

FINAL PROGRAM

**65th
annual
SCIENTIFIC**

JUNE 15-18

MEETING

AUSTIN, TEXAS

JW MARRIOTT AUSTIN

#AHSAM



**AMERICAN
HEADACHE
SOCIETY®**

Join Us for a Satellite CME Lunch Symposium



Insights and Interventions in ACUTE MIGRAINE TREATMENT



Thursday, June 15, 2023

12:45 PM – 1:00 PM ON-SITE CHECK-IN AND LUNCH

1:00 PM – 1:45 PM SATELLITE CME SYMPOSIUM

JW Marriott Austin • Lone Star Ballroom F-H, Level 3

FACULTY

Nada Hindiyeh, MD, FAHS

Director, Headache Medicine
Metrodora Institute
West Valley City, Utah

Jennifer Robblee, MD, MSc, FRCPC

Assistant Professor of Neurology
Lewis Headache Center
Barrow Neurological Institute
Phoenix, Arizona
Assistant Professor of Neurology (Clinical)
Creighton University
Omaha, Nebraska
University of Arizona
Tucson, Arizona

PRE-REGISTER

<https://www.millermeded.com/acutemigraine2023>

Pre-registration does not guarantee seating. On-site registration may be available, space permitting.

This activity is approved for *AMA PRA Category 1 Credit(s)*[™].

Jointly provided by Partners for Advancing Clinical Education (PACE) and Miller Medical Communications, LLC.



This activity is supported by an independent educational grant from Impel Pharmaceuticals, Inc.

The event's content and the views expressed are those of the presenting corporate entity and not of AHS. The content is not part of the AHS Meeting.



50th Annual Scottsdale Headache Symposium

SAVE THE DATE

November 16-19, 2023

JW Marriott Camelback Inn



#AHS AZ

TABLE OF CONTENTS



Welcome Letter from the Scientific Committee	6
Health and Safety Information	7
AHS Mission	8
Continuing Medical Education Information	9
Scientific Program Committee and AHS Board of Directors	10
Faculty Listing	11
AHS Past Presidents	13
Exhibit Hall Map	14
Meeting Floor Plan	15
General Information	16
Industry Supported Events	18
Acknowledgements	20
Program Agenda	21
Lifetime Achievement Award	52
Seymour Solomon Lecture Award	54
Harold G. Wolff Lecture Award	56
Early Career Lecture Award	60
Above and Beyond Award	62
Distinguished Service Award	63
Basic Science Prize	64
Members' Choice Award	64
Frontiers in Headache Research Scholarship Awards	65
Exhibitor Directory	66

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Possibilities.®

WELCOME LETTER FROM THE SCIENTIFIC COMMITTEE

Dear Colleagues,

On behalf of Dr. Andrew C. Charles, the American Headache Society President, our Board of Directors, and the Scientific Program Committee, we are delighted to extend a warm welcome to the American Headache Society's 65th Annual Scientific Meeting.

We owe a debt of thanks to our Program Committee - Drs. Chia-Chun Chiang, Catherine D. Chong, A. Laine Green, Andrea M. Harriott, Paul G. Mathew, Arynah Pradhan, Andrew F. Russo, Elizabeth K. Seng, Jason J. Sico, and Juliana VanderPluym, who have collaborated to create an educationally superb and scientifically-relevant program that brings together experts from around the world to share and discuss the latest scientific advances and clinical applications.

The agenda reflects our shared mission to improve the lives of those affected by migraine and other headache disorders. With diverse sessions, presentations, and networking opportunities, we hope to foster collaboration and promote innovation in headache medicine.

We encourage you to take full advantage of the meeting's many offerings, including plenary sessions, scientific presentations, interactive workshops, and poster sessions, with over 250 abstracts presented across the week. We are also excited to announce two special keynote addresses by Dr. Walter J. Koroshetz and Dr. Burel Goodin. In addition, we are honored to host our award winners and showcase their achievements over the past year and their distinguished careers.

After taking in the latest research, join us for some fun at Thursday's Membership Meeting and Opening Reception. Next, get involved with the Society at our Special Interest Section Fair and Talent Show on Friday. Finally, wrap up a great event with our Wine and Cheese Reception on Saturday. If you've had all that fun and are not yet a member, stop by the AHS booth in the Exhibit Hall to learn more.

Please spend some free time in our exhibit hall to meet our sponsors and tour the scientific posters. There are also many industry-sponsored symposia and other events hosted by our generous sponsors.

After the day's events, please enjoy all the rich culture, food, and wonderful live music that our host city, Austin, has to share!

We genuinely appreciate your support of the American Headache Society and hope that you will find the meeting informative, engaging, and rewarding and that it will leave a lasting impact on your practice and the lives of your patients.

Sincerely,

Mark J. Burish, MD, PhD, FAHS and Christina L. Szperka, MD, MSCE, FAHS
Scientific Program Committee Chairs

HEALTH AND SAFETY INFORMATION

The American Headache Society is actively monitoring the health and safety guidance from the Centers for Disease Control as well as state and local health departments. AHS requires attendees to abide by any applicable rules of conduct or local or state laws that may be announced at any time before or during the event, which may include wearing personal protective gear, engaging in social distancing, agreeing to temperature checks or COVID-19 testing requirements, or providing proof of COVID-19 vaccination status. All registrants will have to attest to being vaccinated (primary series required; all booster doses recommended for you by the CDC are strongly encouraged) and be prepared to show proof of vaccination at check-in. AHS reserves the right to revise this Health and Safety plan based on the then-current COVID-19 conditions where the meeting is located.

IF YOU DO NOT FEEL WELL, DO NOT LEAVE YOUR ROOM.

Please contact the hotel front desk and alert them first. They will provide you with step-by-step instructions.

ONE MEETING, TWO EXPERIENCES

Attendees who come in person will be greeted with new features, things to see, and experiences to remember. Those partaking in the online experience will watch a mix of live-streamed sessions and on-demand content. All audience questions will use our mobile app/virtual event page so both groups will be able to ask speakers questions in real-time. We hope you'll find the 65th Annual Scientific Meeting meaningful no matter which experience you participate in.



MISSION



OUR MISSION

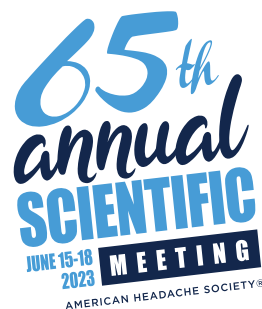
The mission of the American Headache Society is to improve the care and lives of people living with headache disorders. The American Headache Society (AHS) is a professional society of health care providers dedicated to the study and treatment of headache and face pain. The Society's objective is to promote the exchange of information and ideas concerning the causes and treatments of headache and related painful disorders. Educating physicians, health professionals, and the public and encouraging scientific research are the primary functions of our Society. AHS activities include an Annual Scientific Meeting, a comprehensive headache symposium, regional symposia for neurologists and family practice physicians, publication of the journal *Headache* and sponsorship of the American Migraine Foundation.

The American Headache Society's Annual Scientific Meeting continues to be the premiere venue for the dissemination of the latest and most up-to-date research and scientific advances underlying the practice of Headache Medicine.

BECOME A MEMBER TODAY

Enjoy all the benefits of membership with the AHS including exclusive member rates to meetings, issues of *Headache: The Journal of Head and Face Pain*®, access to Special Interest Sections and Committees, and more.

Visit the AHS Booth or [CLICK HERE](#) to join.



CONTINUING MEDICAL EDUCATION INFORMATION

PURPOSE/OBJECTIVE

At the conclusion of the program, participants will be able to:

- Appraise the current state of headache research and explore future directions for the field
- Assess what is known and unknown about understudied headache diseases, including tension-type headache, cervicogenic headache, and new daily persistent headache
- Examine ways to incorporate understudied populations into headache research
- Discuss the relationship between migraine and the gastrointestinal system, the vascular system, and cognition

ACCREDITATION STATEMENT

The American Headache Society® is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

CREDIT DESIGNATION STATEMENT

The American Headache Society® designates this Other (live and recorded sessions) activity for a maximum of 34.50 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

ABPN

The American Board of Psychiatry and Neurology has reviewed the 65th Annual Scientific Meeting and has approved this activity as part of a comprehensive Continuing Medical Education (CME) program, which is mandated by the ABMS as a necessary component of Continuing Certification.

AAFP

The AAFP has reviewed 65th Annual Scientific Meeting (2023) and deemed it acceptable for up to 33.75 Live AAFP Elective credits. Term of Approval is from 06/15/2023 to 06/18/2023. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

INSTRUCTIONS FOR CLAIMING CME

- The maximum number of credits is calculated based on attending all live sessions and then watching concurrent sessions as recordings later
- We suggest you wait to complete the evaluation/claim credit until you've watched all recording sessions for which credit is sought
- Complete the post-activity evaluation
- A certificate of completion will be available once the evaluation is submitted

FINANCIAL DISCLOSURES

The planners and faculty for this activity did not have any relationships to disclose unless listed here: <https://bit.ly/65ASM-CME-Disclosures>. All relevant relationships were mitigated prior to the start of the activity according to ACCME Standards.

DISCLOSURE OF COMMERCIAL SUPPORT

The American Headache Society® received funding to support this activity from the following organizations:

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A. Laine Green, MD, MSc
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Scottsdale, AZ

Andrew F. Russo, PhD
University of Iowa
Iowa City, IA

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Children's Hospital of Philadelphia
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Boston, MA

Elizabeth K. Seng, PhD, FAHS
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College of Medicine
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General Brigham Health Care Center
Foxborough, MA

Jason Sico, MD
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New Haven, CT

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Scottsdale, AZ

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Washington University St. Louis
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Juliana VanderPluym, MD, FAHS
Mayo Clinic – Arizona
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Matthew S. Robbins, MD, FAHS
Weill Cornell Medicine
New York, NY

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MedStar Georgetown University Hospital
Washington, DC

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Los Angeles, CA

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SCIENTIFIC MEETING FACULTY

Jessica Ailani, MD, FAHS
MedStar Georgetown University Hospital
Washington, DC

Michelle A. Clementi, PhD
Children's Hospital Colorado
Aurora, CO
[@mcclementi_phd](#)

Danielle Kellier
University Of Pennsylvania
Philadelphia, PA
[@DanielleKellier](#)

Simon Akerman, PhD
University of Maryland Baltimore
Baltimore, MD

Frank Conidi, DO, MS
Florida Center for Headache and Sports
Neurology
Palm Beach Gardens, FL

Walter J. Koroshetz, MD
NIH National Institute of Neurological
Disorders and Stroke (NINDS)
Bethesda, MD
[@NINDSdirector](#)

Cynthia E. Armand, MD
Montefiore Headache Center,
Albert Einstein College of Medicine
Bronx, NY
[@cynarmandmd](#)

Carrie Dougherty, MD, FAHS
MedStar Georgetown University Hospital
Washington, DC

Mo Levin, MD, FAHS
University of California, San Francisco
San Francisco, CA

Sait Ashina, MD
Beth Israel Deaconess Medical Center
Boston, MA
[@SaitAshina](#)

Gina Dumkrieger, PhD
Mayo Clinic – Arizona
Scottsdale, AZ
[@DumkriegerG](#)

B U. K. Li, MD
Medical College Of Wisconsin/Children's
Hospital Of Wisconsin
Lafayette, WI

Olivia Begasse de Dhaem, MD, FAHS
Hartford HealthCare
Stamford, CT
[@obegassededhaem](#)

Greg Dussor, PhD
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Richard B. Lipton, MD, FAHS
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Bronx, NY

Shin Beh, MD, FAHS
Beh Center for Vestibular and Migraine
Disorders
Frisco, TX
[@thedizzydoc](#)

Burel R. Goodin, PhD
Washington University In St. Louis
St. Louis, MO
[@PainBurel](#)

Michael J. Marmura, MD, FAHS
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Philadelphia, PA

Heidi R. Blume, MD, MPH
Seattle Children's Hospital
Seattle, WA

Amy S. Grinberg, PhD
VA Connecticut Healthcare System
Orange, CT
[@AmyGrinberg](#)

Blanca Marquez de Prado, PhD
Children's Hospital Of Philadelphia
Philadelphia, PA

PRESIDENT

Andrew C. Charles, MD, FAHS
University of California, Los Angeles
Goldberg Migraine Program
Los Angeles, CA

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Lebanon, NH

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Scottsdale, AZ

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Paul Winner, DO, FAHS

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Weill Cornell Medicine
New York, NY

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SECRETARY

Jessica Ailani, MD, FAHS
MedStar Georgetown University Hospital
Washington, DC

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University of California, Los Angeles
Los Angeles, CA

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Jessica Ailani, MD, FAHS
MedStar Georgetown University Hospital
Washington, DC

Michelle A. Clementi, PhD
Children's Hospital Colorado
Aurora, CO
[@mcclementi_phd](#)

Danielle Kellier
University Of Pennsylvania
Philadelphia, PA
[@DanielleKellier](#)

Simon Akerman, PhD
University of Maryland Baltimore
Baltimore, MD

Frank Conidi, DO, MS
Florida Center for Headache and Sports
Neurology
Palm Beach Gardens, FL

Walter J. Koroshetz, MD
NIH National Institute of Neurological
Disorders and Stroke (NINDS)
Bethesda, MD
[@NINDSdirector](#)

Cynthia E. Armand, MD
Montefiore Headache Center,
Albert Einstein College of Medicine
Bronx, NY
[@cynarmandmd](#)

