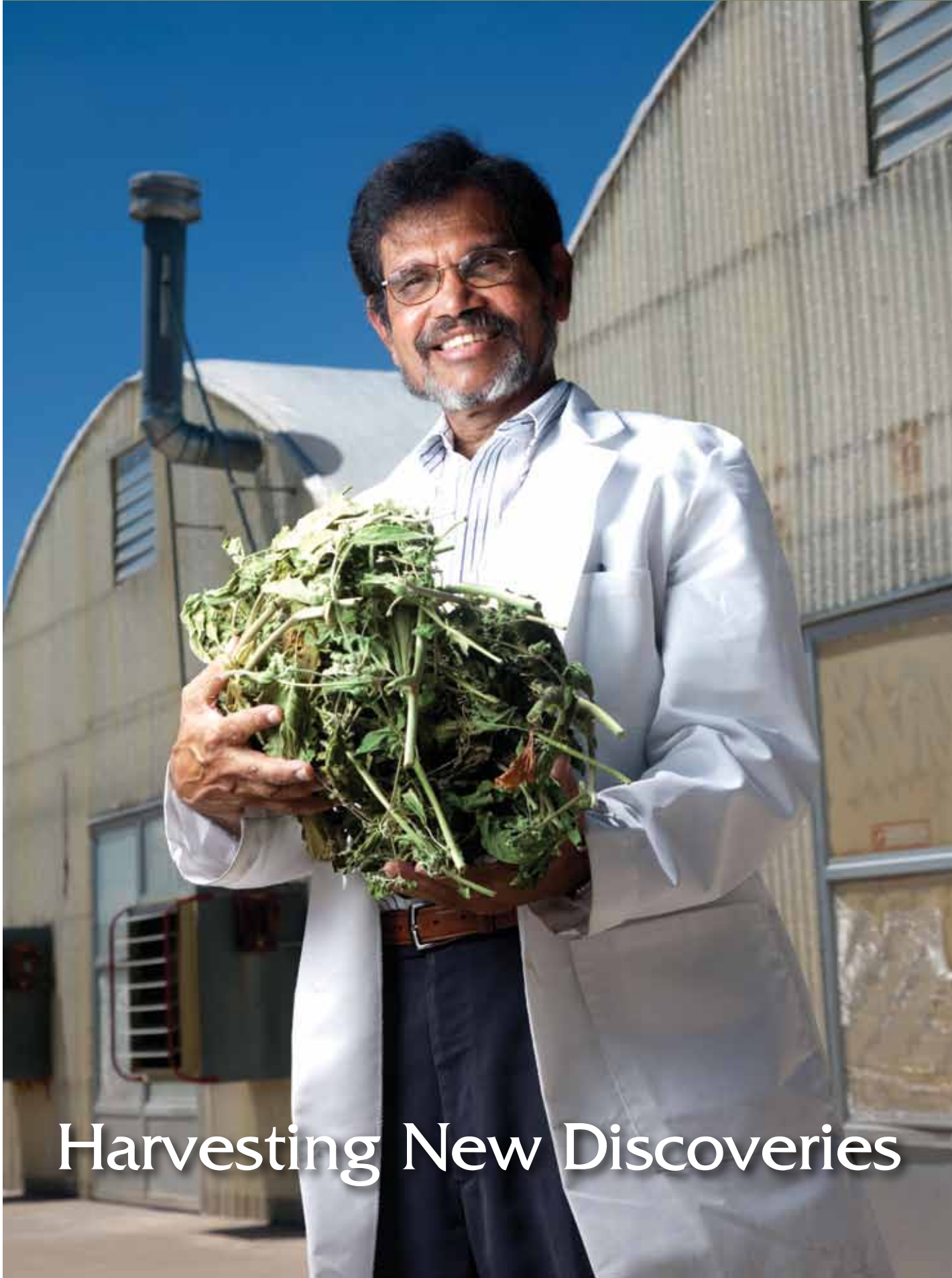


In this issue:

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Harvesting New Discoveries

Director's Message



A recent American Cancer Society report outlining the true financial costs of cancer around the globe gave me pause to ponder. We know the human, personal, individual toll of cancer when it strikes a loved one or ourselves. But cancer presents economic impacts as well – in productivity and disability and years of life lost, not to mention the actual costs of treatment.

That's why research undertaken at comprehensive cancer centers, like the Arizona Cancer Center, has such great societal importance. We want to continue to find the causes and cures and preventative measures for these more than 200 individual diseases called cancer.

By doing so, the Arizona Cancer Center can have an impact on this global challenge. We will continue to grow our international partnerships with a generous grant from the Atlantic Philanthropies to create a Pan-Pacific Skin Cancer Consortium with the Queensland Institute of Medical Research in Brisbane, Australia. The initial one-year, \$500,000 award, shared between the two institutions, will fund new international collaborations.

