmacy student. Nguyen combined visiting friends and family with celebrating her younger sister's acceptance into her alma mater. While on campus, Nguyen toured the facilities and was impressed by "the fantastic new campus."



**Margaret Cording, BCPS '75**, has the distinction of having attended three campuses while at CU – Colorado Springs, Boulder and Denver! Having worked in many states and countries (Georgia, Virginia, California, Iceland, and Japan), for the Navy, the Army and civilian hospitals, Cording's career has been extremely varied and rewarding. In between the moves, she managed to complete her PharmD from Idaho State University. Today, Dr. Cording is the pharmacy ambulatory care clinics supervisor at the Naval Medical Center in San Diego.

**Denese Clark (formerly Mott), '89**, and **Kim Rhoades, '90**, recently dropped by the SOP while at the Anschutz Medical Campus attending a meeting. The two, employees of Kaiser Permanente, were given a tour of the campus and shown the site of the new pharmacy building. Should you wish to connect with them, contact Denese at [Rxgirl1989@hotmail.com](mailto:Rxgirl1989@hotmail.com) and Kim at [Kimberrhoades@msn.com](mailto:Kimberrhoades@msn.com).

Former faculty member, **Dr. F.C. Hammerness**, just 88 this past August, is still enjoying his retirement years. He lives in Yuma, Ariz. and is pictured here with a friend from his mobile home park. They know to spend the 120 degree days indoors. Occasional trips to see family and friends in California also provide relief. Hamm recently reminisced about the 50th and 75th anniversaries of the school and we hope to see him at the 100th.



## 2006 Graduate Receives Distinguished Clinical Practitioner of the Year Award

**Frank Breve, '06 PharmD**, has been named Clinical Practitioner of the Year by Temple University. Dr. Breve received his BS in pharmacy from Temple University in 1981 and his PharmD in the non traditional program from the University of Colorado Denver School of Pharmacy in 2006.

"Getting my doctorate was the best thing I've ever done. It took five years, but it was well worth it. It has opened many doors for me," says Dr. Breve. Those doors include being invited to serve on clinical focus groups and speakers' bureaus, as well as being the keynote speaker at this year's White Coat Ceremony at Temple University.

"The non traditional program was great. It was flexible and worked with my schedule." Because he was already a pharmacist it was difficult to justify taking time off from his career to pursue his doctorate in a traditional manner. "This program allowed me to complete the work on my terms."



"This program allowed me to complete the work on my terms." 

ALUMNI

# '79 Reunion

Alums from the class of '79 came from as far as Hawaii and as near as Stapleton to attend their 30-year class reunion.

Representing eight states – Arizona, California, Colorado, Hawaii, Kansas, Michigan, New Mexico, and Texas – 50 percent of the class (27 of a total of 55 classmates) attended some part of the festivities.

The weekend, planned by Judy McEvitt (formerly Bergstreser), was packed with activities including a reception and tour of the Anschutz Medical Campus where attendees toured the Eisenhower Suite in the old Fitzsimons Hospital (where President Eisenhower stayed during his recovery from a heart attack while in office), experienced how students learn interactively in the classroom today with a high tech presentation of “Clicker technology” by faculty member Dr. Sheryl Vondracek, and were treated to rooftop views of the campus. The weekend included lunch at old haunts like the Bull & Bush (where the class has its own plaque!), dinner at the Millennium Harvest House, and tickets to the CU-Wyoming football game, which included pre-game festivities and a meet-and-greet with Dean Altieri.

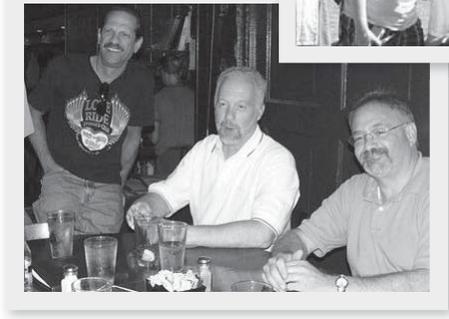
With plenty of opportunities to reminisce, the class of '79 enjoyed the weekend and some even began making plans to attend the school's 100th anniversary celebration in 2011.



