

# Cancer Solutions at Purdue

News from the Purdue Cancer Center

November 2007

**Timothy L. Ratliff, Ph.D.**  
Director

**Marietta L. Harrison, Ph.D.**  
Associate Director / Director,  
Oncological Sciences Center

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Program Leader

Richard A. Gibbs, Ph.D.  
Program Leader

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Rebecca Haddad

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Nikki Williams

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## Dick and Jane Miller donate \$1.5 million to the Purdue Cancer Center

Like thousands of families, former Director's Advisory Board member and Indiana Senator V. Richard "Dick" and his wife, Jane Miller, know first hand what it is like to lose a son to cancer. October 10, 1976 they lost their son Robert "Robbie" Wallace Miller to a rare form of cancer. Since then, the Miller's have sought ways to help in the fight against cancer. Just recently they gave a gift of \$1.5 million dollars to establish the Robert Wallace Miller Director Chair at the Purdue Cancer Center.

Their son, Robbie, died from a rare form of cancer called rhabdomyosarcoma when he was 11 years old. This fast-growing, highly malignant tumor usually strikes young children by attaching itself to muscle tissue, intestines, and/or organs. Robbie had a tumor about the size of a softball around his heart. Six weeks prior to his death, he visited the doctor for a routine physical for school sports, and received a clean bill of health. In retrospect the Miller's remember some cold-like symptoms, an upper respiratory type cough.

The Robert Wallace Miller Chair will allow director, Timothy Ratliff, to use the funds to support the center's research. Because of the work being done here at the Purdue Cancer Center, survival rates for cancer have dramatically improved over the past decade due to an increased ability to diagnose the disease at early stages and the development of more effective treatments. We provide a place where researchers with a variety of specialties can come together to develop new strategies and innovations in the treatment of cancer.

With increasing support from people like the Millers, survival rates will continue to improve and so will the technology allowing us to lead the nation in nanotechnology and cancer research. Every day we strive to improve and investigate new and novel ideas.

Dick and Jane have been long time Boilermaker fans. Dick earned his bachelor's degree in science from Purdue in 1963 and Jane graduated from St. Elizabeth School of Nursing in 1961. The Millers' son Vernon Richard II earned a bachelor's degree in technology from Purdue in 1985, and their daughter Pamela Sue also attended Purdue.

## What goes around, comes around

Singing, dancing, public speaking, teaching, and being a researcher are among the many things Katie Behr did during her time at Purdue as an undergraduate student.

This past year Katie received her doctorate of Pharmacy and is now working as a clinical pharmacist at Memorial Hospital of South Bend. However, while at Purdue, Katie was a featured speaker at several Cancer Center gift announcements and Women of Purdue events. She was a Purduette with Purdue Musical Organizations, serving as the group's manager her senior year. She played a major role in organizing the Purduettes' annual cancer benefit concert in Indianapolis, which gave her an opportunity to speak about cancer research she was performing as a student.

Katie received the Purdue University Cancer Center Breast Cancer Research Program Summer Undergraduate Research Fellowship two years in a row. Under the direction of Dr. Ross Weatherman, she worked on projects focusing on breast cancer and the popular breast cancer drug tamoxifen.

In September, Katie won the 2007 Governor's Award for Tomorrow's Leaders, sponsored by the Indiana Humanities Council. Katie received a \$1,000 award and because of her experience doing cancer research, she has decided to donate the award money back to the Purdue Cancer Center. Her gift will be used for an undergraduate research project in one of the laboratories on campus. "The experiences I have had with the Purdue Cancer Center have allowed me to take a role in educating others about cancer research and all that is being done to find a cure," says Katie. She is hopeful that by supporting an undergraduate cancer researcher, she can make a difference in someone else's life.



Katie Behr, and Lt. Governor Skillman

## A letter from the new PCC director, Tim Ratliff

Greetings from Boilermaker country. The summer months and football season have come and gone and I am quickly settling into my new role as the Director of the Purdue Cancer Center. Thinking back to when I was offered this opportunity, I never would have imagined an experience like this. The support my wife Jackie and I have gotten is just amazing - a special thanks to all that have helped us get settled into our new home here in West Lafayette and to Indiana. I am so honored and proud to be a part of cancer center that is doing such remarkable cancer research and moving forward at a record pace.