It takes a village – no, an entire world – working together to fight cancer. But fighting it we are, and we intend to beat it.

Sincerely,

David S. Alberts, MD
Arizona Cancer Center Director

On the cover

Leslie Gunatilaka, PhD,
holding dried *Withania somnifera* leaves.
See page 6 to read more.

Photograph by David Sanders
www.davidsandersphotos.com



Samantha Kendrick, a CBIO student, with her mentor, Laurence Hurley, PhD.

director of the Arizona Cancer Center's Therapeutic Development Program and UA professor of pharmacology and toxicology.

Dr. Hurley's lab focuses on novel molecular targets called DNA secondary structures, which act as switches that turn gene expression on or off. The goal is to create new therapeutics by using small molecules to manipulate DNA secondary structures and turn overexpressed oncogenes off.

Kendrick began studying the Bcl-2 gene, which is overexpressed in a variety of cancers – lymphoma, prostate, breast, small cell lung carcinoma – and plays a role in chemotherapy resistance.

"Obviously for cancer we would like to turn this gene off so we can improve existing chemotherapy," she said.

After years of research, Kendrick discovered a new class of drug receptors and a lead compound. She was able to show that a particular structure formed

within the Bcl-2 region of DNA and she also found a Bcl-2-interactive compound that turns the overexpressed oncogene off. Her experiments demonstrated that chemotherapy alone couldn't kill chemo-resistant lymphoma cells, but when treated with chemotherapy and the Bcl-2-interactive compound, resistant cancer cells became sensitized to the drug and died.

"I believe this is one of the most important discoveries to come out of my lab," Dr. Hurley said. "Identifying a new class of drug receptors and a lead compound is a rare event."

Beyond being a professional accomplishment, the discovery had personal significance to Kendrick, who learned a year and a half ago that her husband has Hodgkin's lymphoma. He was treated by Arizona Cancer Center physicians and is now doing well, but the experience served to solidify her passion for cancer research and her interest in chemo-resistant lymphoma.

"It just shows that the research being done here is very applicable to what's going on in the clinic," she said.

Kendrick plans to defend her dissertation by December, but the Arizona Cancer Center gets to keep her a bit longer. She is continuing her research as a post-doctoral fellow in the laboratory of Lisa Rimsza, MD, an Cancer Center member and UA pathology professor.

"I'm still interested in pursuing Bcl-2 and how important it is in chemo-resistant lymphoma," Kendrick said. "Now I will be looking at it at the patient level. I'll be looking at a variety of subtypes of lymphomas as well as where they are in their treatment and get some information regarding the differences in the Bcl-2 expression profiles."

Kendrick hopes to go into academia someday, but she's determined to never stray far from translational cancer research.

"All research impacts the clinic at some point, but I want to be closer to that," she said. "I've always remained fairly grounded in how this disease affects people and their caregivers and I want to more directly be able to help them, to have something come of my research that's going to not take so long to get to them. I just really want to help people."

- By Sarah Mauet

Find Your Inner Athlete



From left: Better Than Ever Founder Heather Alberts, participants Darci Slaten and Michelle Skrzypek

Better Than Ever Kicks Off Season 11

Better Than Ever, the Arizona Cancer Center's fitness training program, is kicking off its 11th season this fall – and there is still time to get involved.

Better Than Ever (BTE) encourages people of all ages and fitness levels to take steps toward a healthier lifestyle by training for local running, walking and bicycling events. This season, goal events are the CATwalk 10K, the Tucson half-marathon and El Tour de Tucson's 40- and 66-mile cycling events.

BTE not only helps its participants get fit while having fun, it also helps them fight cancer – in their own lives and in the lives of others. BTE participants help themselves by being physically active, which greatly reduces their risks of developing various cancers and other health conditions, and they help others

by raising funds for cancer research. Proceeds from BTE go to women's cancers research at the Arizona Cancer Center. Fundraising goals are kept low to allow anyone to participate.

Since its inception in 2000, more than 3,000 BTE participants have funded \$1.6 million in research grants – all while having fun, being fit and fighting cancer!

We know athletes come in all ages and sizes; our participants have ranged from 11 to 86 years old. Regardless of your age or fitness level, BTE can help you walk, run or bike across the finish line.

If you're interested in joining Better Than Ever and finding your inner athlete, visit www.arizonabte.org or call Program Coordinator Marisa Allen at (520) 626-7177. Registration deadline is Sept. 20.

- Photo and story by Marisa Allen

STUDENT DISCOVERY DRIVES CANCER INNOVATION

Samantha Kendrick made a scientific discovery, won a competitive award and smashed a gender barrier all while completing her doctoral degree.

A student in the Cancer Biology Graduate Interdisciplinary Program since 2005, Kendrick won the 2010 Student Technology Innovation Award for her discovery of a new class of drug receptors and a lead compound. The University of Arizona recognizes students and faculty members annually for exemplary innovative achievements that contribute to the development of new technology.

