

# ANGIOMA ALLIANCE NEWSLETTER

because brains shouldn't bleed

## The Baca Family Historical Project: Where History Meets Health

In New Mexico, CCM (also known as familial cavernous angioma or cavernous malformation) has been woven into the fabric of Hispanic families for 400 years. As families grew and the state developed into the culturally rich land of enchantment it is today, CCM was passed down from generation to generation. With its broad range of symptoms and difficulty to detect without advanced technology, CCM was not recognized as a common thread for hundreds of years. Just 20 years ago, we learned that a shared genetic mutation connects these families: they can trace their heritage to a common ancestor. When the gene was identified, the identity of that ancestor was not known, but the mutation was given a name: the Common Hispanic Mutation. It is conceivable that 30,000 or more distantly related people live with the Common Hispanic Mutation in New Mexico today. The vast majority are undiagnosed. With potential treatments for CCM in development and nearing clinical drug trials, diagnosis is critical to providing patients with access to hemorrhage-preventing medications.

In 2016, when Angioma Alliance member Joyce Gonzales' identified Cristóbal Baca and Ana Maria Ortiz, who arrived in New Mexico in 1600, or one of their descendants as the original founding family of the illness, we were presented with a unique opportunity. Angioma Alliance created the Baca Family Historical Project as a paradigm-shifting initiative with the intent of giving equal weight to celebrating history and family connections as we do to health education. By increasing social support and embedding medical information in the context of heritage and cultural roots, we are creating community and reducing fear.

On a beautiful September morning in Albuquerque, more than 60 people gathered at the historic Botts Hall to

attend a Baca Family Historical Project conference. They heard from historian Dr. Joseph Sanchez about the history of Spanish Colonialism in New Mexico; from the President of the New Mexico Genealogical Society Henrietta Christmas about the role of the Baca family in the development of New Mexico; from Angioma Alliance Staff Genealogist Joyce Gonzales about the genealogy of the Common Hispanic Mutation; and from Angioma Alliance President and CEO Dr. Connie Lee about the genetics and health implications of CCM. Attendees were given assistance with their family trees, and they explored their connections to each other and to the founding Baca family. Those who wanted to find out whether they carry the Common Hispanic Mutation were offered counseling and genetic testing. Everyone we spoke with afterward reported feeling positive about their choice to participate in the conference and be tested.

The force behind this meeting and the 25 similar meetings we are holding around New Mexico in 2017 is Nora Chavez, our Community Engagement Specialist. Nora was hired in March to create a program unlike anything that has ever existed for any illness. Given her previous position as a liaison



Connie Lee and Nora Chavez.

between rural New Mexican communities and health researchers at the University of New Mexico, Nora was the perfect person to meet this challenge. “I see this as an opportunity to save lives in New Mexico, and I’m certain our outreach has already done that,” said Nora.

We are nine months into the project and have a great deal of progress to share.

- Our website, [www.BacaFamily.org](http://www.BacaFamily.org), offers historical and genealogical information as well a listing of events. It also links to the Angioma Alliance website for more information about the Common Hispanic Mutation.

- The creation of the Baca Family Historical Project coincided with Angioma Alliance recognizing the University of New Mexico Health Sciences Center as a Center of Excellence, and with the publication of the Angioma Alliance Clinical Care Guidelines in the major journal *Neurosurgery*, providing a framework to advise the New Mexico medical community on standards of care. We have used this information to educate 150 healthcare providers around the state, including physicians, nurses, public health workers, and community health workers. It also coincided with the introduction of legislation, the CCM-CARE Act of 2017, into both the US House of Representatives and the Senate, increasing government awareness

- In nine months, we’ve received significant press coverage and have partnered with a variety of organizations that have helped bring 300 at-risk families to our face-to-face meetings at sites along the Camino Real, the original route traveled by the first families. 62 families at risk for the Common Hispanic Mutation have received testing through us as of the end of September, with up to 30 more scheduled for October. Because we test the oldest living generation first (85% have been over 60), each person tested represents their descendants, so 5-20+ people are ruled in or out of the at-risk group with one test.

- We have begun a “Community Health Scholars” program in which volunteers are trained to provide regional organizational and support services under the supervision of our Community Outreach Specialist. Two volunteers are fully trained and we intend to train at least two more volunteers this year.

- We are working to create a historical publication about the history of the Baca family that we can offer families.

- We have begun talking with New Mexico Governor Susana Martinez and members of her Cabinet about the impact of the illness in the state, and we hope to partner with the state government to build solutions. We will also be presenting our concerns to the state legislature in public hearings in October.