1.



2.



3.



4.

1. Classmates from the class of '79 tour the Anschutz Medical Campus. Top, left to right: Steve Calderon, Carl Pansini '80, Craig Murobayashi, Michael Filner, Scott Eskanos, Paul Limberis, Michelle Murphy, and Karen Floyd. Bottom, left to right: Kevin Smith, Judy McEvitt, Carol Troyer, and Jan Bender.
2. Pictured with CU mascot Ralphie, Nancy Robare, Kevin Smith and Judy McEvitt.
3. Enjoying a little R & R at the Bull & Bush, Michael Filner, Carl Pansini and Scott Eskanos.
4. Susan and Jerry Lambrecht reminisce with Debbie and Chuck Stevenson during dinner at the Millennium Harvest House



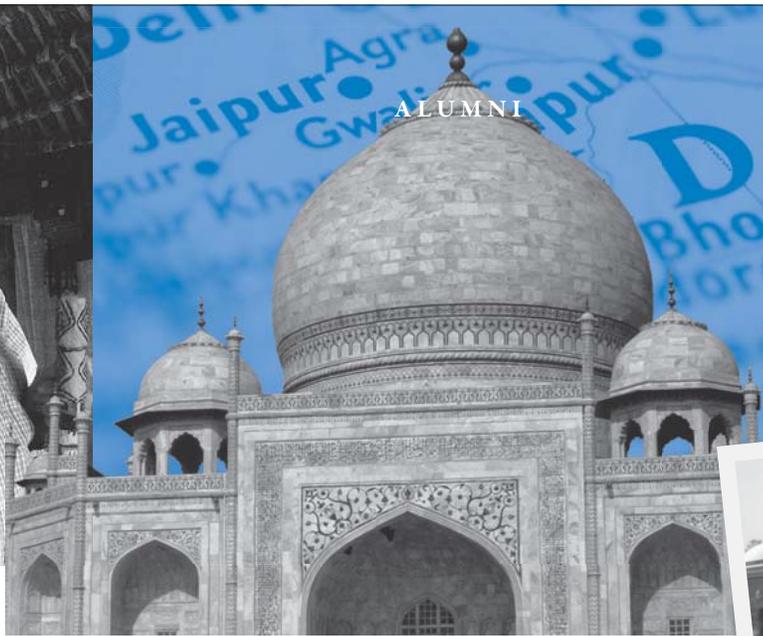
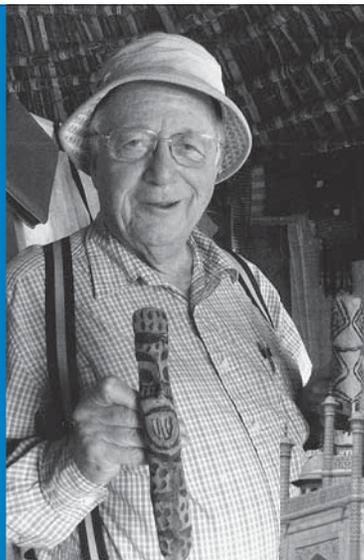
Craig Murobayashi & John McEvitt

Paul Limberis & Karen Floyd

Judy McEvitt

Bill Morck & Jan Bender

Carol Troyer, Claudia Smith, and Nancy Robare



## Globe trotting alum

# OUT OF THE WILDS

At 81 years young, Henry Strauss, '51 RPh, is still going strong. The only obstacles for this octogenarian seem to be heat and humidity. Trips that would exhaust a much younger man are a cakewalk for Strauss. But his recent excursion to India with his wife, Joan, proved too much for this world traveler. Heat, humidity and the lack of air conditioning were his undoing.

