ANGIOMA ALLIANCE

Presents the 14th Annual

CCM SCIENTIFIC MEETING

THE DOUBLETREE BY HILTON HOTEL

SILVER SPRING, MD

NOVEMBER 8-9, 2018
Day 1 | Thursday, November 8th, 2018

7:30  Registration & Continental Breakfast, Connection Room
8:15  Welcome & Opening Remarks, Pinnacle Grand Ballroom

**SESSION I – CLINICAL & BIOMARKERS**
Moderated by Issam Awad, University of Chicago

8:20  Invited talk – *FDA perspective for Biomarker Qualification*
     Christopher Leptak, Center for Drug Evaluation and Research, FDA

8:50  *Microbiome Signatures in Cerebral Cavernous Malformations*
     Le Shen, University of Chicago

9:10  *Spinal Cord Cavernous Malformations in the Familial Cerebral Cavernous Malformations Cohort: High prevalence and positive correlation with brain cavernous malformations*
     Marc Mabray, University of New Mexico

9:30  *Plasma Biomarkers of Cavernous Angioma with Symptomatic Hemorrhage (CASH)*
     Seán Lyne, University of Chicago

9:50  *A Multi-Site Validation of MRI Biomarkers of Vascular Leak and Hemorrhage for Forthcoming Clinical Trials*
     Nick Hobson, University of Chicago

10:10 DISCUSSION

10:30 BREAK

**SESSION II – TRANSLATIONAL STUDIES**
Moderated by Doug Marchuk, Duke University

10:50  *Cerebral Cavernous Malformations Form and Anticoagulant Vascular Domain*
     Miguel Alejandro Lopez-Ramirez, University of California San Diego

11:10  *A kinase inhibitor inhibits MEKK3-KLF signaling and prevents initiation and progression of cerebral cavernous malformations*
     Xiangjian Zhen, Centenary Institute

11:30  *A PDCD10 gut-brain axis exacerbates cerebral cavernous malformations*
     Alan Tang, University of Pennsylvania

11:50 DISCUSSION

12:15 LUNCH - CONNECTION
SESSION III – TRANSLATIONAL STUDIES & CLINICAL TRIALS
Moderated by Rustam Al-Shahi Salman, University of Edinburgh

1:20 Propranolol Repurposing and High Throughput Screening for treatment of Cerebral Cavernous Malformations
Joppe Oldenburg, Uppsala University

1:40 VE-cadherin targeted restoration of vascular integrity rescues cerebral cavernous malformation
Jennifer Gamble, Centenary Institute

2:00 Translation of ROCK2 inhibition to treat cavernous angioma
Lisa McKerracher, BioAxone BioSciences

2:20 Update on the clinical development for REC-994 (Tempol)
Tim Considine, Recursion Pharmaceuticals

2:40 Atorvastatin Treatment of Cavernous Angiomas with Symptomatic Hemorrhage
Exploratory Proof of Concept (AT CASH EPOC) Trial
Sean Polster, University of Chicago

3:00 Treat CCM Clinical Trial – A multicenter randomized clinical trial on Propranolol in Cerebral Cavernous Malformation (CCM)
Roberto Latini, Istituto Di Ricerche Farmacologiche Mario Negri

3:20 DISCUSSION

3:50 GROUP PHOTO

POSTER SESSION | DISCOVERY ROOM (4-5:30)

BA-1049 for Cavernous Angioma: target engagement and barrier function
Matthew Abbinanti, BioAxone BioSciences

CCM3, a protein mutated in cerebral cavernous malformation, is a signal transduction adapter
Kento Abe, University of Toronto

The Effect of Gut Microbiome on Chronic Models of CCM Lesion Formation
Christian Benavides, Duke University Medical Center

Ponatinib (AP24534) inhibits MEKK3-KLF signaling and prevent the initiation and progression of cerebral cavernous malformations
Jaesung Choi, Centenary Institute

Posterior Location and Inflammatory Comorbidities Increase Odds of Sporadic, Brain Cavernous Malformation Development
Kelly Flemming, Mayo Clinic
Low fluid shear stress conditions contribute to activation of cerebral cavernous malformation signaling pathways
Jennifer Gamble, Centenary Institute

Investigation of a novel mouse model for Cerebral Cavernous Malformations using Bub 1b heterozygosity as a genetic sensitizer
Erin Griffin, Duke University Medical Center

Elucidation of mrck-1 pathways in tube development and embryogenesis of Caenorhabditis elegans
Evelyn Popiel, Sickkids

