



# SECTION VI: RESOURCES AND SUPPORT FOR YOUR STAY AT UNIVERSITY OF MINNESOTA MEDICAL CENTER AND MASONIC CHILDREN'S HOSPITAL

## UNIVERSITY OF MINNESOTA MEDICAL CENTER

General Information

(612) 273-3000

### **Masonic Cancer Clinic**

Clinics and Surgery Center

909 Fulton Street SE

Minneapolis, MN 55455

Phone: 612-676-4200

### **Orthopaedics Clinic**

Clinics and Surgery Center

909 Fulton Street SE

Minneapolis, MN 55455

Phone: 612-273-9400

### **Radiation Oncology Clinic**

University of Minnesota Medical Center

500 Harvard St.

Minneapolis, MN 55455

Phone: 612-273-6700

**Please visit [mhealth.org/locations](https://mhealth.org/locations) for information on parking, valet parking options, driving directions, parking rates, and more.**

The University of Minnesota Medical Center is located near downtown Minneapolis. The Medical Center is the main hospital for inpatient stays and also houses the Radiation Oncology Clinic. The Clinics and Surgery Center is the place where clinic appointments and infusions take place.

University of Minnesota Health represents a collaboration between University of Minnesota Physicians and University of Minnesota Medical Center. Together, we are providing breakthrough medicine and transforming the health of our community for the better.

## **UNIVERSITY OF MINNESOTA MASONIC CHILDREN'S HOSPITAL**

University of Minnesota Masonic Children's Hospital is located on the west bank of the Mississippi River in Minneapolis. We provide a broad range of pediatric services; these include surgery, imaging, neonatal and pediatric intensive care, cardiac and oncology services, and blood, marrow, and organ transplantation.

Our doctors strive for medical breakthroughs in their work with patients and in their research, always using innovative approaches. This has led to several firsts, including the first successful pediatric blood marrow transplant, the first infant heart transplant in Minnesota, and the first cochlear ear implant surgery for a child.

## **UNIVERSITY OF MINNESOTA HEALTH SARCOMA CARE TEAM**

The University of Minnesota Health sarcoma program is a collaboration of bone and soft tissue cancer specialists and researchers. It ranks as one of the top sarcoma research and treatment programs in the nation. RIS interviews held with members of the Health Sarcoma Care Team can be found at the end of this section.

### **Care Team Members**

Edward Cheng, M.D.

L. Chinsoo Cho, M.D., M.S.

Denis Clohisy, M.D.

Evidio Domingo-Musibay, MD

Kathryn Dusenbery, M.D.

Paari Murugan, M.D.

Michael Maddaus, M.D.

Christian Ogilvie, M.D.

Daniel Saltzman, M.D.

Keith Skubitz, M.D.  
Todd Tuttle, M.D.  
Brenda Weigel, M.D.  
Emily Greengard, M.D.  
Erin Fritz, BSN, CNP  
Jill Lee, CPNP-AC, CPON  
Barbara Lace, RN, sarcoma team nurse coordinator

**Care Team Members for Pediatric Bone and Soft Tissue Tumors**

For appointments, please call: 612-273-9400

Patients: press 1

Health professionals: press 2

If possible, patients should bring imaging studies and the results of any other tests that have been done. Alternatively, with advance notice, arrangements can be made to have tests run here, in conjunction with your appointment. Diagnostic imaging, medical history, biopsy results, and other information may be forwarded to us for review.

**Journey Clinic (Pediatrics)**

Riverside Campus  
9<sup>th</sup> floor, East building  
2450 Riverside  
Minneapolis, MN 55454-1450

**Cancer Information Nurse Line**

**1-888-226-2376**

**Twin Cities 612-624-2620**

**PARKING:**

Please visit [mhealth.org/locations](http://mhealth.org/locations) for information on parking, valet parking options, driving directions, parking rates, and more.

**PUBLIC TRANSPORTATION**

**City Buses and Light Rail**

Metro Transit bus service is available to our Riverside campus via route numbers 7 and 2, and to our University campus via route numbers 52 and 16.

The Clinics and Surgery Center and University of Minnesota Medical Center is served by the Green Line light rail system with the East Bank Station (at Washington and Harvard) or Stadium Village station. Expect a 4-5 block walk from either light rail station.

### **Airport Transportation**

Super Shuttle offers shuttle services to and from our medical facilities and nearby hotels. For rates, schedules or to make a reservation, call (612) 827-7777; toll-free phone number is 800-BLUE-VAN (800-258-3826).

### **Taxis**

A number of taxicab services in St. Paul and Minneapolis serve the hospital. Direct telephone lines to some taxi services are located in the hospital lobbies.

## **DINING AND LODGING GUIDE — MINNEAPOLIS**

Please note: The listings in this guide are provided for patient, family, and visitor reference only. They are not the University's or Rein in Sarcoma's recommendations.

### **DINING OPTIONS AT THE UNIVERSITY AND MEDICAL CENTER**

#### **Bridges Cafeteria**

The hospital's cafeteria is located on the eighth floor. Hours are 6:30 a.m. to 6:30 p.m., Monday through Friday, and 7 a.m. to 8 p.m. on weekends. The cafeteria serves a wide assortment of meals, from grilled items and sandwiches to salads and desserts.

#### **Vending Machines**

Vending machines are located near the restrooms on the third and fourth floors of the hospital. There are also several local restaurants within walking distance.

### **DINING OPTIONS IN THE SURROUNDING COMMUNITY**

For links and reviews for many Twin Cities area restaurants visit:

<http://www.urbanspoon.com/c/29/Twin-Cities-restaurants.html>

*or*

<http://www.allmenus.com/mn/minneapolis/>

#### **AI's Breakfast**

413 14th Avenue SE, Minneapolis, MN 55414

612-331-9991

**Annie's Parlor**

Lunch and dinner daily  
313 14th Avenue SE, Minneapolis, MN 55414  
(612) 379-0744

**Applebee's Restaurant**

615 Washington Avenue SE, Minneapolis, MN 55414  
At the Commons Hotel  
(612) 378-3740

**Blaze Fast Fire'd Pizza**

1000 Washington Avenue SE, Minneapolis, MN 55414  
612-379-1723

**Coffman Memorial Union Dining Food Court**

300 Washington Avenue SE, Minneapolis, MN 55455  
Offers lunch and snacks from the following restaurants:

- Baja Sol Tortilla Grill
- Chick-fil-A
- Cranberry Farms
- Einstein Bros Bagels
- Erbert & Gerbert's Sandwich Shop
- Greens to Go
- Jamba Juice
- Minnesota Marketplace Food Court
- Panda Express
- Topio's

**D'Amico and Sons Deli**

200 SE Oak Street, Minneapolis, MN 55455  
(612) 626-9659

**Domino's Pizza**

**215 Oak Street SE, Minneapolis, MN 55414**  
**612-331-3030**

**Jewel of India**

Lunch and Dinner  
1427 Washington Avenue S, Minneapolis, MN 55454  
(612) 339-0002

**Little Szechuan**

304 Oak Street SE, Minneapolis, MN 55414  
612-886-3906

**Loring Pasta Bar - Lunch, Dinner**

327 14<sup>th</sup> Ave SE, Minneapolis, MN 55414  
(612) 378-4849

**Phillips-Wangensteen Building**

516 Delaware Street SE, Minneapolis, MN 55455  
Offers the following options on the second floor:  
Freshii  
Freshii POD Express

**Punch Neapolitan Pizza – Stadium Village**

802 Washington Avenue SE, Minneapolis, MN 55414  
**612-331-3122**

**Sally's Saloon and Eatery**

700 Washington Ave SE, Minneapolis, 55414  
(612) 208-1388

**Sprout Salad Company**

309 Huron Boulevard SE, Minneapolis, MN 55414  
612-886-3806

**Toppers Pizza**

712 Washington Avenue SE, Minneapolis, MN 55414  
612-259-7556

**FAST FOOD ON/NEAR WASHINGTON EAST OF HARVARD ST (TOWARDS ST. PAUL)**

Burger King  
Bona Vietnamese  
Bruegger's Bagels  
Burger King  
Caribou Coffee  
Chai Japanese Bistro  
Chipotle Mexican Grill

Dunn Brothers Coffee  
Dairy Queen  
Domino's Pizza  
Haiku Japanese Bistro  
Hong Kong Noodle  
Jimmy John's  
Naf Naf Grill  
Noodles and Company  
MyBurger  
Orange Julius  
Papa John's Pizza  
Raising Cane's Chicken Fingers  
Starbucks  
Subway

### **Restaurants near Masonic Children's Hospital (west bank)**

#### **Birchwood Café**

Breakfast, lunch, dinner  
3311 E 25th Street, Minneapolis, MN 55406  
(612) 722-4474

#### **Davanni's Pizza & Hot Hoagies**

2500 Riverside Ave, Minneapolis, MN 55454  
612-332-5551

#### **Perkins Restaurant & Bakery**

901 27<sup>th</sup> Avenue S, Minneapolis, MN 55406  
612-339-6865

#### **Pizza Lucé - Seward/University**

2200 E Franklin Avenue, Minneapolis, MN 55404  
(612) 332-2535

#### **Tracy's Saloon & Eatery**

2207 E Franklin Ave, Minneapolis, MN 55404  
**Phone:** (612) 332-1865

**West Bank Grocery**

417 Cedar Avenue S, Minneapolis, MN 55454  
(612) 338-2720

**LODGING NEAR THE MEDICAL CENTER**

The listing that follows shows lodging near the University of Minnesota Medical Center. Rates listed include a discount, if there is one available, for University Medical Center patients and relatives. Rates can change without notice.