In my first couple of months a lot has been celebrated. Dick and Jane Miller revealed a \$1.5 million dollar gift to name the Robert Wallace Miller Director Chair at the Purdue Cancer Center. This generous gift is in memory of their son, Robbie. Further details about the gift are detailed within this newsletter. We have also received several other major gifts that will be celebrated in the months to come, so be looking for these announcements.

We are hosting several events in the upcoming months and are doing some remodeling at the Cancer Center. I hope that you will stop by the Center the next time you are on campus to explore the renovations, take a tour of the Center, and let me thank you in person for your support.

All my best,




## Research update.....can your diet reduce your risk of cancer?

Could it be that a simple dietary supplement could reduce your risk of cancers of the breast, prostate, and colon? That's what a lot of population-based research suggests about vitamin D, a nutrient that can be synthesized in the skin or obtained from dietary sources like fish and dairy. However, while these population-based studies are encouraging, there are many gaps in the story. Dr. Jim Fleet, a Professor in the Department of Foods and Nutrition and a Purdue Cancer Center member since 2003, is trying to fill those gaps.

Dr. Fleet uses cell models to study the molecular actions of calcitriol, the active metabolite of vitamin D, and he tries to translate these fundamental findings into animal models. His work provides mechanistic support for the associations that indicate high vitamin D status prevents cancer. At the cellular level calcitriol binds to a nuclear protein called the vitamin D receptor (VDR) and this stimulates the transcription of genes. While many research groups have shown that calcitriol can suppress cell growth and promote cell death, the gene targets that mediate these and other anti-cancer actions of calcitriol aren't known. With this in mind, the Fleet lab recently completed a molecular survey that has identified 1500 potential new vitamin D target genes. This has the potential to dramatically expand our understanding of how vitamin D protects us from cancer. In addition, using known vitamin D target genes as a model, his research group is examining how the process of cancer itself may alter the cellular response to vitamin D. For example, one of his students has shown that a common cancer mutation that activates a signaling molecule called k-ras may limit the biological function of calcitriol. This suggests that the chemopreventative functions of vitamin D may have limits as cancer progresses.

The animal research in the Fleet lab uses both genetically modified mice and dietary intervention to understand the role of vitamin D in cancer. He's currently testing whether prostate cancer risk can be reduced by higher than normal levels of vitamin D status or whether the problem is due to vitamin D deficiency. Several prominent scientists advocate the use of very high levels of vitamin D supplements (> 1000 IU per day compared to the current requirement of 200 IU per day) to reduce the risk of cancer. These levels are not achievable by diet so if higher than normal vitamin D intake is necessary for cancer prevention, this would have a dramatic effect on public health recommendations. Another interesting hypothesis his group is testing relates to dietary calcium intake. Some association studies suggest that very high dietary calcium intake (> 2000 mg per day compared to recommendations of 1200 to 1500 mg per day) can increase the incidence of advanced prostate cancer. Since high dietary calcium intake is an important recommendation to protect bone health, this work will provide critical evidence that will permit us to balance our health recommendations. Finally, Dr. Fleet is making new genetically modified models of colon cancer that will limit expression of pro- and anti-cancer modifications to colonic epithelial cells. Since the results from current animal models of colon cancer are confounded by the development of cancers in tissues other than colon, this model will permit better testing of dietary regimes and drugs for the prevention and treatment of colon cancer.



## Taking a closer look at breast cancer and it's racial role

Can breast cancer tumors affect different ethnic groups? Sulma Mohammed, a PCC member and associate professor of cancer biology is working to identify models to study breast cancer development and progression in women, especially African-American and African women. The majority of African and African-American women develop a particular kind of tumor, called ER-negative, at a young age and Dr. Mohammed is trying to discover ways to improve early detection, which can help keep these tumors at a controllable stage. Women of African descent generally have tumors that are more aggressive than those in Caucasian women. Much of the research and advances in treating breast cancer, has been done on the type of cancer found in Caucasians.



