



# ANGIOMA ALLIANCE NEWSLETTER

because brains shouldn't bleed

## Angioma Alliance Night at the Red Sox and So Much More!

The largest awareness event ever held for Angioma Alliance will happen on **Friday, June 5th** at the Boston Red Sox game, and we need you to join us. There will be over 30,000 fans in the stands and possibly a million more watching at home who will be exposed to cavernous angioma and Angioma Alliance for the first time that evening. This is an all hands on deck event! Here are the details:

### March Auction

The Red Sox and generous donors have offered Angioma Alliance unique experiences that we will be auctioning online in March. Experiences include:

- A private flight for six people from Boston to the Hamptons to play golf at an exclusive country club with a retired Red Sox player.
- A lucky child in your life could be Honorary Bat Boy or Bat Girl (ages 8-14, pre-game).
- Play Ball! Your child could have the privilege of announcing the start of play from on the field.
- Recognition Ceremony – be on the field for a photo opportunity during the pre-game ceremony.
- Three innings behind the world famous Green Monster, Fenway's left field wall.

Please check our website or Facebook page for more information on the start/end date and website address of the auction.

### Ticket Sales

Angioma Alliance has been given a block of over 500 tickets to sell at well below general public pricing. We'll receive \$5 from each ticket sold. We would like to

fill as many of those seats as possible with our members and their family and friends. Please tell everyone to visit [www.redsox.com/angiomaalliance](http://www.redsox.com/angiomaalliance) to purchase their seats early, before the general public grabs them all. Each ticket includes admission to a pre-game reception at the Marriott Residence Inn Back Bay.



### Pre-Game Reception

Every Angioma Alliance ticket holder can join us at the Marriott Residence Inn Back Bay at 5 pm before the game to mingle, enjoy food and drink, and share your excitement about the event. We will be offering t-shirts to identify our group: this is the time to get yours. We may even have some surprise guests. If you plan to attend the reception and would have difficulty walking  $\frac{3}{4}$  mile to the stadium, please let us know in advance so we can arrange transportation.

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### FEATURED ARTICLES:

For the first time since 2011, Angioma Alliance will be hosting a national family conference with expert speakers, panel discussions, and small conversation groups. Read all about it on pages 4-5.

Kristen Fowler's journey with cavernous angiomas began as a child, leading to numerous surgeries and residual deficits. However, Kristen has not let cavernous angiomas keep her from her art or from reaching out to others. She tells her story to Connie Lee on page 8.

### Pre-Game Festivities at Fenway

Cavernous Angioma Night will be recognized during a pre-game ceremony at Fenway. We are working to have the ceremony covered by New England Sports Network to increase our exposure. Ryan Westmoreland and his father are scheduled to throw out the first pitch, a video of his career will be shown on the Jumbotron, and the work of Angioma Alliance will be acknowledged. It will be a very special moment to lift our illness to a new level of recognition.



### Text-to-Donate

The EveryLife Foundation is allowing Angioma Alliance to use its text-to-donate number from June 1 through June 14th, including during the game. We need everyone in the stadium, in the home viewing audience, and around the country to know that if they text RARE to 85944 during this time, they can donate \$10 to Angioma Alliance.

Please see the article on the next page with details of a matching gift offer for new donors courtesy of an anonymous donor.

### 50/50 Raffle

During the game, the Red Sox Foundation sponsors a 50/50 raffle, with tickets sold in the stands. Angioma Alliance will receive a portion of the night's proceeds, but we need your help. If you know of a scout or other service organization in Boston who could help sell tickets for 3 hours the night of the game, we would love to talk with them.

### GENETIC TESTING INITIATIVE

Please look for a major announcement regarding our Genetic Testing Initiative on our website and Facebook page in March.

### National Anthem

As you may know, Olympic track star Florence Griffith Joyner, who was also known as Flo-Jo, passed away from a seizure caused by a cavernous angioma in 1998. Her daughter, Mary Joyner, has grown into a beautiful young woman with a singing career of her own. In fact, you may have seen her as a contestant on America's Got Talent in 2012. Mary will be joining us to sing the National Anthem and celebrate her mother, Angioma Alliance, and our search for a cure.



### Sponsorships

We will be offering t-shirts to anyone who purchases a ticket in our seating block. We will also have banner space available during the pre-game reception. Please contact [cle@angioma.org](mailto:cle@angioma.org) to find out how your company can become a sponsor.

### Volunteers Needed

Angioma Alliance needs volunteers to:

- Hand out flyers at the entrances to Fenway with information about Angioma Alliance and the text-to-donate number.
- Staff a table in the concourse distributing Angioma Alliance information and assisting Ryan Westmoreland as he signs autographs.
- Walk around Fenway to sell tickets for the 50/50 raffle

If you live anywhere in the greater Boston area or know anyone who does, we need your help. Feel free to post about the event and our volunteer needs on social media. This is a huge opportunity to get national recognition, but we can't do it without you.

