THE UNIVERSITY OF ARIZONA

ACT AGAINST CANCER™

Volume I, Issue 2 ..... WINTER 2009

In this issue: **$5 million gift to support breast cancer research**
Vitamin D research • DNA microarray studies • Honoring our donors

Young scientists making their marks

ARIZONA CANCER CENTER®

Director's Message

Today's cancer research is tomorrow's cancer cure. Those are not just words, but a philosophy that we at the Arizona Cancer Center take to heart every single day.

Our activities in the area of breast cancer research have received a tremendous boost in the form of a generous $5 million gift from the estate of the late Fenton Maynard of Phoenix. You can read his story on the opposite page. Mr. Maynard is the epitome of the generous friends who have supported the Arizona Cancer Center in its 33-year history. I was able to personally thank Fenton for his support of our research before he died earlier this year, and I want you to know that each gift to the Cancer Center is received in the same thankful spirit. We plan to use the gift for endowed chairs and endowments to support our scientific research programs. Without you, our Cancer Center would not be a Center of Excellence serving the entire state of Arizona, and beyond.

I want to welcome Michael Bookman, MD, to the Cancer Center leadership team. Dr. Bookman joined us in September as chief of the Hematology/Oncology Section. A renowned gynecologic oncologist, Dr. Bookman spent 21 years at Fox Chase Cancer Center in Philadelphia, and we will benefit greatly from his medical and administrative experience. He also has been appointed professor of medicine at the University of Arizona and will hold the Arizona Cancer Center title associate director of hematology and oncology. We thank Thomas Miller, MD, for his 10 years of tremendous dedication to heading hematology and oncology.

And we heartily congratulate Setsuko K. Chambers, MD, director of Women's Cancers at the Arizona Cancer Center, for her election to the prestigious Institute of Medicine of the National Academies. Dr. Chambers is a professor and vice chair of the Department of Obstetrics and Gynecology and section head of Gynecologic Oncology at the University of Arizona College of Medicine.

Sincerely,

David S. Alberts, MD
Arizona Cancer Center Director

On the cover

Arizona Cancer Center researchers Beth Jacobs, PhD, and George Watts, PhD, won the Tucson-area 2009 "40 Under 40" awards, which honor young community leaders. Read more about their work on pages 4-5.

Around the Center

Photo by Chris Richards

Canine therapy

Roxy has been coming to the Arizona Cancer Center at UMC North for up to two hours six days a week for the past three years. She's not there to receive treatment, but to give it in her own way; Roxy is a dedicated therapy dog – and she's great at what she does.

"She's a star here," said Jim Gruzalski, who adopted Roxy as a puppy from the Humane Society of Southern Arizona 10 years ago. "Patients ask for her. The nurses love her."

Roxy is still coaxing out smiles thanks to Arizona Cancer Center member/researcher Mary Kay Klein, DVM, MS, who successfully treated the four-legged patient for thyroid cancer this year. Roxy underwent three weeks of radiation and four sessions of chemotherapy this summer.

"She went through it really well. She had really no side affects," Gruzalski said scratching Roxy's ears affectionately. "Roxy is a cancer survivor, too."

- By Sarah Mauet

Fenton Maynard and his wife Margaret, who was diagnosed with metastatic breast cancer a few years into their marriage.

LEAVING A LEGACY

Fenton Maynard's $5 million endowment fund will support breast cancer research at the Arizona Cancer Center.

Fenton Maynard wanted to leave a legacy that would have a lasting impact on breast cancer.

"He saw what my aunt had to deal with and the difficulty of treating the disease and he was determined that something had to be done," said Maynard's nephew, David Jensen.

Maynard's $5 million gift – the largest amount that has been pledged for research activities in the Arizona Cancer Center's 33-year history – will establish the Margaret E. and Fenton L. Maynard Excellence in Breast Cancer Research Endowment. The funds will support basic and clinical research by Cancer Center scientists and physicians to achieve improved prevention, diagnosis and treatment of breast cancer.