*Dr. Sulma Mohammed*

To learn more about her research visit

[www.cancer.purdue.edu](http://www.cancer.purdue.edu)

On October 24-28 she will join other international health-care experts in Cape Town, South Africa, for the Sixth International Cancer Conference: Challenges and Opportunities. She is vice president of the North American branch of the African Organization for Research and Training in Cancer, which is sponsoring the conference. Her hope is to change the picture of cancer in Africa.

Dr. Mohammed has been the recipient of many awards, including the African American Institute award, African Women Leaders in Science award, and the Cancer Research and Prevention Foundation award from the American Association for Cancer Research and the Cancer Foundation of America.

## Director's Advisory Board member, Becky Haddad, serves as delegate for breast cancer summit in Hungary

September 2007 will be a time board member, Becky Haddad, will always remember. This marks the landmark meeting that brought breast cancer advocates from 21 states and 30 countries together. Becky is from Aurora, CO and has served as a Purdue Cancer Center Director's Advisory Board member since 2003. An initiative, "Ignite the Promise: Global Advocate Summit" was held in Budapest, Hungary and organized by Susan G. Komen for the Cure. The conference offered breast cancer education and awareness information to hundreds of medically underserved and uninsured women and men. It promoted collaboration among diverse groups and empowers women and men from targeted populations to learn more about breast health.

Becky is an extraordinary breast cancer advocate and has contributed to breast cancer detection and treatment advances through community outreach, shaping public policy, offering health education, providing survivor support and fundraising. As a 21-year breast cancer survivor Becky enjoys being a resource and helping others through their breast cancer journey. "It is indeed an honor and a privilege to represent the United States in this global breast health initiative. I am anxious to share my knowledge and experiences with the international delegates to increase education and awareness about breast cancer in their countries. This will bring us closer to our goal of saving lives and eradicating breast cancer."



*Becky Haddad, DAB board member, and First Lady Laura Bush at a luncheon at the White House.*

**Breast cancer is among the top 10 causes of death in women in the United States. Each year, more than 1 million women receive a breast cancer diagnosis and in 2003, the most recent year numbers are available from the Centers for Disease Control and Prevention, 41,619 women died from breast cancer. The need to provide women the opportunity to beat breast cancer diagnosis has never been greater. By working together we can help women worldwide.**

## For the first time, human clinical trials taking place in Lafayette, IN

For cancer researchers alike, the path to getting your drug into clinical trials is a long process and a an even bigger gamble. The development cost of creating a drug range between \$800 million to \$1.7 billion and there is a 1 in 3 chance, approximately 8%, of reaching clinical trials.

Purdue Cancer Center member, Phil Low, took the gamble and is now awaiting his award. For the first time in Lafayette, our doctors will soon begin the first human clinical trails of a homegrown, cutting-edge cancer medicine. This new drug uses a "Trojan horse" technique to attach potent cancer medicine to folic acid. Lung and ovarian cancer cells specifically seek and consume the folic acid, thereby triggering their own death by taking in the folic acid and cancer drug at the same time. This new drug was created by Dr. Philip Low, who not only is a Cancer Center member, but the chief science officer and a founder of Endocyte, Inc., located in Purdue's Research Park.

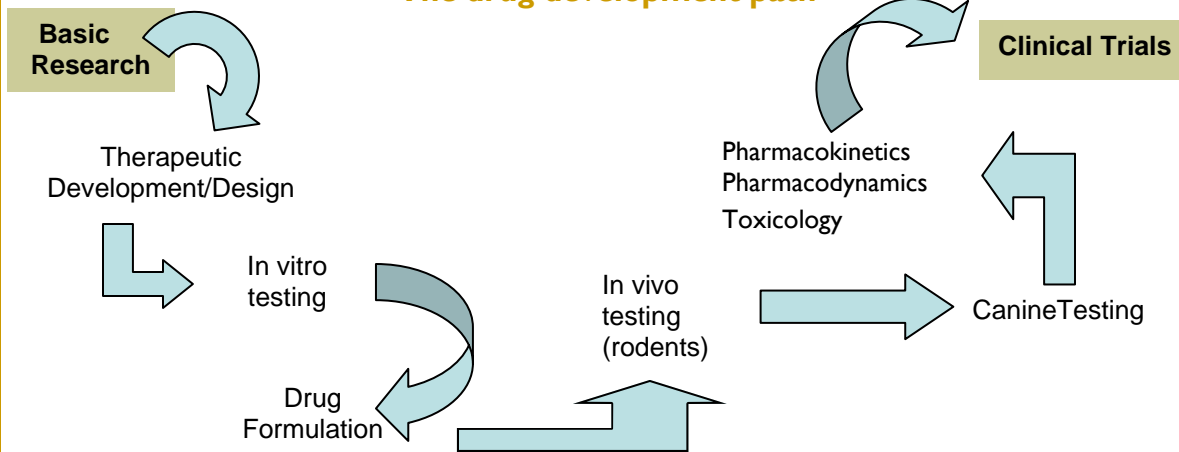
An initiative, Cancer Research Clinical Partnership, was started earlier this year by the Oncologist Sciences Center/Purdue Cancer Center. This brings together local oncologists and Purdue scientists to share ideas on how the two can work side by side to develop and administer cancer treatments. A leader in this is Dr. Wael Harb at the Horizon Oncology Center, "It's a difficult situation where the standard treatments don't work very well. So we're always looking for something novel, something that would offer patients a chance. This is just an example of how collaboration between physicians and Purdue University researchers can have a very positive impact in cancer research," he said.