As we move into 2018, we plan to continue expanding our work. We will host an additional 25-30 public presentations that combine history, genealogy, health education, and, where possible, genetic testing, to attract a target of 500 at-risk families. We will be assisted in this by a growing number of Community Health Scholars and by an increasingly informed medical community. We also intend to connect identified families with medical resources and research opportunities, including with the University of New Mexico.

In the long term, we hope to hire a second Community Engagement Specialist who can expand our work into other regions of New Mexico and southern Colorado where we know there are large pockets of at-risk families. We also would like to hire a Case Manager who could actively connect families to services and to clinical drug trials. Our eventual vision is to create a physical Baca Family Historical Center where history, genealogy, case management, peer support, outreach, and research can come together to create dramatic improvements in the lives of those at-risk for CCM hemorrhage and disability as a result of the Common Hispanic Mutation. Our current work is funded by a generous grant from the Julian Grace Foundation, a one-time grant from Global Genes, and by support from our membership. We welcome donations from inside and outside of New Mexico to continue this important program.

Our project is good for New Mexico, but also good for all those living with CCM. If New Mexicans become engaged in large numbers, all research benefits. The way to a cure must pass through New Mexico, and the Baca Family Historical Project will be one vehicle.

Connie Lee

## News

### Boston Children's Hospital Recognized as Center of Excellence

Angioma Alliance has recognized Boston Children's Hospital as a Center of Excellence for treatment of cerebral cavernous angioma. Along with our recognized Centers of Excellence at the University of Chicago and the University of New Mexico, Boston Children's Hospital demonstrates coordinated, multi-disciplinary expertise in CCM and has a commitment to patient and provider education and CCM research.

"We have worked hard over the years to build our program, and are proud to be honored with this designation," says Edward Smith, MD, co-director of Boston Children's Hospital's Cerebrovascular Surgery and Interventions Center and Medical Director for Center of Excellence.

A list of additional faculty can be found here: [angioma.org/pages.aspx?content=482](http://angioma.org/pages.aspx?content=482).

"On behalf of our affected children, we are pleased to recognize Boston Children's Hospital and its staff for their commitment to our families as demonstrated by the exceptional level of care they offer," said Dr. Connie Lee, President and CEO of Angioma Alliance. "We look forward to partnering with Boston Children's in supporting families and expanding research for years to come."

The Angioma Alliance Center of Excellence program began one year ago to assist our patient community in finding care. To achieve standard Center of Excellence status, a facility must meet stringent criteria. Learn more on our website: [angioma.org/pages.aspx?content=481](http://angioma.org/pages.aspx?content=481)



### Summer 2017 Events Recap

#### Art for Angioma Alliance

Throughout June, amateur and professional artists, many of whom are talented Angioma Alliance members, auctioned off their artwork online. The virtual event hosted on Facebook at by Jana Bergholtz, which featured some amazing work using various mediums, raised almost \$3,000! Another auction will be held in the spring. You can like the Facebook page to get ongoing news of the spring event: [www.FB.com/ArtforAngiomaAlliance](http://www.FB.com/ArtforAngiomaAlliance)

#### Mets Game, New York City

On June 4, Angioma Alliance held its inaugural fundraiser at a Mets game. Hosted by Joseph & Kristina Jankowski, more than 100 people attended, including multiple Angioma Alliance families from the Tri-State area, as the Mets played the Pirates. \$10 of every ticket sold benefited Angioma Alliance. The event raised almost \$5,000 to support our mission. Special thanks to Joseph Jankowski and the Con Edison matching gift program!

#### Saber Seminar, Boston, Massachusetts

On the first weekend of August, 200 scientists, mathematicians, and baseball experts gathered at Boston University for the Sabermetrics, Scouting, and the Science of Baseball seminar. Organized by Dan Brooks and Chuck Korb, this meeting was about more than baseball: It also supported the mission of Angioma Alliance. Attendees heard Chuck Korb's moving cavernous angioma story (which can also be seen on our YouTube channel), and Chuck and Dan donated all ticket sales. The event raised a phenomenal \$35,000. We are very grateful for this support!

#### Wine Tasting, Connecticut

On September 15, hundreds gathered for the 3rd Annual Torrington Wine Tasting in Torrington, CT. The event, organized by Julie DeMichiel and Terry Ponte, raised over \$40,000! Highlights included wine, beer, and chocolate tasting, a silent auction, door prizes, and live music. Chocolate was courtesy of Fascia's Chocolates; owners Louise and Carmen Romero are also members of Angioma Alliance.