"I've been very honored," said Kendrick, the first female recipient in the award's seven-year history. "It's been a privilege and honor to be part of the program and to work with such amazing faculty."

Kendrick, 30, is originally from Canada, but lived in Tucson for six years as a child. The future researcher attended Mountain View High School and got hooked on science her senior year thanks to a series of short, specialized science classes.

"I took genetics and I loved it," she said. "I knew then that I was really interested in biology and diseases and where things go awry."

After obtaining bachelor's and master's degrees from McMaster University in Hamilton, Ontario, Kendrick returned to Tucson in 2005 to pursue a doctoral degree.

"I was looking for a cancer-biology-specific program, and there are not very many," she said. "Here you can take classes like cancer therapeutics and cancer genetics. You spend your first year taking core classes that are all cancer specific so you learn a lot about the pathology of the disease and how it's treated."

Interested in drug discovery, Kendrick chose to conduct her dissertation research in the lab of Laurence Hurley, PhD, co-



Nadia Hassounah, a second year CBIO student, examines a digital scan of prostate tissue.
www.davidsandersphotos.com

FUTURE CANCER RESEARCH SPECIALISTS TRAINED HERE

For 30 years, the Arizona Cancer Center has had a hand in training the next generation of cutting-edge cancer researchers through the University of Arizona's Cancer Biology Graduate Interdisciplinary Program.

The need for a program that specializes in cancer biology is obvious, said Jesse D. Martinez, PhD, the Arizona Cancer Center's chief scientific officer and director of the Cancer Biology Graduate Interdisciplinary Program, known as CBIO.

"The thing about cancer biology – probably more so than almost any other discipline – is that the study and the treatment of cancer involves a lot of disciplines, so it would be difficult to have a cancer biology program that didn't have access to all those different disciplines," said Dr. Martinez, who is also a UA professor of cell biology and anatomy and radiation oncology.

Faculty from five UA colleges and 15 departments are involved in the program. From making the basic laboratory discoveries that improve the understanding of how tumors develop and metastasize, to creating better diagnostics and less toxic drugs to treat patients, there are dozens of specialties that contribute to the discipline of cancer biology.

"All of these people work together, none work in isolation and all are important for conducting cancer research," Dr. Martinez said. "Getting that pipeline going from the most basic kind of discovery at the level of molecules and cells and taking it all the way to the clinic where you treat a patient and see regression of a tumor, it takes a lot of people."

While many universities offer classes and graduate programs that may touch upon cancer, the UA Cancer Biology Graduate Interdisciplinary Program is one of the few that focuses exclusively on cancer across all the related disciplines of science.

Damian J. Junk, PhD, a 2008 CBIO graduate who is now a postdoctoral fellow at Case Western Reserve University, chose the program not only because of its cancer-specific focus, but also because of the Arizona Cancer Center's mission: to prevent and cure cancer.

"It truly was a pioneering program," he said. "Also, it was the only program that seemed to dare talk about a cure for cancer. Nowhere else that I visited dared to be so bold as to speak of a cure. I felt that it was the right place for me, because I trained as a cancer biologist not to just get a good job, but to do my very best to end the suffering induced by cancer."

"The Arizona Cancer Center's mission is to treat and cure cancer. Nowhere else that I visited dared to be so bold as to speak of a cure."

- Damian J. Junk, PhD

Many other applicants share this sentiment. As a result, the CBIO program is in high demand and acceptance is very competitive, said Program Coordinator Anne Cione.

"We get 60 to 80 applicants a year and we only accept three to four," she said. "Our students are really focused. They know what they're doing, and they want to get out there and do it. Every student has a personal reason why they want to cure cancer."

In August, a new group of students began their CBIO journey, bringing the program total to 22 graduate students. The class is kept small to ensure only the most dedicated and driven candidates are admitted and that each receives personalized instruction and mentoring.

"It's a really good learning environment," said Nadia Hassounah, a second year CBIO student. "I think it's a great program."

The first year, students take a wide range of cancer-focused classes that hone their knowledge of the disease. They then choose areas of special concentration such as biochemistry, molecular and cellular biology, pharmacology or microbiology.

"I enjoyed taking the core set of CBIO courses taught by experienced professors, and also enjoyed the opportunity to take a variety of courses cross-listed in other departments for my minor and electives to round out my graduate coursework," said Sarah T. Wilkinson, PhD, a 2008 CBIO graduate who is now a post-doctoral fellow in the laboratory of Lisa Rimsza, MD, a Cancer Center member and UA pathology professor.

The in-depth cancer study ensures that students have the necessary background to enable them to conduct original research at the Arizona Cancer Center and in other laboratories around campus. At the end of their first year, students pick an advisor's laboratory in which to work and a related dissertation topic to pursue.

