Fertility Program Minimizes Financial Burden for Couples

By Jamie Davis
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Angie and Chris Sherman sold a house they loved for a cheaper one and downsized their car. They evaluated their expenses and cut back where they could—all for the chance to become parents. Seventeen thousand dollars later and after years of failed attempts to conceive a child naturally and through various fertility treatments, Angie and Chris say “it’s all worth it” every time they look at their daughter, Isadora.

The treatment that finally worked for them was in vitro fertilization (IVF)—an assisted reproductive technique that involves stimulating the ovaries with fertility medications to make extra eggs. The eggs are then removed and fertilized with the partner’s sperm in a lab and allowed to grow into embryos. One or two embryos are then transferred into the uterus. “We were really lucky because we conceived Isadora on the first IVF attempt,” says Angie. “But that isn’t the case for many couples.” See FERTILITY page 4

Brain ‘Checkpoint’ Might Control Appetite

By Dama Kimmon
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A cell-signaling pathway in the brain that is linked to the development of cancer and diabetes is also a key part of networks that regulate food intake, say UC researchers. The finding might one day lead to new ways of helping obese people lose weight, either with new drugs or by carefully designing diets that can activate this pathway. Scientists from UC’s Genome Research Institute demonstrated that the signaling pathway mTOR—activated by nutrient and hormonal signals—plays a role in the brain’s ability to sense how much energy the body has available. This finding, the researchers say, suggests that very specific micronutrients may drive these pathways in the brain and could lead to a more scientific approach to diet design to help regulate body weight.

The study, led by Randy Seeley, PhD, professor of psychiatry, appeared in the May 12 issue of the journal Science. Ingesting calories (energy in the form of nutrients) has two purposes, says Dr. Seeley. “We take in calories to maintain levels of stored fuel (energy) and adequate available fuel,” he says. “The signals that tell our brain about both the stored and the available energy in our body can activate the mTOR pathway in key parts of the brain that control appetite.”

Knowing that mTOR basically serves as a “checkpoint” for sensing energy changes, the researchers predicted that it could be manipulated to alter food intake. The mTOR pathway is very sensitive to “branch-chain” amino acids, particularly leucine, Dr. Seeley explains. In laboratory studies, he and his team found that when they administered leucine

Training Tomorrow’s Scientists

By David Bracey
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The first in the Midwest, the new PhD program that will train tomorrow’s scientists to analyze and apply the burgeoning amounts of biological data now being provided by genetic research.

The first in the Midwest, the new doctorate in systems biology and physiology PhD program. At work on the confocal microscope is research associate Michael Craig.

New PhD Program Aims to Take Science Education into the ‘Post-Genomic Era’

By Amanda Harper
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UC has introduced a visionary PhD program that will train tomorrow’s scientists to analyze and apply the burgeoning amounts of biological data now being provided by genetic research.

The first in the Midwest, the new doctorate in systems biology and physiology will take science education into “the post-genomic era,” says program director Nelson Horsemann, PhD, professor of molecular and cellular physiology.

“Genetic scientists are delivering more and more information,” says Dr. Horsemann. “Our job is to understand how it works in the context of complex biological systems, and ultimately the human body.”

“Knowing the human genome is like knowing the thousands of components of an automobile,” he explains. “You have to understand how they’re connected, and how they affect each other. It’s not enough just to know you have a gas pedal—you have to know its effect on the engine.”

“In science we might know the genomics, but if that’s all we know, we’ll miss something surprising about how systems function—until we analyze them.”

The goal of the systems biology and physiology PhD program, Dr. Horsemann says, is to combine the latest research tools, “all essentially driven by a vast amount of computer power,” and bring them to bear on the questions scientists are asking.

The tools—which include DNA sequencing, data base research, gene expression profiling, high-throughput biological assay and multiphoton microscopy—are available in a number of different UC labs. Using several of these techniques, Dr. Horsemann says, “we found that serotonin, a chemical usually associated with the brain

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New Surgical Innovation Center Expands ‘Frontiers of Medicine’

By Amanda Harper
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On June 1, UC unveiled a new asset: a permanent home for its Center for Surgical Innovation (CSI), a state-of-the-art teaching and research center dedicated to expanding the frontiers of medicine through research and innovative thinking.