### Hotel Information

There are a limited number of hotel rooms available for Friday night June 5th at the Marriott Residence Inn Back Bay where the pre-game reception will be held. The room rate for a King Suite is \$269 which is far below the rate for the surrounding properties. Follow the instructions below to make a reservation. Please do so as soon as possible to avoid disappointment.

Call 1-800-236-8787 or 617-236-8787 and ask for the Angioma Alliance Room Block. Or go to [www.marriott.com/bosfn](http://www.marriott.com/bosfn), type in your desired dates, and enter the Group Code ANGANGA.

## The Ryan Challenge: Anonymous Donor Offers \$50,000 Matching Gift in honor of Cavernous Angioma Night at the Red Sox

This year, all donations from *new donors* marked “in honor of Ryan” will be matched, up to a total of \$50,000! This is thanks to an extremely generous anonymous donor and in honor of Cavernous Angioma Night at the Red Sox. Please tell your friends and family that their \$100 donation will be worth \$200 to Angioma Alliance.

It's the perfect time to ask your circle to support Angioma Alliance and the work we do for patients and research. New matched donations will allow us to:

- Launch the newest effort in our genetic testing initiative.
- Host our family conference, including offering a limited number of scholarships.
- Begin establishing a network of clinical centers to support better care.
- Continue all of the work we do to drive research toward clinical drug trials.

To contribute, visit our website at [www.Angioma.org/Donate](http://www.Angioma.org/Donate) or mail your donation to Angioma Alliance, 520 W 21st Street, Suite G2-411, Norfolk, VA 23517.

## Recent Events

Thanks to everyone who was able to participate in Dine and Donate events held since our last newsletter. Members were eating at California Pizza Kitchens, all over the United States, in early December to show their support for Angioma Alliance. Also, Tracy Brown hosted an Angioma Alliance night at Chipotle in Edgewater, MD and her crowd ate enough to raise \$1,700!

The annual MadoroM Wine Release and Charity Auction will be held in Bakersfield, CA, on February 21. We are grateful for the Amador family's support through this event which continues to be our largest source of income. This year is particularly special because it comes on the heels of the 2014 Napa earthquake that caused serious damage to the inventory in the MadoroM warehouse. You can show your support for this wonderful family by visiting [Madorom.com](http://Madorom.com) and ordering a bottle.

CCM3 in Indy hosted a Bowling Fundraiser in Indianapolis on January 18th. Attendees had a great time, raised awareness, and hosted a 50/50 raffle that raised over \$350 in two hours. Congratulations to Lexi Sanders and her family who add this to the more than \$12,000 they have raised in the last year.

## ANGIOMA ALLIANCE NEWSLETTER RE-IMAGINED

2015 has brought a dramatic change to the way Angioma Alliance news will be brought to you. No matter how you are reading this, you will notice a difference. Our mailed version of the news now contains highlights, shortened versions of complete articles that can be read online. There is no way for us to duplicate the new online newsletter experience in print; we want you to experience it for yourself!

Our online newsletter is now interactive. You can click icons that will give you audio readings of the articles by their authors, videos of interviews and other highlights, and that will allow you to enjoy full galleries of images or additional information. Our newsletter isn't just about news, it's about connecting.

Here are some tips for using the newsletter:

- Click anywhere to zoom in. Click again to zoom out.
- Move your cursor over the top part of the interactive newsletter page to find options to print, resize, and see what happens when you zoom (click on the gear icon).
- If you have a touchscreen, you can turn the pages by touching the upper or lower corner of the page.
- The interactive newsletter is mobile-ready; you can catch up on the go on your phone or tablet.

We will continue to have a standard PDF version online in our newsletter archives, but the icons will not be active in this version.

We would love your feedback. Do you like the change? Can you suggest additional features you'd like us to add? Please tell what you think at [info@angioma.org](mailto:info@angioma.org) or on our Facebook page.

## Angioma Alliance Family Conference

The Angioma Alliance family conference is back! Our first conference since 2011 will be held at The Hyatt Lodge at McDonald's Campus in Oak Brook, Illinois, outside of Chicago, from July 24 - 26.

### Registration

Registration is \$40 per adult and \$20 for each child. It includes the Friday evening reception, breakfast and lunch on Saturday, and breakfast on Sunday, as well as access to all the sessions and childcare. Register online at [tinyurl.com/AngiomaConference](http://tinyurl.com/AngiomaConference).

### Sponsorships and Vendors

We are accepting sponsorships and vendors for this conference. If you are aware of a company that would like to reach and support our members, please have them contact us at [info@angioma.org](mailto:info@angioma.org) for sponsorship information.

### Children's Program

There will be a children's program this year, including an art therapist and a videographer who will work on projects with the kids. While the children will always be supervised by adults, our affected teens will create some additional programming. For quieter time,

we'll have movies and board games. The children will be staying in a room adjacent to the adult meeting room.

### Accommodations

Hyatt Lodge at McDonald's Campus is the most family friendly hotel in the area. The Angioma Alliance room rate is \$129/night and extends before and after the conference. To make your reservation you must use the following link: <https://resweb.passkey.com/go/ANGIOMASU15>. You can also make reservations by calling Central Reservations at either 1-888-421-1442 or 402-592-6464 and referring to the "Angioma Alliance Family Conference".