"Fenton Maynard was devastated by the death of his beloved wife from breast cancer, so much so that he asked that the majority of his estate be utilized for a research 'crusade' to prevent and cure breast cancer," said David S. Alberts, MD, director of the Arizona Cancer Center. "The estate will be dedicated to endowed chairs, as well as research endowments to make Fenton's dreams come true."

Maynard, who passed away in Phoenix July 19 at the age of 87, was a man of great character, said his nephew. He was thoughtful, very intelligent, a good listener and a hard worker.

"He had strong values and took pride in doing the right thing," Jensen said.

Maynard started his career as a clerk at a Skaggs Drugs in Billings, Mont., in the 1950s and moved around the country as he worked his way up in the company. He was transferred to Phoenix Store #8 in 1953, though he soon moved on and up from there. When Skaggs Drugs partnered with Albertsons supermarkets in 1969 to create combination food and drug stores, Maynard oversaw stores with the new retail structure.

"Now you go into a store and think nothing of seeing a big drug store and grocery store in one place. Forty years ago that wasn't the case. Skaggs-Albertsons was one of the first to do that," Jensen said.

Maynard spent 34 years with Skaggs and was executive vice president and general manager of drug region when he retired at the age of 63.

"He did quite well. He had a great career," Jensen said. "That was his passion. His passion was growing the company."

Maynard retired in Phoenix in 1984 with Betty, his wife of 49 years who would precede him in death, and finally had time to travel and indulge in some of his other interests.

"He was a good cook, very interested in cuisine and fine wines. He had a tremendous wine collection," Jensen said. "He loved to ride bicycles through his 70s. He was active. He liked exercise."

Through friends Maynard met Margaret, who shared many of his interests. Sadly, she was diagnosed with metastatic breast cancer a few years into their marriage.

"He was very devoted to Margaret and when she started deteriorating with breast cancer, he had a pretty good dose of the severity of the disease," Jensen said. "That got him interested in research."

Shortly after Margaret passed away in October 2006, Maynard discovered the Arizona Cancer Center and sent a gift along with a note to Dr. Alberts that said, "Thank you for the work you are doing to defeat cancer."

David Jensen speaking about his late uncle, Fenton Maynard, at a Leadership Circle event.

Though Maynard didn't graduate from college – he attended the University of Montana, Missoula, for a year after serving in the Army Air Corps in World War II – he believed there were benefits of supporting university-based research.

"He liked the longevity and legacy you can leave with a university," Jensen said. "It will be there tomorrow, the next day, and 10 and 50 years from now."

After meeting with Dr. Alberts in the spring of 2009, Jensen said his uncle told him, "This is where I want to make a difference."

- By Sarah Mauet

Beth Jacobs, PhD, is at the forefront of an international scientific movement focusing on vitamin D.

"A REALLY INTERESTING LITTLE MOLECULE"

Beth Jacobs, PhD, thinks a key to cancer prevention may be found in a tiny molecule that our own bodies produce.

Beth Jacobs, PhD, studies genetic, dietary and lifestyle factors associated with cancer risk, and she's at the forefront of an international scientific movement focusing on vitamin D.

It's been long known that a vitamin D deficiency can lead to loss of bone mineralization and, in extreme cases, rickets and adult osteomalacia (bone weakness). However, the link between vitamin D deficiency and various diseases - cancer, heart disease and diabetes – is now a hot topic of study. There's even preliminary research into whether low vitamin D levels are related to influenza, said Jacobs, an Arizona Cancer Center researcher and assistant professor at the University of Arizona Mel and Enid Zuckerman College of Public Health.

"I just think it's a really interesting little molecule because you make it yourself," she explained. "It's different from the usual nutrients we study."

While vitamin D is found in some foods, most people's bodies can make all the vitamin D they need just by having their skin exposed to sunlight. When UV-B rays hit the skin, a reaction takes place that enables skin cells to produce vitamin D, which is actually a hormone.