Founded about three years ago, the CSI has already made significant progress. An interdisciplinary collaboration between the departments of surgery and biomedical engineering and leading government and industry partners, the center’s mission is straightforward: to leverage regional assets and become a world leader in innovative approaches in medical practice and education.

In literal terms, the CSI is a 3,700-square-foot facility that includes an eight-bench teaching lab, equipped with advanced audiovisual and telecommunication capabilities. Prior to its grand opening on June 1, the Center for Surgical Innovation conducted a hands-on teaching symposium for more than 70 cardiothoracic surgery residents and physicians from across the United States.

See CENTER page 3
The College of Medicine has con- firmed its highest honor, the Daniel Drake Medal, on two faculty mem- bers for outstanding contributions to medical education, scholarship and research. William Balistreri, MD, and Alvin Crawford, MD, received their medals during an awards banquet on May 27.

William Balistreri, MD
Dr. Balistreri, a professor of medi- cine at UC, was selected for his distin- guished leadership in medical research and education.

One of the world’s foremost authorities on pediatric gastroenterology and liver disease, Dr. Balistreri is also medical direc- tor of the Pediatric Liver Care Center and Pediatric Liver Transplant Program at Cincinnati Children’s Hospital Medical Center (CCHMC).

Dr. Balistreri earned his medical degree at the University of Buffalo. He was a pediatric resident at Cincinnati Children’s from 1971 to 1972 and a postdoctoral fellow from 1972 to 1974. He completed a research fellowship in gastroenterology at the Mayo Clinic before being appointed assistant professor of pediatrics at the University of Pennsylvania School of Medicine. Author of more than 400 publi- cations, Dr. Balistreri is editor of Journal of Pediatrics, editor-in- chief of Journal of Pediatric Gastroenterology and Nutrition and coeditor of Liver Disease in Children.

Dr. Balistreri has held office in or on a number of major scholar- ship societies, including the North American Society for Pediatric Gastroenterology and Nutrition. In 2000 he became the first pedia- trician to serve as president of the American Association for the Study of Liver Diseases.

Dr. Balistreri’s honors include the Distinguished Leadership Award from the Crohn’s and Colitis Foundation of America, the Andrew Sass-Kortsak Memorial Award from the Canadian Liver Association and the Canadian Association for the Study of Liver, the Murray Davidson Award from the American Academy of Pediatrics Section on Gastroenterology and Nutrition and the Shawacman Award from the North American Society for Pediatric Gastroenterology and Nutrition.

Alvin Crawford, MD
Dr. Crawford was recognized for his leadership in clinical education, research and education.

Director of CCHMC’s Spine Center and UC professor of orthopedics and pediatrics, Dr. Crawford was the first African- American graduate of the University of Tennessee College of Medicine. He started his residency in orthopedics at the Boston (Chelsea) Naval Hospital and com- pleted it at the combined Harvard University Orthopedic Program as a navy-sponsored resident.

Dr. Crawford received fellow- ship training in pediatric orthope- dic surgery at Children’s Hospital Medical Center, Boston, and taught gross anatomy at Harvard Medical School. He also held a pediatric orthopedic fellowship at the Alfred I. DuPont Institute in Wilmington, Del.

Dr. Crawford has published more than 237 articles and abstracts, six books and 53 chap- ters, and has received numerous awards and honors. Recent honors include the dedication of the Alvin H. Crawford, MD, Chair in Pediatric Orthopedics at Cincinnati Children’s and the Founder’s Award from the Cincinnati Pediatric Society.

Dr. Crawford is president of the Scollisi Research Society and vice president of the American Orthopedic Association. He also is a member of the Food and Drug Administration’s Panel for Orthotic and Rehabilitation Devices and serves on the Board of Directors of Ohio National Financial Services.