The hotel is 11 miles from O'Hare Airport and 15 miles from Midway Airport. Cab fare will be between \$30-\$45 depending on airport, number of people, and time of day. The hotel is 20+ miles from the University of Chicago (about 40 minutes without traffic), Shedd Aquarium, and other downtown attractions.

If the Hyatt is not affordable for you, there are budget-friendly hotels in Oak Brook and the surrounding area, including properties with shuttles.

## FAMILY CONFERENCE PROGRAM

After an evening reception, registration, and a welcome, on Friday, July 24, the weekend will feature the following:

- Dr. Issam Awad, will offer a three-hour session, Cavernous Angioma: Soup to Nuts. For the first two hours, Dr. Awad will cover a range of cavernous angioma topics: basic disease information, genetics, and clinical decision-making on topics such as surgery, pregnancy, and spinal cavernous angioma. In the third hour, he will discuss the latest research on drug treatments and news on clinical drug trials, providing information on each of the medications under consideration for treatment. Dr. Awad is the Chair of the Angioma Alliance Scientific Advisory Board and the world's leading expert on the illness.

- Panel Discussion on Recovery & Rehabilitation. This will feature experts on neuroplasticity, neuropsychology, the latest equipment/devices/orthotics for physical and occupational therapy including balance, and vision rehabilitation.

- Panel Discussion on Coping for Patients, Caregivers, and Parents with representatives from patient families as well as experts.

- Dr. Connie Lee and the Angioma Alliance Board of Directors explain how Patients Lead the Way to a Cure, a discussion of patient involvement in setting the stage for clinical drug trials.

- Conversation Groups. We will break into small groups based on shared roles/characteristics of illness: Seizure, Brainstem, Post-Surgical, Caregiver, Parent, Spinal Cavernous Angioma, and Multiple lesions. We will have two conversation group sessions to allow participation in more than one group.

- Neurologists will discuss seizure and headache treatment.

We will end the formal meeting at noon on Sunday. If there is interest, we can arrange a group trip into Chicago in the afternoon.



### Appointments at the University of Chicago

If you are hoping to include a clinical visit with Dr. Awad in your trip, please call his office as soon as possible to make an appointment: 773-702-2123. This is particularly true if you wish to have an MRI in Chicago.

Families with affected children may be eligible to stay free at the Ronald McDonald House near the hospital on Sunday night. Please ask about this at the time you make your appointment as it will need to be arranged through the hospital's social work department.

Adult patients may want to stay at the Quadrangle Club (773-702-7221). It is walking distance to the hospital and offers discounted rates to University of Chicago patients. The Quadrangle Club has only 17 rooms, so you will want to book immediately after making your appointment. Dr. Awad's office also has a list of downtown hotels that offer discounts to University of Chicago patients.



### Awareness Items Now Available

You've been asking for awareness items with the new Angioma Alliance logo, and we have them for you. There are two websites offering a variety of items.

At Shopify ([angioma-alliance.myshopify.com](http://angioma-alliance.myshopify.com)), you will find Awareness Kits and t-shirts. The current Awareness Kits include a removable bumper sticker, two reusable cellphone screen cleaners (they stick to the back of your phone), a tote bag, and an optional cap. We also offer a "Because Brains Shouldn't Bleed" t-shirt. These items are available for a limited time, so stock up now!

We have a full range of items, including mugs, jewelry, and cellphone and tablet skins, at Zazzle ([www.zazzle.com/angiomaalliance](http://www.zazzle.com/angiomaalliance)). These are somewhat more expensive because they are made to order.

We hope you'll raise awareness in whatever way fits you, because brains shouldn't bleed.



## News

### 2015 Angioma Alliance Ambassadors

We are pleased to announce the beginning of the Angioma Alliance Ambassador program, and to reveal the two prominent individuals who will serve as our 2015 Ambassadors. Angioma Alliance Ambassadors support the mission of Angioma Alliance, using their public recognition to bring awareness to the illness and the work of the organization.

#### Ryan Westmoreland



Ryan Westmoreland was drafted by the Boston Red Sox baseball team in 2009. From an article in the Lowell Sun: "After a spectacular first season at Class-A Lowell in 2009, the Portsmouth, Rhode Island, native was ranked by Baseball America as the No. 21 prospect in baseball. Before the 2010 season, Westmoreland underwent brain surgery to remove a cavernous angioma—an abnormal growth of blood vessels in his brain. Westmoreland retired from baseball in March, 2013, three years after his initial surgery." Since his retirement, Ryan has returned to school to study business administration.

Ryan will represent Angioma Alliance on June 5 as the Red Sox honor him during Angioma Alliance Night at the Red Sox. He and his family will be throwing out the first pitch of the game and a video of his short career and the impact of his illness will be shown. See the lead article in this issue about the event and how you can participate. We look forward to seeing Ryan at other public events and are grateful for his continued participation in raising awareness.