**Hope Lodge**

American Cancer Society Hope Lodge  
2500 University Ave SE  
Minneapolis, MN 55414  
(612) 379-6352 or 1-800-ACS-2345  
(You must be referred by a Twin Cities medical facility staff member)

**Ronald McDonald House**

818 Fulton Street SE  
Minneapolis, MN 55414  
(612) 331-5752  
(Lodging for families of children 19 and under receiving treatment)

**Courtyard Minneapolis Downtown**

1500 Washington Avenue S  
Minneapolis, MN 55454  
(612) 333-4646

**The Commons Hotel (East Bank—on campus)**

615 Washington Avenue SE  
Minneapolis, MN 55414  
612-379-8888 or 1-800-822-6757

**Days Hotel Minneapolis - University of Minnesota**

2407 University Avenue SE  
Minneapolis, MN 55414  
(612) 623-3999 or 1(800) 329-1073

**University Inn**

925 4<sup>th</sup> Street SE

Minneapolis, MN 55414

(612) 746-1300

**Reservations:**

When you make a reservation, please identify yourself as a patient or relative at the University of Minnesota Medical Center.

For more information, call Accommodations at (612) 273-3695 in the metro area or 1-800-328-5576, or visit: [www.fairview-university.fairview.org](http://www.fairview-university.fairview.org).

**INTERVIEWS:** On the following pages are interviews with University of Minnesota physicians and scientists, conducted by Christin Garcia, a sarcoma survivor and RIS Board member. You may find this helpful in knowing your University or Masonic medical team. For additional interviews and updates see the RIS website: [www.reininsarcoma.org](http://www.reininsarcoma.org)

©2016 - Rein in Sarcoma Foundation (November 2016)

Current to:  
June 2013

Interviews for the  
Karen Wyckoff Rein in Sarcoma Foundation  
*with*  
University of Minnesota Physicians and Scientists  
Addressing Sarcoma



*By* Christin Jaye Eaton Garcia

## Welcome

I set off on an unexpected journey in August 2007, when synovial sarcoma officially announced its presence in my life. My tumor was big and my treatments, likewise, were not small. After the storm, I was left on the shores of survival. Reconfigured physically to some degree, my real task was to shape a new life, big enough to carry all that had come before.

It can be hard, surviving cancer. Blessed, joyful and amazing, to be sure. But also hard. Each new day is a miracle and a gift for all people; one more chance to know God. Yet for those who have needed to stand tall and declare wellness against the sharp cold wind of an aggressive cancer; for those who have needed to live into that day when the future emerges as a solid mountain from shrouded mists, something substantial again, and more than a distant or crazy dream; for us, these gifts may be both more raw and more apparent. Time passes, of course, and this precious quality fades. Blessedly!: that we may bear to live.

My life has been sustained by God and enriched by my beautiful family, along with our friends and our community. My life also has been made possible through the work done by fine physicians and researchers, nurses and staff, affiliated with the sarcoma program at the University of Minnesota. There, in my own backyard!, I found folks brimming with talent and compassion. Their gracious and excellent care brought me to this day. It is a privilege to bring them to you, with their colleagues, through these pages.

These pages are made possible by the Karen Wyckoff Rein in Sarcoma Foundation, started in 2001 by Karen and carried on with vibrant dedication by her parents, Pete and Sue, along with so many others. RIS seeks to connect and inform the sarcoma community, to enhance knowledge and education about sarcoma, and to fund research that may bring us one day to a cure. Writing for RIS has allowed me to channel my cancer energy in a positive direction. It also has been a lot of fun, especially when I have the chance to give voice to the bright minds you see here.

Each piece is informed by an internet search for context, then followed by a telephone interview lasting about an hour. I expect this to be a living document, which integrates more names and faces, more wonderful stories over time. These are no master works, yet I hope they illuminate, in some small way, the kindled spirit.

*Peace.* Christin.



*Special thanks to **Barb Nallick**, for artistic and technical assistance.*

## Table of Contents

Interview Highlights .....	i
Ed Cheng, MD: “It is a privilege” .....	1
L. Chinsoo Cho, MD: “A great field” .....	3
Denis Clohisy, MD Answers: Why RIS? .....	6
Katie Dusenbery, MD: “Karen was my patient” .....	8
Emily Greengard, MD: Passionate about her patients.....	10
David Largaespada, PhD: Exciting New Research? “Let’s Try It!” .....	12
Jaime Modiano VMD, PhD: Dog Doctor, Your Doctor? .....	14
Christian Ogilvie, MD: Embracing Education .....	16
Amy Skubitz, PhD: Fascinated By Science.....	19
Keith Skubitz, MD: “Absolutely,” Science Helps.....	22
Logan Spector, PhD: Hunting the Why .....	25
Subbaya Subramanian, PhD: “Let’s make sarcoma the disease of the past” .....	28
Brenda Weigel, MD: The Hope Doctor .....	29

Interviews for the  
Karen Wyckoff Rein in Sarcoma Foundation  
*with*



University of Minnesota Physicians and Scientists  
Addressing Sarcoma

**Interview Highlights**

**Ed Cheng, MD: "It is a privilege"**



It is hard to watch patients die. Yet getting to know people who face cancer and seeing how they persevere can be gratifying and inspirational. Treating cancer patients helps keep University of Minnesota Professor and orthopaedic surgeon Dr. Ed Cheng grounded and provides him with perspective. Dr. Cheng considers it a privilege to be a physician, to have the opportunity to care for people every day. He also considers Karen Wyckoff to be a great example of how “you can make a difference. One person can make a difference.” [March 2011]

**L. Chinsoo Cho, MD: “A great field”**



Dr. L. Chinsoo Cho is an Associate Professor and radiation oncologist with the University of Minnesota. Treating sarcoma cancers is “very challenging,” because they may appear anywhere in the body and often are located near critical body structures. In this work, as in life, each person is unique. Dr. Cho considers radiation oncology to be “a great field,” and he finds success in many different outcomes. [December 2011]

**Denis Clohisy, MD Answers: Why RIS?**



Orthopedic surgeon Dr. Denis Clohisy saves lives. With a world-class multidisciplinary team at the University of Minnesota, he is working to save more. RIS funding provides a creative spark and a vital source for a “hopeful research culture” at the U, which may one day contribute badly needed treatment advances for sarcoma. For now, each day, the University team provides outstanding patient care, in an environment enriched and energized by RIS. [November 2010]

**Katie Dusenbery, MD: “Karen was my patient”**



University of Minnesota Professor and Radiation Oncologist Katie Dusenbery has been involved with the Karen Wyckoff Rein in Sarcoma Foundation from the start. After all, she tells us, “Karen was my patient.” She appreciates the support RIS provides for her other patients and looks for ways the physicians can say thank you in return. A founding board member, Dr. Dusenbery has focused on the education aspect of RIS’ mission. She loves introducing medical students to oncology. Each time she does, there is “one more person who knows how wonderful cancer patients are.” [May 2011]

**Emily Greengard, MD: Passionate about her patients**



Emily Greengard is one of the newest members of the Rein in Sarcoma team. A pediatric medical oncologist and Assistant Professor at the University of Minnesota, Dr. Greengard has become involved with the Medical Advisory Committee so central to the work of the Red Flags team. Passionate about treating her patients and having the opportunity to combine her practice with research in an academic environment, Dr. Greengard says “it’s nice to wake up every morning and think there’s nothing else you’d rather do.” [June 2013]

**David Largaespada, PhD: Exciting New Research? “Let’s Try It!”**



Could you ever imagine sarcoma cancer, with a fairy tale ending? University of Minnesota Professor and cancer geneticist Dr. David Largaespada is working hard to make this happen. Through creative collaboration with others at the University and supported in part by RIS, Dr. Largaespada seeks both to better understand how cancer grows in people and to find new ways to stop it. He is drawn to sarcoma in part because it affects young people, and also because it is understudied. There are “more ideas than ever” being tried against the more common cancers. Dr. Largaespada would like to try these ideas against sarcoma cancer, as well. He expects to see “exciting new research in the future.” [December 2010]

### **Jaime Modiano, VMD, PhD: Dog Doctor, Your Doctor?**



University of Minnesota Professor Jaime Modiano is a dog doctor, whose passion for treating his animal patients may translate into new medicine for you. Dogs get sarcoma cancers, naturally, at a much higher rate than people do. They also have much shorter life spans than people. We can learn a lot by studying dogs, and can quickly determine which new treatments may be best, for them and for us. University scientists, medical doctors and veterinary doctors are working together on many exciting research projects, including those for angiosarcoma and osteosarcoma. Dr. Modiano says: “I’m doing something I love to do,” which may end up helping people and their pets. Learn more about exciting sarcoma collaborations, some inspired and funded by RIS. [March 2011]

### **Christian Ogilvie, MD: Embracing Education**



University of Minnesota Associate Professor and orthopaedic surgeon Christian Ogilvie chose medicine so he could practice science, while working directly with people. He likes teaching people, educating patients. And he likes to fix things. He appreciates the chance to make a big difference in someone’s life, in a moment. To restore them, perhaps, to what they could do before. A recent recruit to Minnesota, Dr. Ogilvie has been a great asset for RIS. He has embraced our education mission: teaching residents about sarcomas, speaking to medical students through the Wyckoff Scholar program, appearing at the Mini Medical School. Dr. Ogilvie also has joined our Red Flags Campaign and now, the Rein in Sarcoma Board of Directors. [January 2012]

### **Amy Skubitz, PhD: Fascinated By Science**



It can be really hard to love sarcoma cells when you’re a cancer patient. Yet your future may depend on scientists finding them fascinating. Meet University of Minnesota Professor and tumor biologist Amy Skubitz, who finds cancer cells to be the most interesting in the human body. We can embrace this interest, as she has focused her talents on discovering better ways for doctors to find, predict and stop cancer cells. Often working in collaboration with others at the University, including her husband oncologist Keith Skubitz, Dr. Amy Skubitz has received more than one RIS grant award. What is it about cancer cells? What does a tumor biologist really do? And how can your tumor cells be used to improve cancer treatments? [January 2011]