"The graduate students are an important part of the research process," Dr. Martinez said. "Not only do they get an education, but they are right in the trenches of the process that leads to new cancer discoveries."

On average, students complete the program and receive their PhDs in four and a half years. Once they're finished, they are ready for cancer research, said David J. Samuelson, PhD, a 2001 graduate of the program who is now an assistant professor at the University of Louisville School of Medicine and Department of Biochemistry and Molecular Biology.

"The Arizona Cancer Biology Graduate Interdisciplinary Program provides comprehensive training to early career scientists," he said. "This training positions them to further pursue an independent career in an academic, government or industrial research setting."

Since it began in 1988, 60 scientists have completed the CBIO program. Several have stayed at the Arizona Cancer Center to complete post-doctorates and a few, such as 2002 graduate Nhan Tran, PhD, have become CBIO faculty members.

"Our students get good training and they go good places," Dr. Martinez said. "About 50 percent go into industry and 50 percent go into academia. Our students almost exclusively go on to do cancer-related research or work in a field that has an impact on cancer research."

- By Sarah Mauet

FUNDING THE FUTURE

The Cancer Biology Graduate Interdisciplinary Program (CBIO) has anywhere from 20 to 35 students enrolled in a given year. Class size is kept small to ensure students receive personalized mentoring, but it's also limited by funding.

"Funding is definitely a big influence on the program," said Jesse D. Martinez, PhD, director of the CBIO program. "Students can only go into laboratories of faculty that have funding for them. Sometimes it's a struggle for us to find funding, but we've never let a student lapse due to lack of funding."

NEW DIRECTOR, NEW DIRECTIONS



The Cancer Biology Graduate Interdisciplinary Program is under new management.

G. Timothy Bowden, PhD, the graduate program director since 1992, retired in June, and Jesse D. Martinez, PhD, UA professor of cell biology and anatomy and radiation oncology, took over the position.

Dr. Martinez has been involved in the CBIO program since he came to the Arizona Cancer Center in 1991 and is excited about his new post.

"The field of cancer biology changes by leaps and bounds all the time," he said. "Because the field of cancer prevention and treatment changes so quickly, we have to be certain that we're up-to-date. This will give me an opportunity to make sure that those new things get incorporated into the curriculum of the cancer biology program."

"If I don't do the research that cures cancer, maybe I will produce a student who will."

- Jesse D. Martinez, PhD

Dr. Martinez also took over as the Arizona Cancer Center's chief scientific officer and, in addition to his new roles, is also the director of education, an investigator in the Cancer Prevention and Control and Gastrointestinal Cancer programs and the research principal investigator for the Partnership for Native American Cancer Prevention, a joint program of the Arizona Cancer Center and Northern Arizona University.

"Jesse Martinez has not only excelled as a National Cancer Institute-funded cancer researcher at the Arizona Cancer Center, but as an outstanding teacher and mentor," said David S. Alberts, MD, director of the Arizona Cancer Center.

Dr. Martinez recently received nearly \$1 million from the National Cancer Institute for a four-year colon cancer chemoprevention study.

"One of the motivations for me doing cancer research was that my mom died of colon cancer," Dr. Martinez said. "You can find those types of stories with just about everybody associated with the cancer biology program – students, faculty, staff. Everyone has a story of being touched by cancer in some way. I hope we can do something about it. If I don't do the research that cures cancer, maybe I will produce a student who will."

- By Sarah Mauet

Since 1978, the program has received continuous funding from the National Cancer Institute's Cancer Biology T32 Training Grant, which provides stipends for pre-and post-doctoral trainees. Students are also supported through funds provided by their major professors and generous donors, such as Therese Berg (see page 10).

For more information about funding student research at the Arizona Cancer Center, please contact the Development Office at development@azcc.arizona.edu or (520) 626-5279.

PLANTING SEEDS FOR CANCER RESEARCH

Take a look outside. Where you may see a rocky landscape filled with prickly desert plants, one Arizona Cancer Center member sees a field of possibility.

Leslie Gunatilaka, PhD, looks at arid plants and the microorganisms that live in association with them for new cancer drugs and their drug targets.

As the director of the University of Arizona's Southwest Center for Natural Products Research and Commercialization, known as the Natural Products Center, he and his team have discovered several compounds in desert organisms that can significantly inhibit the growth of tumors. They have also developed a new method to improve the production of natural products by using an innovative cultivation method.

"A lot of people think drugs come out of a test tube, but a little over 70 percent of cancer drugs come from natural sources," said Dr. Gunatilaka, who visited traditional healers as a child in Sri Lanka and thus became interested in medicinal plant research.

Dr. Gunatilaka was involved in the National Cooperative Cancer Drug Discovery Group at Virginia Tech before coming to the UA in 1997. In 2002, he became the director of the Natural Products Center, which dedicates 90 percent of its efforts to cancer-related research.