"It's a controversial area," Jacobs said. "As you know, we're supposed to limit our sun exposure. But certain people, no matter how much vitamin D they consume, they can't get their levels up. There are several genetic factors in pathways that are related to vitamin D metabolism – how much vitamin D is available for tissue."

Additional sun exposure could be the answer for these people, but acknowledging that current skin cancer prevention guidelines don't work for everyone is a slippery slope, she said. She plans to write a grant to work with the Arizona Cancer Center's Skin Cancer Institute on new, modified guidelines for sun exposure.

Jacobs, who has a master's degree in foods and nutrition from Purdue University and a doctoral degree in nutritional sciences from the University of Arizona, has also been studying the role of vitamin D in breast and colon cancer. The National Cancer Institute-funded projects she has worked on have had striking results.

Her preliminary findings indicate that higher blood vitamin D levels are associated with a lower risk of colorectal adenoma recurrence. Moreover, she and Elizabeth Hibler, a UA doctoral student, have found that circulating blood vitamin D levels are linked to genetic factors. Jacobs has studies planned with her colleague Peter Jurutka, PhD, of the University of Arizona College of Medicine Phoenix in partnership with Arizona State University, to determine how genetic variation affects the function of enzymes related to vitamin D metabolism. Additionally, preliminary results from a study with Cancer Center colleague Cyndi Thomson, PhD, and collaborators at the University of California, San Diego, suggest that higher dietary intake of vitamin D leads to lower chances of breast cancer recurrence.

While the results are impressive, Jacobs acknowledges that in the past scientists have found what appears to be a wonder drug only to have its efficacy fail for one reason or another in subsequent trials. Still, Jacobs believes that vitamin D's special properties give it real potential for widespread benefits.

"It would be terrific if vitamin D research shows we could prevent cancer recurrence or increase quality of life if we could get people's vitamin D level up," she said.

More promising studies like Jacobs' may lead scientists to go further and ask whether increasing people's vitamin D levels can lead to preventing cancer from occurring in the first place.

"Right now, that's looking possible," Jacobs said. "That's a definite hypothesis."

"That," she added, "would be awesome."

- By Sarah Mauet

Photos by Chris Richards

George Watts, PhD, became the first scientist in the state of Arizona to analyze the genetics of cancer cells using DNA microarray technology.

FINDING THE KEY TO CANCER

George Watts, PhD, has always been interested in how things work.

As a chemistry major at University of Delaware, George Watts, PhD, wasn't content to be told a substance in the lab was toxic, he wanted to understand its actual effect on the body. That curiosity led him to study Pharmacology and Toxicology at the University of Arizona, during which time he did a rotation in an Arizona Cancer Center lab.

"It took me a week or two before I saw how cool molecular biology was and understood the size of the problem we were trying to tackle in terms of cancer, and I thought, 'this is where it's at.' I've been here ever since," he said.

As a postdoctoral fellow at the Arizona Cancer Center in 1997, Watts became the first scientist in the state of Arizona to analyze the genetics of cancer cells using DNA microarray technology.

A product of the Human Genome Project, DNA microarray technology has enabled scientists to use the human genetic code to study diseases at the most basic level with the aim of improved prediction, detection, monitoring and treatment. Watts soon became the co-director of the Cancer Center's Genomics Shared Service, which has provided the technological support for National Institutes of Health-sponsored research grants as varied as understanding gene-environment interactions in human disease to the development of molecular classifiers of leukemia.

In his personal research, Watts has used DNA microarray technology to discover epigenetic markers (changes in gene appearance or expression not caused by alterations in DNA structure) that can anticipate ovarian cancer disease course. Studies are now being done to translate these discoveries to clinical use.

Watts is currently using DNA microarray technology to try to determine factors related to cancer cell migration, invasion and angiogenesis (the development of blood vessels that support tumors). He's now focusing on one gene, Fn14, which is expressed in certain types of cancer cells and seems to play a role in the process leading to metastasis.