Carrie Dougherty, MD, FAHS
MedStar Georgetown University Hospital
Washington, DC

Mo Levin, MD, FAHS
University of California, San Francisco
San Francisco, CA

Sait Ashina, MD
Beth Israel Deaconess Medical Center
Boston, MA
[@SaitAshina](#)

Gina Dumkrieger, PhD
Mayo Clinic – Arizona
Scottsdale, AZ
[@DumkriegerG](#)

B U. K. Li, MD
Medical College Of Wisconsin/Children's
Hospital Of Wisconsin
Lafayette, WI

Olivia Begasse de Dhaem, MD, FAHS
Hartford HealthCare
Stamford, CT
[@obegassededhaem](#)

Greg Dussor, PhD
University Of Texas At Dallas
Richardson, TX

Richard B. Lipton, MD, FAHS
Albert Einstein College of Medicine
Bronx, NY

Shin Beh, MD, FAHS
Beh Center for Vestibular and Migraine
Disorders
Frisco, TX
[@thedizzydoc](#)

Burel R. Goodin, PhD
Washington University In St. Louis
St. Louis, MO
[@PainBurel](#)

Michael J. Marmura, MD, FAHS
Thomas Jefferson University
Philadelphia, PA

Heidi R. Blume, MD, MPH
Seattle Children's Hospital
Seattle, WA

Amy S. Grinberg, PhD
VA Connecticut Healthcare System
Orange, CT
[@AmyGrinberg](#)

Blanca Marquez de Prado, PhD
Children's Hospital Of Philadelphia
Philadelphia, PA

PRESIDENT

Andrew C. Charles, MD, FAHS
University of California, Los Angeles
Goldberg Migraine Program
Los Angeles, CA

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TREASURER

Matthew S. Robbins, MD, FAHS
Weill Cornell Medicine
New York, NY

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MedStar Georgetown University Hospital
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University of California, Los Angeles
Los Angeles, CA

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Maureen A. Moriarty, APRN, DNP, FAHS

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Christopher B. Oakley, MD
Johns Hopkins University
Baltimore, MD

Hope L. O'Brien, MD, MBA, FAHS
Headache Center of Hope
Cincinnati, OH
@drhopemo

Michael Oshinsky, PhD
NIH National Institute of Neurological
Disorders and Stroke (NINDS)
Bethesda, MD

Anna Pace, MD
Icahn School of Medicine at Mount Sinai
New York, NY

Scott W. Powers, PhD, ABPP, FAHS
Cincinnati Children's Hospital
Cincinnati, OH
@scottwpowers

Amynah A. Pradhan, PhD
Washington University St. Louis
St. Louis, MO
@amynahpradhan

Paul B. Rizzoli, MD
John R. Graham Headache Center
Boston, MA

Jennifer Robblee, MD, MSc, FRCPC
Barrow Neurological Institute
Phoenix, AZ
@jenniferrobblee

Andrew F. Russo, PhD
University of Iowa
Iowa City, IA

Todd J. Schwedt, MD, MSCI, FAHS
Mayo Clinic - Arizona
Scottsdale, AZ
@schwedtt

Elizabeth K. Seng, PhD, FAHS
Yeshiva University/Albert Einstein College of
Medicine
Bronx, NY
@sengelizabeth

Amaal J. Starling, MD, FAHS
Mayo Clinic - Arizona
Scottsdale, AZ
@amaalstarlingmd

Kristen Steenerson, MD
Stanford University
Palo Alto, CA

Stewart J. Tepper, MD, FAHS
Dartmouth-Hitchcock Medical Center
Lebanon, NH

Gretchen E. Tietjen, MD
Johnson & Johnson
Ottawa Hills, OH

Cathleen Turnage, PsyD
Oregon Health & Science University
Portland, OR

Juliana VanderPluym, MD, FAHS
Mayo Clinic - Arizona
Scottsdale, AZ

Daping Yang, PhD
Harvard Medical School
Boston, MA
@DapingYang88

Daisy Zamora, PhD
UNC Chapel Hill
Brownsville, TX

Pengfei Zhang, MD
Rutgers Robert Wood Johnson Medical
School
New Brunswick, NJ

AHS PAST PRESIDENTS

During the past 65 years, the AHS has made significant contributions to improving the quality of life for patients, educating health professionals, and encouraging and supporting scientific research in the field of headache pain. These contributions have been possible through the leadership, vision, and dedication of our Past Presidents:

1959 – 1961 Henry D. Ogden, MD

1961 – 1963 Bayard T. Horton, MD

1963 – 1964 John P. McGovern, MD

1964 – 1966 Leonard L. Lovshin, MD

1966 – 1968 Robert E. Ryan, Sr., MD

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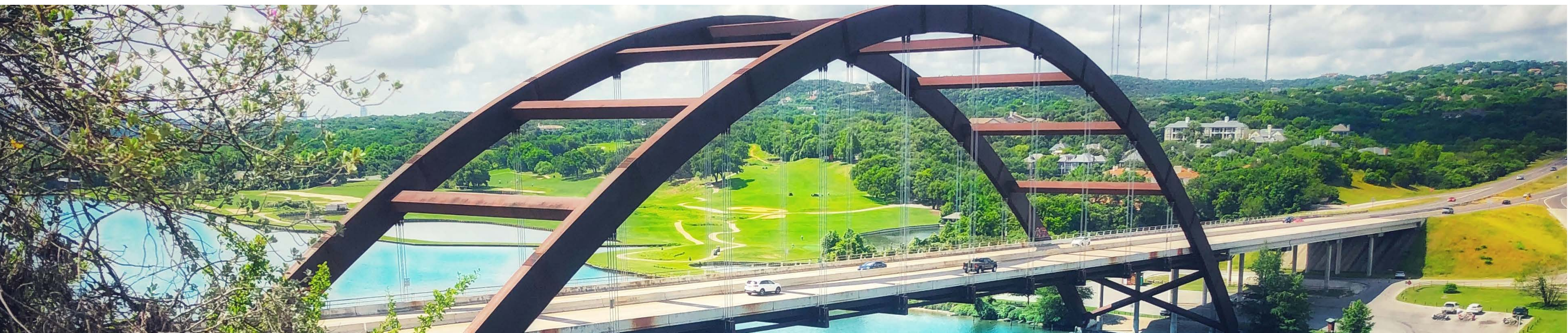
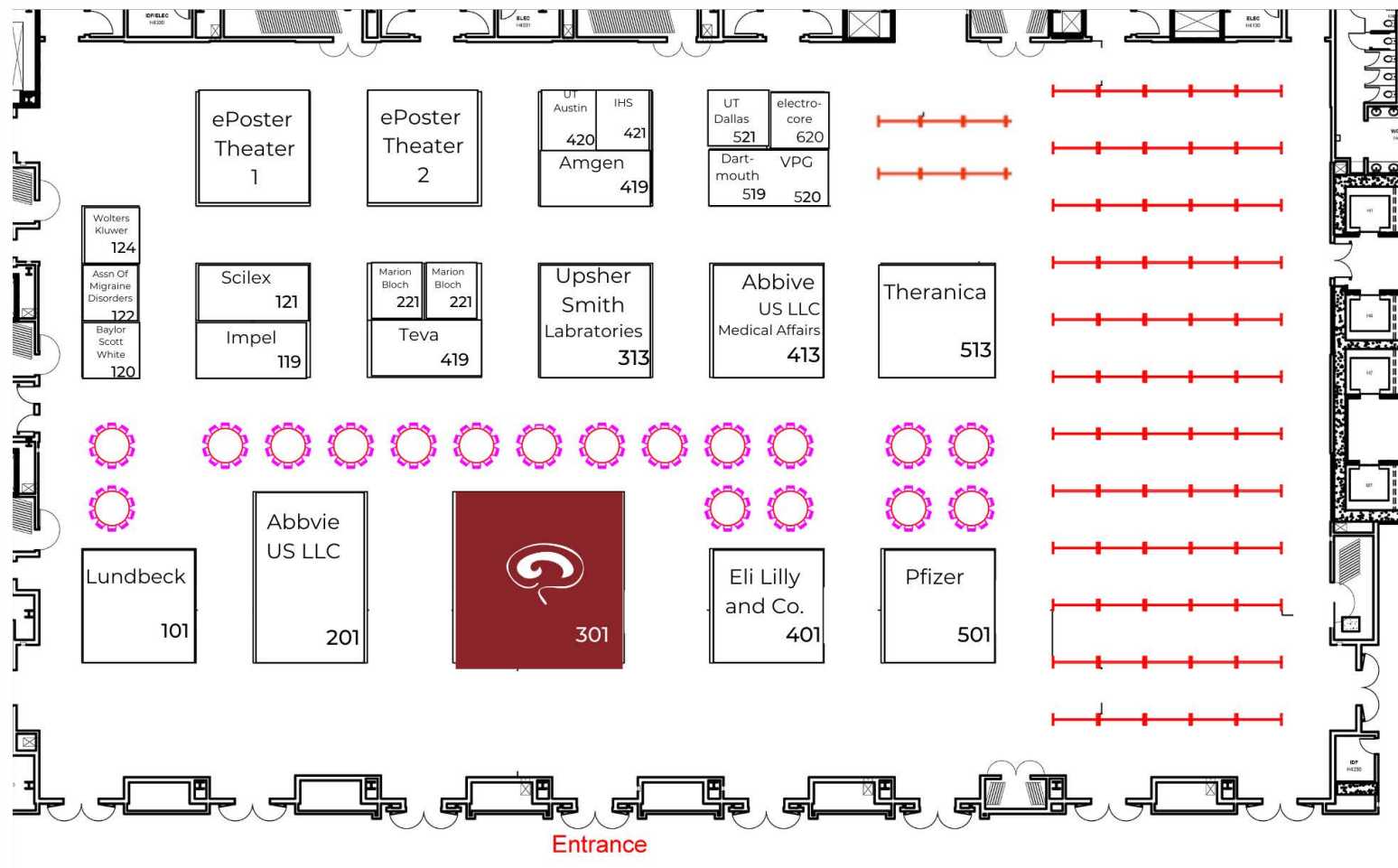


EXHIBIT HALL MAP

MEETING FLOOR PLAN



GENERAL INFORMATION

AHS MEMBERSHIP MEETING

LONE STAR BALLROOM D-E

AHS Members are encouraged to attend the Annual Membership Meeting on Thursday, June 15 at 4:45 pm. The meeting will feature updates on AHS and include the presentation of the Above and Beyond and Distinguished Service Awards.

BADGES

Your badge serves as your admission to all meeting events. You must wear your name badge during the events. For security reasons, persons without badges will not be permitted to attend events.

CONTINENTAL BREAKFAST

A Continental Breakfast is available for attendees exhibitors, and sponsors each morning.

GRAND BALLROOM

Friday, June 16 6:30 am – 8:00 am
Saturday, June 17 6:30 am – 7:30 am

LONE STAR BALLROOM WEST FOYER

Sunday, June 18 7:45 am – 8:45 am

Celebrate Father's Day with a special pancake station!

EXHIBITS

GRAND BALLROOM

Come and explore the Exhibit Hall. Talk to our industry partners and get more information on the latest technology and pharmaceutical products. Get the information you need to provide the best treatment to your patients. Don't forget to stop by the Scientific Poster Hall and meet the authors of the latest headache medicine research.

WELCOME AND EXHIBITOR RECEPTION

Thursday, June 17
5:30 pm – 7:00 pm

EXHIBIT HOURS

Friday, June 16
6:30 am – 8:00 am
9:40 am – 10:15 am
12:35 pm – 1:50 pm
4:25 pm – 5:25 pm

Saturday, June 17

6:30 am – 7:30 am
9:30 am – 10:15 am
12:45 pm – 2:00 pm

FRAGRANCE FREE

To help reduce the triggers of migraine, the American Headache Society has taken steps to ensure all attendees have a positive experience and has adopted a fragrance-free policy. Please refrain from the excessive use of perfumes, colognes, lotions, etc. during the meeting.

GENERAL INFORMATION

JOIN US!

AHS HAS TALENT

Join us at Club AHS on Friday night from 5:30 pm – 7:00 pm in the Lone Star Ballroom F-H for our third annual "AHS Has Talent" showcase. Come see your fellow headache specialists sing, dance, play instruments and tell jokes in the pursuit of big prizes!

WINE AND CHEESE RECEPTION

You are cordially invited to join the AHS Board of Directors for a wine and cheese reception on Saturday evening from 5:30 pm – 7:00 pm on the Edge Rooftop (5th Floor).

HEALTH & FAMILY PRIVACY SUITE

AHS offers a private room (near the meeting space) that can be used for nursing mothers or any individual that needs to tend to a private medical function. For access to the suite please see the AHS Registration Desk. The suite will be available:

Wednesday, June 14	8:00 am – 7:30 pm
Thursday, June 15	6:45 am – 7:30 pm
Friday, June 16	6:45 am – 7:30 pm
Saturday, June 17	6:45 am – 7:30 pm
Sunday, June 18	7:45 am – 10:30 am

REGISTRATION & INFORMATION DESK

The Registration and Information Desk is in the Lone Star Pre-Function. Please stop by to get your badge and let us know if you have any questions.