### **Biking for Brains, Boston & Indianapolis**

On September 16, Kent McCord and Kim Hofelich each held a Biking for Brains event. Kent cycled over 100 miles from his home in Connecticut to Boston Children's Hospital, where his daughter Shannon had surgery to remove her cavernous angioma. Shannon rode with her father for the final 20+ mile leg, and was greeted by a contingent of Angioma Alliance members. In Indiana, Kim Hofelich hosted a leisurely Biking for Brains on the Whiteriver State Park Bike Trail. Together, they raised over \$1,500.

### **Zach Brown 5K, Edgewater, Maryland**

On September 17, the 5th Annual Zach Brown 5K was held at Camp Letts YMCA. The event was graced with beautiful weather, and a great pre-event speech by Zach, who is now 16 years old, and four other Angioma Alliance families. Over \$8,000 was raised.



### **Florence Joyner Walk, Orange County, California**

On September 24, over 100 people participated in the inaugural Orange County Walk honoring Flo-Jo, Olympic track and field star, who passed away from complications of CCM. \$13,500 was raised.

## **Upcoming Events**

### **Zuma Beach Walk, Malibu, California**

On October 21, the 3rd Annual Malibu Walk will be held at Zuma Beach. The walk offers stunning views of the Pacific Ocean and an opportunity to meet others affected. Register at [www.tinyurl.com/malibuangiomaawalk](http://www.tinyurl.com/malibuangiomaawalk)

### **Potomac, Maryland**

A greater Washington, DC, area get-together will be hosted by Robyn and Lee Margolies on November 5th at a location to be determined. Meet other Angioma Alliance families and plan future activities and events. Contact Stephanie Alband at [salband@angioma.org](mailto:salband@angioma.org) for more information.

### **Tri-City Medical Center Marathon/Half Marathon, Carlsbad, California**

On January 14, 2018, escape the winter blues by participating in this iconic sunny San Diego marathon and half marathon and raise funds and awareness. We are a charity partner and you can participate by walking, running, or volunteering. Learn more at [www.crowdrise.com/angiomaalliance](http://www.crowdrise.com/angiomaalliance)

## **We Need Your Help to Build Our Community**

Holding events and gatherings is an important part of building our rare disease community. Only through our collective efforts and the connections we make with one another can we move our cause forward. This fall, we have made tremendous connections and we ask you to help keep the momentum going. Please consider holding a fundraising or awareness event in your community.

You can start by taking these steps:

1. Think about what your interests are - bowling, trivia, BBQ, holiday mixer, etc. - and what sort of event you might want to organize.
2. Talk to your friends and family and gauge their interest in helping out.
3. Reach out to Stephanie Alband, Development Director, [salband@angioma.org](mailto:salband@angioma.org), to talk it through and get started. She can help with event flyers, creating a registration and fundraising webpage, and reaching out to other folks in your area who are affected.

### **Create a Fundraising Webpage**

If planning an event isn't for you, you can create a fundraising webpage at [www.crowdrise.com/angiomaalliance](http://www.crowdrise.com/angiomaalliance). You can customize it by including pictures and telling your story. Then share it with friends and family and ask them to support you. You can ask for donations in lieu of birthday, anniversary, or holiday presents.

## What is Brave?

We often hear that a diagnosis of CCM is accompanied by fear and loneliness. The fear of hemorrhage and life-long neurological deficits is sometimes just too much to bear. Talking about it, sharing, learning; it's all just too painful. But volunteering can help us gain control of our diagnosis and lessen the fear. Volunteering is a brave thing to do; it takes guts to face the illness more than you have to.

Since February, I have been fortunate to work on the inaugural Orange County Walk in Mission Viejo, CA, with three brave volunteers with very different CCM stories. Through their efforts, we have raised funds and awareness, but more importantly, their volunteerism has empowered them to face their illness and provided inspiration for others to do the same.

The Orange County Walk was the vision of Linda Fuchser, who was diagnosed in 2004 after a fall and bump to the head. In 2007, she had surgery and recovered fully. Three months later, doctors discovered an inoperable lesion on her brainstem. Linda has the Common Hispanic Mutation, which is hereditary. Her husband, Eric, tells her, "either get busy living or get busy dying. Get busy living, Linda."