#### Mary Joyner

Mary Joyner is the daughter of Olympic Track Star, the fastest woman of all time, Florence Griffith Joyner. Florence Griffith Joyner, who was also known to the world as Flo-Jo, earned 3 gold medals during the 1988 Olympics and a silver in 1984. She still holds the world record for both the 100m and 200m distances. In 1998, Flo-Jo passed away from a cavernous angioma related seizure. At that time, her daughter Mary was just 7 years old; she was deeply affected by her mother's death.



Mary has grown to become a beautiful, talented woman who wowed the judges and the public with her voice on America's Got Talent in 2012. Please visit her YouTube Channel at [www.youtube.com/user/MaryJoynerMusic/videos](http://www.youtube.com/user/MaryJoynerMusic/videos) to listen to her recent work. Mary will be performing the National Anthem during Angioma Alliance Awareness Night at the Red Sox and will join us at other events as they are scheduled. We are touched and humbled by Mary's choice to remember her mother by serving our community.

We feel very fortunate to have these two young individuals carrying our message and raising awareness throughout the United States.

### Angioma Alliance Philippines

We are pleased to announce the formation of our latest international Angioma Alliance sister group: Angioma Alliance Philippines. Oj Mina, a cavernous angioma patient, has created a Facebook page and

group that have become active in providing mutual support. The organization is planning its first get together in Manila. We welcome them to the Angioma Alliance family!



## 2014 Angioma Alliance Annual Report

Angioma Alliance is a 501(c)3 non-profit organization whose mission is to inform, support, and empower people affected by cavernous angiomas, and to drive research for better treatments and a cure. We strive to be responsible stewards of the donations you entrust to us and use every dollar possible to fund the work that will move us toward achieving our mission.

These charts explain our audited fiscal year 2014 income and expenditures. As a comparison, the American Heart Association typically functions on \$600 million/year in income. The National Multiple Sclerosis Society, a disease whose numbers are similar to ours, raises \$100 million each year.

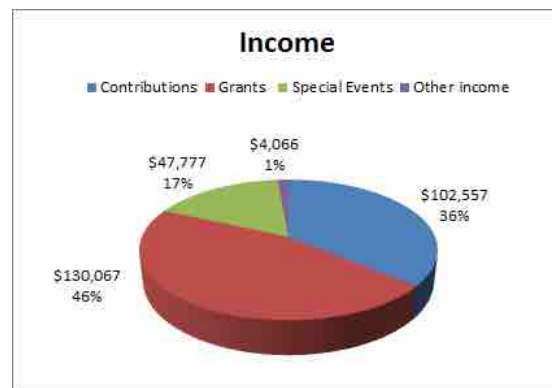
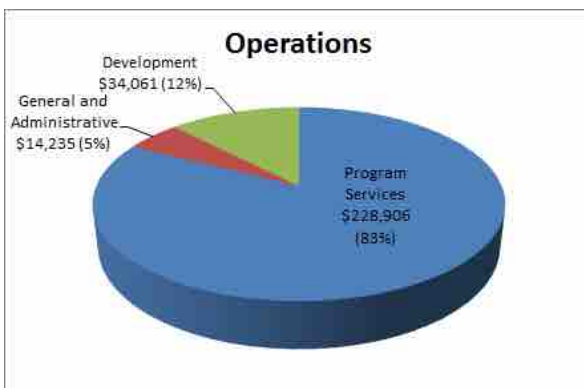
Our major donor in 2014 was the newly formed MadoroM Foundation, whose \$100,000 grant comprised more than one third of our income. The Amador family has hosted a wine release and charity auction each year since 2006, and we have always received a sizable portion of the auction proceeds. Their connection to Angioma Alliance is through their family friends, the Peters and Neuman families, who have three affected members between them. This year,

the Amadors decided to start their own foundation in the name of their vineyard. We remain extremely grateful for their ongoing support and could not fulfill our mission without them.

Since the retirement of our part-time registry nurse in September, Angioma Alliance has only two full-time paid positions. They are held by Dr. Connie Lee, our president, and by Dr. Amy Akers, our Chief Scientific Officer. The remainder of our work is performed by a dedicated Board of Directors, volunteers, and professionals we contract as needed.

Our programs are varied and extensive: a DNA/Tissue Bank, an annual International Scientific Meeting, a Patient Registry, participation in a number of research grants, an upcoming Family Conference, legislative advocacy and advocacy with NIH and FDA, the development of clinical centers, ongoing peer support online and through one-on-one phone and email support, mentoring of international organizations, and the raising of awareness through events and materials. We take pride in making a little stretch a very long way, and we are honored by the trust you place in us with your financial support.

*Karen Asbury, Treasurer*



## 2015: Looking Forward

While we don't have a crystal ball, we do know that there is a lot to look forward to in 2015:

- The Angioma Alliance Scientific Advisory Board is on schedule to complete Clinical Treatment Guidelines early this summer for submission to major peer-reviewed journals. This is a step toward standardizing care and toward creating Clinical Centers.
- At least one American research laboratory will be applying to FDA for clinical drug trials. European laboratories also are preparing the groundwork for a trial.

