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**Brain Vascular Malformation Consortium:
*Predictors of clinical course***

- **Familial Cavernous Malformations (CCM)**
 - Common Hispanic mutation
- **Sturge-Weber Syndrome (SWS)**
 - Leptomeningeal angiomatosis
- **Hereditary Hemorrhagic Telangiectasia (HHT)**
 - Brain Arteriovenous Malformation (BAVM)

Google: **rare diseases network**
<http://rarediseasesnetwork.epi.usf.edu/>

Brain Vascular Malformation Consortium: Predictors of clinical course

- **Biological mechanisms poorly understood**
- **High probability of serious neurological morbidity**
- **Resource-intensive to manage effectively**
- **No specific medical therapies**
- **Need for**
 - **risk factors for surveillance and prognosis**
 - **risk stratification and surrogate outcomes for treatment trials**
- **Common goals**
 - **Establish clinical databases**
 - **identify novel markers for disease risk**

Brain Vascular Malformation Consortium: Leadership

William L. Young — Program Director

Douglas A. Marchuk — Co-Director

•CCM

–Leslie Morrison

–Helen Kim

•SWS

–Douglas A Marchuk

–Anne Comi

•HHT

–Marie E. Faughnan

–William L. Young

•Genetic and Statistical Analysis

–Charles E. McCulloch

–Ludmila Pawlikowska

•Training / Career Development

–Charles E. McCulloch

–William L. Young

• Patient Advocacy Groups

– Cornelia Lee & Amy Akers (*Angioma Alliance*)

– Karen L. Ball (*Sturge-Weber Foundation*)

– Marianne S. Clancy (*HHT Foundation International*)

Project 1

Cerebral cavernous malformations (CCM)

Leslie Morrison, MD

Helen Kim, PhD

Blaine Hart, MD

Angioma Alliance

- **Aim 1**
 - **CCM1-CHM patients @ University of New Mexico**
 - **Standardized Clinical Registry**
- **Aim 2**
 - **Modifier genes: clinical variability**
 - **Lesion burden by MRI: primary outcome**
- **Aim 3**
 - **longitudinal component**

Project 2

Sturge-Weber Syndrome (SWS) Leptomeningeal angiomatosis

Douglas A Marchuk, PhD

Anne Comi, MD

Marsha Moses, PhD

Jonathan Pevsner, PhD

Sturge-Weber Foundation

- **Aim 1. Create standardized clinical database**
- **Aim 2. urine angiogenesis biomarkers**
 - Predict severity of neurologic progression
- **Aim 3. Map and identify the somatic mutation causing SWS**
 - High resolution genotyping
 - Compare affected and unaffected tissue

Project 3

Brain AVMs in Hereditary Hemorrhagic Telangiectasia

Marie E. Faughnan, MD

William L. Young, MD

Karel terBrugge, MD

Nerissa Ko, MD

The HHT Foundation International

12 HHT Centers of Excellence in North America

- **Univ. Toronto/St. Michael's Hosp.** (Faughnan ME)
- **Yale University** (White RI)
- **Univ. Pennsylvania** (Pyeritz RE)
- **Washington Univ. , St. Louis** (White AJ)
- **Mayo Clinic** (Swanson K)
- **Medical College of Georgia** (Gossage JR)
- **Oregon Health & Science Center** (Chesnutt MS)
- **Univ. Montreal** (Faughnan ME)
- **Univ. Utah** (McDonald J)
- **St. Paul's Hospital-Vancouver** (Wilcox P)
- **Univ. Alberta-Edmonton** (Vethanayagam D)

Project 3
Hereditary Hemorrhagic Telangiectasia

- **Aim 1**
 - **HHT clinical research database**
 - **Focus on BAVM cases**
 - **Aim 2**
 - **Clinical risk factors for BAVM hemorrhage**
 - **Both cross-sectional and longitudinal**
 - **Use sporadic BAVM cases for comparison group**
- Aim 3**
- **SNP genotyping as marker for increased ICH risk**