In February, she told me about her vision to have an Angioma Alliance Walk honoring Florence Griffith Joyner, also known as Flo-Jo. This Olympic track and field record-holder is still the fastest woman of all time. Linda worked in Flo-Jo's hometown for 18 years, and always looked to Flo-Jo as a pillar of the community

and a role model for her daughters. After her own diagnosis, Linda learned that Flo-Jo passed away from complications as a result of CCM. Linda told me how she envisioned holding a walk at Flo Jo Park in Mission Viejo to honor the Olympic legend.

We corralled Kristen Lewis to help. Days after delivering her second child, Kristen had lost nearly all function from the waist down. She was nursing her newborn baby girl as a neurologist told her she needed emergency surgery to remove a hemorrhaging lesion from her spinal cord. Genetic testing revealed that CCM1 is responsible for the multiple lesions remaining in her brain and brainstem. She is left with sensory damage and neuropathic pain, but is still grateful. "I am absolutely determined to see a cure for this disease, and I will do anything I possibly can to help make this happen."

I knew after hearing Linda and Kristen's stories, and sensing their passion, that this was going to be a great experience. We started to hold regular calls. I tried to moderate their expectations, "it may just be us on these calls, but we have to keep inviting folks to join us." It can be challenging to engage the community when working for a rare disease, like CCM. To our surprise, we had a regular stream of folks on the calls who offered to participate.

Lindsay Ramirez was one of the individuals who joined our calls ready to help. Her upbeat attitude and supportive family network would continue to amaze me. In December, 2016, her 4-year old son Elan was diagnosed with CCM and had surgery to remove a golf-ball sized cavernous angioma from his cerebellum. In June, he had a second surgery. Today, Elan is doing great, but Lindsay and her husband constantly worry about Elan's future and the possibility of future bleeds. Lindsay and Edgar mobilized their network of family and friends to ensure that the walk was a success. Elan and his team came to the walk dressed as superheroes. That, to me, was perfect, because not only is Elan a superhero, his mom and dad are, too.

Our efforts paid off. At the inaugural Orange County Walk on September 24, over 100 people participated and \$13,500 was raised to support Angioma Alliance. We connected with people who were excited to meet others who are affected. Dr.





Miguel Alejandro Lopez-Ramirez, a post-doctoral scientist from UCSD who is working on CCM research, provided a hopeful message to our attendees. At the event, participants didn't feel alone and afraid; they felt hopeful and empowered. I think Kristen's daughter Remy said it best, "Flo-Jo would have been very proud of us."

It is such a pleasure to work with brave volunteers like Linda, Kristen, and Lindsay. I look forward to working more with our brave nation of volunteers in the future to help find a better treatment and cure for CCM.

*Stephanie Alband, Development Director*



THE UNIVERSITY OF NEW MEXICO ♦ HEALTH SCIENCES CENTER

**SCHOOL OF MEDICINE**

October 5, 2017

To the Angioma Alliance and their generous donors,

The purpose of this letter is to offer an update on our ongoing project, The positives after testing positive: Patient perspectives of genetic screening for the cerebral cavernous malformation (CCM) Common Hispanic Mutation. This study aims to better understand the genetic testing decision-making process in individuals with the CCM Common Hispanic Mutation and their non-affected biological relatives (those who tested negative for the Common Hispanic Mutation). The goal is to survey patients who have had genetic testing to understand their perspectives and experiences, both positive and negative. Savannah Cheek, the research coordinator for this study and an undergraduate student at the University of New Mexico, has been busy contacting participants, sending out questionnaire packets, and scoring and entering data. To date, we have received completed questionnaires from 82 participants, 54 with positive genetic testing for the Common Hispanic Mutation and 28 non-affected relatives. We have approximately 60 individuals that we are either awaiting completed questionnaires from or have yet to contact. We will continue to recruit and follow-up with these individuals until the study ends in December.

After the data is collected, we will move into the analysis and writing phase of the study. Specifically, we will identify characteristics and circumstances that might influence the decision-making process about testing. Our larger goal is to assist doctors in improving patients' experience of genetic testing by identifying and addressing concerns and stumbling blocks before, during, and after testing. With this understanding, we aim to improve the quality of healthcare delivery for those with the Common Hispanic Mutation.

On behalf of my collaborators, I would like to extend my appreciation to the Angioma Alliance and their donors for their commitment to this study and to patients with CCM. Without their support, this work would not be possible. If there are any questions, comments, or concerns, please feel free to contact me at [cpetranovich@gmail.com](mailto:cpetranovich@gmail.com).

All the best,

Christine Petranovich, Ph.D.