The Daniel Drake Medal, bestowed on distinguished living faculty and alumni, honors the frontier physician who founded the College of Medicine, the first medical school west of the Alleghenies. Fifty-three medals have been awarded since 1983.
Many in the College of Allied Health Sciences have been on for 100 years—before the allied health sciences college even existed. That started as two days a week quickly turned to four, and she’s been carrying that workload ever since.

As an adjunct clinical faculty member in the department of communication sciences and disorders, Breen has taught the introductory clinical process course to undergraduates and clinical skills to graduate students while also supervising their first practicum experience. She also serves as director of the on-campus speech-language clinic and teaches a practicum for the department’s newly formed distance-learning program.

But probably her biggest task involves managing the clinical practicum activities of master’s degree students in speech-language pathology—more than 60 students each year needing at least three clinical placements each.

“A few years ago I told my students that I’m a matchmaker,” says Breen. “I thought about it for a second and said, ‘I guess I am!’”

Breen teaches the community for locations serving people with speech-language problems, evaluates those sites and then interviews students to find the perfect match. She puts great care into her “matchmaking” because she knows that clinical experiences can set the tone for a student’s career.

Before coming to UC, Breen worked at various clinical sites around Cincinnati, Detroit and Milwaukee, helping people with speech-language problems. It’s experience like that, she says, that makes adjunct faculty such an important part of the university.

“Adjunct faculty have the important role of adding to the knowledge and skills they are working with,” says Breen. “What we really need to do this, as engineers, is to develop and assemble all the components of the airplane before they fly the plane the first time.”

But biology isn’t anywhere near that. But this is what the future will be. At some point we’ll have the same kind of knowledge about interacting biological systems—starting with bacteria and then on the human being—as engineers have about airplanes.

“When we understand that well enough, we’ll be able to model biological systems on computers and know which component is working properly, and fix it if it’s not,” says Dr. Horserman.

“Genome science is giving us lots of raw material that we might need to use this,” Dr. Horserman says, “but doesn’t tell us anything about how they would work together. This program and others like it will change that.”

UC’s systems biology and physiology doctoral program, which started in January, is believed to be one of only half a dozen in the country.

For more information on the program, call (513) 558-2536, visit www.uc.edu/phd or e-mail bette.young@uc.edu.
Millions of Allergy Sufferers Still Thank George Rieveschl

By Jill Hazen
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The man who continues to help the world breathe easier was honored by UC for his discovery during a reception held May 16. George Rieveschl, PhD, invented the world's first effective antihistamine. He was recognized by UC officials in conjunction with the 60th anniversary of the drug, commonly used to treat allergy symptoms, such as hay fever, rashes and hives.

Dr. Rieveschl is a chemical engineering professor at UC when he discovered that his new, two-part compound could be tested to improve muscle-relaxing medications, dramatically blocked histamine, a chemical released in the body that narrows air passages in the lungs and causes inflammation.

This “surprising” breakthrough led to Benadryl becoming the first FDA-approved prescription antihistamine in 1946. The drug was first produced by Parke, Davis and Company, but is now distributed over-the-counter by the Parke-Davis division of Pfizer, Inc.

Despite being one of the oldest antihistamines on the market, Benadryl is still considered one of the most effective, either by prescription or over-the-counter.

In addition to treating allergies, the drug is used to prevent and treat motion sickness, induce sleep, control Parkinson’s disease symptoms and relieve cough caused by stomach irritation.

Dr. Rieveschl is currently a professor emeritus of environmental engineering at UC.

UPCOMING EVENTS

JUNE 4
13th Annual Greater Cincinnati Cancer Survivors Day

Naon & B&B Rivertours on the Ohio River
Join fellow cancer survivors during this national celebration.
Day includes lunch, entertainment and door prizes. Cost is $30. Call (513) 686-5555 or visit cancervitastoday.com.

JUNE 10
All-University Commencement
9:45 a.m., 1:45 p.m.