"A lot of people think drugs come out of a test tube, but a little over 70 percent of cancer drugs come from natural sources"

- Leslie Gunatilaka, PhD

Arid-land plants are special because they have developed unusual adaptations to deal with extreme heat, sunlight and opportunistic pests, and they get a boost from some of the microorganisms living in them and around their roots. Natural Products Center scientists repeatedly extract and purify samples from desert organisms in search of the biological compounds, known as secondary metabolites, that help them survive and thrive in their harsh surroundings.

"We are starting with extracts containing hundreds of compounds and coming down to one or two compounds. It's like looking for a needle in a haystack," Dr. Gunatilaka said of finding a pure compound with cancer-fighting properties.

Recently his lab discovered something new about an old natural remedy. *Withania somnifera*, the winter cherry plant native to the deserts of India, Pakistan, the Middle East and Africa, has been used in traditional medicines for more than 3,000 years. A compound derived from the plant called withaferin A has been found to inhibit the formation and spread of tumors and increase healthy cell survival by inducing the heat-shock response.

Unfortunately, it has been difficult to produce the large quantities of withaferin A needed for biological research. When Dr. Gunatilaka first purchased the compound five years ago, he had to pay \$195 for 10 milligrams.

"With natural products, the problem is quantity. If you want to do an animal study, you need gram quantities of the material,"

he said. "That is why people like synthetic molecules, because when it's synthesized, you can scale it up. But when you collect material from nature, it's hard to obtain large quantities without ecological destruction."

To solve this problem, he looked outside the field of cancer research – to agriculture. He began growing winter cherry plants using aeroponics, a successful food crop cultivation method that uses no soil but sprays plants' roots with water and nutrients.

"With food plants, you are interested in biomass (the amount) and the quantity of secondary metabolite produced by a plant also depends on biomass, so I thought why not try?" he said.

The energy-efficient, water-efficient aeroponics technique resulted in plants that grew about five times larger and more than four times faster than if they had been grown in soil. They also produced a higher concentration of withaferin A. Now the Natural Products Center, the first to use aeroponics to grow plants for their potential cancer-fighting capacities, can easily produce more than 20 grams of withaferin A per harvest.

"The plants grow bigger and faster, and it's not environmentally destructive," Dr. Gunatilaka said of the new cultivation method.

The team also found that when grown aeroponically, the winter cherry plant produces large quantities of an entirely new water-soluble, sulfate form of withaferin A. The new compound is a prodrug – initial tests show it gets converted into the active form of withaferin A in cell cultures and animal models. Dr. Gunatilaka expects it will do the same thing when metabolized in a human body.

"We found when we grow the plant aeroponically, it produces the prodrug," he said. "It's easier to administer because it's water-soluble, and when it gets into the cell or culture medium, it converts into the drug."

Natural Products Center scientists collaborated with researchers from the Whitehead Institute at the Massachusetts Institute of Technology on this project, so the patent application on the promising new prodrug is shared by the UA and MIT.

Dr. Gunatilaka continues to study withaferin A and its analogs with the hope that one of them will prove to be a novel anti-cancer drug. Because withaferin A targets heat shock proteins, the compound has many other potential applications. Thanks to his ability to produce large quantities of it, Dr. Gunatilaka has been able to provide withaferin A to Dartmouth College for a lung cancer chemoprevention study, Cornell University for Alzheimer's and Parkinson's studies and the University of Massachusetts for eye disease research.

As with all novel drugs, bringing a withaferin A analog to market could take 10 to 20 years and cost millions of dollars, said Dr. Gunatilaka. He now has three published patents and two patent applications under his belt, but none has made it to medicine cabinets yet.

"We are hoping that a withaferin A analog will be the one," he said, "because there are a lot of people interested and involved."



Leslie Gunatilaka, PhD, examines the roots of a plant being cultivated in his greenhouse using aeroponics.

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Emmanuelle J. Meuillet, PhD,
in her Arizona Cancer Center
laboratory.

www.davidsandersphotos.com

"The impact is huge. The possibilities are endless."

Emmanuelle J. Meuillet, PhD

TAMING TUMORS

For most people, occasional inflammation is an annoying but fleeting fact of life.

A bee sting may cause pain, redness, swelling and perhaps even temporary loss of function at the sting site, but the symptoms usually disappear in a matter of hours or days. That's the body's inflammatory response at work, which is part of the healing process.

However, for reasons not entirely understood, some people develop prolonged inflammation. Rather than being beneficial, chronic inflammation has a destructive effect on tissues and can lead to inflammation-related diseases, such as cancer.

"People affected with inflammatory bowel disease are at higher risk to develop colon cancer," said Emmanuelle J. Meuillet, PhD, a member of the Arizona Cancer Center's Cancer Biology and Genetics Program.

Dr. Meuillet aims to understand the role of inflammation in colon carcinogenesis and to develop a novel targeted therapy to treat it. A five-year, \$1,784,878 grant from the National Cancer Institute will fund her research.