## Interview with Researcher Doug Marchuk

**Amy Akers:** Hi, this is Amy Akers. I'm the Chief Scientific Officer of Angioma Alliance and I'm here today having a conversation with Doug Marchuk. Doug is a James B. Duke Professor of Molecular Genetics and Microbiology at Duke University. He is also the Director of the Division of Human Genetics at Duke and one of the founding members of the Angioma Alliance Scientific Advisory Board. And, near and dear to my heart, he was also my Ph.D. thesis advisor while I was at Duke as a grad student.

We're going to have a discussion today about CCM research. His lab is focused on the genetics of vascular diseases. He and his group have been involved in so many aspects of CCM research going back to gene identification and molecular work. Now they are doing lots and lots of drug studies with the mouse models he developed. Doug, how did you become involved in CCM research?

**Doug Marchuk:** I heard about CCM from a number of colleagues and then I became friends with Eric Johnson [researcher] and with Leslie Morrison, who is a pediatric neurologist in New Mexico. These people told me all about the disease and the families they had collected. We started our genetic studies with Leslie's families and Eric's families. Eric's families came mostly from the Phoenix, AZ area and Leslie's obviously came from Albuquerque, NM and all throughout New Mexico. So, talking about disease and having some good colleagues and friends – that's how I got started.

**AA:** Let's talk a little more about CCM families. CCM comes in two different flavors: sporadic and familial. In the familial, where we have multiple lesions and multiple family members affected from different generations, folks often go for genetic testing. If they [everyone in a family who has lesions] come back negative from genetic testing, what does that tell you? Can you talk about that a little bit: how someone could still have familial CCM but come up negative on genetic testing?

**DM:** One of the big issues is that diagnostic laboratories are very conservative. They are hesitant to call something a mutation that they are pretty sure is a mutation but they don't have rock-solid evidence. There's a series of rules you would go by, reading a sequence of a gene and claiming that change you found is a mutation. So, often they have an idea that they found something, but they are not able to report it because of these rules. In fairness, they should not. That's the first thing: there's probably a fair number of families that have those changes but it doesn't meet certain criteria to be called a bona fide mutation. They're probably 80% sure, 70%, 90% but they're not able to call it.

The other thing is we as scientists don't understand all the rules of how a DNA change can influence a gene and, in this case, break the gene. We understand a fair amount of the rules, especially in the coding region of the gene, but we don't know all the rules. There are many ways to break something, and not all of them we can identify. There may be a variant they don't find because they don't even sequence that part of the gene, or they do sequence but we don't know how to interpret even if we find base changes there.

I think there's a third option—is there another CCM gene?—and you and I were just talking about this. It's impossible to say there isn't, but there's no evidence as of right now that there is another gene. The fact that people don't have a mutation found in a



diagnostic lab is not evidence of another gene. There has to be some other kind of evidence to say there is evidence of another gene. That kind of negative data happens all the time. It happens in science and it happens in diagnostic labs. It doesn't mean there is another gene. I'm not saying there isn't another gene; I'm saying there is no evidence that there is one until someone comes up with some evidence.

AA: Tell us about the mice. I know you've got lots and lots of mice and lots of different treatment regimens right now. Just in broad brushstrokes, can you tell us what you guys have going on mouse-wise?

DM: Yes, we have so many mice. I think we're pushing four or five hundred cages, and each cage would have a different number depending on whether they were breeding or this or that. In broad brushstrokes, some of our mouse studies are involved with trying to understand the molecular events that are going on in the cerebral cavernous malformation itself; what kinds of molecular and cellular events are going on to create that mulberry appearance or that lesion. Those are very mechanistic studies. They are very detailed. They are very important in the long run, but they don't necessarily have an immediate clinical or therapeutic context. We do have a huge number of studies that are pre-clinical drug studies. We're studying some off-the-shelf drugs in our models. We also are studying some novel therapies with BioAxone, a company that has a new compound that could become a new drug. We have a lot of mice on various drugs or on experimental compounds. We'll see which ones come up. I will say this, a drug that works in the mouse may or may not work for the human situation. And, if it doesn't work in the mouse, it's not going to work in the human. I think that's a fair statement. We'll be talking about some of them at the Angioma Alliance scientific research conference later this month.

AA: The patient community is obviously very eager for clinical trials. That's the next great thing from the clinical side of things. What about basic research? What are your biggest unanswered questions? What is that black hole still remaining for CCM?