**Keith Skubitz, MD: “Absolutely,” Science Helps**



University of Minnesota Professor and medical oncologist Keith Skubitz has been treating people with sarcoma cancer for over 20 years. Maybe, he is your doctor. What he really seems passionate about is finding ways for science to help doctors deliver better treatments to their patients. This can mean anything from more effective drugs to portable pumps, which allow patients to take their chemo home. A long-time RIS partner, Dr. Skubitz’ scientific research includes the quest for genetic signatures that may identify more dangerous tumors and provide targets for new drugs. [June 2011]

**Logan G. Spector, PhD: Hunting the Why**



Logan Spector is not a medical doctor, but he does have the opportunity to talk with families as part of his research work. In his experience, the first question asked by parents whose children have been diagnosed with cancer is: What’s going to happen to my child? The second question is: Why did this happen to my child? Epidemiologists like Dr. Spector are “here to investigate the why.” Back in 2004, a small seed grant from Rein in Sarcoma helped Dr. Spector support a successful application for funding from the National Institutes of Health, to study the connection between osteosarcoma and certain genes. The University of Minnesota, where Dr. Spector is an Associate Professor, is “a great place to study pediatric cancer.” It’s not quite the life led by Colonel Sam Daniels, but it suits him well. [October 2011]

**Subbaya Subramanian, PhD: “Let’s make sarcoma the disease of the past”**



In 2008, KWRSF funded work done by Dr. Subramanian in collaboration with Dr. Jaime Modiano, which led to further funding support for continued efforts to understand the gene networks that contribute to osteosarcoma development and progression. Dr. Subramanian’s goal? To make sarcoma a disease of the past. [February 2009]

### **Brenda Weigel, MD: The Hope Doctor**



I once heard University of Minnesota Associate Professor and medical oncologist Brenda Weigel referred to as the hope doctor. It is easy to see why this could be so. Dr. Weigel radiates a sincere and vital hope, fueled by her research seeking better cancer treatments but grounded in her experience treating cancer patients. “Far too often,” she has faced situations where there is “nothing else to do” for patients. But she also has seen recoveries in recent years that would have been unimaginable, just 10 years ago. Even more exciting developments are on the horizon. Dr. Weigel would like to recognize the Wyckoff family and all those who have helped Rein in Sarcoma, for the huge impact the group has had in moving the University to develop what is now becoming one of the premiere sarcoma programs in the country. [September 2011]

## Ed Cheng, MD: “It is a privilege”

---



It is hard to watch patients die. Yet getting to know people who face cancer and seeing how they persevere can be gratifying and inspirational. Treating cancer patients helps keep University of Minnesota Professor and orthopaedic surgeon Dr. Ed Cheng grounded and provides him with perspective. Dr. Cheng considers it a privilege to be a physician, to have the opportunity to care for people every day. He also considers Karen Wyckoff to be a great example of how “you can make a difference. One person can make a difference.”

Dr. Cheng was not involved in Karen’s medical care. He knew that patients who are motivated can make a difference, however, and was intrigued by the opportunities her ideas presented. So when the University of Minnesota asked for a doctor to help out with the new organization, carried forward by her parents, he agreed. Dr. Cheng became a founding board member. It has been “quite exciting” to see the Karen Wyckoff Rein in Sarcoma Foundation grow. RIS has generated energy and enthusiasm at the University, money has been raised to support cancer research, educational materials have been created for doctors and patients, and a new website has been developed. RIS really has been “instrumental in the care, management and support of patients who have this terrible disease, sarcoma.”

When asked how he became involved in the educational video prepared for patients facing amputation, Dr. Cheng said: “You know they say ideas are born out of necessity, and that was certainly the case here.” The life-changing effects of losing a limb are “so paramount,” patients need to sort through this over a much longer time frame than is available in an office visit. Patients need to understand not only the functional and logistical changes they can expect but also the psychosocial aspect of coping with the loss of their limb. They need to have this information provided in a way that is sensitive and compassionate. If doctors don’t provide help for patients going through this challenging process, they are missing the “art of medicine.” One way to help patients is by hearing and learning from others who have gone through similar experiences.

But when Dr. Cheng set out to look for resources to share with his patients, he couldn’t find them. He identified this as an unmet medical need and decided to ask RIS for funding to help create materials. RIS did award funding, and Dr. Cheng led the efforts to make a video including interviews with adults who have undergone major surgery and limb amputation. He personally found the movie clips inspirational to watch. He learned things he had not known about what people experience, and he has incorporated this knowledge to help his discussions with new patients.

The intent of the video series, titled “Living Life: Cancer Patients Talk About Amputation,” was to help as many people as possible. Accordingly, it is posted on YouTube as well as the websites of the University’s Cancer Center Sarcoma homepage and Rein in Sarcoma. With time, more and more people are watching the clips, some from places far away.

Those who’ve been involved in making the movie have noted the gratification of knowing that they’ve helped people elsewhere, some of whom they haven’t even seen. “So we have to say thank you to KWRISF,” Dr. Cheng added, “because without them we would not have been able to do it.” Another RIS-funded video is in process to address children’s experiences.

Dr. Cheng always wanted to be a doctor, since he was a boy in elementary school. He received his Medical Degree from Northwestern University in 1983 and did a General Surgery Residency there. He moved to Harvard, where he completed an Orthopaedic Surgery Residency in 1989 and Fellowships in Orthopaedic Oncology and Pediatric Orthopaedic Oncology in 1990. Also in 1990, Dr. Cheng joined the University of Minnesota faculty. He has practiced here ever since.

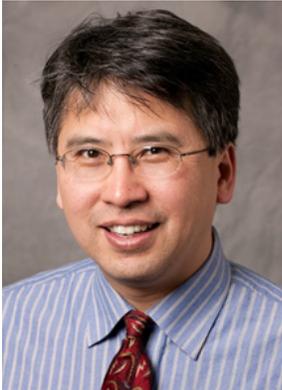
From time to time, of course, Dr. Cheng does leave the state. For example, this was his second year traveling to Mongolia as a medical missionary, as part of his ministry through the Christian Medical & Dental Society. Dr. Cheng felt called to a broader mission, beyond his practice here, and wished to offer this service in Christ. He had the opportunity to consult with physicians in Mongolia and help care for their patients. He found it rewarding to educate doctors about cancer treatments and complex joint replacements and to help them build their infrastructure. “This is not giving them a fish, but teaching them to fish,” which may leave a lasting legacy. And through the wonders of electronic communication, Dr. Cheng can continue to consult with physicians there, even from his place in Minnesota.

Dr. Cheng loves his work as a physician. “How many people have the chance to help someone out all the time?” he asked. Every day, he gets to “see all these stories” and meet new people. He also has the chance to teach other doctors. And one never knows what else may come along. “KWRISF just popped up,” he said, and “look what it’s become.” Dr. Cheng would encourage young people who are interested to consider this career. He also would encourage people to “have confidence in knowing that if you think big, you can make a difference.”

*Christin Garcia, March 2011*

## L. Chinsoo Cho, MD: “A great field”

---



Dr. L. Chinsoo Cho is an Associate Professor and radiation oncologist with the University of Minnesota. Treating sarcoma cancers is “very challenging,” because they may appear anywhere in the body and often are located near critical body structures. In this work, as in life, each person is unique. Dr. Cho considers radiation oncology to be “a great field,” and he finds success in many different outcomes.

### **Many Homes**

Dr. Cho has lived many places, but he does not feel adrift. He has lived in each place for quite some time, and always for a good reason. After growing up in the Washington DC area, he attended medical school at George Washington University and completed his residency there. He left for Duke University in North Carolina to begin his training in radiation oncology, but returned to George Washington University to complete it.

From there, Dr. Cho moved to Dallas to join the University of Texas Southwestern Medical Center and work with pre-eminent physician Dr. Eli Glatstein. Training under Dr. Gladstein was like “being a clerk for a Supreme Court Justice.” Dr. Glatstein was a good mentor and a fantastic leader. Dr. Cho gained experience with lung, prostate and breast cancer, in addition to sarcoma.

In 2005 Dr. Cho moved to Minnesota. He visited in September after enduring day after day of 100 degree Texas heat. Minnesota was beautiful and Dr. Cho thought he could live here in beauty all the time. As it happens, winter is cold and long and summer has too many mosquitos, but his family loves it here. And here he has stayed. Today, Dr. Cho’s practice includes the treatment of lung, prostate and sarcoma cancers.

### **“That’s Challenging”**

Dr. Cho stumbled into radiation oncology, a field to which medical students had very little exposure when he was in school. He became involved in treating sarcomas and found them to be “very challenging stuff to treat.” Sarcomas involve every part of the body, and every body part has unique ways it can handle radiation. “Sarcoma is everywhere from head to toe – that’s challenging.” Targeting tumors while protecting healthy tissues is always the goal, and with sarcoma cancers the plans are unique to each person and different almost every time. “That’s what I like,” Dr. Cho said.

Clinical research is a big interest for Dr. Cho, who seeks to apply technology in different ways to improve outcomes. One cutting-edge tool is image guided stereotactic body

radiotherapy, which can deliver precisely targeted beams. This is especially important for tumors, where the target location can change daily with normal fluctuations in the body.

In both prostate and lung cancer, doctors are studying new uses for radiation beams. Studies are being done to test the use of higher-dose and more precisely targeted radiation, given over several days instead of months. There are also ongoing studies comparing radiation head-to-head with surgery in lung cancer. Doctors look for short-term successes and problems, as well as long-term results. Some signs suggest that radiation therapy may be better than surgery, in certain cases.

These technologies could be used with sarcoma, though the case would need to be chosen carefully.