Harb, who will run the local trial, said the clinical trials are a great opportunity for the Lafayette community to play a larger role in the global fight against cancer. He, along with Dr. Shahid Shekhani, also of Horizon Oncology, are recruiting 10 lung cancer and 10 ovarian cancer patients for the trial.

Low and the other Endocyte scientists hope the drug produces fewer side effects and quicker treatment. The company is testing the drug in more than 20 medical centers across the country. Drug trials are typically done in major medical centers, not smaller communities like Lafayette. "If things work out well," Low said, "I would hope that other drug companies will bring their newest and best drugs here for testing."

The Endocyte drug has already been tested in animals and was approved by the federal Food and Drug Administration for human trials.

### The drug development path



### MARC/AIM awards

The Purdue Cancer Center is the proud recipient of a National Cancer Institute (NCI) Supplement Award for the 2007 summer training and education of outstanding multicultural undergraduate students in the field of cancer research. We have chosen to again partner with Purdue's highly successful MARC/AIM (Minority Access to Research Careers/Access for Internal Minorities) program to identify promising undergraduate students from social and economic backgrounds that are underrepresented in cancer research, and who may have an interest in pursuing a career in cancer research. These students will work intensively conducting research with our experienced Cancer Center mentors by their side each step of the way. The participating students and Purdue Cancer Center mentors are as follows: *Brenda Cordero (Dr. Mark Cushman); Tiaunn Foster (Dr. Sulma Mohammed); Alexandra Mendez (Dr. Phil Low); Eythan Morenu (Dr. Suresh Mittal); Shanel Pruitt (Dr. Marietta Harrison); Kellymar Rosa (Dr. Daniel Raftery); and Angela Van Buren (Dr. David Thompson).*

The goal of the MARC/AIM Multicultural Summer Research Opportunity Program is to enhance diversity in academic, government, and industry positions that require the Ph.D. degree (positions of leadership). MARC/AIM recruits the best potential graduate students in the country to the program; assists them in developing credentials for a successful application to graduate school; and provides resources for building and maintaining a network of potential mentors throughout their careers.

Claudia, a Director's Advisory Board member, and her husband Art Kruggel, lost their son Alex on August 10<sup>th</sup>, 2007. Six weeks prior to his death, he was diagnosed with a tumor in his spinal cord. Below is an emotional letter Claudia wrote to Alex's doctor - Dr. Daniel Donovan, head of the Traumatic Spinal Cord in the Neurology Department at Queen's Memorial Hospital in Honolulu, Hawaii.

Dr. Donovan's valiant efforts were not enough to save Alex, but his efforts did not go unnoticed. Claudia is gracefully sharing this heartfelt letter with us all. If you knew the Kruggel family or would like to make a donation in Alex's memory, please contact the Purdue Cancer Center at [pccinfo@purdue.edu](mailto:pccinfo@purdue.edu) ; 765-427-3128.

Dear Doctor Donovan,

September 14, 2007

It is a month now since Alex passed away and this is the most painful, gut-retching time in our life. Our bleak sadness is as deep as Alex's spirit was wide. Everything in our lives has changed, forever.