DM: One really big black hole is that there's been so much good study by really good groups coming from different approaches...We have all these ideas and in some cases we may even have some evidence in an

experimental setting that altering a pathway may have some benefit, but what we don't know is how all that fits together...

I think that's one of the big questions. Is there one central pathogenesis idea that we would say, "we should hit that" [with a drug]. As we were talking about earlier, the key here is that even if we don't find that right away, we have so many good leads for compounds that we can study. You can think of it as maybe there is something wrong way up at the top and it trickles down and it branches out into all different ways of causing problems with the blood vessels. But we can attack at those levels and try to fix that even if we don't understand the big picture at the front end. But I think that fitting it all together is the million-dollar question.

AA: Thank you very much. I appreciate your time. I look forward to sharing this with the Angioma Alliance patient community.

You can watch the video of this interview on the Angioma Alliance YouTube channel.

## Microbiome Project Update

As we reported in our last issue, Angioma Alliance is a recruiting site, along with the University of Chicago, University of California at San Francisco and the University of New Mexico, for the CCM-Microbiome pilot study. Over the summer, Dr. Amy Akers enrolled 25 participants in the study. Across all sites, the goal was to collect and analyze approximately 60 microbiome samples to generate preliminary human data in preparation for a larger grant application.

At this year's Scientific Meeting in late October, research teams that will be part of the project, including Angioma Alliance, have scheduled a Human Microbiome Grant planning meeting to discuss scientific questions and strategy related to recruitment. There has already been a request that Angioma Alliance hire a research assistant to assist in enrolling as many new participants as quickly as possible. We are seeking funding for such a position and would be grateful for any leads or direct support.

To express interest in enrolling in the project, please register at [www.angioma.org/registry](http://www.angioma.org/registry). We'll be contacting registrants once the project is fully funded.



## Cavernoma Alliance UK News

Since our last update for the Angioma Alliance newsletter a great deal has happened to Cavernoma Alliance UK (CAUK). Especially pleasing is our increase in membership, which we put down to our visibility as well as to the recommendations of clinicians.

The International Cavernoma Alliance UK Forum is a high point of our year, an event full of talks by professionals. This year's meeting was our first Forum away from London: it was held at the University of York. Dr Connie Lee spoke at the forum, along with a geneticist, a neurosurgeon, and a medical student from the University of Groningen (in the Netherlands). During the afternoon we held four participatory workshops. Connie presented a workshop on measuring quality of life with a cavernoma; Emma Tait's workshop discussed "Symptoms and practicalities of living with a cavernoma;" Simona Stankovska, our press officer and trustee, presented "Surgery: Preparing for the Operation and Dealing with Life After;" and Dr Susie Mackenzie led a workshop on Singing for the body and Brain.



*Connie Lee talks on Moving Cavernoma Treatment Forward.*

During the summer months, CAUK had its 5th Annual CaverFamilies Residential, based this year at Hemscott Hill Farm on the beautiful Northumberland coastline. This July weekend involved nine families from all over the UK, uniting groups of children aged between 2 and 12, some of whom are affected by cavernoma, and others who are siblings of a child with

a cavernoma. Whilst the children played football, swam, made candles, and baked pizza, parents spent time with a trained psychologist discussing issues of living with children with a cavernoma, and taking Pilates, meditation, and reflexology classes.

CaverCentres (discussion groups) are springing up everywhere. Debbs, our community worker for southern England, led discussions in Brighton (on England's south coast), with help from a local CAUK trustee, at a new CaverCentre in Devon, as well as a group to the north of London. And we are about to continue this regional expansion with Ailsa Crowe, our new part-time community worker for northern England. As well as Scotland where she lives, Ailsa hopes to establish CaverCentres in Newcastle, Liverpool, and Leeds.

Debbs and Ailsa are shortly to be united as CAUK continues in its attempt to bring awareness to GPs at their annual national conference held this year in Liverpool. Many GPs are not (yet) aware of cavernoma but remain the gatekeepers to neurologists. Also, training continues for CaverBuddies (informal cavernoma relationships), as well as a day to celebrate the work of volunteers. CAUK have also published two new Crystal Mark-approved booklets on spinal cavernoma and pregnancy and cavernoma. (These are available for free download from our website, scroll to the bottom of the page: [www.cavernoma.org.uk/about-cavernoma](http://www.cavernoma.org.uk/about-cavernoma)).

Mark your calendars: 28 April 2018 will be the International CaverArt Auction to celebrate Connie Lee's founding of Angioma Alliance and its worldwide impact. Of those Alliances able to fundraise, International CaverArt Day will see Alliances accept final bids for their own countries' art displayed on their website. All proceeds go to the Alliances in the artist's own countries.