### **Healthy Collaboration**

At the University of Minnesota, doctors from many different fields all get together to talk about their sarcoma patients and decide which treatments would be best. The team has been meeting like this for years, and they are getting to the point where they “can almost guess what the other person is going to say.” All are “very comfortable expressing” an opinion, which leads to a great conference. The beauty about this is that each doctor is able to learn details and insights from the other specialists, leading to a well-informed and “healthy discussion” about how to treat. Most often, when the information is complete, the team can come to a consensus about what is best.

With sarcoma, of course, consensus is gained amidst uncertainty. There is a big open question, for example, about the best time to administer radiation. In Dr. Cho’s mind, pre-operative radiation is better. But better, he reminds us, “has to be defined collectively. What’s better for me is not better for Dr. Cheng.” When radiation is given before surgery, radiation oncologists can see their target better, decrease the dose and minimize the surrounding tissues that are affected. Yet pre-operative radiation can make surgery more difficult and doubles the wound healing problems after surgery. The best answer will vary for each patient, depending in part on the tumor size and location, as well as the important body structures located nearby.

### **Many Successes**

Many outsiders consider radiation oncology to be a depressing field. Yet for half the patients, the doctors treat for a cure. “We want to get rid of it.” For the other half, treatment is designed to be palliative, which means to help with symptoms, pain and bleeding. “Each patient has a different goal,” Dr. Cho explains, and when pain is relieved, “we consider that a success.”

One difficult part of Dr. Cho's job is trying to convey the vast amount of scientific literature about radiation therapy in a way that the patient understands and can accept. It is hard, for example, to explain the toxicities of radiation "without scaring them to death."

And what is the good part? "When patients get better. That's the reward."

*Christin Garcia, December 2011*

## Denis Clohisy, MD Answers: Why RIS?

---



Orthopedic surgeon Dr. Denis Clohisy saves lives. With a world-class multidisciplinary team at the University of Minnesota, he is working to save more. RIS funding provides a creative spark and a vital source for a “hopeful research culture” at the U, which may one day contribute badly needed treatment advances for sarcoma. For now, each day, the University team provides outstanding patient care, in an environment enriched and energized by RIS.

Dr. Denis Clohisy has been treating sarcoma patients for 20 years. A surgeon who joined the University of Minnesota Medical School faculty in 1991, Dr. Clohisy was named Chair of the Department of Orthopedic Surgery in November 2007. With a world-class multidisciplinary team, Dr. Clohisy is leading efforts to develop better treatments for patients who have sarcoma cancer. These treatments are badly needed, as can be seen in the persistently hard survival rates that accompany some diagnoses. Yet one young woman who lost her life to sarcoma started a revolution, here in Minnesota. Her spirit of hope, her wish for community, can be felt every day. The Karen Wyckoff Rein in Sarcoma Foundation (RIS) has grown from its small beginnings in 2001, just months before Karen died, to become an important spark for creative ideas, hopeful energy, and inspired patient care at the University.

Have you ever seen the sunflowers? At any event hosted by RIS, gorgeous cloth flowers mark the survivors. At the Party in the Park celebration each July, the sunflowers are out in force. Asked how it feels to see so many people walking around who are there because they have been treated at the University, Dr. Clohisy said this picnic is “the most rewarding day of the year” in his professional life. He loves to have his own children join him there, to see the impact his work is having on so many other lives. The children he has treated hold a special place in Dr. Clohisy’s heart. So, too, do the families who have lost someone to sarcoma. To see their willingness to participate in the organization, despite their loss; “it’s really inspiring.” And hopefully this means the family believes their loved one received the best care possible, even though they could not be cured. This picnic is a very special thing.



Asked about the impact RIS has had at the University, Dr. Clohisy discussed the practical support for research, at a time when it is extremely difficult to get funding. By providing money that allows researchers to test their ideas, a necessary first step before they can seek large-scale funding from major organizations, RIS has created “a hopeful research culture.” RIS also has created a culture of scholarship, research and energy that has drawn more people to the field. More doctors are treating sarcoma patients, more scientists are

researching sarcoma cancers, and the team works together more collaboratively to share and develop ideas. This is really important. The young post-doctoral scientists dedicated to sarcoma research, in particular, may be the ones who discover breakthrough treatments. Ten years ago, there were not graduate students who knew much about sarcomas or cared to focus their research in the field. This has changed.

University scientists are succeeding, as measured by publication of their work in leading scientific journals and by research funds granted, including a large grant from the prestigious National Institutes of Health. Cutting-edge genetic research takes place at Minnesota, enabled in part by RIS investments.

Yet the most important impact RIS has had goes way beyond this funding. The education and support for patients who otherwise would feel extremely isolated; the collaborative energy among the medical team; the hopeful research culture? All created through RIS. As Dr. Clohisy observed, "If you think about that, it's quite impressive."

You who are reading this article may have a deeply personal understanding about the value RIS brings; the special collaboration between RIS and the University of Minnesota; the need for medical advances. We hope you will continue to support this work with your time, your energy and your financial resources.

We also hope you will continue to share your smiles with other families who face sarcoma. You do remember, how much those smiles can mean?

*Christin Garcia, November 2010*

## Katie Dusenbery, MD: “Karen was my patient”

---



University of Minnesota Professor and Radiation Oncologist Katie Dusenbery has been involved with the Karen Wyckoff Rein in Sarcoma Foundation from the start. After all, she tells us, “Karen was my patient.” She appreciates the support RIS provides for her other patients and looks for ways the physicians can say thank you in return. A founding board member, Dr. Dusenbery has focused on the education aspect of RIS’ mission. She loves introducing medical students to oncology. Each time she does, there is “one more person who knows how wonderful cancer patients are.”

After completing a residency at Michigan State University, Dr. Dusenbery came to Minnesota for a Fellowship in Medical Oncology. She switched to radiation oncology for a time, not intending this to be permanent. She discovered a whole different aspect of taking care of patients that she really liked, and decided to stay. In 1990, she took her first staff position at the University of Minnesota. She has served as Head of the Department of Therapeutic Radiology since 1999 and now is recognized as one of the Best Doctors in America in her field. As she talks, one understands that Dr. Dusenbery has a passion for the clinic: she really cares for her patients, and she wishes to train new doctors who will do so, as well.

The rigorous, multi-disciplinary work in an academic medical center always called to Dr. Dusenbery. She can’t imagine practicing any other way. As you may know, there is a good deal of “gray” when it comes to treating sarcoma cancers. It is easier to make decisions in collaboration – and also fun.

When she began to treat patients with sarcoma cancer, there were no other radiation oncologists specializing in the area. Dr. Dusenbery gravitated to these patients, who often were young, and saw this as a great opportunity for her future work. Although she now shares sarcoma patients with Dr. Chinsoo Cho, who she recruited to her program several years ago, Dr. Dusenbery still treats patients. Especially the kids. With pediatric patients, the first challenge is to see if you can avoid having to give radiation at all. Because their bodies are still growing, their cells can be more vulnerable to radiation damage. They also have much longer lives ahead of them, making the risk of secondary cancers that can develop as a side effect less tolerable. If radiation really is required, “you try to limit the dose as much as you can.”



Just what does a radiation oncologist do? Long-term follow-up with patients, for one thing. “I love that.” But first, they design the radiation field by drawing on a scanned image, slice

by slice, to show what areas should be treated and which should be avoided. Dosimetrists and medical physicists help to translate these instructions before the machine is powered on and the precisely targeted beams are delivered. Sounds like Star Wars to me. And there is a lot of art involved. Decisions must be made based on imperfect data, and no-one is perfectly prescient. Doctors must balance the goal of controlling the cancer against the desire not to cause harm. One of the most difficult aspects of Dr. Dusenbery's medical practice is when a patient's cancer comes back, or a patient experiences a bad side effect, and "you second guess what you should have done."

Teaching others how to navigate these challenges is another great part of Dr. Dusenbery's job. She loves seeing a resident start out not knowing what they're doing, then learn, then go out and do well in practice. "When they become a really good doctor." Teaching doctors how to treat patients well "can make a difference for a lifetime."

The oncology patients, in particular, have spoken to Dr. Dusenbery. Cancer is "an advanced course in living" and it is really an honor and a privilege to be on the journey with them. One family she joined for the journey was Karen Wyckoff's. Karen was "such an incredibly wise beyond her years young woman" and it was really fun knowing her. Dr. Dusenbery was a founding board member with the official KWRISF and she serves to this day. One has the sense that she will stay connected for as long as she is welcomed. And she seeks good ideas, including ideas about how the physicians can thank the group for all the patient support services it provides.

This wish led her to begin the Mini Medical School, which has been presented by U of M doctors twice so far. Offering families, volunteers and donors the chance to learn about sarcoma, up close and hands-on, the Saturday morning affair has been a big hit with those who've attended. Watch for future opportunities!

Watch too, for the next Wyckoff Sarcoma Scholars. Dr. Dusenbery began this program two years ago, connecting medical residents with the University's sarcoma team. The residents coordinate an educational presentation about sarcoma to other medical students, increasing the chance that if they encounter a sarcoma cancer in clinical practice, they will actually notice the signs and respond appropriately. The Sarcoma Scholar program offers another benefit: there is "one more person who might become an oncologist."

We thank Dr. Dusenbery for her long and inspired service to RIS. The welcome mat is still out.

*Christin Garcia, May 2011*

## Emily Greengard, MD: Passionate about her patients

---



Emily Greengard is one of the newest members of the Rein in Sarcoma team. A pediatric medical oncologist and Assistant Professor at the University of Minnesota, Dr. Greengard has become involved with the Medical Advisory Committee so central to the work of the Red Flags team. Passionate about treating her patients and having the opportunity to combine her practice with research in an academic environment, Dr. Greengard says “it’s nice to wake up every morning and think there’s nothing else you’d rather do.”