•Angioma Alliance will roll out the next phase of our Genetic Testing Initiative. Look for an announcement in March.

•We have an awareness video in progress: 6-Word Stories of Cavernous Angioma. When it releases in March, please share it with your friends and family.

•Our children's book will be completed later this year, with the stories of affected children in their own words.

Stay tuned to our newsletters, website, and social media to find out more. You can find us on Facebook, Twitter, Instagram, Pinterest, and YouTube.



## Spotlight

### Kristen Fowler

Kristen Fowler is a long time Angioma Alliance member who lives in Orange Country, California. She shares her story with us. You may read the transcript here or watch the Skype interview.

Connie Lee, President of Angioma Alliance: I'm here with Kristen Fowler and we're going to be spending a little bit of time chatting... I know you've been living with this for a long time. Can you tell me when you were first diagnosed?



Kristen Fowler: I was nine.

C: And, what led to the diagnosis?

K: They thought I had the flu because I had flu-like symptoms, but in the end I just couldn't walk. So, my mother took me to the doctor which led to the ER. They did an MRI. I was paralyzed on the left side of my body. And they discovered that they thought I have AVMs. I was in my mid 20s when they realized it was cavernous angiomas.

C: Can you tell me a little bit about what's happened with your illness since you were diagnosed?

K: I've had six brain surgeries; I've had too many bleeds to count; I have too many lesions to count; my left arm is numb. From day-to-day I have to worry about my body and how it's working that day.

C: When you say six brain surgeries, were they open-brain or were they gamma knife? What kind of surgeries did you have?

K: I had three craniotomies and three gamma knife.

C: Where were the craniotomies, what parts of your brain...? Do you remember or know?

K: The first one was done on my brainstem, and that's the one they figured out for the first time, when I was nine. They took that one out, and then they gave me the three gamma knife. But, they figured out when you take an angioma from me, they just pop back up and multiply. So, I had two more [craniotomies] when I was 25. That was a bleed in my thalamus. They had to do it twice because it didn't work the first time.

C: That's a lot. That's a whole lot. How is your life different from the life of other women that are your age? Do you have some sense of comparison; what cavernous angioma has done to the course of your life compared to somebody else your age?

K: Well, I'm 33 and I think about what other women want that are "normal" women. They want the career, they want the babies, and they want the picket fence. I can't have that. I'm on SSI Disability. It's about 2 hours before my head starts hurting from any type of concentration on a good day, so I can't have a career. As for trying to have children, sometimes I can't take care of myself so I just think it would be selfish to have a child myself.

C: Tell me what it is you do with yourself, with your time. I know something about you that other people don't. What do you spend your time doing?

K: I learned in college how to make stained glass windows so I'm doing that right now. I made a few for my church and friends and family mostly.

C: How long ago did you find Angioma Alliance? And how did that happen, how did you find it?

K: I was speaking with a geneticist. He looked up the gene that I have and through that he found the Angioma Alliance. I was so happy. Throughout my entire life the goal was to find one person that has what I have so I could talk to them and they would understand; because nobody understands. And then I found you guys on Facebook and all these people were there, and now they are my friends. It means a lot.

C: I'm so glad to hear that. How else have you been involved with Angioma Alliance? What else have you been doing as part of the organization?



K: I think it's very cool that we can talk to each other. We're all dealing with the same things but at different times. People don't understand certain things that are happening to them. I remember somebody was talking to me, and they were like, "I can't sleep at night because I jerk myself awake." And I'm like, "Yes, that's probably myoclonus. I have the same thing. My doctor gave me this pill. It does this. I take it this way." I have information that I can actually help somebody and they can do the same for me.

C: That's wonderful. You also have been to Chicago, right? Can you tell us about that?

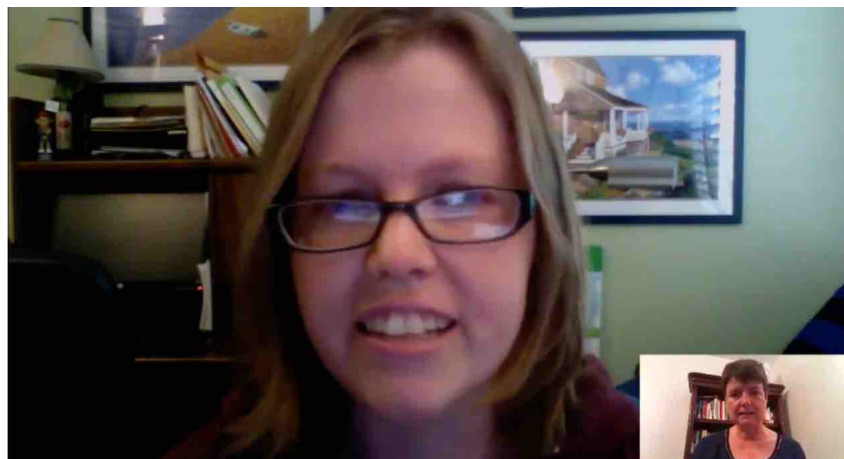
K: With the CCM3 gene, I'm able to go to Chicago and they give me a 3T MRI. It's insane because [the lesions] are all there, and it's information. You don't get information very often. With what I have, doctors don't know. Answers are hard to come by. And, you're able to get them [with 3T MRI] that way, and I get them explained.