*Ian Stuart*

Angioma Alliance is pleased to introduce Asociación Española de Cavernomas, serving those with cavernoma in Spain. Information about the organization can be found at [www.cavernomas.org](http://www.cavernomas.org) and at [www.facebook.com/cavernomas/](https://www.facebook.com/cavernomas/). A full list of international organizations associated with Angioma Alliance can be found at [angioma.org/pages.aspx?content=372](http://angioma.org/pages.aspx?content=372).

## Research Update

### Measuring and Predicting Cavernous Angioma Behavior

In preparation for clinical trials, Dr. Awad's team in Chicago is working to develop validated biomarkers for CCM. Biomarkers are standardized tools that help us to measure a medication's effectiveness. Data from the current study ([www.ncbi.nlm.nih.gov/pubmed/28791783](http://www.ncbi.nlm.nih.gov/pubmed/28791783)) suggests that the advanced MRI technique called Quantitative Susceptibility Mapping (QSM), which measures iron content, may be used as a measure for hemorrhage. Importantly, the power and sensitivity of QSM may benefit trial design by reducing the number of study participants needed for an effective trial.

Biomarkers can also be used in clinical practice to predict a change in the behavior of a lesion or in symptoms. The University of Chicago team is also investigating chemical markers that are carried in the blood that may reflect clinical severity of CCM ([www.ncbi.nlm.nih.gov/pubmed/28819935](http://www.ncbi.nlm.nih.gov/pubmed/28819935)). The team investigated chemical signals related to inflammation, blood vessel development, and structural integrity; all processes known to be defective in CCM lesions. Unique chemical signals were identified that correlate with CCM-related seizures and/or hemorrhage. These exciting results lay the foundation for exploring the potential use of these molecules to predict what a lesion may do.

"Biomarkers open a promising new era in cavernous angioma care and clinical research," said Dr. Awad. "Biomarkers can detect lesion bleeding and leaking in the absence of clinical symptoms. They can raise red flags about what lesions are stable or unstable. Other biomarkers may even predict clinical consequences before they happen. But, their most exciting promise is that they may detect benefit or harm of a drug with smaller trials involving smaller groups of patients. They will drive trial readiness projects and smaller trials for early proof of concept of the usefulness of a medication."

Dr. Awad's team has been awarded an NIH grant to prepare for clinical drug trials. The team will focus on cavernous angiomas with symptomatic hemorrhage (CASH). One part of the preparation is to export the biomarker detection technology to a select number of other US university hospitals that will be participating in trials. These institutions will be ready to test any of the medications that are currently under consideration for treatment of cavernous angioma.

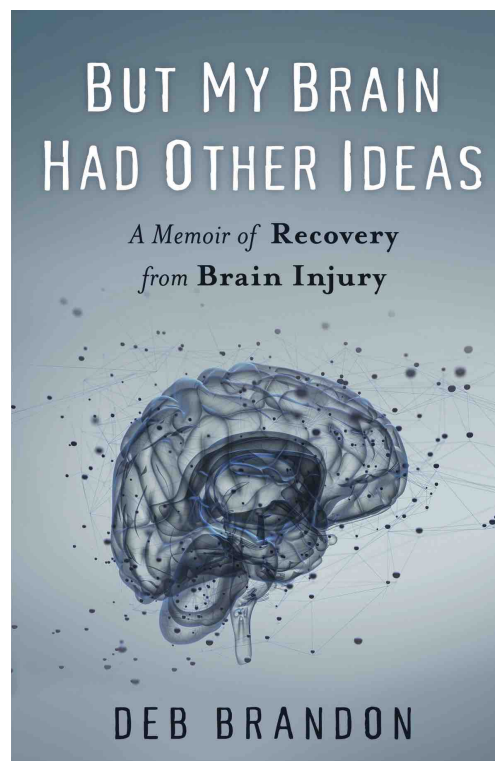
Amy Akers

### New Book about Life with Cavernous Angioma

Long-time Angioma Alliance member Deb Brandon has written a book about her experience with cavernous angioma: *But My Brain Had Other Ideas: A Memoir of Recovery From Brain Injury*. From the publishers description:

"When Deb Brandon discovered that cavernous angiomas—tangles of malformed blood vessels in her brain—were behind the terrifying symptoms she'd been experiencing, she underwent one brain surgery. And then another. And then another. And that was just the beginning... Unlike other memoirs that focus on injury crisis and acute recovery, *But My Brain Had Other Ideas* follows Brandon's story all the way through to long-term recovery, revealing without sugarcoating or sentimentality Brandon's struggles—and ultimate triumph."