### **A two-part focus.**

Emily always knew she wanted to be “a doctor treating children,” but did not begin with the idea that her work would be with cancer patients. During her Pediatric Residency at Children’s Memorial Hospital and Northwestern University, she rotated through the children’s oncology practice. There, she “just fell in love with the patients.” She really appreciated the interpersonal relationships that can be developed with patients and their families.

Dr. Greengard knew she wanted to practice in an academic environment, because she wanted some component of her career to be research. She is intrigued by the cancer disease process, with so many incredible research opportunities to advance the field and improve treatments.

### **Minnesota, and sarcoma.**

As she completed her Hematology/Oncology Fellowship at the Children’s Hospital of Philadelphia, Dr. Greengard became more and more fascinated by solid tumors, and then by sarcomas. As many of us know all too well, so much more progress is needed to improve outcomes and decrease the toxicity of treatments for this cancer. Dr. Greengard would like to contribute to this advancement.

A lifetime resident of the Midwest except for her time in Philadelphia, Emily was happy to come to Minnesota. When she learned of the job opening, she felt it would be “perfect” for her and “a really great fit.” Offering an academic environment and the opportunity to practice with “grounded, supportive people” who have been successful in building their own practices, she expected it to be a great environment to start her career.

### **Working with the Red Flags.**

In 2012, Dr. Greengard joined with the Karen Wyckoff Rein in Sarcoma Foundation by spending time at the Sarcoma Corner during the annual Party in the Park event. Since that

time, she has been active with the Medical Advisory Committee, a group of physicians from the University of Minnesota and Children's Hospitals and Clinics of Minnesota. Together these doctors meet with members of the RIS team to develop materials and design programs to educate both lay people and professionals.

Missed diagnosis and delayed or inadequate treatments are still all too common with sarcoma. The Red Flags team is working to improve these odds.

When asked what is surprising about her work, Emily said: "How incredibly resilient people are." No matter what their background, people rise to the occasion and find a way to get through the situation. She said she's "always so amazed" at how families do.

And we thank Dr. Greengard for her energy, enthusiasm and fine contributions. We hope her practice will go well here, so she may stay in Minnesota for a long time.

*Christin Garcia, April 2013*

## David Largaespada, PhD: Exciting New Research? “Let’s Try It!”

---



Could you ever imagine sarcoma cancer, with a fairy tale ending? University of Minnesota Professor and cancer geneticist Dr. David Largaespada is working hard to make this happen. Through creative collaboration with others at the University and supported in part by RIS, Dr. Largaespada seeks both to better understand how cancer grows in people and to find new ways to stop it. He is drawn to sarcoma in part because it affects young people, and also because it is understudied. There are “more ideas than ever” being tried against the more common cancers. Dr. Largaespada would like to try these ideas against sarcoma cancer, as well. He expects to see “exciting new research in the near future.”

David Largaespada received his Ph.D. in Cellular and Molecular Biology at the University of Wisconsin-Madison in 1992, then did a postdoctoral fellowship at the National Cancer Institute, and finally joined the University of Minnesota in 1996. He holds a joint appointment as Professor in the Department of Genetics, Cell Biology and Development and in the Department of Pediatrics. His cancer research has received national attention, with publication in elite scientific journals and funding support from the National Institutes of Health. Several years ago, through a confluence of happenings, Dr. Largaespada began turning his talents towards sarcoma cancer.

You may have seen headlines about Largaespada’s unique model for identifying the genetic changes that could cause cancer, titled “*Sleeping Beauty*” because it uses awakened genetic material that was inactive for millennia. If you wish to learn more about this work, just type “largaespada sleeping beauty” into your favorite search engine. You could read for hours! What I will tell you about this work is that it led Dr. Largaespada, ultimately, to us.

When he began using the *Sleeping Beauty* model, sarcomas were among the first cancers Largaespada found. He looked around the University and saw that others were working with sarcomas. He has long had an interest in pediatric cancers, and felt that sarcomas were understudied. For all these reasons, Dr. Largaespada and his lab began to consider sarcoma. Currently, they have projects underway to apply the *Sleeping Beauty* model to both osteosarcoma and rhabdomyosarcoma. Through this model, they seek to identify those precise genetic changes in a normal bone or muscle cell that lead to the growth and spread of cancer. Identifying these changes may allow doctors to provide more effective cancer treatments and may provide scientists with new ideas for stopping cancer.

Dr. Largaespada conducts other sarcoma research, as well. One goal is to improve the speed and precision with which potential new treatments could be tested. Largaespada’s lab is

working with vectors, which can be thought of as cargo trucks that carry certain types of genetic material into cells. His graduate student Brandon Moriarity is making “a really fancy cargo truck.” If they succeed, they may be able to match up the genetic changes in a particular tumor with the drugs that will offer the best chance for a response. This information can be really important in the clinic, to allow doctors to give the most effective treatments to their patients. The more scientists learn about cancer, the more they understand that each person’s tumor develops in a unique way. The genetic changes within the tumor may be more important than the body part where it first appeared. This may require scientists and pharmaceutical companies to have “a new way of thinking” about how to develop treatments. And perhaps, it could open new possibilities for sarcoma patients.

In 2010, Dr. Largaespada and his colleague Dr. Bridget Charbonneau used their RIS grant to build upon literature suggesting that certain fibroblast growth factors may be important in causing rhabdomyosarcoma. When they blocked the action of these growth factors in the lab, the cancer cells did in fact slow down. When they also blocked an insulin growth factor, as well, the cancer cells slowed down even more. Although there are not drugs available right now to achieve all this blocking in people’s bodies, Dr. Largaespada is talking with Dr. Brenda Weigel about the possibilities.

This balance, between basic science research and clinical application, is important to Dr. Largaespada. He firmly believes we need more basic information about the process of cancer development. “On the other hand,” he said, “I’m impatient, like a lot of people.” Against the more common cancers, there are “more ideas than ever before” being tried in people. In case the answer to sarcoma is “already sitting right there,” Dr. Largaespada says: “Let’s try it.”

And trying it, he is. Every other week, Dr. Largaespada meets with a group including physicians Drs. Denis Clohisy, Keith Skubitz and Brenda Weigel and scientists Drs. Logan Spector and Subbaya Subramanian, all working together to find better treatments for sarcoma cancer. At the close of our interview Largaespada said, “I would like to have emphasized the fact that we’ve organized ourselves and created this sarcoma program.” There is a “community of labs” and a collaboration among people. “I expect lots of exciting research in the near future,” he said. And we are hopeful!

*Christin Garcia, December 2010*

## Jaime Modiano VMD, PhD: Dog Doctor, Your Doctor?

---



University of Minnesota Professor Jaime Modiano is a dog doctor, whose passion for treating his animal patients may translate into new medicine for you. Dogs get sarcoma cancers, naturally, at a much higher rate than people do. They also have much shorter life spans than people. We can learn a lot by studying dogs, and can quickly determine which new treatments may be best, for them and for us. University scientists, medical doctors and veterinary doctors are working together on many exciting research projects, including those for angiosarcoma and osteosarcoma. Dr. Modiano says: “I’m doing something I love to do,” which may end up helping people and their pets.

Dr. Modiano completed his training in veterinary medicine and received a PhD in immunology at the University of Pennsylvania in 1991. He completed a residency and fellowship in Colorado, then moved to Texas A&M for several years. From 1999 to 2007 he worked in Colorado, serving as a senior scientist in cancer research and an Associate Professor of Immunology. Dr. Modiano misses the gorgeous mountains and dry air in Colorado, but also loves his new work in Minnesota. In 2007 he joined the College of Veterinary Medicine here, where he serves as Professor of Comparative Oncology and as Director of the Animal Cancer Center and Research Program.

Dr. Modiano began our interview by emphasizing that “I am a dog doctor, I am proud to be a dog doctor.” He studies naturally occurring cancers that arise spontaneously in dogs. Dogs are much less likely than people to get breast cancer or prostate cancer. “Dogs don’t smoke,” and they don’t really get lung cancers. Their diets are a bit different, so they don’t get a lot of the gut cancers humans do. Dogs do get cancer, though, and the cancers they are much more likely to get are blood cancers and sarcomas. These cancers are “very rare in people, and very common in dogs.” This gives doctors an opportunity and a question: “Can we use the tumors happening spontaneously in dogs to help us answer the questions” why people get cancer, and what doctors can do about it?



In many respects, the answer is a resounding YES. For example, other than the life stage at which it occurs, osteosarcoma in dogs is “virtually identical” to the disease in people. And in dogs, it may be much easier to figure out what is driving the problem. There are many steps on the way to a cancerous tumor. First, one cell needs to “become bad.” Then this cell needs to acquire the ability to outcompete its neighbors and grow out of control. Many different things can go wrong along the way, and when scientists look at many tumors – even of the

same cancer type – they see hundreds of different genetic mutations. What they really need to know is: Which are the really bad actors? What should be our targets? Because people have exercised control over dog breeding, there are discrete breeds with more isolated, narrower gene pools. This gives doctors a better chance to find important traits that really drive cancer growth and spread.

Some time ago, Dr. Modiano and his colleagues began approaching this question in a slightly different way: they decided to “let the tumor tell us what matters.” They identified molecular genetic “signatures” that tended to appear in one of two different ways in each bone tumor. When they looked at the two groups of animals to see if there were any other differences between them, besides the genetic signature of their tumor, they discovered that these signatures correlated with survival time. One signature occurred in a group that did very poorly; the other signature occurred in a group that did better. The team then applied their bone cancer signature test to other groups of dogs or people and found that separation into two similar groups was there, every time.

The researchers think they know what cellular component is responsible for causing the really bad outcome, but more testing is needed. With this year’s RIS grant, Dr. Modiano will test to see if different variations of the gene he thinks is so important really will cause differences between the two bone cancer signatures. If the answer is yes, “then we have a target” for new drug treatments.