Alex was such a big part of our life and yet he started out as such a little boy! He entered the world as a 4 lb. 3 oz. child. He grew bigger and played football in high school and his senior year, won the Indiana State Championship. Alex never gave less than 110% in anything he undertook. At Purdue he majored in civil engineering

(<sup>BSCEM 1997</sup>) and during his senior year he and two friends won the regional Rube Goldberg Contest.

Alex loved teaching and returned to Purdue to earn his Master's Degree in Management Construction (<sup>MSCCE 1999</sup>).

Immediately after graduation the Pankow Company hired him and he moved to L.A., where he met the love of his life, Jen. I never met two people more in love! She said, in marrying Alex, she considered herself the *luckiest girl in the world*.

In the eight years that Alex worked for Pankow he developed a family-type relationship with his colleagues. In Los Angeles, he built two office buildings and supervised the building of White Memorial Hospital in East L.A. Alex talked about a wall outside the emergency room that was built to keep the gangs from shooting in when they were trying to kill a rival gang member that had survived gang retaliation. He knew the only way to effect change was to mentor these kids. So he designed a program and took it to Roosevelt High School, the *most violent high school in North America*. He mentored kids that were interested in civil engineering, building, and design. He was always making a difference.

Three months after marrying Jen and just before the hospital was finished, Alex was promoted to Project Manager for the renovation of the Royal Hawaiian Shopping Center. At the age of 30, he was now the boss of what is almost a one hundred million dollar project. He was a superstar in his company. One executive told me, "Alex got it – he really got it!" At the funeral, the president of Pankow sobbed in my arms, as he was grooming him to become a corporate leader.

Alex and his brothers are very close, all three spoke at his services, each addressing a different part of their relationship with Alex. Fritz spoke to the professional Alex, Adam spoke to the personal brother relationship and their younger years, and John, well John was Alex's Best Man, and Alex was to be John's Best Man, next June.



The Monday after his funeral his company had a memorial service. There, an Ohī'a tree, dedicated to Alex, was planted and represents Warrior, Expert and the flowers represent the children of Hawaii *and* the children Alex & Jen never had. Pankow also issued a sticker with Alex's initials in relief and a circle of eight stars for every year Alex worked for there. Employees now wear it on their hard hats out of respect for Alex. Another memorial service was held in Pasadena and a Mass and memorial service in Indiana. In all, about 700 people attended these ceremonies.

Jen and Alex celebrated their 2<sup>nd</sup> wedding anniversary and their first mortgage payment at his bedside. She keeps his sandals by the door, visits his grave almost daily. We are all lost, floundering, and miss Alex desperately. My husband and I cry every day. Sometimes I call his cell phone just to hear his voice.

Grieving the loss of a child is brutal and hangs on your body like a heavy cloak. Knowing people have lost loved ones since time began is not yet comforting, as we are on our own personal journey. The pain of grief is too sharp and commands your full attention. I know our journey of mourning, listening for his call, hearing his laugh, and sharing his dreams may never end in our lifetime. I expect that there will never be full closure. I accept that, just wanted you to know a little bit more about this extraordinary son of ours.



Alexander J. Kruggel  
5-8-75 ~ 8-10-07

Very truly yours,  
Claudia Kruggel  
*The luckiest Mom in the world*

Help in the fight against cancer!

# Take the Purdue Cancer Center Challenge!

5k RUN/WALK | APRIL 12, 2008 | 8:30 a.m. | ROSS-ADE STADIUM

Race proceeds benefit the Purdue Cancer Center \*



## Register

Please register for the Challenge online at [www.cancer.purdue.edu](http://www.cancer.purdue.edu) or detach and mail in this form with a check, payable to:

Purdue Foundation

**Mail to:** Purdue Cancer Center Challenge

Attn: Beth Steurer

Hansen Life Sciences Research Building

Purdue University

201 S. University Street

West Lafayette, IN 47907-2064

Name (First) (Last) \_\_\_\_\_

Address \_\_\_\_\_

City State Zip Code \_\_\_\_\_

Phone Number \_\_\_\_\_

Email Address \_\_\_\_\_

Male Female

T-shirt size (Youth S-L, Adult XS, S, M, L, XL, XXL, XXXL)