Visiting South Asia specifically to expand Joan's international adoption agency, International Adoption Net (IAN), the Strauss' decided to merge business with pleasure and "see the sights." IAN, a nonprofit organization, was contacted by the Nepalese government in the hopes that Joan would consider adding Nepal to the roster of countries she represents. Currently, IAN places more than 100 children annually from a variety of countries including Uzbekistan, Guatemala, Kazakhstan, and Ethiopia.

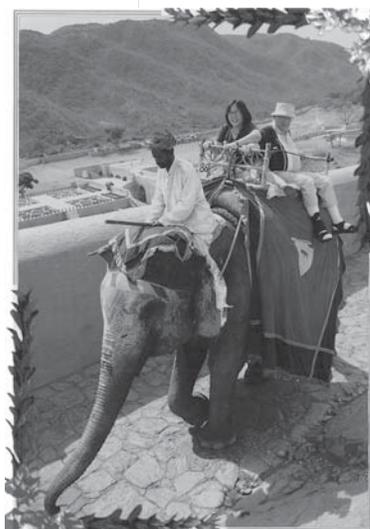
So, for 18 days, the Strauss' visited orphanages, talked with facilitators, and managed to squeeze in visits to the Taj Mahal, the Amer Fort and Palace in Jaipur, Kathmandu, the Ganges River, Tibet, and a trip to the Royal Chitwan National Park. And it's that trip into the jungle that proved to be the proverbial "straw that broke the camel's back" for Strauss.

April in South Asia is not like springtime in the Rockies. With 100+ degree temperatures and equal amounts of humidity, the weather can be oppressive. But liberal amounts of air conditioning relieve the sweltering heat. Unfortunately for Strauss, a five hour excursion into the jungle via bus, riverboat and Jeep – sans air conditioning – ended with heat exhaustion, a call to the American Embassy, and a helicopter ride back to civilization. Little did Joan and Henry know that the helicopter ride would be the high point of the trip. For two hours, the couple got a birds' eye view of the Himalayas and even saw Tibetan farmers tilling the land.

"Once out of the jungle, I bounced right back. But that trek into the jungle was rough," says Strauss.

After a few months in dry, cool Colorado, Strauss and his wife are ready for their next adventure. But you can be sure that they will double check the fine print wherever they travel to ensure that air conditioning is included!

Little did Joan and Henry know that the helicopter ride would be the high point of the trip. 🌿



*Joan and Henry Strauss atop an elephant while traveling in India.*

Name:  
**Pharmacy and  
Pharmaceutical Sciences Building**

New Home Of:  
**The Skaggs School of Pharmacy and  
Pharmaceutical Sciences**

Size:  
**165,000 square feet**

Price:  
**\$59.5 million**

Completion Date:  
**January 2011**

Architect:  
**HOK**

Contractor:  
**Mortenson Construction Company**



Construction on the School of Pharmacy's new building is progressing as planned, and according to Susan Saunders, director of facilities and planning, is "on budget and on schedule." The anticipated date for completion and move in is early 2011 – just in time to celebrate the 100-year anniversary of the school.

The new \$59.5 million, 165,000 square-foot building will include research laboratories as well as administrative, faculty and staff offices. The centrally located building on the Anschutz Medical Campus, situated between the library and the Henderson Parking Garage, is within two blocks of the education zone, classrooms and students.

In an effort to be environmentally responsible, the school has incorporated many 'green' features into the building. While some are common, such as low flow fixtures in restrooms and laboratories, and the use of low VOC paints, tile and carpet, others are not. Light colored roofing and sidewalks have been incorporated into the design in order to reduce the "heat island" effect. Sustainably produced and recycled products are also being used throughout the building. Even the brick will be supplied from a source within 500 miles of the site. "The construction process has been specifically geared to carefully manage the recyclable materials being used on the project, as well as the collection and disposition of 'remnants' for reuse," says Saunders.

