ANGIOMA ALLIANCE

Presents the 15th Annual

CCM SCIENTIFIC MEETING

THE DOUBLETREE BY HILTON HOTEL
SILVER SPRING, MD
NOVEMBER 7-8, 2019
Day 1 | Thursday, November 7th, 2019

7:30  Registration, Pinnacle Grand Ballroom Foyer
7:30  Continental Breakfast, Connection Room
8:30  Welcome & Opening Remarks, Pinnacle Grand Ballroom

SESSION I – ANIMALS & PRECLINICAL STUDIES

Moderated by TBD

8:40  Understanding the role of CCM3 in endothelial development and disease
Tvisha Misra • Sickkids Hospital

9:00  Specific deletion of CCM3 in brain endothelium reliably models human cerebral cavernous malformations
Huanjiao Jenny Zhou • Yale

9:20  Advancing CCM mouse models for pre-clinical therapeutic testing
Matthew Detter • Duke University

9:40  Transcriptomes of Cerebral Cavernous Angiomas Clarify Mechanisms of Lesion Genesis and Maturation in Murine Pre-Clinical Models and Human Symptomatic Hemorrhage
Romuald Girard • University of Chicago

10:00 DISCUSSION

10:20 BREAK

SESSION II – NATURAL HISTORY & BIOMARKERS

Moderated by TBD

10:40  Angioma Alliance updates - patient engagement, international collaborations & unraveling the genealogy of an American founder mutation
Connie Lee • Angioma Alliance

11:00  Health-related Quality of Life in Cavernous Angioma Patients with Symptomatic Hemorrhage
Helen Kim • UCSF

11:20  Subclinical Imaging Changes in Cerebral Cavernous Angiomas During Prospective Surveillance
Julian Carrion-Penagos • University of Chicago

11:40  Common transcriptomic and biomarker signatures in the aging brain and in Mendelian neurovascular disease, cerebral cavernous malformation
Issam Awad • University of Chicago

12:00 DISCUSSION

12:20 LUNCH - CONNECTION
SESSION III – HEMORRHAGE RISK & CLINICAL TRIALS
Moderated by TBD

1:30  Predictors of Intracranial hemorrhage in Familial Cerebral Cavernous Malformation Patients - BVMC Study Cohort
Atif Zafar • UNM

1:50  Predictors of Initial Presentation with Hemorrhage in Patients with Cavernous Malformations - the role of clinical history and medications
Kelly Flemming • Mayo Clinic

2:10  Association between statin or beta blocker drug use and hemorrhage from cerebral cavernous malformations
Susanna Zuurbier • Amsterdam University

2:30  TREAT_CCM - A multicenter randomized clinical trial on propranolol in familial cerebral cavernous malformations
Roberto Latini • Istituto Mario Negri

2:50  Tempol clinical trials and developing a CCM-Health Index
Tracey Clayton • Recursion Pharmaceuticals

3:10  DISCUSSION

3:30  GROUP PHOTO

POSTER SESSION | DISCOVERY ROOM (3:45-5 PM)

Symptomatic Brain Hemorrhages from Cavernous Angioma Following Botulinum Toxin Injections, and Suggested TLR/MEKK3 Mechanism
Julian Carrión-Penagos • University of Chicago

Characterizing Meningeal Lymphatic Development in Zebrafish
Daniel Castranova • NIH

The Cavernous Angioma Patient Registry – a tool for research & recruitment
Kristen Dahlem • Angioma Alliance

nfatc1 deficiency causes thoracic duct dilation during vascular development
Alexandra Fister • NICHD/NIH

Affected health domains in patients with brainstem cavernous malformations
Kelly Flemming • Mayo Clinic

Artery/Vein Plasticity After Vessel Injury
Leah Greenspan • NIH

Target sequencing for germline mutations in sporadic CCM patients
Hiromi Hongo • University of Tokyo

CCM1 and CCM3 cooperate to maintain intestinal function in C. elegans
Sam Krempel • SickKids Hospital
The role of CCM-3 in the ERK-5 pathway
Ben Lant • SickKids Hospital