Wednesday, June 14	4:00 pm – 6:00 pm
Thursday, June 15	6:45 am – 5:30 pm
Friday, June 16	6:30 am – 5:30 pm
Saturday, June 17	6:30 am – 5:30 pm
Sunday, June 18	7:45 am – 10:30 am

PHOTOGRAPHY

Any photography, filming, taping, recording or reproduction in any medium including the use of tripod-based equipment of any of the programs and/or posters presented at the 65th Annual Scientific Meeting without the express written consent of the American Headache Society is strictly prohibited. Exceptions to this policy include non-flash photography and audiotape recording - using hand-held equipment for strictly personal use, are permitted if not disruptive.

POSTER PRESENTATIONS

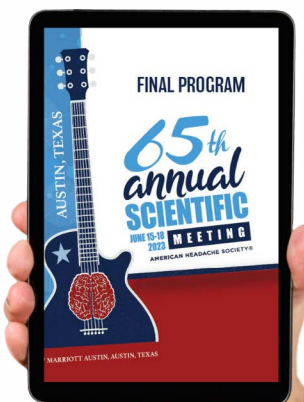
AHS invites you to meet the poster authors during the Annual Scientific Meeting. Posters are presented in the Grand Ballroom (Exhibit Hall). The authors will be available for discussion during lunch on Friday and Saturday. There will also be e-poster presentations during those times.

Authors/Presenters' please note: AHS is not responsible for removing and/or returning posters. All posters not removed by 5:00 pm on Saturday may be discarded.

SOCIAL MEDIA

Find out what is happening live at the 65th Annual Scientific Meeting!

Follow AHS on Twitter, Facebook, and Instagram @ahsheadache. We encourage you to join the conversation and share session highlights by tagging your posts with #AHSAM. Thanks for sharing!



INDUSTRY SUPPORTED EVENTS

THURSDAY, JUNE 15

1:00 pm - 1:45 pm

LONE STAR BALLROOM F-H

CME Industry-Supported Session (via sponsor)

Insight and Interventions in Acute Migraine Treatment

Faculty:

Nada Hindiyeh, MD, FAHS
Metrodora Institute

Jennifer Robblee, MD, MSc, FRCPC
Barrow Neurological Institute

Whereas the full spectrum of recent advances in the management of migraine is an important consideration for individuals who suffer from this condition, expanded treatment options are particularly important for acute migraine treatment because all migraine patients can benefit from them. This activity reviews new therapeutic options for acute migraine treatment, including new drug classes and novel delivery options for established drug classes.

Educational Objectives

Upon completion of this activity, participants should be able to:

- Identify gaps in the quality of acute care provided to patients with migraine, the impact on patient quality of life, and opportunities to improve outcomes
- Evaluate new migraine-specific therapies for acute migraine treatment for appropriate patients by using efficacy and tolerability data from clinical trials

This activity has been approved for AMA PRA Category 1 Credit™. Jointly provided by Partners for Advancing Clinical Education (PACE) and Miller Medical Communications, LLC.

This activity is supported by an independent educational grant from Impel Pharmaceuticals, Inc.

THURSDAY, JUNE 15

7:00 pm - 7:45 pm

LONE STAR BALLROOM A-C

Non-CME Industry-Supported Session

Learn About the Expanding Range of Treatment Options for Patients With Migraine

Faculty:

Deborah I. Friedman, MD, MPH, FAAN
Neuro-ophthalmologist & Headache Medicine Specialist

For healthcare providers, helping patients suffering from migraine attacks can be an urgent matter. This presentation will review clinical factors that drive the need for intervention, emphasize the burden of disease for patients, highlight strategies to help diagnose migraine, and educate about a prescription medication that can treat and prevent migraines as well as a prescription nasal spray to treat migraines in adults.

FRIDAY, JUNE 16

7:00 am - 7:45 am

LONE STAR BALLROOM A-C

Non-CME Industry-Supported Session

ELYXYB: A Fast Acting, Oral Solution for Acute Migraine

Faculty:

Stewart J. Tepper, MD, FAHS
Dartmouth-Hitchcock Medical Center

Discover the only liquid solution designed to deliver fast and long-lasting migraine relief with the proven safety of COX-2 selectivity.

Supported by Scilex Holding Company

FRIDAY, JUNE 16

12:50 pm - 1:35 pm

LONE STAR BALLROOM A-C

Non-CME Industry-Supported Session

Research to Practice: Clinical implications of real-world use of an anti-CGRP mAb in high frequency migraine

Faculty:

Wade Cooper, DO
University of Michigan

Richard Lipton, MD
Albert Einstein College of Medicine

Amaal Starling, MD
Mayo Clinic Scottsdale

In this symposium, program faculty will lead an interactive, case-based session that incorporates post marketing research and experience with an anti-CGRP mAb preventive. Presenters will integrate the latest findings from ongoing research with personal expertise and best practices, focusing on case-based insights that highlight techniques for individualizing care to improve collaboration and outcomes.

Supported by Lundbeck LLC

INDUSTRY SUPPORTED EVENTS

FRIDAY, JUNE 16

7:00 pm - 7:45 pm

LONE STAR BALLROOM A-C

Non-CME Industry-Supported Session

Rethinking Migraine: Learn about Treatment Options that Prevent and Treat Migraine Attacks

Faculty:

Stewart J. Tepper, MD, FAHS
Dartmouth-Hitchcock Medical Center

This session takes a deep dive into the most novel treatment innovations for patients living with This session takes a deep dive into the most novel treatment innovations for patients living with migraine. The discussion will elevate the paradigm shift in transforming patient care.

Supported by Abbvie US LLC

SATURDAY, JUNE 17

1:00 pm - 2:00 pm

LONE STAR BALLROOM A-C

Non-CME Industry-Supported Session

Migraine Newsroom Live

Faculty:

Jessica Ailani, MD, FAAN, FANA, FAHS
Wade Cooper, DO, FACN, FAHS
Paul G. Mathew, MD, DNBPAS, FAAN, FAHS
Stephanie J. Nahas, MD, MSED, FAHS, FAAN

This just in... Join our impact news team in studio as they cover breaking headlines in migraine in a live news broadcast format. From epidemiologic insights that have revealed important clinical care gaps, to research studies that are helping to shape the evolving treatment landscape, our reporters are covering all the news that's fit to broadcast. News at 1!

Supported by Eli Lilly and Company



ACKNOWLEDGEMENTS

THE AMERICAN HEADACHE SOCIETY
GRATEFULLY ACKNOWLEDGES THE
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at Dell Children's

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Lundbeck LLC
Pfizer

PROGRAM AGENDA

THURSDAY, JUNE 15

6:00 am – 6:30 am
LONE STAR FOYER EAST

Sunrise Yoga

6:45 am – 5:30 pm
LONE STAR PRE-FUNCTION

Registration Desk

6:45 am – 8:00 am
BRAZOS

Research Career Development Program

Not Eligible for CME Credits

Moderator: Elizabeth Seng, PhD, FAHS

6:45 am – 6:50 am

Welcome and Orientation

Scott W. Powers, PhD, FAHS
Cincinnati Children's Hospital

6:50 am – 7:10 am

Building an Early Research Career through NIH
Mechanisms

Michael Oshinsky, PhD
NIH National Institute of Neurological Disorders and Stroke (NINDS)

7:10 am – 8:00 am

Panel Discussion

Michael Oshinsky, PhD (government funding)
Andrew F. Russo, PhD (basic science)
Scott W. Powers, PhD, FAHS (clinical trials)
Stewart J. Tepper, MD, FAHS (industry funding)

6:45 am – 8:00 am
LONE STAR BALLROOM A-C

Women in Headache Medicine Breakfast: Identifying Allies
on the Path to Leadership

Moderator:
Carrie Dougherty, MD, FAHS

Panelists:
Cynthia E. Armand, MD
Albert Einstein College of Medicine

Rebecca Burch MD, FAHS
University of Vermont

Rashmi B. Halker Singh, MD, FAHS
Mayo Clinic – Arizona

Hope L. O'Brien, MD, MBA, FAHS
Headache Center of Hope

Breakfast Provided Courtesy of AbbVie US LLC

PROGRAM AGENDA

THURSDAY, JUNE 15

8:00 am – 10:00 am

LONE STAR BALLROOM A-C

PRE-MEETING COURSES

PRE-COURSE 1: REFRACTORY MIGRAINE? LET'S EXPLORE THE EDGE OF OUR KNOWLEDGE AND BEYOND

Pharmacology and Therapeutics/Refractory Special Interest Sections

Moderators: Shivang Joshi MD, MPH, RPh, FAHS; Jennifer Robblee, MD, MSc

8:00 am – 8:20 am

What is “Refractory” in Headache Medicine? Is There a Better Definition: ICHD3 Implications?

Mo Levin, MD, FAHS

University of California, San Francisco

8:20 am – 8:40 am

Exploring Underlying Mechanisms as to Why Some Patients Cannot Improve Beyond 50%

Rami Burstein, PhD

Harvard Medical School, Beth Israel Deaconess Medical Center

8:40 am – 9:00 am

MOH: Updates on Mechanisms and Clinical Implications

Paul B. Rizzoli, MD

John R. Graham Headache Center

9:00 am – 9:20 am

Post-Marketing Surveillance (CGRP). What are We Seeing Or Not?

Jessica Ailani, MD, FAHS

MedStar Georgetown University Hospital

9:20 am – 9:40 am

Tricks of the Trade, “Out of the Box” Treatment Strategies for Migraine

Michael J. Marmura, MD, FAHS

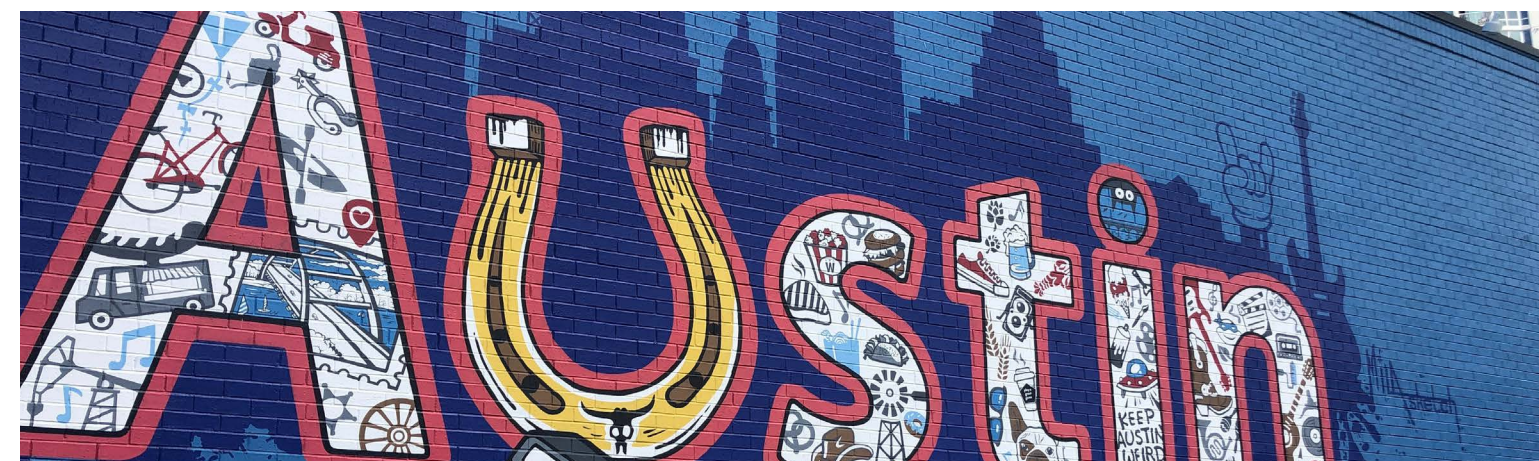
Thomas Jefferson University

9:40 am – 10:00 am

Panel Discussion and Q&A



PROGRAM AGENDA



THURSDAY, JUNE 15

LONE STAR BALLROOM F-H

PRE-COURSE 2: UP AND COMING TREATMENTS FOR MIGRAINE AND POST-TRAUMATIC HEADACHE IN CHILDREN AND ADOLESCENTS

Pediatric and Behavioral and Post-Traumatic Special Interest Sections

Moderators: Catherine D. Chong, PhD, FAHS; Christopher B. Oakley, MD; Christina L. Szperka, MD, MSCE, FAHS; Michelle A. Clementi, PhD and Cathleen Turnage, PsyD

8:00 am – 8:05 am

Welcome and Introductions

8:05 am – 8:35 am

CGRP Agents and other New Medications in Pediatric Headache: Which? When? Who? and How?