"I think once you get the cancer started, Fn14 helps the tumor grow because it helps with angiogenesis and it increases the ability of the tumor cells to leave the site," Watts said.

He's working to determine whether inhibiting the function of Fn14 in tumor cells will stunt the cells' ability to spread and grow a tumor at a new site.

"Our argument is: there's a reason why cancer cells over-express this gene – it helps them do a number of things we consider bad - therefore this gene is a good target for therapeutic development," Watts explained.

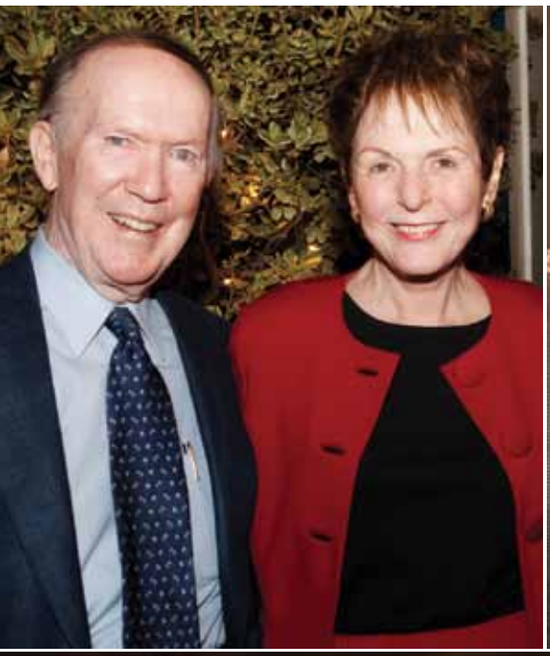
Fn14 seems to be an attractive target for the development of novel treatments for other reasons as well. It sits on the cell membrane and is a signaling receptor so new drugs wouldn't have to be designed to go through the membrane, they just have to interact at the surface. Plus, an Fn14-targeted therapy could have wide-ranging applications.

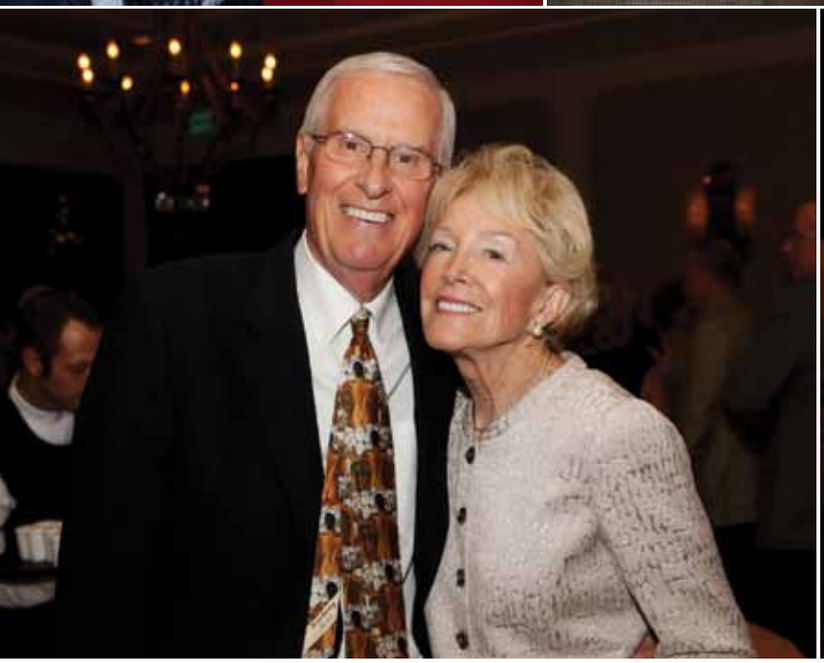
"Fn14 is over expressed in esophageal cancer, lung cancers, breast cancer, glioma, and I have preliminary data that suggests it's over expressed in colon cancer," Watts said.