"During the process of inflammation, there are many inflammatory molecules that are produced, and one of them that seems to play a detrimental role in many different types of cancers is called prostaglandin E2, or PGE2," Dr. Meuillet said. "If it's out of balance too much, it can induce tumor growth, among many other things. The last enzyme that is responsible for the synthesis of this molecule is microsomal Prostaglandin E Synthase, or mPGES-1, and that's the one we are focusing on."

A drug that inhibits mPGES-1 activity could reduce production of PGE2, which is overexpressed in many cancers and inflammatory diseases, and slow – or even reverse – tumor growth, said Dr. Meuillet, who is also a BIO5 member and an associate professor of nutritional sciences in the College of Agriculture and Life Sciences and molecular and cellular biology in the College of Sciences at the University of Arizona. The benefit of developing a drug that targets a specific protein is that targeted therapies usually have fewer side effects for patients than traditional treatments.

The discovery of mPGES-1 a few years ago was important because a previous attempt to control the inflammatory response had negative outcomes. A popular drug known as Vioxx worked to reduce inflammation by inhibiting COX-2, which also plays a role in PGE2 synthesis. However, after the drug hit the market, it was discovered that the products of COX-2 were also involved in cardiovascular function, and the drug had to be recalled due to harmful secondary effects.

Dr. Meuillet's target, mPGES-1, is downstream from COX-2 in the pathway, so the belief is that it won't cause those secondary effects. However, she isn't taking any chances. The first step in the grant is to use colon cancer cell lines and inflammatory colon cancer animal models to find clear evidence that mPGES-1 plays a role in colon carcinogenesis and will be a good drug target for the treatment of colon cancer.

"What we're trying to do is understand the role of mPGES-1 in the process of inflammation in the colon," she said. "It's overexpressed in cancer, but its mechanical function, its regulation and its interplay with the stroma and the tumor is not

at all known. That's why this grant is so important, because it involves developing inhibitors to this but making sure also that inhibiting it is not going to be a disaster clinically."

Dr. Meuillet is optimistic because in an earlier study she conducted, thanks in part to two small Arizona Cancer Center pilot research grants, mPGES-1 appeared to be a good drug target and a particular molecule showed promise as an mPGES-1 inhibitor.

"With the preliminary data we have, we have a lead compound that's not toxic, that shows very good anti-tumor activity and even regression after the treatment," she said.

Dr. Meuillet will work with several collaborators in a multidisciplinary effort to perform her translational research. She will work with Daniel W. Rosenberg, PhD, professor of medicine and co-director of the Colon Cancer Prevention Program at the University of Connecticut, to investigate the role of mPGES-1 in normal and colon cancer animal models.

At the University of Arizona, Dr. Meuillet has enlisted the help of a team of pharmacologists and chemists, and will work with Christopher Hulme, PhD, professor of organic and medicinal chemistry in the Department of Pharmacology and Toxicology, and Vijay Gokhale, PhD, assistant research scientist in the Department of Pharmacology and Toxicology, to identify additional novel compounds that can bind to mPGES-1 and inhibit its activity and to synthesize those compounds.

Finally, Dr. Meuillet's laboratory will conduct all *in vitro* and *in vivo* testing of these compounds in human colon cancer cells and mouse models of colon carcinogenesis. These novel compounds will be used to better understand the role of the enzyme in the early stage of colon carcinogenesis.

Though this grant funds research focused on colon cancer treatment, the findings may have widespread applications. Because the targeted therapy would inhibit a cellular process, it could potentially reduce inflammation for patients with other inflammation-associated cancers, such as inflammatory breast cancer, pancreatitis (which leads to pancreatic cancer) and chronic obstructive pulmonary disease (which leads to lung cancer), as well as gingivitis, rheumatoid arthritis and atherosclerosis.

"It's not only important for colon cancer," said Dr. Meuillet. "It's very important in any inflammation-derived cancer and any disease that starts with an inflammation process. These are all areas that need attention."

Making slight adjustments to her method would also allow her to investigate potential preventative applications. She's writing additional grants now to look into ways to prevent inflammatory bowel disease from ever developing into colon cancer and she is working on another gastrointestinal cancer – pancreatic cancer – for which patient outcome remains bleak.

"Dr. Meuillet's innovative research has the potential to greatly influence future treatment and prevention of cancer," said David S. Alberts, MD, director of the Arizona Cancer Center.

Dr. Meuillet is excited about being on the verge of such a potentially powerful discovery. If mPGES-1 is indeed a good drug target, and if the new target therapy works as expected, many patients with many conditions could benefit from her work.

"The impact is huge," Dr. Meuillet said. "The possibilities are endless."