Heidi Blume, MD, MPH

Seattle Children's Hospital and Research Institute

8:35 am – 9:05 am

Neuromodulation Devices for Acute and Preventive Headache Treatment for Children and Teens

Christopher B. Oakley, MD

Johns Hopkins Hospital

9:05 am – 9:35 am

Behavioral and Psychological Interventions for Pediatric Headache

Michelle A. Clementi, PhD

Children's Hospital Colorado

9:35 am – 10:00 am

Panel Discussion and Q&A

PROGRAM AGENDA

THURSDAY, JUNE 15

8:00 am – 12:30 pm
LONE STAR BALLROOM D-E

HOT TOPICS IN BASIC SCIENCE SYMPOSIUM
Moderator: Arynah A. Pradhan, PhD

8:00 am – 8:05 am

Introductions
Arynah A. Pradhan, PhD
Washington University in St. Louis

8:05 am – 8:25 am

Neural Basis for the Comorbidity of Migraine and Temporomandibular Disorders
Simon Akerman, PhD
University of Maryland, Baltimore

8:25 am – 8:45 am

Puberty, Sex Hormones, and Migraine
Hadas Nahman-Averbuch, PhD
Washington University in St. Louis

8:45 am – 9:05 am

Could sleep disruption of glymphatic flow lead to PTH symptoms in mice?
Andrew F. Russo, PhD
University of Iowa

9:05 am – 9:25 am

Optogenetic Spreading Depolarization Induced Trigeminal Pain Behavior
Andrea M. Harriott, MD, PhD
Massachusetts General Hospital

9:25 am – 9:45 am

Update on the genetics of migraine in children and adolescents, results of the CHAMP study
Andrew D. Hershey, MD, PhD, FAHS
Cincinnati Children's Hospital

9:45 am – 10:05 am

Panel Discussion + Q&A

10:05 am – 10:30 am **BREAK**

PROGRAM AGENDA

THURSDAY, JUNE 15

10:30 am – 11:00 am

Headache® Basic Science Prize: “Prolactin Signaling Modulates Stress-Induced Behavioral Responses in a Preclinical Mouse Model of Migraine”
Greg Dussor, PhD
The University of Texas at Dallas

11:00 am – 12:10 pm

DATA BLITZ PRESENTATIONS

Alterations in the structure and function of the brain in adolescents with new daily persistent headache: A pilot MRI study
Edina Szabo, PhD
Boston Children's Hospital | Harvard Medical School

Different characteristics of cortical spreading depression in the sleep and wake states
Andrew C. Charles, MD, FAHS
University of California, Los Angeles

The Role of Amylin and CTR-based Receptors in Gastrointestinal Pathophysiology
Jayme Waite
Iowa City Department of Veterans Affairs

Comparison of Migraine-like Behaviors in Mice Using Selective vs General Stimulation of Neurons in the Cerebellar Medial Nucleus
Toby Buxton
University Of Iowa

Identifying migraine-relevant circuitry between the cerebellum and thalamus and what's next
Thomas Duong, BS
University of Iowa

Role of glucocorticoids and upstream hormones in a mouse migraine model caused by repeated exposure to stress
Ya-Yu Hu, MS
University of Texas, Dallas

HCN channels do not drive mechanical allodynia induced by opening of ATP-sensitive potassium channels in mice
Sarah Louise Christensen, DVM, PhD
Danish Headache Center

12:10 pm – 12:30 pm

Group Discussion

PROGRAM AGENDA

THURSDAY, JUNE 15

10:30 am – 12:30 pm
LONE STAR BALLROOM A-C

**PRE-COURSE 3: RISE OF THE MACHINES:
WILL AI REPLACE US?**
**Clinical Informatics; New Investigators and Trainees; Methodology,
Design, and Statistical Issues; Primary Care Special Interest Sections**
Moderators: Jennifer Hranilovich, MD; Anna Pace, MD

10:30 am – 10:35 am Introductions
Jennifer Hranilovich, MD
University of Colorado School of
Medicine/Children's Hospital Colorado

Anna Pace, MD
Icahn School of Medicine at Mount Sinai

10:35 am – 10:55 am AI - What is It, and How Does it Work?
Gina Dumkrieger, PhD
Mayo Clinic – Arizona

Pengfei Zhang, MD
Rutgers Robert Wood Johnson Medical School

10:55 am – 11:15 am Building a Better Model
Chia-Chun Chiang, MD
Mayo Clinic – Arizona

**11:15 am – 11:35 am Do Models Help us Find the Truth in Big Data or Do They
Propagate our Biases?**
Danielle Kellier
University Of Pennsylvania

Mia Minen, MD, MPH, FAHS
NYU Langone Health

11:35 am – 12:30 pm Wrap Up, Panel Discussion, and Questions
Jennifer Hranilovich, MD
Children's Hospital Colorado

Anna Pace, MD
Icahn School of Medicine at Mount Sinai

PROGRAM AGENDA

THURSDAY, JUNE 15

10:30 am – 12:30 pm
LONE STAR BALLROOM F-H

**PRE COURSE 4: MEDICAL, BEHAVIORAL, COMPLEMENTARY
AND INTEGRATIVE APPROACHES TO TREATMENT OF
VESTIBULAR DISORDERS IN PATIENTS WITH HEADACHE**
**Complementary & Integrative Medicine; Behavioral Issues; Refractory,
Inpatient, and Emergency Care Special Interest Sections**
Moderators: Michelle Clementi, PhD; Jennifer Robblee, MD, MSc;
Cathleen Turnage, PsyD

**10:30 am – 10:55 am Medical Treatment of Vestibular Disorders in Patients with
Headache**
Kristen K. Steenerson, MD
Stanford University

**10:55 am – 11:20 am Complementary and Integrative Treatment of Vestibular
Disorders in Patients with Headache**
Shin Beh, MD, FAHS
Beh Center for Vestibular and Migraine Disorders

**11:20 am – 11:45 am Vestibular Physical Therapy for Patients with Vestibular
Disorders and Headache**
Kristin Morris, PT, DPT
Stanford University

**11:45 am – 12:10 pm Behavioral treatments for Patients with Vestibular Disorders
and Headache**
Amy S. Grinberg, PhD
VA Connecticut Healthcare System

12:10 pm – 12:30 pm Panel Discussion Q&A

1:00 pm – 1:45 pm
LONE STAR BALLROOM A-C

Insight and Interventions in Acute Migraine Treatment
CME Eligible (via sponsor)
Supported by an independent educational grant from Impel Pharmaceuticals, Inc.

PROGRAM AGENDA

THURSDAY, JUNE 15

2:00 pm – 2:30 pm
LONE STAR BALLROOM D-E

Welcome / Opening Remarks

Andrew C. Charles, MD, FAHS
President, American Headache Society

Mark J. Burish, MD, PhD, FAHS and Christina L. Szperka, MD, MSCE, FAHS
Co-Chairs, Scientific Meeting Planning Committee

2:30 pm – 3:30 pm
LONE STAR BALLROOM D-E

Headache Research Priorities Update

Michael Oshinsky, PhD
Amynah A. Pradhan, PhD
Todd J. Schwedt, MD, MSCI, FAHS

3:30 pm – 3:50 pm
LONE STAR BALLROOM D-E

EARLY CAREER LECTURE AWARD

Moderators: Scott W. Powers, PhD, FAHS and
Todd J. Schwedt, MD, MSCI, FAHS

Analysis of retinal microvasculature during a migraine attack using an Optical Coherence Tomography Angiography based retinal perfusion measure.

Katherine Podraza, MD, PhD
Hartford Healthcare Headache Center

3:50 pm – 4:30 pm
LONE STAR BALLROOM D-E

HAROLD G. WOLFF LECTURE AWARD

Moderators: Jessica Ailani, MD, FAHS and
Amy Gelfand, MD, FAHS

Use of EHR-Integrate Patient Headache Questionnaire Improves Diagnostic Specificity

Christina L. Szperka, MD, MSCE, FAHS
Children's Hospital of Philadelphia

4:45 pm – 5:30 pm
LONE STAR BALLROOM D-E

AHS MEMBERSHIP MEETING

Not Eligible for CME Credits
Open to AHS Members Only

Member's Choice Award "The unique role of stigma in migraine-related disability and quality of life"

Elizabeth K. Seng, PhD, FAHS
Yeshiva University/Albert Einstein College of Medicine

PROGRAM AGENDA

THURSDAY, JUNE 15

4:45 pm – 5:30 pm
LONE STAR BALLROOM D-E

AHS MEMBERSHIP MEETING (cont.)

Not Eligible for CME Credits
Open to AHS Members Only

Above and Beyond Awards

Cynthia E. Armand, MD
Montefiore Headache Center, Albert Einstein College of Medicine

Clarimar Borrero-Mejias, MD
Johns Hopkins All Children's Hospital

Rebecca E. Wells, MD, MPH, FAHS
Atrium Health Wake Forest Baptist

Distinguished Service Award

Brad C. Klein, MD, MBA, FAHS
Abington Neurological Associates, LTD

5:30 pm – 7:00 pm
GRAND BALLROOM

Welcome/Exhibitor/Poster Reception

7:00 pm – 7:45 pm
LONE STAR BALLROOM A-C

Learn About the Expanding Range of Treatment Options for Patients With Migraine

Not Eligible for CME Credits
Sponsored by Pfizer



PROGRAM AGENDA

FRIDAY, JUNE 16

6:00 am – 6:30 am
LONE STAR FOYER EAST

Sunrise Yoga

6:30 am – 5:30 pm
LONE STAR PRE-FUNCTION

Registration Desk

6:30 am – 8:00 am
GRAND BALLROOM

Exhibits and Posters with Continental Breakfast

6:45 am – 8:00 am
BRAZOS

Research Career Development Program

Not Eligible for CME Credits

Moderator: Elizabeth K. Seng, PhD, FAHS

6:45 am – 7:10 am

Identifying a Research Question and Appropriate Design

Elizabeth Seng, PhD, FAHS

Yeshiva University/Albert Einstein College of Medicine

7:10 am – 7:35 am

How to Write a Specific Aims Page

Michael Oshinsky, PhD

NIH National Institute of Neurological Disorders and Stroke (NINDS)

7:35 am – 8:00 am

People Problems: How to Find Mentors and Helpers

Andrea M. Harriott, MD, PhD

Massachusetts General Hospital

7:00 am – 7:45 am
LONE STAR A-C

ELYXYB: A Fast Acting, Oral Solution for Acute Migraine

Not Eligible for CME Credits

Sponsored by Scilex Holding Company



PROGRAM AGENDA

FRIDAY, JUNE 16

8:00 am – 9:40 am
LONE STAR BALLROOM D-E

SCIENTIFIC PAPER PRESENTATIONS – SESSION 1

Moderator: Catherine D. Chong, PhD, FAHS

8:05 am – 8:15 am

Epidemiology and Health Outcomes

Designing a Longitudinal Cohort Study to Support Patient Reported Outcome Development: A Roadmap for the MiCOAS Quantitative Study

Carrie Houts, PhD

Vector Psychometric Group, LLC

8:15 am – 8:25 am

Epidemiology and Health Outcomes

A Data-Driven Approach to Assess Clinical Heterogeneity in Migraine: Results of the American Migraine Prevalence and Prevention (AMPP) Study

Ali Ezzati, MD

Albert Einstein College Of Medicine

8:25 am – 8:35 am

Preclinical Science

Chemogenetic Inhibition of the Posterior Thalamus: Effects on Migraine-like Phenotypes in Mice.

Michael Huebner

University of Iowa

8:35 am – 8:45 am

Other

Examining Trends in Headache Characteristics and Mental Health among Youth with Headache Disorders Over Time

Maya Marzouk, PhD

Cincinnati Children's Hospital Medical Center

8:45 am – 8:55 am

Epidemiology and Health Outcomes

Factors Associated with Receiving a “Migraine” Diagnosis vs. a “Headache” Diagnosis Among Adult Arizona Medicaid Recipients: Demographics, Comorbidity, and Problems relating to Social Determinants of Health

Juliana VanderPluym, MD, FAHS

Mayo Clinic – Arizona

8:55 am – 9:05 am

Headache Education

Headache and Psychological Variables as Predictors of Disability in Individuals with Primary Headache Disorders

Halle McCracken, MA

University Of Mississippi

PROGRAM AGENDA



FRIDAY, JUNE 16

9:15 am – 9:25 am **Therapeutics**
Vaporized cannabis versus placebo for the acute treatment of migraine: a randomized, double-blind, placebo-controlled, crossover trial
Nathaniel Schuster, MD
UC San Diego Center For Pain Medicine

9:25 am – 9:35 am **Epidemiology and Health Outcomes**
Evaluating Disparities in the Diagnosis, Management, and Response to Treatment among Children and Adolescents with Headache at the Tertiary Care Level
Jessica Saunders, MD
Cincinnati Children's Hospital

9:40 am – 10:15 am
GRAND BALLROOM **EXHIBITS AND POSTERS WITH REFRESHMENTS**

10:15 am – 11:00 am
LONE STAR BALLROOM D-E **SEYMOUR SOLOMON LECTURE AWARD**
Moderators: Jessica Ailani, MD, FAHS and Cynthia E. Armand, MD
Introduction by: Seymour Solomon, MD

All Migraine Management is Behavior
Elizabeth K. Seng, PhD, FAHS
Yeshiva University/Albert Einstein College of Medicine

11:00 am – 11:20 am
LONE STAR BALLROOM D-E **Lifetime Achievement Award**
Moderators: Andrew C. Charles, MD, FAHS and Arynah A. Pradhan, PhD
R. Allan Purdy, MD, FAHS
Dalhousie University

PROGRAM AGENDA

FRIDAY, JUNE 16

11:20 am – 12:35 pm
LONE STAR BALLROOM D-E

Frontier Awards Presentation
Moderators: Jessica Ailani, MD, FAHS and Christina L. Szperka, MD, MSCE, FAHS

FRONTIERS IN HEADACHE RESEARCH SCHOLARSHIP AWARD PRESENTATIONS

The Efficacy of Rimegepant in the Treatment of Vestibular Migraine: A Proposed Single-Arm, Open-Label Study
Richard Baron, MD
Stanford University

The Effectiveness of Sphenopalatine Ganglion Block for V2 Trigeminal Neuropathic Pain: A Randomized Double-Blinded Placebo-controlled Trial
Jack Botros, DDS, MS
Herman Ostrow School of Dentistry of USC

Telemedicine Adoption in a Tertiary Academic Outpatient Center amongst Hispanic Patients with Headache Disorders; Sociodemographic and Clinical Factors
Michelle Bravo, MD
University of Miami

Neurofeedback as Adjunct Treatment in Pharmacologically-Managed Migraine
Skyler L. Kanegi, MD
UT Health San Antonio

Macromastia and Headache: Defining the Headache Prior to Reduction Mammoplasty
Kristyn M. Pocock, MD
Atrium Health Wake Forest Baptist

Patient Characteristics and Medication Use Patterns among Medicare Beneficiaries with Migraine in the United States
Seonkyeong Yang, MS
University of Florida

Epidemiology and Health Outcomes
Racial and ethnic disparities in headache management in the pediatric emergency room
Danielle Kellier
University Of Pennsylvania

Preclinical Science
Migraine signaling events in the meninges
Sarah Louise Christensen, DVM, PhD
Beth Israel Deaconess Medical Center/Harvard Medical School.