With an earlier RIS grant, Dr. Modiano studied angiosarcoma growth and development. He was able to build upon previous work to strengthen the evidence for “very select survival-related effects” associated with certain cancer stem cells. In other words, scientists may be able to predict which tumors will develop rapidly and spread aggressively by looking to see whether or not they have these few certain kinds of cells. Figuring out how these particularly lethal cancer cells stay alive, even when they should be marked for death by our body, also may give doctors new drug targets.

For both projects, small RIS grants have allowed Dr. Modiano to build upon past research and strengthen the evidence for major grant requests, which ultimately may leverage scientific experiments into better clinical knowledge and successful cancer treatment, for our dogs and for their people. And once again, we see collaborative energy stirring at the University, leading scientists with different backgrounds and specialties to work together in asking important questions and pursuing creative answers. For this support, Dr. Modiano is “very excited and very grateful.” For the work, we are excited and grateful as well.

*Christin Garcia, April 2011*

## Christian Ogilvie, MD: Embracing Education

---



University of Minnesota Associate Professor and orthopaedic surgeon Christian Ogilvie chose medicine so he could practice science, while working directly with people. He likes teaching people, educating patients. And he likes to fix things. He appreciates the chance to make a big difference in someone's life, in a moment. To restore them, perhaps, to what they could do before. A recent recruit to Minnesota, Dr. Ogilvie has been a great asset for RIS. He has embraced our education mission: teaching residents about sarcomas, speaking to medical students through the Wyckoff Scholar program, appearing at the Mini Medical School. Dr. Ogilvie also has joined our Red Flags Campaign and now, the Rein in Sarcoma Board of Directors.

### Family Beginnings

Christian Ogilvie's father was a doctor. A spine surgeon, who spent years at the University of Minnesota and operated on many people with scoliosis. Even as a high school student, Dr. Ogilvie was drawn to the chance for sudden change. To take a crooked spine and make it straight, all in one setting.

In college, Dr. Ogilvie had the opportunity to do service work. He found it "really rewarding to work directly with people," and he wanted to include this type of feeling with his professional work. He liked science, and decided medicine would be a great career. He returned to Minnesota to attend medical school here, at the University.

Before and during medical school, Dr. Ogilvie worked in Dr. Clohisy's lab. Through this work he became interested in tumors. Although he considered pediatric medical oncology for a time, ultimately Dr. Ogilvie wanted to "intervene directly." He liked performing surgical procedures, and he wanted to take the cancer out. So he took his residency in Orthopaedic Surgery, then a fellowship in Musculoskeletal Tumor Surgery at the University of Toronto.

### Geography

Upon completion, Dr. Ogilvie moved to the University of Pennsylvania, where he was an Assistant Professor and a surgeon. He developed a busy practice, focused on tumors. In one single year, he saw 400 individual cancer patients.

When Dr. Clohisy was becoming Chair of the Orthopaedic Surgery Department at the University, he called to recruit Dr. Ogilvie back to Minnesota. In 2009, Dr. Ogilvie returned. He had met his wife here, and the two of them felt this was a good place to raise children.

At Minnesota, Dr. Ogilvie's practice still involves tumors. He focuses on sarcoma, but does other things as well, including major trauma. He drew many connections between the two. Like sarcomas, fractures can occur anywhere in the body. Both trauma surgery and sarcoma surgery may involve bones and joints. And, you will not be surprised to hear that trauma surgery calls to Dr. Ogilvie because it offers the chance to take a crooked, broken bone and straighten it out, all in one setting; to place a plate on it; to help it heal.

You may be surprised to learn that unlike many other tissues in the body, bone really can heal. Cleanly, completely, and without a lot of scar tissue getting in the way of good function. If the conditions are right, if you give it enough time, bone will replace itself and be almost like new. Often, people can go back to doing just about everything they were doing before, because their bone will go back to doing what it was doing before.

### **Education**

Medical students and residents may not get much education about sarcomas, even today. Through his practice, Dr. Ogilvie has seen the patients who don't get diagnosed. Sometimes, an incomplete surgery by a non-cancer specialist will require a second revision surgery, bigger than it would have needed to be.

Dr. Ogilvie talks to people about sarcomas. He has presented at Grand Rounds for medical students twice, through the Wyckoff Sarcoma Scholar program, and expects to do this again. He speaks to orthopedic residents about sarcomas, since people will show up in their offices with lumps and bumps and pains. Most will be benign and harmless, but some will be cancer. He wants people to consider the cancer, before they cut.

Patients, too, need education. Teaching people is nice to do.

### **What is hard?**

The hardest thing about Dr. Ogilvie's job "is probably telling someone their kid has cancer. That's difficult." The parents are kind of helpless, and they have so many questions. Most times, they worry a lot. The second hardest thing? Telling someone they have metastatic disease. The third? Telling someone they have cancer.

It is rewarding, though, when you have the ability to tell people you can take out the cancer and they'll be fine. When you can "educate them a little bit, make some plans" and attack the tumor. Or when a person has pain from cancer in their bone, and has trouble walking, and surgery can help them feel better. When you can "help out with the quality of life."

There are lots of opportunities for constructive outcomes. Sometimes, these come in surprising forms. Allowing someone to go home, for even a few days, may be a victory.

We are thankful that Dr. Ogilvie has decided to embrace these challenges.

*Christin Garcia, January 2012*

## Amy Skubitz, PhD: Fascinated By Science

---



It can be really hard to love sarcoma cells when you're a cancer patient. Yet your future may depend on scientists finding them fascinating. Meet University of Minnesota Professor and tumor biologist Amy Skubitz, who finds cancer cells to be the most interesting in the human body. We can embrace this interest, as she has focused her talents on discovering better ways for doctors to find, predict and stop cancer cells. Often working in collaboration with others at the University, including her husband oncologist Keith Skubitz, Dr. Amy Skubitz has received more than one RIS grant award. What is it about cancer cells? What does a tumor biologist really do? And how can your tumor cells be used to improve cancer treatments?

Amy Skubitz' parents were scientists. When it came time for her to choose a college major, she combined their backgrounds in biology and chemistry, taking a major in biochemistry. What she really loved was working in the lab, with hands-on and off-beat procedures, some so delicate that a single human fingerprint could change the results. She loved the quantitative data analysis, too, that followed this work. So she pursued a PhD in Pharmacology and Experimental Therapeutics from the Johns Hopkins University and completed postdoctoral work in Laboratory Medicine and Pathology at the University of Minnesota. Now a Professor in that department, Dr. Skubitz spends her days preparing grant funding applications, conducting scientific research, writing scientific papers, and mentoring graduate and undergraduate students who work in the labs.

Amy Skubitz seeks excitement in her work. She was drawn to the idea of "discovering something that nobody else knew." The field continues to change dramatically, as new technology allows new opportunities and much quicker results. Information that used to take weeks to get can now be delivered overnight. The same aspects that make tumor cells dangerous in the body make them fascinating in the lab. Normal cells "don't do much." Put them in a lab environment, and they will multiply a couple of times and then just sit there. Cancer cells "grow, multiply, spread out, and move." They reach out and try to grab things. Through special time-lapse photography, scientists can watch dramatic shifts that happen overnight.

The trick for helping patients is to identify better ways for doctors to identify cancer, predict how it will behave in the body, and stop it from growing. During her career, Dr. Skubitz has pursued many different paths to these results. In the beginning, she wanted to do cancer research. Of all diseases, this is the one that seemed like such a big problem. "So many people have had cancer, or know someone who has had it," she said. But her first work in graduate school was with parasites, after she became involved with a Johns Hopkins lab that was

trying to find targets for vaccines that could prevent worm infections that plague people in foreign countries. When she came to the University of Minnesota in 1984, Dr. Skubitz was able to find work using similar technologies to evaluate potential new treatments for cancer. She has been working with cancer cells ever since.

Amy Skubitz came to RIS through her leadership of the Cancer Center Tissue Procurement Facility, which began in about 1995. Before then, after pathologists had finished testing the tumors that were removed from patients through biopsy or surgery, the extra tissue was thrown away. At the same time, researchers were having a hard time finding enough tissue samples to do their work. Dr. Skubitz led the Facility effort, which asked patients to agree that their leftover tumor tissue could be used by scientists, then to have that tissue cataloged and stored for research use. Eventually, University researchers had access to information about all the different genes that were contained in over fifteen hundred tumors. This allowed them to look for profiles or signatures that might be important to cancer growth or movement in the body. If important genes could be identified, this could lead to tests that would help doctors identify tumors or predict their behavior. It also could lead to treatments that block tumor growth or spread in the body. Amy was interested in the opportunities for ovarian cancer, which had been a focus of her work for many years.

Her husband, oncologist Keith Skubitz, was interested in the possibilities for sarcoma. One person's sarcoma tumor can have many different-looking areas, so it can be hard for a pathologist to tell if a tumor really is sarcoma, and which kind it is, based only on the small tissue samples taken before surgery. Getting the diagnosis right is really important, however, so patients without sarcoma are not exposed to toxic treatments but patients with sarcoma get the best available treatments for their cancer type. Many sarcoma tumors are really aggressive, but some are not. Again, the best treatment could depend on knowing which is which. And, as you may understand all too well, there is a serious need for better sarcoma treatments to be developed.

Ultimately, Drs. Amy and Keith Skubitz ended up working together. They stayed up late many nights "in a locked room" at home, after their kids went to bed, reading lists of genes to each other and deciding which may be important. With their first RIS grant, they took this work one step further, testing to see if the genes they had thought were important for an aggressive form of fibromatosis actually appeared to play a role in tumor growth in the body. With fine assistance from pathologist Dr. Carlos Manivel, they were able to confirm that the genes they had identified did seem important. This work continues, and they hope to apply a new technology that will allow much smaller tumor samples to be evaluated, in a much quicker and cost-effective way.