Genetic investigation of five Japanese CCM cases by whole-exome sequencing
Hiroki Hongo, The University of Tokyo

Multiple Bleeds, Lower Cranial Nerve Dysfunction and Gait Dysfunction Predict Lesser Employment Status after Brainstem Cavernous Malformation Diagnosis
Shivram Kumar, Mayo Clinic

Novel Derivatives of Fasudil that Inhibit ROCKII with Enhanced Potency and Kinase Selectivity
Matthew Lee, Cervello Therapeutics

Development of the pectoral fin vasculature in zebrafish embryos
Scott Paulissen, NICHD/NIH

Hemorrhagic Risk Factors in Cerebral Cavernous Malformations
Myranda Robinson, University of New Mexico

Regulation of endocytic trafficking and VEGFR2 receptor availability by a component of the microtubule motor dynein
Amber Stratman, NICHD/NIH

Artificial intelligence-powered drug discovery: using machine learning to identify novel therapeutic targets for CCM
Andrea Taddei, BenevolentAI

Introduction of Ranger Biotechnologies
Christina Udesen, Ranger Biotechnologies

Comorbidities and Cerebral Vascular Burden In Hereditary Hemorrhagic Telangiectasia
Ashley Wegele, University of New Mexico

Cause of Death in Familial Cerebral Cavernous Malformations: An Analysis of Prospective Database
Atif Zafar, University of New Mexico

5:30 BREAK

WELCOME DINNER | MRS. K’S RESTAURANT & CELLAR (7-9 PM)
9201 Colesville Road, Silver Spring, MD
Day 2 | Friday, November 9th, 2018

**CONCURRENT SESSION SCIENTIFIC MEETING & FAMILY CONFERENCE**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30</td>
<td>Registration &amp; Continental Breakfast, Connection Room</td>
</tr>
<tr>
<td>8:30</td>
<td>Welcome &amp; Introduction, Pinnacle Ballroom</td>
</tr>
<tr>
<td>8:40</td>
<td><strong>PLENARY PRESENTATION</strong></td>
</tr>
<tr>
<td></td>
<td>Rustam Al-Shahi Salman, University of Edinburgh</td>
</tr>
<tr>
<td>9:30</td>
<td><strong>BREAK</strong></td>
</tr>
</tbody>
</table>

**SESSION IV – VASCULAR SIGNALING STUDIES**
Moderated by Angela Glading, University of Rochester

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
</table>
| 9:50  | *Characterizing the function of RHOA signaling in regulating cranial vascular integrity and development*  
Laura Pillay, NICHHD/NIH |
| 10:10 | *Moving toward prognostic biomarkers and therapeutic strategies for CCM disease: Kirit1 loss-of-function causes increases in protein S-glutathionylation*  
Andrea Perrelli, University of Torino |
| 10:30 | *Role for a Hippo-like pathway in Cerebral Cavernous Malformations?*  
Amin Ghabrial, Columbia University College of Physicians and Surgeons |
| 10:50 | *Investigating the molecular interaction and modulation within CSC complex*  
Akhil Padarti, Texas Tech University Health Science Center |
| 11:10 | *Novel and known genes elucidated in cerebral cavernous malformation through comparative transcriptomic analysis of multiple model species and human microdissected lesional endothelial cells*  
Janne Koskimäki, University of Chicago |
| 11:30 | **DISCUSSION**                                                                                   |
| 11:45 | **LUNCH – CONNECTION**                                                                          |
|       | Lunchtime speaker: Issam Awad, University of Chicago, *Content and Collaboration*              |

**SESSION V – VASCULAR DEVELOPMENT & LESION GENESIS**
Moderated by Angeliki Louvi, Yale University

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
</table>
| 1:00  | *Studying the origin and function of novel brain vascular-associated cells*  
Maria Venero Galanternik, NICHHD/NIH |
1:20  MicroRNA-mediated control of developmental lymphangiogenesis
Hyun Min Jung, NICHD/NIH

1:40  Understanding the role of CCM3 in endothelial development and disease
Tvisha Misra, Sickkids

2:00  Cerebral Cavernous Malformations Develop through Clonal Expansion of Mutant
Endothelial Cells
Matt Detter, Duke University Medical Center

2:20  Cerebral cavernomas arise from clonal expansion of endothelial cells
Matteo Malinverno, IFOM, FIRC Institute of Molecular Oncology Foundation

2:40  DISCUSSION

3:00  CLOSE OF MEETING

Thank you to our sponsors!