PROGRAM AGENDA

FRIDAY, JUNE 16

FRONTIERS AWARD PRESENTATIONS (cont.)

Preclinical Science

The effect of functional S1PR1 antagonists on central trigeminovascular neurons using migraine-like preclinical approaches

Ana Salinas-Abarca, PhD
University Of Maryland Baltimore

Preclinical Science

The effect of an adenosine A3 receptor (A3AR) agonist in a preclinical model of migraine-like periorbital allodynia

Paula Sureda-Gibert, PhD
University Of Maryland Baltimore

12:35 pm – 1:50 pm
GRAND BALLROOM

EXHIBITS AND POSTER SESSION (LUNCH AVAILABLE)

12:50 pm – 1:35 pm
LONE STAR BALLROOM A-C

Research to Practice: Clinical implications of real-world use of an anti-CGRP mAb in high frequency migraine

Not Eligible for CME Credits
Sponsored by Lundbeck, LLC

1:50 pm – 2:55 pm
LONE STAR BALLROOM D-E

KEYNOTE PRESENTATION

State of the Science of Neurology...and where do we go from here?

Moderators: Mark J. Burish, MD, PhD, FAHS and
Christina L. Szperka, MD, MSCE, FAHS

Walter J. Koroshetz, MD
NIH National Institute of Neurological Disorders and Stroke (NINDS)



PROGRAM AGENDA

FRIDAY, JUNE 16

2:55 pm – 4:25 pm
LONE STAR BALLROOM D-E

Updates in MULE (Misunderstood, Understudied, Limited, and Emerging) Fields

Introductions: Kaitlin Greene, MD
Moderators: A. Laine Green, MD, MSc, FAHS and Jennifer Robblee, MD, MSc

2:55 pm – 3:15 pm

Cervicogenic Headache: Misunderstood Clinically and Scientifically

Tesha Monteith, MD, FAHS
University of Miami

3:15 pm – 3:35 pm

Tension-Type Headache: Common and Understudied

Sait Ashina, MD
Beth Israel Deaconess Medical Center

3:35 pm – 3:55 pm

Limitations and Interpretations of Imaging Research

Simona Nikolova, PhD
Mayo Clinic - Arizona

3:55 pm – 4:15 pm

Continuous Headache/NDPH: an Emerging Field

Andrew D. Hershey, MD, PhD, FAHS
Cincinnati Children's Hospital

4:15 pm – 4:25 pm

Panel Discussion

4:25 pm - 5:25 pm
GRAND BALLROOM

FRIDAY EXHIBIT HALL REFRESHER

Sponsored by PULMATRIX, Inc.

4:40 pm – 5:25 pm
LONE STAR BALLROOM D-E

DEBATE: IS MIGRAINE A VASCULAR DISORDER?

Moderators: Chia-Chun Chang, MD and Andrea M. Harriott, MD, PhD

Migraine is a Vascular Disorder

Gretchen E. Tietjen, MD
Johnson & Johnson

Migraine is a Neurological Disorder

Andrew F. Russo, PhD
University of Iowa

PROGRAM AGENDA

FRIDAY, JUNE 16

5:30 pm – 7:00 pm
LONE STAR BALLROOM F-H

AHS Has Talent

7:00 pm – 7:45 pm
LONE STAR BALLROOM A-C

Rethinking Migraine: Learn about Treatment Options that Prevent and Treat Migraine Attacks

Not Eligible for CME Credits
Sponsored by AbbVie US LLC


Zembrace[®] SYMTOUCH[®]
(sumatriptan injection) 3 mg

Learn more at Booth #313

www.zembrace.com

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MIGRAINE NEWSROOM LIVE

Lonestar A-C at the JW Marriott Austin
Saturday, June 17, 2023 | 1:00PM CENTRAL

Research studies! Epidemiologic insights! Clinical care gaps!
It's the migraine news that matters to you. Be there LIVE as we cover breaking headlines in migraine.

Co-anchors



Jessica Ailani,
MD, FAAN,
FANA, FAHS

Sports



Paul G. Mathew,
MD, DNBPAS,
FAAN, FAHS

Reporter at Large



Wade Cooper,
DO, FACN,
FAHS



Stephanie J. Nahas,
MD, MEd,
FAHS, FAAN

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PROGRAM AGENDA

SATURDAY, JUNE 17

6:00 am – 6:30 am
LONE STAR FOYER EAST

Sunrise Yoga

6:30 am – 5:30 pm
LONE STAR PRE-FUNCTION

Registration Desk

6:30 am – 7:30 am
GRAND BALLROOM

Exhibits and Posters with Continental Breakfast

6:30 am – 7:30 am
BRAZOS

Research Career Development Program

Not Eligible for CME Credits

Moderator: Elizabeth K. Seng, PhD, FAHS

Jumpstarting Your Research Career: Roundtable Discussions

7:30 am – 9:30 am
LONE STAR BALLROOM D-E

INDUSTRY-SUBMITTED ABSTRACTS

Not Eligible for CME Credits

Moderators: Andrew F. Russo, PhD and Jason Sico, MD

7:30 am - 7:40 am

Therapeutics

The effect of barriers to treatment access on emergency department usage by race/ethnicity in the United States: A claims data analysis

Sait Ashina, MD, FAHS

Harvard Medical School, Beth Israel Deaconess Medical Center

7:40 am - 7:50 am

Epidemiology and Health Outcomes

Race/ethnicity-based perceptions of and experience with migraine-related burden, treatment, and care in people with high-frequency headache/migraine and high acute medication use

Amaal Starling, MD, MS, FAHS

Mayo Clinic - Arizona

7:50 am - 8:00 am

Therapeutics

Sustained efficacy of STS101 DHE Nasal Powder for the acute treatment of migraine: Results from the Phase 3 double-blind, randomized, placebo-controlled SUMMIT study

Alan Rapoport, MD

University of California, Los Angeles

PROGRAM AGENDA

SATURDAY, JUNE 17

8:00 am - 8:10 am

Epidemiology and Health Outcomes

Effect of Erenumab Versus Migraine Preventive Medications on Cardiovascular and Cerebrovascular Outcomes

Stewart J. Tepper, MD, FAHS

Dartmouth-Hitchcock Medical Center

8:10 am - 8:20 am

Therapeutics

Efficacy of fremanezumab in reducing depression in patients with migraine and major depressive disorder: results of the UNITE study

Richard B. Lipton, MD, FAHS

Albert Einstein College of Medicine

8:20 am - 8:30 am

Epidemiology and Health Outcomes

Reduction in barbiturate prescription fills and quantity dispensed following initiation of rimegepant treatment: A real-world administrative claims study

Noah Rosen, MD, FAHS

Hofstra Northwell

8:30 am - 8:40 am

Therapeutics

Ubrogepant for the Acute Treatment of Migraine When Administered During the Prodrome (Premonitory Phase): Results From a Phase 3, Randomized, Double-blind, Placebo-Controlled, Crossover Study

Peter J. Goadsby, MD, PhD, FAHS

University of California, Los Angeles

8:40 am - 8:50 am

Therapeutics

Kinetic Oscillation Stimulation for the preventive treatment of chronic migraine: results from a randomized-controlled trial

Jan Hoffmann, MD, PhD

King's College London

8:50 am - 9:00 am

Therapeutics

Long-Term Safety and Tolerability of Zavegepant 10 mg Nasal Spray During Concomitant Use of CGRP Monoclonal Antibodies: Results From a 1-Year Open-label Safety Trial

Timothy Smith, MD, RPh

Studymetrix Research

PROGRAM AGENDA

SATURDAY, JUNE 17

- 9:00 am - 9:10 am **Therapeutics**
Temporal Analysis of Remote Electrical Neuromodulation (REN) in Migraine Prevention
Rashmi Halker Singh, MD, FAHS
Mayo Clinic – Arizona
- 9:10 am - 9:20 am **Epidemiology and Health Outcomes**
Factors associated with calcitonin gene-related peptide (CGRP) monoclonal antibody (mAb) ever versus never use: Results of the OVERCOME (US) study
Sait Ashina, MD, FAHS
Harvard Medical School, Beth Israel Deaconess Medical Center
- 9:20 am - 9:30 am **Therapeutics**
Preclinical Assessment of MEDI0618, A Novel PAR2 Monoclonal Antibody for Treatment of CGRP-dependent and CGRP-independent Migraine-like Pain
Caroline M. Kopruszinski, PhD
The University of Arizona
- 9:30 am – 10:15 am
GRAND BALLROOM
- 10:15 am – 11:00 am
LONE STAR BALLROOM D-E
- EXHIBITS AND POSTERS**
- DEBATE: MIGRAINE AS A RISK FACTOR FOR DEMENTIA**
Moderators: Matthew S. Robbins, MD, FAHS and Elizabeth K. Seng, PhD, FAHS
- Migraine is a Risk Factor**
Richard B. Lipton, MD, FAHS
Albert Einstein College of Medicine
- Migraine is not a Risk Factor**
Olivia Begasse de Dhaem, MD, FAHS
Hartford HealthCare

PROGRAM AGENDA

SATURDAY, JUNE 17

- 11:00 am – 12:00 pm
LONE STAR BALLROOM D-E
- SCIENTIFIC PAPER PRESENTATIONS - SESSION 2A**
Moderator: Chia-Chun Chiang, MD
- 11:05 am – 11:15 am **Translational Research**
Predicting Headache Improvement in Patients with Acute Post-traumatic Headache Attributed to Mild Traumatic Brain Injury Using Imaging, Clinical, and Speech Data: a Multi-Modality Machine-Learning Study
Jing Li, PhD
Georgia Tech
- 11:15 am – 11:25 am **Epidemiology and Health Outcomes**
Prevalence And Comorbidities Of GI Disorders In Migraine In Large Tertiary Medical Center
Maria Chavez, MD
University Of Washington
- 11:25 am – 11:35 am **Epidemiology and Health Outcomes**
Psychological factors associated with interictal behavioral avoidance in response to migraine-related stimuli
Daniel Rogers, PhD
VA Connecticut Healthcare System
- 11:35 am – 11:45 am **Epidemiology and Health Outcomes**
Quality of Life in Patients with Confirmed and Suspected Spinal CSF Leaks
Deborah I. Friedman, MD, MPH, FAHS
Thomas Jefferson University (adjunct)
- 11:45 am – 11:55 am **Headache Education**
Suicide Ideation and Attempts in Veterans with Post-Traumatic Headache: A Case-Control Study in the Veterans Health Administration
Sarah Anthony, MSc
West Haven Veterans Affairs



PROGRAM AGENDA

SATURDAY, JUNE 17

11:00 am – 12:00 pm
LONE STAR BALLROOM A-C

SCIENTIFIC PAPER PRESENTATIONS - SESSION 2B
Moderator: Paul G. Mathew, MD, DNBPAS, FAHS

11:05 am – 11:15 am

Headache Education
Breaking Down Barriers: The International Pediatric Headache Didactic Series, A Novel Educational Intervention
Sara Pavitt, MD
University of Texas

11:15 am – 11:25 am

Clinical Presentation/ Diagnosis
Symptoms associated with headache in youth
Carlyn Patterson Gentile, MD, PhD
University Of Pennsylvania Perelman School Of Medicine, Children's Hospital Of Philadelphia

11:25 am – 11:35 am

Therapeutics
TENACITY - Telemedicine-based Cognitive Behavioral Therapy for Headache: A Pilot Randomized Controlled Trial
Teresa Damush, PhD
Veterans Health Administration Headache Center Of Excellence Research Center

11:35 am – 11:45 am

Epidemiology and Health Outcomes
Association Between Blood Biomarkers and Migraine in Patients with Tinnitus
Cynthia Tsang
University of California Irvine

11:45 am – 11:55 am

Preclinical Science
ATP-sensitive potassium channels in the meninges contribute to priming following repeated exposure to stress
Hao-Ruei Mei, BS
University Of Texas at Dallas

PROGRAM AGENDA

SATURDAY, JUNE 17

12:00 pm – 12:45 pm
LONE STAR BALLROOM D-E

DEBATE: POST-TRAUMATIC HEADACHE – EARLY VS. LATE TREATMENT
Moderators: Catherine D. Chong, PhD, FAHS and Jason J. Sico, MD, MHS

Early Treatment

Frank Conidi, DO, MS, FAAN, FAHS
Florida Center for Headache and Sports Neurology

Late Treatment

Amaal J. Starling, MD, FAHS
Mayo Clinic - Arizona

12:45 pm – 2:00 pm
GRAND BALLROOM

EXHIBITS AND POSTER SESSION (INCLUDES LUNCH)

1:00 pm – 2:00 pm
LONE STAR BALLROOM A-C

Migraine Newsroom Live

Not Eligible for CME Credits
Sponsored by Eli Lilly and Company

2:00 pm – 3:15 pm
LONE STAR BALLROOM D-E

Understudied Populations

Introductions: Jessica Kiarashi, MD
Moderator: Cynthia E. Armand, MD

2:00 pm – 2:30 pm

KEYNOTE PRESENTATION
Engaging Underserved Populations in Pain Research: A Priority
Burel R. Goodin, PhD
Washington University in St. Louis

2:30 pm – 3:15 pm

Serving Underserved Populations: How Can We Take Action?

