Curing the Epilepsies 2020: Setting Research Priorities

Natcher Center
National Institutes of Health
Bethesda, Maryland
April 13-15, 2020

Conference Co-chairs:
Annapurna Poduri, MD, MPH
Associate Professor in Neurology, Harvard Medical School
Director, Epilepsy Genetics Program, Boston Children’s Hospital, Boston, MA
Chair of the AES Epilepsy Research Benchmark Stewards Committee

Vicky Whittemore, PhD
Program Director, Division of Neuroscience, NINDS, NIH, Bethesda, MD
Co-Chair of the AES Epilepsy Research Benchmark Stewards Committee

Monday April 13, 2020

7:00 AM REGISTRATION

8:00 AM Welcome
Francis Collins, MD, PhD
Director, National Institutes of Health

8:10 AM Introduction
Walter Koroshetz, MD
Director, National Institute of Neurological Disorders and Stroke, NIH

8:30 AM Keynote Address: Advancing Research on the Epilepsies
Ivan Soltesz, PhD
Stanford University

Morning Session (9:00 AM – 12:00 PM)

Benchmark Area I: Understand the causes of the epilepsies and epilepsy-related neurologic, psychiatric, and somatic conditions.

Session Chair: Bernard Chang, MD

9:00 AM Perspective
Gabi Conecker and/or JayEtta Hecker

9:10 AM  Overview of Benchmark Area I
Bernard Chang, MD
Harvard Medical School

9:20 AM  Priorities in genetics: new gene discoveries, rare vs. common disorders, and implications for therapy
Heather Mefford, MD, PhD
University of Washington

9:40 AM  Priorities in basic mechanisms: ion channels, the mTOR pathway, and interneuronopathies
Alfred George, MD
Feinberg School of Medicine, Northwestern University

10:00 AM  Priorities in acquired epilepsy: infection and inflammation
Karen Wilcox, PhD
University of Utah

10:20 AM  Break

10:40 AM  Priorities in acquired epilepsy: autoimmunity
Sean Pittock, MD
Mayo Clinic

11:00 AM  Priorities in epidemiology: causes and risk factors, including those in later life
Daniel Pastula, MD
University of Colorado School of Medicine

11:20 AM  Priorities in comorbidities: bidirectional relationships between epilepsy and other neuropsychiatric disorders
Vaishnav Krishnan, PhD
Baylor College of Medicine

11:40 AM  Discussion

12:30 PM  Lunch

Afternoon Session (1:00 – 4:00 PM)

Benchmark Area II: Prevent epilepsy and its progression.
  Session Chair: Devin Binder, PhD
1:30 PM  Perspective
Army Specialist Tyler McGibbon

1:40 PM  Overview of Benchmark Area II
Devin Binder, PhD
University of California, Riverside

1:50 PM  Preventing Epilepsy Using Vigabatrin in Infants with Tuberous Sclerosis Complex (PREVeNT) trial
Martina Bebin, MD
University of Alabama, Birmingham

2:05 PM  Design and implementation of antiepileptogenesis trials
Pavel Klein, MD
Mid-Atlantic Epilepsy and Sleep Center

2:20 PM  Biomarkers of epileptogenesis
Denes Agoston, MD, PhD
Uniformed Services University

2:40 PM  Astrocyte mechanisms and translational targets
Tore Eid, PhD
Yale School of Medicine

3:00 PM  Break

3:20 PM  Posttraumatic epilepsy mechanisms and translational targets
Viji Santhakumar, PhD
University of California, Riverside

3:40 PM  Epigenetic mechanisms and targets
Avtar Roopra, PhD
University of Wisconsin, Madison

4:00 PM  Genetics, genomics, novel animal models
Wayne Frankel, PhD
Columbia University Medical Center

4:20 PM  Discussion

5:00 PM  Breakout Sessions for Areas I and II

6:30 PM  Adjourn and Dinner on Your Own
Tuesday April 14, 2020

8:00 AM  REGISTRATION

Morning Session (8:30 AM – 12:00 PM)

Benchmark Area III: Improve treatment options for controlling seizures and epilepsy-related conditions without side effects.
   Session Chair: Steve Traynelis, PhD

8:30 AM  Perspective
   Kraig Peterson

8:40 AM  Overview of Benchmark Area III
   Steve Traynelis, PhD
   Emory University School of Medicine

8:50 AM  Novel study designs to treat rare epilepsies
   Dennis Dlugos, MD
   Children’s Hospital of Philadelphia

9:10 AM  Treatments for neonatal seizures
   Janet Soul, MD
   Boston Children’s Hospital

9:30 AM  Antisense oligo therapy
   Lori Isom, PhD
   University of Michigan

9:50 AM  Break

10:10 AM  Genetic therapy
   Dimitri Kullmann, PhD
   University College of London

10:30 AM  Neural devices
   Martha Morrell, MD
   Stanford University

10:50 AM  Neurosurgery
   Kathryn Davis, MD
   Hospital of the University of Pennsylvania
11:10 AM  Discussion

12:00 PM  Lunch

Afternoon Session (1:00 – 4:00 PM)

Benchmark Area IV: Limit or prevent adverse consequences of seizures and their treatment across the lifespan.

Session Chairs:  Miya Asato, PhD and Jana Jones, PhD

1:00 PM  Perspective
Brandy Parker

1:10 PM  Overview of Benchmark Area IV
Frances Jensen, MD
Perelman School of Medicine, University of Pennsylvania

1:20 PM  Examining adverse impact of seizures on nonseizure outcomes
Madison Berl, PhD
Children’s National Health System

1:40 PM  Examine the impact of antiseizure medications on nonseizure outcomes
Rani Sarkis, MD
Brigham and Women’s Hospital

2:00 PM  Identify windows of incidence of epilepsy in the aging population
Alice Lam, MD, PhD
Massachusetts General Hospital

2:20 PM  Pharmacological treatment: risks and benefits on maternal, fetal, and postnatal outcomes
Kimford Meador, MD
Stanford University

2:40 PM  Break

3:00 PM  Risk factors and mechanisms involved in non-epileptic seizures (NES)
Curt LaFrance, MD
Brown University

3:20 PM  SUDEP mechanisms and advancements in clinical knowledge
Samden Lhatoo, MD
McGovern Medical School, University of Texas
3:40 PM  Discussion

4:30 PM  Panel Discussion – Comments from the Community
Moderator: Brandy Fureman, PhD

Panelists:
Tracy Dixon-Salazar, PhD
Heidi Grabenstatter, PhD
Mike Hammer, PhD
Megan O’Boyle
Steve Roberds, PhD

5:30 PM  Breakout Sessions for Areas III and IV

7:00 PM  Adjourn and Dinner on Your Own

Wednesday April 15, 2020

Session V: Benchmarks for Research on the Epilepsies

8:30 AM  Breakout Session Summaries and Full Group Discussion: New Opportunities Beyond the Current Benchmarks
Moderator – Dan Lowenstein, MD

10:30 AM  Closing Remarks - Walter J. Koroshetz, M.D., Director, NINDS, NIH