- By Sarah Mauet

A LIFE MADE RICHER THROUGH GIVING

In 1995, Therese Berg honored the memory of her late husband, Robert Berg, by giving a charitable gift annuity to the Arizona Cancer Center. That and subsequent gift annuities for the Cancer Center will ultimately create the Robert L. Berg Fellowship Endowment for Research in the Cancer Biology Doctoral Program. It was an act that represented a continuation of personal commitment – both Berg’s husband and son died of cancer – and a commitment to philanthropy, to research and to setting a positive example.

“When I make gifts, I choose things close to my heart,” Berg said.

Berg, a University of Arizona graduate, has been generously giving to her alma mater since 1971. Each gift is devoted to educating future generations of UA students studying medicine, public health, education and aerospace engineering and supports a fund named for a beloved family member.

“After I learned about charitable gift annuities, I decided right away that I could forever remember my loved ones with this kind of permanent gift and also receive an income for life,” Berg said.

The Robert L. Berg Fellowship Endowment will become a cornerstone of the Cancer Center’s Cancer Biology Graduate Interdisciplinary Program. Berg’s gifts will support the training of students for research and academic careers in areas that directly impact our understanding of cancer prevention and treatment. (See more on page 4.)

Born and raised in Tucson, Berg’s family played an integral role in the life of the community. Her grandfather came to Tucson from Mexico and founded the Spanish-language newspaper El Fronterizo in 1870. Her father, Charles, owned an auto-supply business and later became a deputy sheriff in Tucson.

Berg, 90, has dedicated her life to education. She graduated from the UA with an education degree in 1942 and tirelessly worked as a teacher and counselor. She retired after 40 years in the field, but never slowed down. She swims almost daily and enjoys the lasting relationships that make her life richer.

Berg said that as long as the University remains, her gifts will make a difference.

“Pick a cause you really believe in, and give to things that will last longer than you will,” she said. “The more I give, the more I get.”

- By Keri Valdes



“Pick a cause you really believe in, and give to things that will last longer than you will.”

- Therese Berg

By making a planned gift to the Arizona Cancer Center, you provide a legacy that benefits future generations. Please consider creating a legacy for you and your family. To learn more, please visit www.arizonacancercenter.org, e-mail development@azcc.arizona.edu or call (800) 327-5279.

Around the Center

Join us for Day of Discovery on Oct. 9 to learn the latest about cancer research



Do you wonder what causes cancer? Are you curious about what is being done to catch it early, treat it and cure it? Are you interested in learning if there is anything you can do personally to prevent cancer?

Join us for Day of Discovery to find answers to these questions and more. Day of Discovery is a free, annual open house that provides a fascinating look at what the Arizona Cancer Center is doing to prevent and cure cancer.

Discover how Arizona Cancer Center scientists create new drugs to fight and cure cancers, develop diagnostic tools to catch cancer early and identify the best and most effective treatments. Learn about risk factors and the best ways to prevent cancer.

Enjoy a continental breakfast and engaging presentations by world-renowned Arizona Cancer Center scientists on the newest developments and discoveries in cancer prevention, diagnosis, treatment and cure. Tour a working laboratory and meet with a researcher to learn about their work and experience the excitement of making cancer history. Register now to participate in this exciting event.

What: Day of Discovery
When: 9 a.m. - 12:30 p.m. Saturday, Oct. 9
Where: Arizona Cancer Center’s Kiewit Auditorium, 1515 N. Campbell Ave.
Who: Open to the public ages 15 years and older
Cost: Free with pre-registration
Register: Contact Ilya Sloan at isloan@azcc.arizona.edu or (520) 626-6401

Gear up for CATwalk on Nov. 6



The Better Than Ever fitness program will team up with the UA fraternities and sororities for their annual CATwalk event on Nov. 6 at the University of Arizona. Proceeds from the 10K and 5K races and the 5K walk will benefit the Bobbi Olson Fund at the Arizona Cancer Center.

Visit www.catwalk.arizona.edu to register and join in the fun!

CATwalk is one of the goal events for the Better Than Ever program. Read more on page 2 and visit www.arizonabte.org for more information about the Arizona Cancer Center’s fitness program.

Emad Elquza named medical director at Arizona Cancer Center at UMC Orange Grove



Emad Elquza, MD, has been named medical director of the Arizona Cancer Center at UMC Orange Grove.

Dr. Elquza most recently was chief fellow in the section of hematology/oncology at the University of Arizona College of Medicine, where he served a three-year fellowship. He completed a residency and an internship in internal medicine at the UA and received his medical degree from the Flinders University School of Medicine in Adelaide, Australia.

Dr. Elquza’s research interests include the study of stem cell mobilization in bone marrow transplantation patients.

For more information about the Arizona Cancer Center at UMC Orange Grove, please visit www.arizonacancercenter.org and click on locations.

Cancer Center researcher co-authors cookbook for cancer patients and survivors

Cynthia A. Thomson, PhD, RD, CSO, an Arizona Cancer Center member and associate professor at the University of Arizona Department of Nutritional Sciences, co-authored the second edition of The American Cancer Society Complete Guide to Nutrition for Cancer Survivors.