Selective ROCK Inhibitors Ameliorate CCM Lesions in an Acute Mouse Model
Matthew Lee • Cervello Therapeutics

Endothelial cell clonal expansion in the development of Cerebral Cavernous Malformations
Matteo Malinverno • FIRC Institute

Female Hormonal Therapy and Cavernous Angioma Hemorrhage
Jorge Marcondes • Universidade Federal Rio de Janeiro

Variants in Inflammation-Related Genes Plus DNA Repair Enzymes and Aggressiveness in a CCM3 Brazilian Patient with Cerebral Cavernous Malformations.
Jorge Marcondes • Universidade Federal Rio de Janeiro

KRIT1 deficiency promotes aortic endothelial dysfunction and atherosclerosis
Andrea Perrelli • University of Torino

The role of MRCK-1 in biological tube development
Evelyn Popiel • The Hospital for Sick Children

Adapting BioID for Use in Zebrafish to Investigate the Protein-Protein Interactions of CCM3
Shimon Rosenthal • University of Toronto

A Brain Targeted Orally Available ROCK2 Inhibitor Benefits Mild and Aggressive Cavernous Angioma Disease
Robert Shenkar • University of Chicago

Studying the origin and function of novel vascular-associated cells in the zebrafish meninges
Marina Venero Galant • NIH

Characterizing Novel RHOA Mutant Alleles and their Effects on Vascular Integrity
Joseph Yano • NIH

Prevalence of Obstructive Sleep Apnea (OSA) in Cerebral Cavernous Malformations
Atif Zafar • University of New Mexico

Autoantigen(s) Trigger a Robust Immune Response in Cerebral Cavernous Malformations
Dondong Zhang & Abhinav Srinath • University of Chicago

5:00 BREAK

WELCOME DINNER | MRS. K’S RESTAURANT & CELLAR (7-9 PM)
9201 Colesville Road, Silver Spring, MD
Day 2 | Friday, November 8th, 2019

**CONCURRENT SESSION SCIENTIFIC MEETING & FAMILY CONFERENCE**

7:30  Continental Breakfast, Connection Room
8:30  Welcome & Introduction, Pinnacle Ballroom

8:40  **PLENARY PRESENTATION**

*Keynote Address to Patients, Families, and Investigators: Milestones and Our Road Ahead*

Issam Awad • University of Chicago

9:30  **BREAK**

**SESSION IV – VASCULAR BIOLOGY & LESION DEVELOPMENT**

Moderated by TBD

9:50  *Characterizing the function of RHOA in regulating vascular development and integrity in vivo*

Laura Pillay, NICHHD/NIH

10:10  *Blood flow suppresses vascular anomalies in zebrafish model of cerebral cavernous malformations*

Claudia Rodel - Potsdam University

10:30  *Axonal Guidance Factors Regulate Invasion and Migration of Brain Endothelial Cells in Normal Development and Cerebrovascular Malformations*

Katie Fehnel - Boston Children’s

10:50  **DISCUSSION**

11:45  **LUNCH – CONNECTION WITH FAMILY CONFERENCE ATTENDEES**
SESSION V – VASCULAR DEVELOPMENT & LESION GENESIS

Moderated by TBD

1:00  *CCM3, a protein mutated in cerebral cavernous malformations, is a signal transduction adapter*  
Kento Abe • University of Toronto

1:20  *Alternatively spliced isoforms reveal a novel type of PTB domain in CCM2 protein*  
Jun Zhang • Texas Tech University

1:40  *NgBR Regulates the Expression of CCM1/2 in Endothelial Cells via Histone Acetylation*  
Zhi Fang • New York University

2:00  *Ccm2l deletion aggravates cerebral cavernous malformation in Ccm2-deficient mice by activating MEKK3-KLF signaling pathway*  
Jaesung Choi • Centenary Institute

2:20  *Pharmacological inhibition of the HEG1-KRIT1 protein complex increases Kruppel-like Factors 4 and 2 expression in endothelial cells.*  
Miguel Lopez-Ramirez • UCSD

2:40  **DISCUSSION**

3:00  **BREAK WITH FAMILY CONFERENCE**

3:15  **CLOSE OF MEETING**

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