Panelists:
Larry Charleston, IV, MD, MSc, FAHS
Michigan State University College of Human Medicine

Burel R. Goodin, PhD
Washington University in St. Louis

Jennifer Hranilovich, MD
Children's Hospital Colorado

Juliana VanderPluym, MD, FAHS
Mayo Clinic – Arizona



PROGRAM AGENDA

SATURDAY, JUNE 17

- 3:15 pm – 4:45 pm**
LONE STAR BALLROOM A-C
- 3:20 pm – 3:30 pm** **Epidemiology and Health Outcomes**
Clinical Comparison of Migraine with Left- vs Right-Sided Headache: A Secondary Data Analysis
Adam Sprouse Blum, MD
University Of Vermont
- 3:30 pm – 3:40 pm** **Preclinical Science**
Electrical Connectomics in preclinical models of migraine
Rainbo Hultman, PhD
University of Iowa
- 3:40 pm – 3:50 pm** **Epidemiology and Health Outcomes**
Evaluating Individual Differences in Quantitative Headache Research: An Example Using Headache Diary Data
James S. McGinley, PhD
Vector Psychometric Group, LLC
- 3:50 pm – 4:00 pm** **Epidemiology and Health Outcomes**
Evaluating Individual Differences in Quantitative Headache Research: An Example Using Headache Diary Data
James S. McGinley, PhD
Vector Psychometric Group, LLC
- 4:00 pm – 4:10 pm** **Headache Education**
Developing and Delivering a Migraine Disparities and Diagnosis Undergraduate Medical Educational Program to Underrepresented In Medicine medical students members of the Student National Medical Association
Larry Charleston, IV, MD, MSc, FAH
Michigan State University College of Human Medicine
- 4:10 pm – 4:20 pm** **Other**
To Hear or to Fear: Examining Sound Hypersensitivity in Individuals with Migraine
Caitlin Masterson, PhD
Clinvest Research

PROGRAM AGENDA

SATURDAY, JUNE 17

- 4:20 pm – 4:30 pm** **Epidemiology and Health Outcomes**
Sexuality and Sexual Function in Females with Migraine vs Controls
John Rothrock, MD
Inova Health/University Of Virginia
- 4:30 pm – 4:40 pm** **Translational Research**
Comparison of the King-Devick test (KDT) during the interictal state verses different phases of migraine and non-migraine headache attacks
Chia-Chun Chiang, MD
Mayo Clinic
- 3:15 pm – 4:45 pm**
LONE STAR BALLROOM D-E
- 3:20 pm – 3:30 pm** **Translational Research**
Deep and Unbiased Proteomics for Identification of Candidate Biomarker Signatures in Migraine
Yohannes W. Woldeamanuel, MD
Stanford University
- 3:30 pm – 3:40 pm** **Epidemiology and Health Outcomes**
The effect of barriers to treatment access on emergency department usage by race/ethnicity in the United States: A claims data analysis
Dawn C. Buse, PhD, FAHS
Albert Einstein College of Medicine
- 3:40 pm – 3:50 pm** **Therapeutics**
Exploring openness to treatment in pediatric headache: Unveiling gendered healthcare decision-making patterns
Zoe Schefter, BA
Boston Children's Hospital
- 3:50 pm – 4:00 pm** **Clinical Presentation/ Diagnosis**
Greater Disability in Patients Who Have Migraine With Aura is Mediated by Cognitive Impairment During the Migraine Attack: A Mig-SCog Analysis from the American Registry for Migraine Research (ARMR)
Meesha Trivedi, BS
Mayo Clinic
- 4:00 pm – 4:10 pm** **Epidemiology and Health Outcomes**
Migraine and Sleep Behaviors and Symptoms in the Hispanic Community Health Study/Study of Latinos (HCHS/SOL)
Angeliki Vgontzas, MD
Brigham And Women's Hospital/Harvard Medical School

PROGRAM AGENDA

SATURDAY, JUNE 17

4:10 pm – 4:20 pm **Therapeutics**
Repeat round of psilocybin suppresses cluster headache: results from the blinded extension phase of a controlled clinical trial
Emmanuelle Schindler, MD, PhD
VA Connecticut Healthcare System

4:20 pm – 4:30 pm **Epidemiology and Health Outcomes**
Sleep Deficiency and Pain Catastrophizing among Adolescents with High Frequency Primary Headache
Andrew Rogers, MA
University Of Washington

4:30 pm – 4:40 pm **Preclinical Science**
CGRP promotes goblet cell mucus production to facilitate gut barrier protection
Daping Yang, PhD
Harvard Medical School

4:45 pm – 5:30 pm **Special Interest Section Fair**
LONE STAR PRE-FUNCTION
Consider joining a Special Interest Section (SIS) and learn more at this informal gathering. Find one to enhance your AHS experience and meet with others who share your passion in a specific area of headache medicine

5:30 pm – 7:00 pm **WINE AND CHEESE RECEPTION**
EDGE TERRACE
(5th Floor)

PROGRAM AGENDA

SUNDAY, JUNE 18

7:45 am – 8:45 pm **Registration Desk**
LONE STAR PRE-FUNCTION

7:45 am – 8:45 am **Continental Breakfast**
LONE STAR BALLROOM WEST
FOYER
Celebrate Father's Day with a special pancake station

8:45 am – 10:30 am **"I Have a Gut Feeling " Systemic Contributions to Headache (GI/Diet)**
LONE STAR BALLROOM A-C
Moderators: Mark J. Burish, MD, PhD, FAHS and Nada Hindiyeh, MD, FAHS

8:50 am – 9:15 am **CGRP and GI Infections**
Deping Yang, PhD
Harvard Medical School

9:15 am – 9:35 am **Abdominal Migraine/Cyclical Vomiting**
B U. K. Li, MD
Children's Hospital of Wisconsin and Medical College of Wisconsin (Ret.)

9:35 am – 9:55 am **Diet and Migraine**
Daisy Zamora, PhD
University of North Carolina-Chapel Hill

9:55 am – 10:15 am **Microbiome**
Blanca Marquez de Prado, PhD
Children's Hospital Of Philadelphia

10:15 am – 10:30 am **Panel Discussion**



THIS IS THE MOMENT YOUR PATIENTS

BREAK FREE
FROM THE VICIOUS CYCLE OF MIGRAINE*



VYEPTI is indicated for the preventive treatment of migraine in adults.¹

*The vicious cycle is defined as more frequent migraine days with the continued increasing need for acute medications over time.^{2,3}



Visit **AHS Booth 101** to learn more about results with VYEPTI.

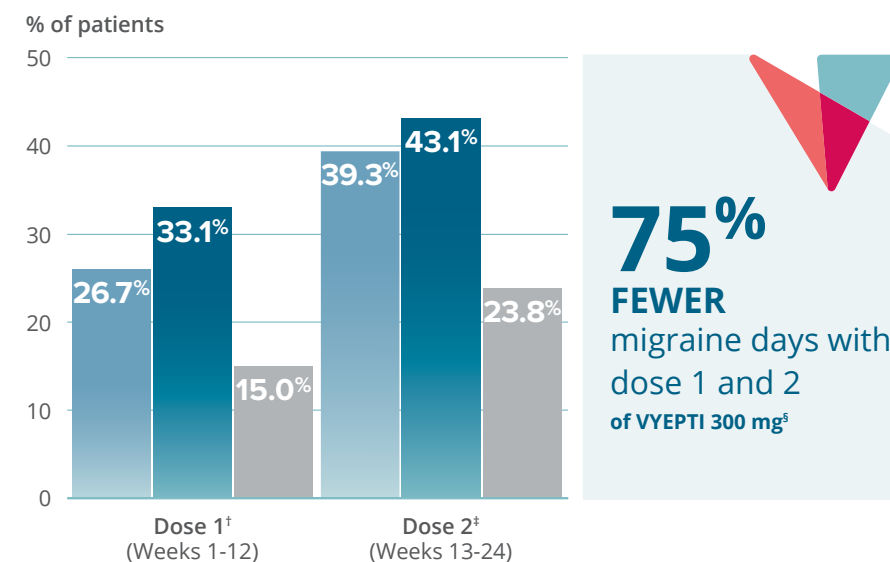
Please scan the QR code to learn more at vyeptihcp.com

≥75% fewer migraine days are possible

43.1% of patients on VYEPTI 300 mg experienced ≥75% fewer migraine days⁴

● VYEPTI 100 mg (n=356) ● VYEPTI 300 mg (n=350) ● Placebo (n=366)

≥75% responder rate in chronic migraine^{4*}



Primary endpoint^{1,5}

Patients with ≥8 monthly migraine days (MMD) experienced on average 23.1 (VYEPTI 100 mg) and 24.6 (VYEPTI 300 mg) fewer migraine days,[¶] over weeks 1-12, vs 16.8 with placebo (baseline ~16.1 MMD; *p*<0.001).

Patients experienced a 52%[†] reduction in mean acute medication days^{**} on VYEPTI 300 mg over weeks 1-12^{5,6}

In patients with chronic migraine, VYEPTI 100 mg and 300 mg reduced acute medication days from 6.6 to 3.3 and 6.7 to 3.2 days/months, respectively (vs 6.2 to 4.3 days/months for placebo) (Months 4-6).⁴

VYEPTI demonstrated reduction of MMD in placebo-controlled, phase 3, clinical trials; one each for patients with episodic^{††} and chronic migraine.¹ For more information, see vyeptihcp.com/efficacy.

100 mg is the recommended dose. Some patients may benefit from the approved 300 mg dose.

*75% responder rate was defined as a subject achieving, on average, a ≥75% reduction from baseline in migraine days within the 12-week interval.

[†]Key secondary endpoint (*p*<0.001).

[‡]Other secondary endpoint, not adjusted for multiplicity.

[§]Average reduction for each month within the 12-week dosing intervals.

[¶]Calculated by multiplying the mean change from baseline in mean MMD by 3 months.

^{**}An acute migraine medication day is a day with any triptan or ergotamine use.

^{††}EM: 4 to 14 monthly headache days of which at least 4 were migraine days.

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IMPORTANT SAFETY INFORMATION

CONTRAINDICATIONS

VYEPTI is contraindicated in patients with serious hypersensitivity to eptinezumab-jjmr or to any of the excipients. Reactions have included anaphylaxis and angioedema.

WARNINGS AND PRECAUTIONS

Hypersensitivity Reactions:

Hypersensitivity reactions, including angioedema, urticaria, facial flushing, dyspnea, and rash, have occurred with VYEPTI in clinical trials and in the postmarketing setting. Most hypersensitivity reactions occurred during infusion and were not serious, but often led to discontinuation or required treatment. Serious hypersensitivity reactions may occur. Cases of anaphylaxis have been reported in the postmarketing setting. If a hypersensitivity reaction occurs, consider discontinuing VYEPTI, and institute appropriate therapy.

ADVERSE REACTIONS

The most common adverse reactions (≥2% and at least 2% or greater than placebo) in the clinical trials for the preventive treatment of migraine were nasopharyngitis and hypersensitivity.

For more information, please see a Brief Summary of the Full Prescribing Information on the following page.

References: 1. VYEPTI (eptinezumab-jjmr) [package insert]. Bothell, WA: Lundbeck Seattle BioPharmaceuticals, Inc. 2. Diener HC, Antonaci F, Braschinsky M, et al. European Academy of Neurology guideline on the management of medication-overuse headache. *Eur J Neurol.* 2020;27(7):1102-1116. 3. Headache Classification Committee of the International Headache Society (IHS). The International Classification of Headache Disorders, 3rd ed. *Cephalalgia.* 2018;38(1):1-211. 4. Silberstein S, Diamond M, Hindiyyeh NA, et al. Eptinezumab for the prevention of chronic migraine: efficacy and safety through 24 weeks of treatment in the phase 3 PROMISE-2 (PREvention Of Migraine via Intravenous ALD403 Safety and Efficacy-2) study. *J Headache Pain.* 2020;21(1):120. 5. Lipton RB, Goadsby PJ, Smith J, et al. Efficacy and safety of eptinezumab in patients with chronic migraine: PROMISE-2. *Neurology.* 2020;94(13):e1365-e1377. 6. Data on file. Bothell, WA: Lundbeck Seattle BioPharmaceuticals, Inc.

VYEPTI® (eptinezumab-jjmr) injection, for intravenous use

Brief Summary of Prescribing Information

(See package insert for Full Prescribing Information or visit www.vyepthcp.com)

INDICATIONS AND USAGE

VYEPTI® (eptinezumab-jjmr) is indicated for the preventive treatment of migraine in adults.