In 2010, the RIS grant was for work related to the prevailing scientific theory that a small and constant percentage of "cancer stem cells" within a tumor are the ones that actually

make cancers dangerous to people, because they drive the spread of tumors throughout the body and are not killed by commonly used chemotherapies. This work also was designed to test chemotherapies against these cancer stem cells, to see if any of the drugs had an effect on the cells. This work also continues.

It was difficult to end my conversation with Amy Skubitz. She speaks quickly and with great enthusiasm, conveying incredible depth and complexity in an accessible way. I expect she could talk about science for hours, nonstop. In many ways, she has been talking about science for a lifetime. To learn more, you may find her biography and select publications, including many publications related to her work with sarcoma, through the Masonic Cancer Center website or the Laboratory Medicine and Pathology website.

*Christin Garcia, January 2011*

## Keith Skubitz, MD: “Absolutely,” Science Helps

---



University of Minnesota Professor and medical oncologist Keith Skubitz has been treating people with sarcoma cancer for over 20 years. Maybe, he is your doctor. What he really seems passionate about is finding ways for science to help doctors deliver better treatments to their patients. This can mean anything from more effective drugs to portable pumps, which allow patients to take their chemo home. A long-time RIS partner, Dr. Skubitz’ scientific research includes the quest for genetic signatures that may identify more dangerous tumors and provide targets for new drugs.

Dr. Skubitz received his medical degree from the Johns Hopkins University, then completed his Internal Medicine training at the University of Minnesota. He took a fellowship in Clinical Pharmacology at Johns Hopkins and returned to Minnesota for his fellowship in Medical Oncology. Here he has stayed. Since 1988, Dr. Skubitz has led the University of Minnesota’s medical oncology treatment efforts for adult sarcoma patients.

### **Better Patient Care**

One of the first things he did was to study the possibility that chemotherapy could be delivered differently. Drugs like ifosfamide had been given to patients in one or two big infusions, over several hours in the clinic. Dr. Skubitz thought it made more sense to deliver the drug slowly, over many days, by a continuous drip. He said “you knew from high school chemistry” that this might make the drug more effective. For one thing, the long steady drip could increase the chances the drug would be there in the body, active and available to hit new cancer cells as they were turned out by the tumor, day after day. This also could lessen side effects, because people would not need to absorb so much of the drug at once.

In about 1980, new technology made this option possible. Portable pumps could deliver a slow continuous drip to patients, even while they moved around freely or stayed at home, carrying their pumps in little packs. With a colleague, Dr. Skubitz studied this method and found that it worked. They published their findings, and many other doctors have followed the same approach.

### **Finding Better Medicines**

Dr. Skubitz says his work is “certainly very interesting,” and sometimes he and his colleagues have “very satisfying results.” It is hard, however, that the treatments don’t always work. For many patients, “eventually, they stop working.” This is a “high stress” time.

One way to improve the situation is to find better medicines. Of course, this could mean making something totally new. But it also could mean making a new match, between an existing drug and an aggressive disease. University researchers have been part of just such a solution for giant cell tumors of the bone. These tumors usually do not kill people, but they can grow aggressively and there have not been good treatment options. Doctors use surgery and radiation when possible, but good results can be hard to get and even then, the tumors often grow back. It appeared to Dr. Skubitz and his colleagues that an antibody developed for osteoporosis might target these bone tumors. A small initial study showed that the drug did help. The University now participates in a world-wide follow-up study to consider the best dose and length of time to use the drug, which is seen as a very promising treatment.

Along the way, doctors also learned more about how tumor cells “talk” to normal cells. In this disease, tumor cells make a protein that recruits normal cells to come nearby and make something – call it factor x – that the tumor itself needs to thrive and grow. The drug works by blocking this protein, interfering with the tumor’s call for normal cells. With fewer normal cells stopping by to donate factor x, the tumor can’t grow so well anymore. Sometimes, it even dies.

### **Using New Science**

Cutting-edge science clearly motivates Dr. Skubitz. On the list of scientific articles he’s written, there are many about genes. Dr. Skubitz tries to understand what tumors are telling us through the unique collection of genetic mutations and expressions they contain. When asked if the study of genetics will turn out to be an important thing for patients, Dr. Skubitz did not hesitate. “Absolutely,” it will.

Of course, genetic work could help doctors develop more effective treatments, targeted directly at the mistakes or pathways that allow the cancer to grow and spread. Even without a cure, genetic work could help doctors predict how dangerous a cancer will be. “Absolutely, definitely” it matters to know which cancers are most likely to be dangerous. This will affect the choices doctors make about treatment. Patients with less dangerous tumors could be spared the more intensive treatments; patients facing tougher battles could receive the most aggressive options.

Just this month, Dr. Skubitz was at a national cancer conference presenting results from a study that uses genes to help doctors separate the more aggressive cancers from the less dangerous ones. This work grew from one of RIS’ first seed grants. Years ago, University researchers including Keith Skubitz and his wife Dr. Amy Skubitz received a grant to identify the genetic signatures that might help doctors predict what cancers would do. The University’s tissue bank and the RIS grant allowed them to begin. Eventually, they found gene sets that appeared to break sarcoma cancers, ovarian cancers and kidney cancers into

two main groups. They did not have enough information about what happened to the patients, though, to allow them to test the idea that the two tumor groups acted differently in people. Recently, the Skubitzes collaborated with researchers in Sweden and Denmark, who did have access to good follow-up information about patients. This work confirmed the sense that different gene sets appear in tumors that are more aggressive than in those less likely to be dangerous.

Another RIS-funded project that Dr. Skubitz works with is the clinical trial designed to test whether PET scans can show us which tumors are responding to chemotherapy. This is “quite neat,” because it may suggest better measures to test drug response. Using traditional methods, it could look like “you killed it off really well,” but then sometimes the tumor comes back. Doctors believe this may be due to the survival of a select group of deadly cells, sometimes called “cancer stem cells,” which may be great at hiding from toxic drugs or blocking their effects. If doctors could tell early on which tumors are being affected by a drug, they could spare patients who are not responding by stopping the drug and could switch them sooner to a potentially more effective option.

### **Always Surprising**

When I asked Dr. Skubitz if there was anything else he thought we should know, he said this sounded an awful lot like the “classic internal medicine question.” Do your visits end with this invitation? Apparently, from the other side of the table, it is “striking” what patients will mention in closing. The doctor may have covered four or five major problems, and “you may think you know why they’re there,” but what’s really of concern to the patient may be something that’s “not even on your radar screen.” It’s surprising what you hear.

Hopefully, most of us can be thankful that our physicians do ask us for our concerns, and will listen for the surprise.

*Christin Garcia, June 2011*



Logan Spector is not a medical doctor, but he does have the opportunity to talk with families as part of his research work. In his experience, the first question asked by parents whose children have been diagnosed with cancer is: What's going to happen to my child? The second question is: Why did this happen to my child? Epidemiologists like Dr. Spector are "here to investigate the why." Back in 2004, a small seed grant from Rein in Sarcoma helped Dr. Spector support a successful application for funding from the National Institutes of Health. NIH funding allows him to study the connection between osteosarcoma and certain genes. The entire field of genetic epidemiology has been revolutionized, with the possibilities changing dramatically in just the last decade. In other work, Dr. Spector uses new technology that could increase the chances of finding key connections between troublesome genes and aggressive cancers. The University of Minnesota, where Dr. Spector is an Associate Professor, is "a great place to study pediatric cancer." It's not quite the life led by Colonel Sam Daniels, but it suits him well.

### A Beginning

At The College of William and Mary, Logan Spector studied biology. For his life, Dr. Spector sought a field where he could use this science without being tied to a lab. Epidemiology offers these possibilities. For a time, Dr. Spector was intrigued by Colonel Sam Daniels, the character played by Dustin Hoffman in the 1995 movie "Outbreak." But then he discovered that Hoffman played a virologist, not an epidemiologist. What's the difference? Virologists chase down viruses, sometimes deadly and always contagious. Not the best fit for a man who wanted to have a family one day. And not the study of people, which is what Dr. Spector found really interesting.

Epidemiology is the study of people. Groups of people, put into categories and then compared. Researchers look for the factors that make a difference. Is one group more likely to suffer disease than another? If scientists can find out why, then we may be able to prevent the harm. Even when this is not possible, it can be helpful to know our chances. And in cancer research, naming the targets can lead to break-throughs in treatment.

When I think about break-throughs in treatment, I tend to think of fancy new drugs. But here is a more stealth example, at least for those of us who don't do this for a living: Scientists have discovered that children who have one particular version of a certain gene will face a great risk of getting sick from one of the main treatments used for acute lymphocytic leukemia. Because they know this, doctors now can test their patients to look

for this gene. If the children have the version that places them at risk, doctors can lower the dose of the drug, and lower the chance the kids will get sick. Steps like these can lead to real differences in many lives.

Making this difference seems to call Dr. Spector, who received his PhD in Epidemiology from Emory University in 2002. He began with an intention to work with infectious disease. His dissertation led him to childhood leukemia, however, and he has worked with pediatric cancers ever since.

### **Calling for Investigation**

Like many of his colleagues, Dr. Spector is drawn to challenging and important questions. After he arrived at the University of Minnesota, one of his first assignments was to write a book chapter on childhood cancer. So he dove into the literature. There he discovered osteosarcoma and Ewing's sarcoma, two cancers that were "ripe for study."

In osteosarcoma, there was "this very strong clue" that the cancer "mirrors puberty almost exactly." Girls peak earlier than boys, both in their age for getting the cancer and in their age for puberty. Boys peak later, and their peak is higher than girls. Their pubertal growth spurt is longer and more intense – they get taller and bigger, on average, than girls – and they also have higher chances of getting osteosarcoma.