The book also includes an introduction by Connie Lee, founder and President of Angioma Alliance. We congratulate Deb on the release of her work and wish her much success in spreading awareness!



## 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 our support for the patient and research community. Sponsors are acknowledged with logo placement, naming opportunities, or appropriate other recognition. Sponsorships are available for the following:

### Scientific Meeting - \$35,000 to \$1,000

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

### Newsletter - \$10,000 to \$5,000/year

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

### Website - \$10,000 to \$1,000/year

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.

### Events - Range of opportunities

Angioma Alliance members host multiple events throughout the year, from Cavernous Angioma Awareness Night at major league sporting events to smaller Fun Runs and tournaments. Sponsorship opportunities are always available with varying levels of public exposure depending on the event.

### DNA and Tissue Bank - \$20,000/year

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 Stephanie Alband at [salband@angioma.org](mailto:salband@angioma.org) to learn more about these opportunities and valuable benefits for your company.



**ANGIOMA  
ALLIANCE**

## 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.

Angioma Alliance  
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[www.angioma.org](http://www.angioma.org)  
[www.facebook.com/AngiomaAlliance](https://www.facebook.com/AngiomaAlliance)  
[info@angioma.org](mailto:info@angioma.org)  
Twitter: @AngiomaAlliance

A copy of the latest financial report, registration filed by this organization and a description of our programs and activities may be obtained by contacting us at: Angioma Alliance, 520 W 21st St STE G2-411, Norfolk, VA 23517, [info@angioma.org](mailto:info@angioma.org). If you are a resident of one of the following states, you may obtain financial information directly from the state agency.

- Florida – A COPY OF THE OFFICIAL REGISTRATION AND FINANCIAL INFORMATION MAY BE OBTAINED FROM THE DIVISION OF CONSUMER SERVICES BY CALLING TOLL-FREE, WITHIN THE STATES, 800-435-7352 (800-HELP-FLA) OR BY VISITING [www.800helpfla.com](http://www.800helpfla.com). REGISTRATION DOES NOT IMPLY ENDORSEMENT, APPROVAL OR RECOMMENDATION BY THE STATE. Florida Registration CH20096
- Georgia – A full and fair description of our programs and our financial statement summary is available upon request at our office and email indicated above.
- Colorado – Colorado residents may obtain copies of registration and financial documents from the office of the Secretary of State, 303-894-2860, [www.sos.state.co.us/](http://www.sos.state.co.us/) Reg. No. 20063003635.
- Maryland – For the cost of copies and postage, from the Office of the Secretary of State, State House, Annapolis, MD 21401.
- Michigan – MICS # 35000
- New Jersey – INFORMATION FILED WITH THE ATTORNEY GENERAL CONCERNING THIS CHARITABLE SOLICITATION AND THE PERCENTAGE OF CONTRIBUTIONS RECEIVED BY THE CHARITY DURING THE LAST REPORTING PERIOD THAT WERE DEDICATED TO THE CHARITABLE PURPOSE MAY BE OBTAINED FOR THE ATTORNEY GENERAL OF THE STATE OF NEW JERSEY BY CALLING 973-504-6215 AND IS AVAILABLE ON THE INTERNET AT: <http://www.state.nj.us/lps/ca/charfrm.htm>. REGISTRATION WITH THE ATTORNEY GENERAL DOES NOT IMPLY ENDORSEMENT.
- New York – Upon Request, Attorney General Charities Bureau, 102 Broadway, New York, NY 10271
- North Carolina – Financial information about this organization and a copy of its license are available for the State Solicitation Licensing Branch at 919-807-2214. This is not an endorsement by the state.
- Pennsylvania – The official registration and financial information of Angioma Alliance may be obtained from the Pennsylvania Department of State by calling toll-free within Pennsylvania 800-732-0999. Registration does not imply endorsement.
- Virginia – State Division of Consumer Affairs, Department of Agriculture and Consumer Services, PO Box 1163, Richmond, VA 23218.
- Washington – Secretary of State at 800-332-4483 or <http://www.sos.wa.gov/charities/>. REGISTRATION WITH A STATE AGENCY DOES NOT CONSTITUTE OR IMPLY ENDORSEMENT, APPROVAL OR RECOMMENDATION BY THAT STATE.