C: Is there anything else you'd like to add?

K: Yeah, two quotes. One I don't like. It's "Live like you're dying." I think it's so stupid because I think it should be "Live like you're living." Like you're actually living in the moment. And, one by Bob Dylan, one of his quotes [from Dear Landlord]:

*Now, each of us has his own special gift  
And you know this was meant to be true  
And if you don't underestimate me  
I won't underestimate you.*

C: That's wonderful. Thank you, Kristen.



Watch a video of the interview with Kristen Fowler at [youtu.be/OZ977gz2Mmg](https://youtu.be/OZ977gz2Mmg).

## Research Update

Over the past few months, more than a dozen articles have been published reporting results from new Cavernous Angioma (CCM) disease research. These publications come from research institutions around the world, and describe a wide range of research interests including basic, translational, and clinical research. Below is a summary of three articles that report the following findings:

1. A new understanding of the function of the CCM proteins and the identification of a new chemical target for drug development.
2. A new strategy for identifying drugs that are already available on the market for other uses, which may also be therapeutic for Cavernous Angioma. Mouse studies show promise for two such drugs including Tempol and Vitamin D3.
3. Individuals with familial CCM are more likely to have white matter “bright spots” that show up on MRI; these white spots are not associated with clinical severity.

### Definitions

**Basic Research** includes biochemical studies, cells assays, and animal studies. It aims to better understand the underlying biology of a system or disease. In the case of CCM disease research, many basic researchers focus on understanding the chemical pathways (the mechanism of disease). This type of research may lead to the identification of new potential drug targets.

**Translational Research** typically includes animal studies that aim to bring basic findings closer to the human condition. One example of this is treating CCM mice with a potential drug treatment that was identified through basic research.

**Clinical Research** focuses on people, and includes, but is not limited to, clinical trials.

### Basic Research

One of the greatest challenges to developing a drug for CCM is that we do not yet fully understand the molecular biology of the disease. Knowing the precise disease mechanism and which chemical signals are responsible for CCM lesion development would allow researchers to develop drugs that specifically target those chemical signals to slow progression of disease, or to prevent bleeding. This basic research approach is a common strategy for drug development.

In a recent study from the University of Pennsylvania, researchers used genetically modified mice to investigate the function of the CCM proteins. We have known for some time that CCM proteins are required for the normal development of the heart and blood vessels. However, we are only beginning to understand how exactly these molecules function, and with which other molecules they interact in cells. The goal of the study was to understand the molecular mechanism underlying these important developmental processes to identify new targets for drug development.

The U Penn study team showed that the CCM proteins work in partnership with a signaling molecule called MEKK3 to regulate (turn on and off) other genes in blood vessel cells. In the absence of proper CCM protein function, the MEKK3 signaling is uncontrolled, leading to developmental defects. When the MEKK3 signaling is blocked with a chemical inhibitor, the defects are prevented.

This research team uncovered a previously unknown function of CCM proteins and MEKK3 and opened up new lines of investigation for targeted drug development.

For more information, please see the U Penn press release and the original article.

[www.newswise.com/articles/possible-therapeutic-target-for-common-but-mysterious-brain-blood-vessel-disorder2](http://www.newswise.com/articles/possible-therapeutic-target-for-common-but-mysterious-brain-blood-vessel-disorder2) Translational Research

[www.ncbi.nlm.nih.gov/pubmed/25625206](http://www.ncbi.nlm.nih.gov/pubmed/25625206)

### Translational Research

Another strategy to developing therapeutics does not require precise knowledge of the disease mechanism, but instead focuses on repurposing existing medications for new clinical uses.

In collaboration with other academic and industry partners, researchers at the University of Utah took a different approach and tested known drug compounds in a computer-automated analysis. This team developed an analysis system that used cells with CCM2 gene mutations. The physical shape and structure of these mutant cells is abnormal when viewed under a microscope. The team treated the cells with various drugs and looked for those that reversed the cell structure back to normal appearance. Compounds showing promising results were then validated in additional cell and animal-based experiments.

In total, 2,100 compounds were screened, resulting in the identification of two drugs, the common nutritional supplement Vitamin D3, and Tempol, a drug that neutralizes chemical oxidative stress (an antioxidant), and that is undergoing trials for a variety of uses. Both of these drugs were shown to effectively decrease the number of CCM lesions in treated mice.

While this work is promising, this cell and animal-based research study should not be taken as medical advice for treatment of CCM disease. There is not yet any human data to suggest that these drugs will be effective for treatment of CCM in people. However, this data is very exciting, and we look forward to further clinical studies which will provide evidence and recommendations for clinical care.

This very exciting work highlights the success of this new screening assay that has the power to quickly identify drug candidates for a variety of rare diseases.