I have read and acknowledge Purdue University's release form for this event which can be found at

[www.cancer.purdue.edu](http://www.cancer.purdue.edu). (Registration is not complete unless this is checked)

Age on Raceday \_\_\_\_\_ Birth date \_\_\_\_\_

Student (\$18 by April 5, 2008)

Non-Student (\$20 by April 5, 2008)

"Sleep-in for the Challenge"  
( \$18 Student; \$20 Non-Student)

I have included an additional donation of \$ \_\_\_\_\_

### Check all that apply

I would like to be recognized as a cancer survivor

I am a Purdue alumna/alumnus

I am a Purdue student

I am a Purdue faculty/staff member

### How did you hear about the race?

On-campus promotions

At a Purdue event (Homecoming, athletic event, etc)

Alumni publications

Posters/fliers in the community

Purdue Cancer Center communications

Running group websites

Other, please specify

## About the Purdue Cancer Center

\*Founded in 1978

\*Elite basic cancer research center

\*One of seven centers in the U.S. to earn the National Cancer Institute's basic-research designation.

\*Located on Purdue's campus

\*Purdue scientists and researchers with a common goal: **Fight Cancer**

## Registration cost

\*Student runner—\$18 by April 5th (\$25 on April 11 or 12)

\*Non-student runner—\$20 by April 5th (\$25 on April 11 or 12)

### \*Sleep-in for the Challenge

Can't make the race, but want to contribute and get a t-shirt (\$18 for students; \$20 for non-students)

## How to register

*We strongly encourage registering prior to race day.*

\***Online** [www.cancer.purdue.edu](http://www.cancer.purdue.edu)

\***By Mail** Tear off the registration form and mail in with your check.

\***In person** Ross-Ade Stadium (Friday, April 11 from 4–7 p.m.; Saturday, April 12 from 7–8:15 a.m.)

## Race details

\*The Purdue Cancer Center Challenge race is open to runners and walkers of all ages and abilities that share a common goal: **Fight cancer!**

**Learn more at:**  
[www.cancer.purdue.edu](http://www.cancer.purdue.edu)

## Are you taking the challenge?

Take the Purdue Cancer Center Challenge and join us for our first 5k walk/run!

**April 12, 2008**  
**8:30 am**  
**Ross-Ade Stadium**

Sign up today at  
[www.cancer.purdue.edu](http://www.cancer.purdue.edu)



**PURDUE**  
UNIVERSITY.

[www.cancer.purdue.edu](http://www.cancer.purdue.edu)

### DREAM BIG

Through your support and our researchers' discoveries, we can all be champions for the dreams of individuals struggling with the diagnosis of cancer *and* for the biggest dream of them all - *conquering cancer*.

We invite you to participate in our quest for effective treatments and cures. We realize that no two gifts are alike and at the Purdue Cancer Center, we encourage gifts of all shapes, sizes and purposes. Every gift can impact the lives of so many.

To make a gift to the Purdue Cancer Center please contact:

Tim Bobillo, Director of Development  
Hansen Life Sciences Research Building  
201 South University Street  
West Lafayette, Indiana 47907-2064  
(765) 496-6374 \* [bobillo@purdue.edu](mailto:bobillo@purdue.edu)

Beth Steurer, Director of Donor Relations  
Hansen Life Sciences Research Building  
201 South University Street  
West Lafayette, Indiana 47907-2064  
(765) 494-1109 \* [steurered@purdue.edu](mailto:steurered@purdue.edu)

### Update your information

We are committed to helping you stay connected to the University and to the Purdue Cancer Center - please help us keep the most updated information at our fingertips so that we can share our success stories with you about how we are fighting the battle against cancer.

Send updates to the above address or to [steurered@purdue.edu](mailto:steurered@purdue.edu).

Name: \_\_\_\_\_ Spouse Name: \_\_\_\_\_

Children: \_\_\_\_\_

Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_

Email address: \_\_\_\_\_ Home Phone: \_\_\_\_\_

Employer: \_\_\_\_\_ Work Phone: \_\_\_\_\_

News you would like to share: \_\_\_\_\_

\_\_\_\_\_

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