The book, aimed at cancer patients and survivors, covers eating well before, during and after treatment. Readers will learn how to create a healthy diet that works for them and make good decisions about what to eat to maintain a healthy body weight. It also explores immune system strengthening, coping with side effects and lifestyle choices to enhance survivorship.

The second edition of The American Cancer Society Complete Guide to Nutrition for Cancer Survivors retails for \$24.95 and is in stores now.

25th annual memorial golf tournament benefits the Arizona Cancer Center

The 25th annual Betty Beuerlein Memorial Golf Tournament, which benefits the Arizona Cancer Center, will take place Nov. 20. Hosted by the Stonecreek Golf Club in Phoenix, the tournament is a labor of love for Betty’s husband Charles and their 12 children.

“The longevity of the event is a testimony to the strength of our very large family and the friends who come out every year,” said John Beuerlein. “To see the legacy of Betty Beuerlein carry on through this event is quite a tribute to the mom we all lost.”

“The strides that have been made in fighting cancer since Betty died have been miraculous,” he said. “The Arizona Cancer Center has been the reason behind many of the successes in this fight.”

For more information or to participate, call (480) 502-8465.

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www.arizonacancercenter.org

September

Childhood Cancer Month, Leukemia and Lymphoma Awareness Month, Ovarian Cancer Awareness Month, Prostate Cancer Awareness Month

1 Better Than Ever Fitness Season **11** Kick-off Event and Expo - 5:30 - 7 p.m. Kiewit Auditorium at AZCC. See more on page 2.

11 Arizona Cancer Center Benefit Day at The Running Shop - 10 a.m. - 5 p.m. 3055 N. Campbell Ave. #153.

17-18 The Pioneer Classic Golf Tournament - Phoenix - Visit www.thepioneerclassic.com to register.

20 Better Than Ever fitness training program registration deadline - See more on page 2 or visit www.arizonabte.org to learn more.

25 Santa Rita Golf Club Cancer Fundraiser Memorial Tournament for the Arizona Cancer Center - Call (520) 762-5774 for more information.

October

Breast Cancer Awareness Month

1 Coulter Cadillac and The Phoenix Friends of the Arizona Cancer Center Golf Tournament - Arizona Biltmore, noon - 5 p.m. Call Terri Anderson at Coulter Cadillac at (602) 264-1188 for more information.

2 iVIDA! The Fifth Annual Mujer Latina Breast Cancer Conference - El Pueblo Community Center Senior Building, 101 W. Irvington. 8 a.m. - 1 p.m. Free admission, complimentary breakfast and lunch. Please register by calling (520) 626-0331.

6 Coaches' Night Out - A silent auction, autograph session and dinner with UA basketball players and coaches. Visit www.coachesnightout.com for more details.

6 Oro Valley Community Lecture: Diet, Nutrition and Cancer Prevention with Michelle Bratton, RD, CSO - 11 a.m. - noon. Oro Valley Public Library

8 Waddell Award Lecture with Sir Bruce Ponder, MB, BChir, PhD - Kiewit Auditorium at AZCC. For more information, contact Ilya Sloan at (520) 626-6401 or isloan@azcc.arizona.edu.

9 Day of Discovery: Acting Against Cancer - 9 a.m. - 12:30 p.m. Kiewit Auditorium at AZCC. See more on page 11.

19 Green Valley Community Lecture: Lymphoma with Daniel Persky, MD - 10 - 11 a.m. West Center.

20 Director's Circle Reception in Phoenix - By invitation.

November

Lung Cancer Awareness Month
Pancreatic Cancer Awareness Month

3 Leadership Circle Dinner in Tucson - By invitation.

3 Oro Valley Community Lecture: Endometrial, Cervical and Ovarian Cancer with Janiel Cragun, MD - 11-noon. Oro Valley Public Library.

4 Leadership Circle Dinner in Phoenix - By invitation.

10 Director's Circle Reception in Tucson - By invitation.

17 Green Valley Community Lecture: Prostate Cancer with Mitchell Sokoloff, MD, FACS - 10-11 a.m. West Center.

20 25th annual Betty Beuerlein Memorial Golf Tournament benefitting the Arizona Cancer Center - Stonecreek Golf Club in Phoenix. See more on page 11. Call (480) 502-8465 for more information.

COMMON LOCATIONS:

AZCC = Arizona Cancer Center
1515 N. Campbell Ave., Tucson

AZCC at UMC North = Arizona Cancer Center
at UMC North, 3838 N. Campbell Ave., Tucson

West Center = 1111 Via Arco Iris, Green Valley

Oro Valley Public Library = 1305 W. Naranja
Dr., Oro Valley

Please visit www.arizonacancercenter.org for more information about the Arizona Cancer Center.