CONTRAINDICATIONS

VYEPTI is contraindicated in patients with serious hypersensitivity to eptinezumab-jjmr or to any of the excipients in VYEPTI. Reactions have included anaphylaxis and angioedema.

WARNINGS AND PRECAUTIONS

Hypersensitivity Reactions: Hypersensitivity reactions, including angioedema, urticaria, facial flushing, dyspnea, and rash, have occurred with VYEPTI in clinical trials and in the postmarketing setting. Most hypersensitivity reactions occurred during infusion and were not serious, but often led to discontinuation or required treatment. Serious hypersensitivity reactions may occur. Cases of anaphylaxis have been reported in the postmarketing setting. If a hypersensitivity reaction occurs, consider discontinuing VYEPTI and institute appropriate therapy.

ADVERSE REACTIONS

The following clinically significant adverse reactions are described elsewhere in the labeling:

- Hypersensitivity Reactions.

Clinical Trials Experience: Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in clinical practice. The safety of VYEPTI was evaluated in 2076 patients with migraine who received at least one dose of VYEPTI, representing 1615 patient-years of exposure; of these, 1524 patients were exposed to 100 mg or 300 mg. Across all doses, 1872 patients were exposed for at least 6 months and 991 patients were exposed for 12 months. In the placebo-controlled clinical studies (Study 1 and Study 2) of 1372 patients, 579 patients received at least one dose of VYEPTI 100 mg, 574 patients received at least one dose of VYEPTI 300 mg, and 588 patients received placebo. Approximately 86% were female, 89% were white, and the mean age was 40.4 years at study entry.

The most common (incidence at least 2% and at least 2% greater than placebo) adverse reactions in the clinical trials for the preventive treatment of migraine were nasopharyngitis and hypersensitivity.

Table 1 summarizes the adverse reactions that occurred during Study 1 and Study 2.

Table 1. Adverse Reactions Occurring with an Incidence of at Least 2% for VYEPTI and at Least 2% Greater than Placebo in Studies 1 and 2

Adverse Reactions	VYEPTI 100 mg N=579 %	VYEPTI 300 mg N=574 %	Placebo N=588 %
Nasopharyngitis	6	8	6
Hypersensitivity reactions*	1	2	0

*Hypersensitivity reactions includes multiple related adverse event terms, such as hypersensitivity, pruritus, and flushing/hot flush that occurred on the day of dosing. In Study 1 and Study 2, 1.9% of patients treated with VYEPTI discontinued treatment because of adverse reactions.

Immunogenicity:

As with all therapeutic proteins, there is potential for immunogenicity. The detection of antibody formation is highly dependent on the sensitivity and specificity of the assay. Additionally, the observed incidence of antibody (including neutralizing antibody) positivity in an assay may be influenced by several factors, including assay methodology, sample handling, timing of sample collection, concomitant medications, and underlying disease. For these reasons, comparison of the incidence of antibodies to eptinezumab-jjmr in the studies described below with the incidence of antibodies in other studies or to other products may be misleading.

In patients receiving VYEPTI 100 mg or 300 mg every 3 months, the incidence of anti-eptinezumab-jjmr antibody development in Study 1 (up to 56 weeks) was 20.6% (92/447), and 41.3% (38/92) of those patients developed anti-eptinezumab-jjmr neutralizing antibodies. In Study 2 (up to 32 weeks), the incidence of anti-eptinezumab-jjmr antibody development was 18.3% (129/706), and 34.9% (45/129) of those patients developed anti-eptinezumab-jjmr neutralizing antibodies. In an open-label study with 84 weeks of treatment, 18% (23/128) of patients developed anti-eptinezumab-jjmr antibodies, and 39% (9/23) of those patients developed anti-eptinezumab-jjmr neutralizing antibodies.

Although the results from both studies showed no clear evidence of an impact from development of anti-eptinezumab-jjmr antibodies, including neutralizing antibodies, on the safety and efficacy profiles of VYEPTI, the available data are too limited to make definitive conclusions.

Postmarketing Experience: The following adverse reactions have been identified during postapproval use of VYEPTI. Because these reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure.

Immune System Disorders: Anaphylaxis

General Disorders and Administration Site Conditions: Fatigue

USE IN SPECIFIC POPULATIONS

Pregnancy: Risk Summary - There are no adequate data on developmental risks associated with the use of VYEPTI in pregnant women. No adverse developmental effects were observed following administration of eptinezumab-jjmr to pregnant animals at doses greater than those used clinically [see Data].

In the U.S. general population, the estimated background risk of major birth defects and miscarriages in clinically recognized pregnancies is 2%-4% and 15%-20%, respectively. The estimated rate of major birth defects (2.2%-2.9%) and miscarriage (17%) among deliveries to women with migraine are similar to rates reported in women without migraine.

Clinical Considerations - Disease-Associated Maternal and/or Embryo/Fetal Risk: Published data have suggested that women with migraine may be at increased risk of preeclampsia and gestational hypertension during pregnancy.

Data - Animal Data: When eptinezumab-jjmr (0, 75, or 150 mg/kg) was administered weekly to female rats and rabbits by intravenous injection throughout organogenesis, no adverse effects on embryofetal development were observed. The higher dose tested (150 mg/kg) is 30 times the maximum recommended human dose (MRHD) of 300 mg, on a body weight basis (mg/kg).

When eptinezumab-jjmr (0, 75, or 150 mg/kg) was administered weekly to female rats throughout pregnancy and lactation, no adverse effects on pre- and postnatal development were observed. The higher dose tested (150 mg/kg) is 30 times the MRHD, on a mg/kg basis.

Lactation: Risk Summary - There are no data on the presence of eptinezumab-jjmr in human milk, the effects on the breastfed infant, or the effects on milk production. The developmental and health benefits of breastfeeding should be considered along with the mother's clinical need for VYEPTI and any potential adverse effects on the breastfed infant from VYEPTI or from the underlying maternal condition.

Pediatric Use: Safety and effectiveness in pediatric patients have not been established.

Geriatric Use: Clinical studies of VYEPTI did not include sufficient numbers of patients aged 65 and over to determine whether they respond differently from younger patients.

CLINICAL PHARMACOLOGY

Pharmacokinetics: Specific Populations

A population pharmacokinetic analysis assessing the effects of age, race, sex, and body weight did not suggest any clinically significant impact of these covariates on eptinezumab exposures.

Patients with Renal or Hepatic Impairment: No dedicated studies were conducted to assess the effects of renal or hepatic impairment on the pharmacokinetics of eptinezumab-jjmr. However, hepatic or renal impairment is not expected to affect the pharmacokinetics of eptinezumab-jjmr. A population pharmacokinetic analysis of integrated data from eptinezumab-jjmr clinical studies did not reveal clinically significant impact on pharmacokinetics of patients with hepatic or renal impairment.

Drug Interaction Studies

P450 Enzymes - Eptinezumab-jjmr is not metabolized by cytochrome P450 enzymes; therefore, interactions with concomitant medications that are substrates, inducers, or inhibitors of cytochrome P450 enzymes are unlikely.

Sumatriptan - The co-administration of a single dose of 300 mg eptinezumab-jjmr administered as an intravenous infusion (over a period of 1 hour ± 15 min) with a single dose of 6 mg sumatriptan administered subcutaneously did not significantly influence the pharmacokinetics of eptinezumab-jjmr or sumatriptan.

Manufactured by:
Lundbeck Seattle BioPharmaceuticals, Inc.
11804 North Creek Parkway South
Bothell, WA 98011 USA
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BECAUSE GOOD ISN'T GOOD ENOUGH ANYMORE

SHORTEN THE DISTANCE TO PAIN FREEDOM^{1,2}



Add Trudhesa® to your patients' monthly migraine treatment plan while they're currently taking a gepant

Trudhesa uses POD® technology to deliver trusted DHE to the upper nasal space^{3,4}

- ✓ DHE has a history of proven effectiveness for migraine⁴
- ✓ Trudhesa demonstrated a favorable safety profile in a phase 3 trial over 52 weeks^{1,3}

DHE=dihydroergotamine mesylate.

Attending the AHS 65th Annual Scientific Meeting on June 15?
Visit us at Trudhesa Booth #119

Important Safety Information

Indication

Trudhesa is an ergotamine derivative indicated for the acute treatment of migraine with or without aura in adults.

WARNING: PERIPHERAL ISCHEMIA FOLLOWING COADMINISTRATION WITH POTENT CYP3A4 INHIBITORS

Serious and/or life-threatening peripheral ischemia has been associated with the coadministration of dihydroergotamine with strong CYP3A4 inhibitors. Because CYP3A4 inhibition elevates the serum levels of dihydroergotamine, the risk for vasospasm leading to cerebral ischemia and/or ischemia of the extremities is increased. Hence, concomitant use of Trudhesa with strong CYP3A4 inhibitors is contraindicated.

Limitations of Use

Trudhesa is not indicated for the preventive treatment of migraine or for the management of hemiplegic or basilar migraine.

Contraindications

Trudhesa is not recommended in patients with:

- Concomitant use of strong CYP3A4 inhibitors such as protease inhibitors (eg, ritonavir, nelfinavir, or indinavir) and macrolide antibiotics (eg, erythromycin or clarithromycin)
- Ischemic heart disease or coronary artery vasospasm

- Uncontrolled hypertension, known peripheral arterial diseases, sepsis, following vascular surgery, or severe hepatic or renal impairment
- Hypersensitivity to ergot alkaloids
- Concomitant use of other 5-HT₁ agonists (eg, sumatriptan) or ergotamine-containing or ergot-type medications within 24 hours
- Concomitant use of peripheral and central vasoconstrictors
- **Medication overuse headache:** Detoxification may be necessary
- **Preterm labor:** Advise pregnant women of the risk
- **Local irritation:** Local irritation has been reported following administration of Trudhesa

Warnings and Precautions

Trudhesa may cause:

- **Cardiac events:** Cardiac events in patients with risk factors of coronary artery diseases: Consider administration of the first dose of Trudhesa under medical supervision (including the use of an electrocardiogram)
- **Cerebrovascular events:** Cerebrovascular events (eg, cerebral hemorrhage, subarachnoid hemorrhage, and stroke) have been reported, particularly with dihydroergotamine mesylate injection
- **Vasospasm/elevated blood pressure:** Dihydroergotamine may cause vasospasm or elevation in blood pressure
- **Fibrotic complications:** Rare cases have been reported following prolonged daily use of dihydroergotamine mesylate. Administration of Trudhesa should not exceed the dosing guidelines or be used for chronic daily administration.

Most Common Adverse Reactions

Most common adverse reactions (incidence >1%) were rhinitis, nausea, altered sense of taste, application site reactions, dizziness, vomiting, somnolence, pharyngitis, and diarrhea.

Use in Special Populations

Pregnancy: Available data from published literature indicate an increased risk of preterm delivery with Trudhesa use during pregnancy.

Lactation: Patients should not breastfeed during treatment with Trudhesa and for 3 days after the last dose.

Please see the Trudhesa Full Prescribing Information, including Boxed Warning and Medication Guide.

The risk information provided here is not comprehensive. The FDA-approved product labeling can be found at www.trudhesaHCP.com or 1-800-555-DRUG. You can also call 1-833-TRUDHESA (1-833-878-3437) for additional information.

References: 1. Smith TR, Winner P, Aurora SK, Jeleva M, Hocevar-Trnka J, Shrewsbury SB. STOP 301: a phase 3, open-label study of safety, tolerability, and exploratory efficacy of INP104, Precision Olfactory Delivery (POD®) of dihydroergotamine mesylate, over 24/52 weeks in acute treatment of migraine attacks in adult patients. *Headache*. 2021;61(8):1214-1226. 2. Shrewsbury SB, Jeleva M, Satterly KH, Lickliter J, Hoekman J. STOP 101: a phase 1, randomized, open-label, comparative bioavailability study of INP104, dihydroergotamine mesylate (DHE) administered intranasally by a 1123 Precision Olfactory Delivery (POD®) Device, in healthy adult subjects. *Headache*. 2019;59(3):394-409. 3. Trudhesa. Prescribing information. Impel Pharmaceuticals; 2021. 4. Silberstein SD, Shrewsbury SB, Hoekman J. Dihydroergotamine (DHE) - then and now: a narrative review. *Headache*. 2020;60(11):40-57.



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LIFETIME ACHIEVEMENT AWARD

The American Headache Society (AHS) presents the Lifetime Achievement award to an AHS member for sustained and substantial service to the AHS and/or the field of headache over a person's lifetime.

Additionally, the recipient must be held in high regard from colleagues of the Society. The recipient is decided upon by the AHS Awards Committee based on nominations from the Committee as well as the Board of Directors. This award is the Society's highest honor.