There is a lot more research that must be done before therapies based on his research can be developed or applied in a clinical setting, but Watts will continue working to deconstruct the base mechanisms of cancer, because understanding how cancer fundamentally works may be the key to preventing or curing it.

- By Sarah Mauet

THANK YOU FOR SUPPORTING RESEARCH




Dinners celebrate generosity of Leadership Circle members

On Oct. 20 and 21, Arizona Cancer Center Director David S. Alberts, MD, hosted the second annual Leadership Circle Dinners at the Paradise Valley Country Club in Paradise Valley and the Arizona Inn in Tucson.

More than 120 of the Cancer Center's most generous friends were in attendance for the elegant occasions.

The Leadership Circle is a program that honors the Arizona Cancer Center's loyal friends. Individual donors who contribute a total of $10,000 or more in the last year qualify to be a part of the Leadership Circle. Visit www.azcc.arizona.edu/giving for more information about the Leadership Circle.

Photo identification

This page

Top row (left to right): *Mark and Mary Anne Fay; Tom Rogers and Ginny Clements; Ed and Judy Lynn*

Second row: *Charlie and Barbara Young; Michael and Kathy Norton, Doris and John Norton and Melanie Norton*

Facing page

Top: *Joann and Jim Sumwalt*

Bottom: *Betty and Victor Schwanbeck*

Photos by Chris Richards Photography

Director's Circle reception welcomes members

Arizona Cancer Center Director David S. Alberts, MD, hosted members of the Director's Circle Oct. 14 at Wildflower restaurant in Tucson.

Two cutting-edge researchers – Amanda Baker, PharmD, PhD, who is using new drugs to personalize cancer treatments, and Georg Wondrak, PhD, who is developing new drugs to prevent skin cancer – spoke at the reception, which was generously underwritten by Arizona Cancer Center advisory board member Sam Fox of Fox Restaurant Concepts.

The Director's Circle honors donors who contribute $1,000 or more annually. Please visit www.azcc.arizona.edu/giving for more information.

2009 Events

O'vary Special Occasion - *The law offices of Renaud Cook Drury Mesaros, PA, sponsored O'vary Special Occasion in March at the home of Bill and Colleen Drury in Phoenix. The evening included casino style gambling and a silent auction, which raised more than $13,000 for ovarian cancer research.*

Evening in the Park - *The Phoenix Friends of the Arizona Cancer Center held the 24th annual Evening in the Park at the JW Marriott Resort and Spa in Phoenix in March. The gala raised more than $350,000 to support three "Phoenix Friends Scholars" conducting promising research.*

Pioneer Classic - *Nearly 90 players teed off at the Pioneer Classic Golf Tournament & Weekend presented by Alliance Beverage Distributing Company, LLC. Some of the proceeds from the tournament, held Sept. 19 at The Wigwam Golf Resort & Spa in Litchfield Park, support a postdoctoral fellow studying new treatments to prevent skin cancer.*

Swing for Hope - *The Ironwood Ladies Golf Association raised more than $6,800 at the annual Swing for Hope Golf Tournament held April 2 at the Ironwood Golf Club in Sun Lakes.*

Putt an End to Cancer - *The Westbrook Village Ladies Golf Association's Putt an End to Cancer golf tournament in March raised more than $10,000 for cancer research.*

Benefit Golf Tournament - *Dozens of golfers showed off their best swings at the fifth annual Benefit Golf Tournament held April 15 at the Torres Blancas Golf Club in Green Valley. Organized by the Torres / Ranch Ladies Golf Association, this year's event raised $1,000 for cancer research.*

Games for the Greater Good - *The football team at Salpointe Catholic High School in Tucson initiated a service project called Games for the Greater Good™ to raise awareness for local causes at each home game. On Oct. 2, the team highlighted breast cancer research at the Arizona Cancer Center.*