Fifth Third Arena

Commencement ceremonies for the colleges of nursing and pharmacy will be held at 9:45 a.m. The ceremony for the College of Allied Health Sciences will be at 1:45 p.m. For detailed graduation information, call (513) 556-4190 or visit www.uc.edu/commencememt.

JUNE 19
UC Cancer Center Golf Tournament
All Day

Snow Hill Country Club

Becoming the UC Cancer Center, golf teams will compete for a chance to win great prizes. Registration is $125 per person. Call (513) 321-2268.

NEWS EXTRAS

Graduation Numbers Soar

This Academic Health Center will graduate more than 480 students from all four colleges this spring. On May 26, the College of Medicine graduated 150 students, all of whom will further their training at residency programs across the nation.

On June 10, the colleges of allied health sciences, nursing and pharmacy will hold their respective commencement ceremonies. The College of Allied Health Sciences will graduate 108 students, including 39 in communication sciences and disorders, the largest class within the college.

Nearly 100 students will graduate from the College of Pharmacy. The college achieved a 100 percent placement rate for PharmD students.

Nursing is expected to graduate 116 undergraduates and 11 master’s and doctoral degree candidates. Students will take the registered nurse exam in July.

Unsung Hero for Cancer

Nader Husseinzadeh, PhD, professor of obstetrics and gynecology, was recently honored by Cancer Family Care as an “Unsung Hero” in cancer care. The award—given annually to a small group of oncology professionals, patients and caregivers—recognizes individuals “who go above and beyond to help cancer patients while never seeking praise or recognition.”

Dr. Husseinzadeh was recognized at a banquet on May 16.

LeMasters achieves UC First

Grace LeMasters, PhD, professor of epidemiology, has become the first female scientist ever to receive the Professional Accomplishment in Cancer Sciences Award from the Cincinnati Engineers and Scientists Association. She was selected for her contributions to science as an independent researcher, industry adviser and mentor for environmental health students.

Golf for UC Cancer Research

Pros and amateurs alike are invited to golf for a good cause at the first UC Cancer Center golf classic. The 18-hole event—in support of a sumptuous food and drink setup and activities from the high point of the tournament—will be slotted for June 19 at the Snow Hill Country Club, 11093 State Route 73, New Vienna. Players will tee off at 11 a.m. The tournament is $225 per person and must be received by June 4. Complimentary breakfast, lunch and beverages are included. To register, call (513) 321-2268.

FERTILITY: Affordable Assisted Pregnancy

From page 1

“Although the majority of patients will be successful with IVF treatment, the reality is most patients will need more than one cycle to be successful,” says Daniel Williams, MD, professor of obstetrics and gynecology and director of the IVF program, a partnership of UC and Christ Hospital. “One of the biggest issues with IVF, of course, is the cost.”

But, Dr. Williams and his colleagues hope that a new IVF program at the Center for Reproductive Health (CRH), called the IntegraMed Shared Risk Refund Program, will help eliminate some of that stress.

Patients pay one fee (excluding the cost of medications) and may attempt up to three IVF cycles and three frozen embryo transfer cycles. If a baby is not born, 70 percent of the fee is returned (100 percent if donor eggs are used).

“The average person has difficulty affording just one cycle,” says Dr. Williams. “This program benefits those who undergo IVF because they’re able to go through more than one cycle for one fee.”

Fees for IVF programs vary across the country, but the cost of one fresh and one frozen IVF cycle at the CRH is $7,800 (without medications). The fee for the Shared Risk Refund Program is less than two cycles.

The Schermans would have taken advantage of this program if it had been offered when they were undergoing IVF.

“Your pay so much money to get pregnant and you feel like you only have one shot. If it doesn’t work, you may not be able to afford to go through it again,” says Angie.

Stress also causes some couples to need more than one cycle.

“There are so many things about IVF that are stressful,” adds Angie. “You worry about the cost and if it will work. If you can relieve that pressure by not having to pay for another cycle if it’s needed, you might be less stressed and more successful in getting pregnant.”

For more information, visit www.ucfertility.com or call (513) 581-3341.