For more information, please see the University of Utah press release and the original article.

[healthcare.utah.edu/publicaffairs/news/2014/recursion.php](http://healthcare.utah.edu/publicaffairs/news/2014/recursion.php)

[circ.ahajournals.org/content/early/2014/12/04/CIRCULATIONAHA.114.010403.abstract](http://circ.ahajournals.org/content/early/2014/12/04/CIRCULATIONAHA.114.010403.abstract)

### Clinical Research

White matter hyperintensities (WMHI), “bright spots,” are often observed on T2 or SWI MRIs of CCM patients, as well as in patients with other blood vessel diseases. The number of these WMHI lesions increases with age, but it is unknown if they are related to disease symptoms or severity.

The CCM research team at the University of New Mexico analyzed MRI and clinical data from 149 familial CCM patients and compared the appearance and frequency of WMHI to sporadic CCM patients and healthy controls. They found that WMHI are more frequently associated with familial CCM, but that there was no association with any clinical factors (headache, seizure, high blood pressure, high cholesterol or neurologic disability). This study team concluded that, like CCM lesions, WMHI lesions increase in number with patient age, but that they are not indicators of CCM disease clinical severity.

For more information, see the original article.

[www.ajnr.org/content/early/2015/01/02/ajnr.A4200.full.pdf](http://www.ajnr.org/content/early/2015/01/02/ajnr.A4200.full.pdf)

### Brain Vascular Malformations Research Consortium (BVMC) Recruitment Update

There is evidence from animal and cell models of CCM disease that statin drugs may be able to reduce the leakiness (permeability) of CCM lesions, and therefore may be therapeutic for individuals with CCM. To further investigate this hypothesis, the University of New Mexico research team aims to compare lesion permeability of CCM patients who are/are not taking statin drugs over a three month period. Lesion permeability will be measured by an advanced MRI technique called dynamic contrast-enhanced MRI (DCEMRI).

A clinical study to investigate the effects of statin treatment on CCM lesions is currently recruiting participants. The research team needs your help if you are an adult with the CCM1 Common Hispanic Mutation and live near enough to Albuquerque to travel to the University of New Mexico for several study visits over three months.

For more information please visit the BVMC website.

<https://www.rarediseasesnetwork.org/BVMC/studies/6205-CCM.htm>



## International News

### Cavernoma Alliance UK

As regular readers of this column know, Cavernoma Alliance UK was awarded a Big Lottery Grant in 2013. With funding set to continue until 2018, but shortly due to diminish, CAUK decided to hire our first full-time employee to help make up for this shortfall. After a nationwide search, the committee voted unanimously for Mr. Paul Cooper to be our Fundraising and Development Manager on a one year contract. With him having raised over \$1,000,000 in funding for local schools, CAUK very much hope that Paul will bring us similar success.

Paul says, "I have already been impressed with the commitment and enthusiasm of CAUK members and supporters in raising additional funding and helping to spread awareness on cavernomas".

One of those who undoubtedly impressed Paul was Melonie Neal, due for a cavernoma resection this month. Melonie's cavernoma, nick-named Cuthbert, seized the imagination of her work colleagues, and fourteen of them came out in support of Mel and shaved their heads along with her. The "Evict Cuthbert" campaign raised over \$12,000 for CAUK as well as interviews on the BBC and in the local press.



*Melonie Neal with her work colleagues in the "Evict Cuthbert" Campaign*

Raising awareness of cavernoma is a key part of our strategy. In addition to our successful distribution of literature in the "Share and Make People Aware" Campaign, Ian Stuart went to the British Neurovascular Group [of neurosurgeons], spreading awareness of the charity's existence and ensuring that

surgeons take part in the research study currently underway.

Future Angioma Alliance newsletters will include details of participation in Rare Disease Day, lectures throughout the country during March as part of Brain Awareness Week, conferences and the Ninth International Cavernoma Alliance UK Forum at which we hope to welcome participants from all over the world.

*Ian Stuart*

### Angioma Alliance Canada

Angioma Alliance Canada would like to encourage our supporters to share a personal message about their condition on or before February 28, 2015, to mark "International Rare Disease Day." A letter or e-mail to their member of parliament can make a big impact in raising awareness across the country.

We expect June, the "International Awareness Month" for our disease, to once again be our busiest month.

The month kicks off on June 6, 2015 with our 4th Annual Cavernous Angioma Family Conference. Along with an amazing lineup of keynote speakers, we will also offer financial information on retirement savings plans for the disabled, who would otherwise have a difficult time to save for their senior years.

Speakers this summer include Dr. Loch Macdonald, a neurosurgeon from Toronto; Dr. Brent Derry, a research scientist who will update us on the latest findings from his lab; and Crystal Shaulis, who will share her experience that a diagnosis of Cavernous Angioma is not the end of the road, and that we can become successful despite the setbacks we experience. Nikki Mulvihill, a financial representative, will be informing us about the RDSP details. The conference takes place at the Peter Gilgan Centre (Sick Kids) in Toronto, on Saturday June 6, 2015. Register at [www.angioma.ca](http://www.angioma.ca).