Ewing's sarcoma arises almost exclusively in children of European descent. It also is strongly associated with hernia. This means that children who have certain kinds of hernias are more likely to get the cancer than would be expected just by chance. And don't think, here, about those hernias your friends may get from lifting too much weight. The hernias that are linked with Ewing's sarcoma are inherent weaknesses in tissue structure, affecting for example the umbilical cord, the diaphragm or the intestines. People are born with these weaknesses. This suggests a possibility that Ewing's sarcoma could be caused by things that happen before children are born.

Basically, there was this "grab bag of things that did not fit well together," which, to Dr. Spector, was "collectively calling for investigation." And so he has investigated, with fine mentoring from Dr. Julie Ross, who brought him to the University through a research training grant and who continues to serve as his mentor today.

### **Revolutionary Advances**

If you think of the human genome as a book, the Human Genome Project found the first letter of every sentence, and the period at the end of each sentence. Next, scientists began to fill in every seventh letter of each sentence. Now, scientists are in the process of discovering

every letter in every sentence. Dramatic changes have occurred in this field, even since Dr. Spector began his work in 2002.

Several years ago, when scientists wanted to look for certain genetic changes that might be important for cancer, they needed to decide up front. Using the clues they could find, researchers would name the genes they were going to study. The problem with this method is that we people have about 30,000 genes. The ways they combine together, and the things that can go wrong, are almost too many to count. So the chances of hitting on just the right connection, between bad genes and bad cancers, were not great. The studies based on these predictions ended up having a fairly poor track record, as scientists learned that “we don’t know as much as we think about what might be relevant.”

Enter the Genome Wide Association Study, which now allows scientists to “put a genome on a chip and get back a million base pairs.” I’m not really very sure what this means. But I do understand that what it promises is a much better ability to compare information across people and cancers, and to figure out what really matters. Dr. Spector’s current work includes this kind of research for both osteosarcoma and Ewing’s sarcoma.

“Those of us who’ve been paying attention,” notes Dr. Spector, have heard a lot of hype for the last 10 years about the benefits of personalized medicine. The benefits “have not materialized as fast as we’d like. But it will happen.” Particularly for childhood cancers, the benefits will come.

We await this future. And are glad that bright young minds continue to engage the clues.

*Christin Garcia, October 2011*

## Subbaya Subramanian, PhD: “Let’s make sarcoma the disease of the past”

---



In 2008, KWRISF funded work done by Dr. Subramanian in collaboration with Dr. Jaime Modiano, which allowed them to develop a research proposal for further funding from the Academic Health Center at the University of Minnesota.

The AHC awarded an additional \$200,000 in 2009, which will support continued efforts to understand the gene networks that contribute to osteosarcoma development and progression. This may lead to new ways to treat osteosarcoma, or to a simple blood test to detect whether a patient's cancer has a potential to spread, which could help doctors make better treatment decisions.

Dr. Subramanian has been researching sarcomas since 2003. Although only few funding resources are available for sarcoma research compared to other cancers, Subramanian is drawn to the field. Sarcomas often strike children and young adults, who have so much life left to experience. Subramanian would like to discover ways to help these people. His own proposed title for this interview? “Let’s make sarcoma the disease of the past.”

Researchers look for tools that will allow doctors to better treat their patients. One recent example from Dr. Subramanian's work was the discovery of a biomarker to distinguish between synovial sarcomas and malignant peripheral nerve sheath tumors. These two cancers can look very similar on imaging scans and under the microscope, but the best treatment for each type is very different.

Through your support, KWRISF helps create the energy that sustains scientists like Dr. Subramanian. We thank you for this, and look forward to our future work together.

*Christin Garcia, February 2009, with Pete Wyckoff*

## Brenda Weigel, MD: The Hope Doctor

---



I once heard University of Minnesota Associate Professor and medical oncologist Brenda Weigel referred to as the hope doctor. It is easy to see why this could be so. Dr. Weigel radiates a sincere and vital hope, fueled by her research seeking better cancer treatments but grounded in her experience treating cancer patients. “Far too often,” she has faced situations where there was “nothing else to do” for patients. But she also has seen recoveries in recent years that would have been unimaginable, just 10 years ago. Even more exciting developments are on the horizon. Dr. Weigel would like to recognize the Wyckoff family and all those who have helped Rein in Sarcoma, for the huge impact the group has had in moving the University to develop what is now becoming one of the premiere sarcoma programs in the country.

### The Accidental Oncologist

It may surprise you to discover that Dr. Weigel “was not one of those people who knew from the beginning” that she wanted to be a doctor. She was “always interested in lots of things,” and chose to major in science in college. While obtaining her Masters degree in nutritional biochemistry, she worked at the Hospital for Sick Children in Toronto, Canada. In the late 1980s, as she pursued her graduate studies, a colleague suggested that she might try medical school instead. Her response? “Are you kidding me? I’d never get in!” But she did apply, and she did get in. Then she turned the offer down, because she wasn’t sure she really wanted to go. Dr. Weigel got married, and some time passed, and she began to think: “I may have made a big mistake.”

So Dr. Weigel applied again to medical school, and again she was accepted. She said to her husband, “I probably should do this!” Fortunately, then as now, her husband was wonderfully supportive. And so she went.

Dr. Weigel had loved working with children in the Toronto hospital, but she spent most of her time in medical school trying to convince herself that she would do something else. She was interested in “very intense fields” of medicine and had a strong interest in continuing to do cutting-edge scientific research. After she completed her internship, she realized that she had the most fun during her rotation through pediatrics. So she conducted her residency in pediatrics at the University of Western Ontario. She intended to go into critical care, practicing intensive care medicine.

Then, after a few months in an oncology rotation, “this light bulb turned on.” Dr. Weigel realized that pediatric oncology would allow her to marry her “love of research” with intense

medicine, and also would allow her to develop “such incredible relationships with families,” which was something that critical care medicine did not offer.

In this way, an oncologist was born.

### **Onward, to Minnesota and Sarcoma**

Very few options for oncology training were available in Canada, and someone suggested to Dr. Weigel that the University of Minnesota offered what she was seeking. So she and her husband traveled here early one November, when snow already was falling. Contrary to popular belief, Toronto is not quite so freezing as our great state. “The lake effect!”

After her interview here, Dr. Weigel was offered an oncology fellowship with full research funding for three to four years. This research guarantee sealed the deal, and she came in the mid-1990s. Her experience was “really really fantastic.”

Dr. Weigel landed in the lab of Dr. Bruce Blazar, a bone marrow transplant doctor who both worked to control immune system response after transplant and also to develop new ways to use the immune system to treat cancer. Dr. Weigel was drawn to solid tumors and particularly to sarcoma. At that time, the scientific literature was just “this black hole” with respect to sarcomas. Work simply was not being done, in this area “so desperately in need of research.”

So Dr. Weigel expressed her interest, and Dr. Blazar supported her completely. But she needed to blaze her own trail. She could use the lab resources, but she needed to “literally start from scratch” and figure out how to get it done. One has the sense that this challenge itself was a major draw. After weeks combing the literature, Dr. Weigel found a whole series of papers from the East Coast indicating that a cell line had been developed that could be used for research into rhabdomyosarcoma. She contacted Dr. Robert Evans, the retired man behind this work, and obtained his permission to carry on. He was “just incredibly gracious” and sent her the cells, happy to know that someone would use his work. And use his work, she and her University colleagues did.

When asked about what she is doing now, Dr. Weigel said that all her years in basic science research were “a gateway to bring new therapies to children and adults with cancer.” Now, most of her time is spent in early phase clinical trials and translational research, seeking to move new drug therapies out to people.

In talking about the course of her life, Dr. Weigel said she thought it important to “make the most out of whatever opportunity is put in front of you,” and to understand that “you never know what that opportunity will be.” The understanding she has gained through her work

with patients and families has been important in shaping her scientific research. We are thankful that Dr. Weigel has poured so much of herself into both research and treatment, fulfilling a dual role she finds it “so crystal clear” must be played.

### **Hope on the Horizon**

After so many years in the dark ages, it is astonishing to learn that sarcomas finally may be emerging into lighter times. Ten years ago, Dr. Weigel wrote a clinical trial design for young people with rhabdomyosarcoma. There were no new drugs available then; just a plan to deliver old drugs in new ways. In the first 18 months after the treatments were delivered, these changes allowed people to live longer overall and extended the length of time that they lived without return of their cancer. Even if the improvements fade away with more time, this is a great accomplishment. And there are promising signs that the benefits will stick.

Today, scientists have the technologies that will allow them to really study tumors in ways they never have been able to study them before. For example, Dr. Weigel and Bridget Charbonneau, a post-doctoral fellow with her colleague Julie Ross, have combed the tumor bank at the University of Minnesota to identify about 180 patients with synovial sarcoma. About 50 of these patients had good tumor tissue available for testing, and the team is looking for genetic markers that might tell them which tumors are more likely to be dangerous. If they can tell which cancers are more deadly, they can give the stronger treatments to those people facing the most danger. And if they can find the bad actors within the cells, they also might be able to develop drugs specially designed to target the cancer.

As science advances, more targeted drugs are becoming available that may hit the sarcoma tumors in ways that could really knock them out. With great folks like Dr. Weigel using this science, we have reason to hope.

When asked for her final thoughts, Dr. Weigel wished to highlight the impact that Rein in Sarcoma and the Karen Wyckoff Foundation have had on the specific research in the field of sarcoma at the University. This, she said, “can’t go unrecognized.” She considers RIS to have been “a huge impetus behind what is now becoming one of the premiere sarcoma programs in the country.” This has been “spearheaded by the Wyckoffs,” and is an “incredible testament” to them and to the whole group of volunteers who have offered their talents and dedication.

And we would like to recognize the huge impact Dr. Weigel and her colleagues have had, in channeling their considerable talents to treat this disease. Thank you!

*Christin Garcia, September 2011*