CATwalk - *The Better Than Ever fitness program teamed up with the UA fraternities and sororities for their annual CATwalk event Nov. 14 at the University of Arizona. Proceeds from the 10K and 5K races and the 5K walk benefit the Bobbi Olson Fund. This year's event brought in more than $80,000, bringing the 8-year total to more than $330,000.*

Betty Beuerlein Memorial Golf Tournament - *The Beuerlein family – all 12 siblings and their father Charles - hosted the 24th annual Betty Beuerlein Memorial Golf Tournament Nov. 21 at the Stonecreek Golf Club in Phoenix. Last year's event raised $5,000.*

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The Arizona Cancer Center is a Comprehensive Cancer Center designated by the National Cancer Institute

Produced by the Office of Public Affairs

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Sara Hammond
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Editors
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Design
Kayla Coe, MA
Printing
AlphaGraphics Commercial Printing Services

The media is welcome to quote from this publication and is asked to provide credit. Correspondence or inquiries should be addressed to:
Arizona Cancer Center, Office of Public Affairs
1515 N. Campbell Ave., PO Box 245024
Tucson, AZ 85724-5024
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Volume 1, Issue 2.

www.arizonacancercenter.org

EVENTS CALENDAR

December

2 **Oro Valley Community Lecture: Non-Melanoma Skin Cancer** - *with James Sligh, MD, PhD*
11 a.m.-noon Oro Valley Public Library

3 **Donald Ware Waddell Award Lecture** - *with MIT scientist Robert A. Weinberg, PhD*
5 p.m. Kiewit Auditorium, AZCC

8 **Corks for Cancer** - *Harvest Restaurant celebrates its first anniversary with a wine tasting benefit. $40 per person. Limited seating. 5:30-7 p.m. RSVP to (520) 731-1100*

9 **Green Valley Community Lecture: Colon Cancer** - *with Tomislav Dragovich, MD, PhD*
10-11 a.m. West Center

12 **Canyon Del Oro High School Cancer Walk** - *benefitting cancer research at the Arizona Cancer Center. 8 a.m.-noon Canyon Del Oro High School. Call (520) 248-2186 or (520) 490-9784 for more information*

13 **Tucson Marathon Events** - *benefitting the Better Than Ever fitness program. All day*

16 **Arizona Cancer Center Clinic Lecture: Clinical Trials and You** - *with Daruka Mahadevan, MD, PhD*
10 a.m.-noon AZCC at UMC North

January

Cervical Cancer Screening Month

11 **Arizona Cancer Center Clinic Lecture: Breast Cancer** - *with Julie Lang, MD*
10 a.m.-noon AZCC at UMC North

13 **Oro Valley Community Lecture: Breast Cancer** - *with Rachel Swart, MD, PhD*
11:15 a.m.-noon Oro Valley Public Library

20 **Green Valley Community Lecture: Diet and Nutrition** - *with Michelle Bratton, RD*
10-11 a.m. West Center

31 **Westbrook Charity Challenge to support the Arizona Cancer Center** - *a day of golf at the Lakes and Vistas Golf Courses, a 5K walk and a 15K bike ride through Westbrook Village in Peoria. All day. Visit www.westbrookvillage.org for more information*

February

3 **Oro Valley Community Lecture: Diet and Nutrition** - *with Michelle Bratton, RD*
11 a.m.-noon Oro Valley Public Library

10 **Arizona Center Clinic Lecture: Clinical Trials and You** - *with Daruka Mahadevan, MD, PhD*
10 a.m.-noon AZCC at UMC North

13-14 **Kona Bikes 24 Hours in the Old Pueblo** - *benefitting lung cancer research at the Arizona Cancer Center. All day. Visit www.epicrides.com for more information*

17 **Green Valley Community Lecture: Breast Cancer** - *with Leona Downey, MD*
10-11 a.m. West Center

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 these events