Another series of walks, runs, and bike events will be hosted by various supporters across the country. The "Anytime, Anywhere walk, run or bike-a-thon" is an important part of helping our organization complete our mandates. For more information on how to set up your own event, or to look for an upcoming

event in your neighbourhood, visit [www.workingtowardsacure.ca](http://www.workingtowardsacure.ca).

We would also like to mention that we have created an association with "Donate A Car Canada." You are now able to donate your unwanted cars, vans, and trailers, to name but a few options. The first vehicle has been donated so we are off to a great start. For more details, click on the Donate a Car link on our website.

*Henk van der Wilt*

## CCM Italia

The Marche region is the latest Italian region, following Piemonte and Valle d'Aosta, to recognize symptomatic CCM disease as a rare disease. We hope Tuscany will follow soon. CCM patients living in such regions are exempt from health care costs for diagnosis and treatment of the disease.

Patients who have received this exemption are entitled to health care benefits included in the Essential Levels of Assistance (LEA), which are considered appropriate and effective for CCM disease treatment and follow-up care. This allows patients to visit doctors, receive further diagnostic examinations, including genetic tests, as well as take tests and examinations for monitoring the evolution of the disease. If the rare disease is suspected to be of genetic origin, the exemption is extended to genetic investigations of the patient's family members. Each region can provide further services free of charge, including exemption from payment of class C drugs (which are usually paid entirely by patients).

Symptomatic CCM disease is estimated to affect from 15,000 to 80,000 Italians. It has been estimated that the sporadic (sCCM) and the familial (fCCM) forms of CCM disease affect a number of Italian people ranging from 10,500 to 56,000, respectively. CCM disease hits the headlines when it affects famous people, such as the Roma football player Leandro Castan, but awareness is poor among the general public, and even among doctors.

CCM Italia is therefore organizing a residential course, eligible for CME credits, designed to update physicians and health care professionals about CCM disease. This event will be held in April at the University of Turin.

A national conference on rare diseases, held in Turin in January, featured a discussion about CCM disease and its clinical management.

In addition, CCM Italia is promoting new collaborative efforts among Italian clinical and research centers and with international research groups in order to pursue new avenues of CCM science. This large-scale and multidisciplinary cooperation aims to provide novel options for CCM disease prevention and treatment. To learn more about this, Italian speakers may refer to an interview given to Radio 110 (the official web radio of the University of Turin, Italy) by Dr. Eliana Trapani, a talented young researcher of the CCM Italia research network (Torino Unit). She summarizes the outcomes and significance of recent Italo-American cooperative research published in the journal *Circulation* (listen to the interview at: [www.youtube.com/watch?v=k59ysPtmTFY](http://www.youtube.com/watch?v=k59ysPtmTFY)).



An improved version of the mobile application SOS Angioma, recently launched to provide better support to the Italian community of CCM patients and their relatives, will be available soon.

For more information, please visit the CCM Italia ([www.ccmitalia.unito.it](http://www.ccmitalia.unito.it)) and the Associazione Italiana Angiomi Cavernosi (AIAC) ([www.ccmitalia.unito.it/aiac/](http://www.ccmitalia.unito.it/aiac/)) websites.

*Francesco Retta*

## About Angioma Alliance

Angioma Alliance is a non-profit, international, patient-directed health organization created by people affected by cerebral cavernous angiomas (also known as cavernous malformations or CCM). Our mission is to inform, support, and empower individuals affected by cavernous angioma and drive research for treatments and a cure. We are monitored closely in our educational efforts by a Scientific Advisory Board comprised of leading cerebrovascular neurosurgeons, neurogeneticists, and neurologists.

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## How You Can Help

Your contributions help fund our research initiatives toward a cure and our patient support programs. To donate, please send a check or money order in the enclosed envelope or visit our website at [www.angioma.org](http://www.angioma.org) to donate with a credit card.

Sponsorships can maintain essential programs or help us expand the way we support the patient and research community. Sponsors are acknowledged with logo placement, naming opportunities, or appropriate other recognition.

Sponsorships are available for the following:

### Newsletter

This newsletter reaches thousands of patients and donors both in print and online. It is the only patient-directed source of news and information for the cavernous angioma community. If you have an interest in reaching this community to support our efforts, please contact us.

### Website

Our website has a global reach, and is always in the top three search results for cavernous angioma. It is

the first place newly diagnosed patients look for information and support. In addition to being a patient resource, the website provides information to medical support staff, researchers and the general public.

### Children's Book

A sponsored printing of the children's book under development would allow us to give the book to our families for free.

### Scientific Meeting

Our scientific meeting offers a variety of opportunities to support and reach the research community, including travel awards and sponsored speakers, breaks, and meals.

### DNA and Tissue Bank and Genetic Testing

The DNA and Tissue Bank is the major source of cavernous angioma biological samples for labs around the world, and we have provided the raw materials for several major published studies.

Contact us at [info@angioma.org](mailto:info@angioma.org) to discuss any of these sponsorship opportunities.