Upon completion and occupation of the Pharmacy and Pharmaceutical Sciences Building, the school will be renamed the Skaggs School of Pharmacy and Pharmaceutical Sciences in recognition of the Skaggs family and The ALSAM Foundation for their long-standing support of the school's buildings and educational programs. Most recently, in late 2006, the foundation committed \$10 million for the construction of the new building and followed that gift in 2008 with an additional \$1 million.



✕

## We'd like to hear from you

Comings, goings, marriages, births, retirements, honors, accolades and other events that are important to you are important to us, too. Tell us your news and we'll share it with classmates, alumni, students, faculty and friends. Use this form to send a class note OR an e-mail to [SOPalumni@ucdenver.edu](mailto:SOPalumni@ucdenver.edu)

Please mail to: School of Pharmacy  
C238-L15, Academic Office 1  
Aurora, CO 80045

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*Pharmacy Perspectives* – Volume 1, Issue 3 is published three times a year by the University of Colorado Denver for alumni and friends of the School of Pharmacy. Editor: Dana Brandorff. Contributing Writers: Dana Brandorff and Mary Lemma. Photos: Tom Cherrey, Dana Brandorff, Isabella Muturi Sauve, and Julie Rodriguez. We welcome your comments, news and story ideas.

University of Colorado Denver School of Pharmacy – C238-L15  
12631 E. 17th Avenue, Aurora, CO 80045

SOPalumni@ucdenver.edu – 303.724.4618

## Attending the ASHP Midyear Clinical Meeting?

Join the School of Pharmacy dean and faculty at the Mountain States Reception on Monday, December 7th from 5:30 - 7:30 p.m. at Harrah's Las Vegas.



## When there's a will, there's a way.

### dream big

Your will may be your way to nourish promising, bright minds. Build the leaders of tomorrow. Illuminate new thinking. Spark discoveries.

### spark discoveries

So dream big. Support your passion, make a real difference and leave your imprint on CU (and, perhaps your mark on the world) with a bequest.

### support your passion

To find out how easy it is to make a gift through your will, obtain sample bequest language or learn about other planned giving options, contact our Planned Giving Group, 303.541.1335 or email [planned.gifts@cufund.org](mailto:planned.gifts@cufund.org)

### leave your imprint



UNIVERSITY OF COLORADO  
FOUNDATION

Saturday, Dec. 5, 2009, 4:30-9 p.m., \$10

## Zoo Lights

Celebrate the winter holidays with your family and fellow alums at a private UC Denver viewing of the lights at the Denver Zoo. Afterward, warm up inside with coffee, hot chocolate and snacks. Cost is \$10 per person, children two and under are free. Register by Nov. 30, 2009. A special area is designated for School of Pharmacy alumni.



Friday, Jan. 22, 2010, 7:30 p.m., \$10

## CU Family Night at the National Western Stock Show



CU alumni from across the Front Range will have a blast at CU Family Night at the National Western Stock Show. Your \$10 ticket provides access to the stock show grounds and entrance to the rodeo. Register by Jan. 15, 2010. Don't miss the Mutton Bustin' Contest where future rodeo stars are made! Visit our Web site before Jan. 4, 2010 for details and to submit an entry.

Remember, students and faculty from the School of Pharmacy are on hand conducting

health screenings during the National Western Stock Show, so drop by our booth and reconnect with the school while obtaining valuable health information.

A portion of proceeds from these alumni events will benefit students through scholarships at the University of Colorado Denver.

### Save the Date!

## Advances in Pharmacy Practice: 2010

Plan now for the *Advances in Pharmacy Practice: 2010* continuing education symposium, which will be held on Saturday, February 20, 2010 at the Anschutz Medical Campus in Aurora. Six contact hours of ACPE-accredited continuing education will be provided, with updates in key areas of interest for pharmacists. The following topics are planned: Law/rules & regulations update, new drugs; and clinical updates in the areas of osteoporosis, pain, HIV, and alternative medications.

Please watch for updates on programming on the UC Denver School of Pharmacy CE Web site: <http://UCDenver.edu/SOPprogram>