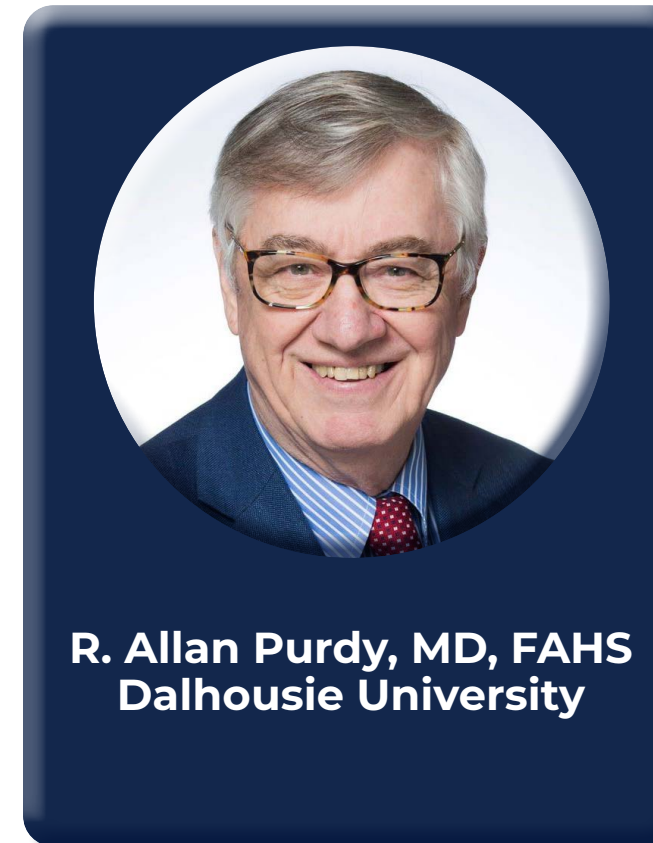
PAST RECIPIENTS

Barry Baumel, MD
J. Keith Campbell, MD, Regent
Robert B. Daroff, MD, FAHS
Kenneth Holroyd, PhD, Regent
Richard B. Lipton, MD, FAHS
Elizabeth W. Loder, MD, MPH, FAHS
Ninan T. Mathew, MD, FAHS

Linda McGillicuddy
Neil Raskin, MD, Regent
Joel R. Saper, MD, Regent
Stephen D. Silberstein, MD, FAHS
Robert Smith, MD
Seymour Solomon, MD, FAHS
Gretchen E. Tietjen, MD

LIFETIME ACHIEVEMENT AWARD

2023 RECIPIENT



R. Allan Purdy, MD, FAHS
Dalhousie University

R. Allan Purdy, MD, FRCPC, is Professor of Medicine (Neurology) at Dalhousie University. He was Professor and Head of the Department of Medicine, and Chief of the Medicine Service of the Department of Medicine at Dalhousie and QE II Health Sciences Centre Health from 2005 to June of 2011.

He previously was the Professor and Head of Neurology at Dalhousie from 1994 to 2006. He is the past President of the American Headache Society and the Canadian Headache Society. He is a fellow of the Royal College of Physicians of Canada, American College of Physicians the American Headache Society. He recently stepped down, after 6 years, as Chair of the Education Committee for the International Headache Society.

He has many publications and Excellence in Teaching Awards, throughout his career. In 2005 he received the Arnold P. Friedman Distinguished Clinician Research Award from the American Headache Society for outstanding contribution to the field of

headache, and in 2007 Life Time Achievement Award from the Headache Cooperative of New England. He is the 2018 recipient of the John R. Graham Lecture Award from the American Headache Society for international leadership in research and education in the field of headache. In 2019 he received the John Edmeads Award from the Canadian Headache Society for his work in the field of headache and resident education in Canada. He is the 2020 recipient of the Seymour Solomon Award Lecture from the American Headache Society in recognition of achievements in the field of headache neurology. He was a 2021 recipient of a Special Recognition Award, from the International Headache Society for his work in headache education in the Society and worldwide. He is the 2023 recipient of the Lifetime Achievement Award of the American Headache Society.

His interests include migraine, other primary and secondary headache disorders, general neurology and neurological education and teaching.

SEYMOUR SOLOMON LECTURE AWARD



Dr. Solomon has been a leader in headache clinical care and research for the past 25 years. At Montefiore/Einstein, he has contributed to the training of hundreds of neurology residents and numerous headache fellows. An exceptional teacher and gifted clinician, he deserves the title of “Solomon the Wise”.

Seymour Solomon was born in Milwaukee, Wisconsin in 1924 and received his primary and secondary education there. After graduating from Marquette University School of Medicine (now the Medical College of Wisconsin), he trained in internal medicine at Mount Sinai Hospital in Milwaukee. He completed a residency in neurology at Montefiore Hospital and then became Director of Neurology at Philadelphia General Hospital. Following his two years as captain in the Air Force at Maxwell Air Force Base Hospital in Alabama, he returned to Montefiore as Associate Chief of Neurology. The remainder of his career was at Montefiore Hospital and the Albert Einstein College of Medicine in various roles. He was Director of EEG, acting chief of the department, and Vice Chairman of Neurology. After Dr. Arnold Friedman's retirement, Dr. Solomon became Director of the Montefiore Headache Unit in 1980 until his retirement in 2009.

Dr. Solomon had faculty appointments at Temple University and Columbia University College of Physicians and Surgeons. Until his retirement, he had been Professor of Neurology at the Albert Einstein College of Medicine since 1983. Dr. Solomon has written more than 200 scientific papers, book chapters, and reviews. He is the author of *The Headache Book* for the lay population. His particular interests are the clinical aspects of headache including diagnosis, classification, and definition of unusual headache syndromes, as well as clinical trials. Dr. Solomon initiated and was abstracts editor of the journal *Headache*.

Dr. Solomon has held many positions in the American Headache Society, including president, and is a past chairman of the American Council for Headache Education. He is a fellow of the American Academy of Neurology and fellow and regent member of the American Headache Society. He is a member of the American Neurological Association, the American Pain Society, the Association for Research in Nervous and Mental Diseases, the International Association for the Study of Pain, the International Headache Society and the World Federation of Neurology. Dr. Solomon has received awards from the National Headache Foundation, the American Council for Headache Education, the American Headache Society, and the Staff and Alumni Association of Montefiore, and was the physician honoree of “Montefiore 2000.” Dr. Solomon has been a frequent invited lecturer in the United States and other countries.



2023 Recipient
Elizabeth K. Seng, PhD, FAHS
Yeshiva University,
Albert Einstein College of
Medicine

All Migraine
Management is
Behavior

PAST RECIPIENTS

- | | |
|------|---|
| 2019 | Elizabeth W. Loder, MD, MPH, FAHS
Time's Up: Headache Medicine in the #MeToo Era |
| 2018 | Deborah I. Friedman, MD, MPH, FAHS
Under Pressure |
| 2017 | Ann I. Scher, PhD, FAHS
Medication Overuse Headache: A Critical Review of the Evidence |
| 2016 | Dawn C. Buse, PhD, FAHS
Migraine and Stress |
| 2015 | Andrew D. Hershey, MD, PhD, FAHS
Changes in Migraine in the Developing Child: What Does it Teach us? |
| 2014 | Richard B. Lipton, MD, FAHS
Riding the Migraine Roller Coaster: Lessons from Longitudinal Studies |
| 2012 | Fabrizio Benedetti, MD
Placebo Responses: How Therapeutic Rituals Change the Patient's Brain |
| 2011 | Michael A. Moskowitz, MD, FAHS
Migraine, Man, Mice, Mutations, and Mechanisms |
| 2010 | Shuu-Jiun Wang, MD
Heavily T2-weighted MR Myelography in Spontaneous Intracranial Hypotension |
| 2008 | Gretchen E. Tietjen, MD
The Role of the Vascular Endothelium in Migraine |
| 2007 | Peter J. Goadsby, MD, PhD, FAHS
Trigeminal Autonomic Cephalalgias – Things I've Learnt |
| 2006 | Andrew C. Charles, MD, FAHS
Imaging Cellular Mechanisms of Migraine |
| 2005 | Hans-Christoph Diener, MD, PhD
From Single Patients to the Science of Headache |
| 2004 | Seymour Solomon, MD
Migraine 2000 BC to 2000 AD |
| 2022 | Larry Charleston, IV, MD, MSc, FAHS
Black Patients Matter in Headache Medicine: Exploration of Race, Racism, Race-based Headache Disparities and Professional Ethics |
| 2021 | Scott W. Powers, PhD, FAHS
What Is... 'Getting Better?' |
| 2020 | R. Allan Purdy, MD, FAHS
Observations 2020 – 'Teaching Headache' |

HAROLD G. WOLFF LECTURE AWARD



Dr. Wolff was one of few who influenced the scientific thought of a generation and whose influence continues to this day. The Harold G. Wolff, MD Lecture Award for The American Headache Society was established by Donald J. Dalessio, MD, one of Dr. Wolff's former students and colleagues. The award is given annually to that person who contributes the best original paper on headache, head pain, or on the nature of pain itself.

Dr. Harold G. Wolff was born in New York City in 1898. He received his medical education at Harvard and trained in psychiatry at Johns Hopkins. In 1932 he was recruited as the first chairman of the new division of Neurology at New York Hospital-Cornell Medical Center.

His emphasis at the time was on protective and defensive reaction patterns of individual behavior that lead to disease, and the meaning of precipitative events and environmental setting in illness. His particular interest was in the personality features and reactions of migraineurs.

Dr. Wolff's appointment to that pioneering post was based on his broad education which included training in neurology and cerebral circulation at Harvard; experience in Austria and America on the humoral transmission of nervous activity; study in psychiatry at Johns Hopkins; work with Pavlov in Russia in his Conditioned Reflex Laboratory; and study with Desmond Curran on delirium. He went on to become one of the most experienced clinical and experimental neurologists in the United States serving as editor of The Archives of Neurology, and President of the American Neurological Association. Dr. Wolff continued as Chairman of the Department of Neurology at Cornell until his death in 1962.

Dr. Wolff's enormous energy and curiosity led him to question many procedures and techniques then in use and to institute many revolutionary ideas. Early in his career, he began to clarify the neurogenic control of vasoconstriction and vasodilatation in headache. He began to build his hypotheses of stress and disease, particularly with respect to migraineurs. His meticulous experimentation contributed to the understanding of migraine. He showed the biphasic vascular reactions of vasoconstriction and vasodilatation and demonstrated that both intracranial and extracranial structures are involved in the reaction pattern. Most importantly, he discovered neurokinin, the neurohumor elaborated in the tissues resulting from excitation in the central nervous system. His last hypothesis stating that disordered vaso-activity in this syndrome reflected an adaptive response to a threat to the integrity of the brain itself would have been put to further test had he lived longer. He was ahead of his time in linking the relationship between man's goals, his methods of achieving them, and the conflicts thus engendered as a direct link to many aspects of disease, tissue damage and death.

It is a tribute to Dr. Wolff that many years after his death articles still appear about him and his research. In the late 1950's, he established an institute to study human ecology and anticipated behavioral methods for treatment of headache which have only recently been accepted widely. Harold G. Wolff viewed the study of man in his setting as especially crucial in determining the fine line between health and disease. Much of his work was concerned with the idea that during or following circumstances perceived as chronically threatening or unacceptable, primitive patterns of behavior and physiologic activity are evoked which may produce, when experienced over time, patterns of disease.



2023 Recipient

**Christina L. Szperka, MD, MSCE, FAHS
Children's Hospital of Philadelphia**

**Use of EHR-Integrate
Patient Headache
Questionnaire Improves
Diagnostic Specificity**

PAST RECIPIENTS

- 2022 Aynnah A. Pradhan, PhD
Migraine and Peripheral Pain Models Show Differential Alterations in Neuronal Complexity
- 2021 Ryotaro Ishii, MD, PhD (Japan)
Chronic Versus Episodic Migraine: The 15-Day Threshold Does Not Adequately Reflect Substantial Differences in Disability Across the Full Spectrum Of Headache Frequency
- 2020 Antonio Russo, MD, PhD (USA)
Cognitive Networks Disarrangement in Patients with Migraine Predicts Cutaneous Allodynia
- 2019 Amy Gelfand, MD, FAHS (USA)
The Association Between Parental Migraine and Infant Colic: A Cross-sectional, Web-Based, US Survey Study
- 2018 Richard B. Lipton, MD, FAHS (USA)
Identifying Natural Subgroups of Migraine Based on Profiles of Comorbidities and Concomitant Conditions: Results of the Chronic Migraine Epidemiology and Outcomes Study
- 2015 Todd J. Schwedt, MD, MSCI, FAHS (USA)
Accurate Classification of Chronic Migraine via Brain Magnetic Resonance Imaging
- 2014 Christoph Schankin, MD (Germany)
The Relation Between Migraine, Typical Migraine Aura and 'Visual Snow'
- 2013 Farooq Husain Maniyar, MB BS, MD, MCRP (USA)
Investigating the premonitory phase of migraine with H215O PET
- 2012 Robert E. Shapiro, MD, PhD (USA)
Casein Kinase I Mutations in Familial Migraine with Aura
- 2011 Michael L. Oshinsky, PhD (USA)
Spontaneous Trigeminal Allodynia in Rats: A Model of Primary Headache

HAROLD G. WOLFF LECTURE AWARD - PAST RECIPIENTS CONT.

2010	Gretchen E. Tietjen, MD (USA) Adverse Childhood Experience: Migraine and Vascular Biomarkers	2000	Richard B. Lipton, MD (USA) W.F. Stewart, PhD, MPH; C. Hall, PhD; S. O'Quinn, PharmD; T.Kuhn, PharmD; R. Cady, MD Sumatriptan for the Range of Headaches in Migraine Sufferers: Results of the Spectrum Study
2009	Simon Akerman, PhD (England) Oxygen Inhibits Neuronal Activation in the Trigemino-cervical Complex after Stimulation of Trigeminal Autonomic Reflex, but Not Via Direct Dural Activation of Trigeminal Afferents	1999	S.K. Aurora, MD (USA) Y. Cao, PhD; S.M. Bowyer, PhD; K.M.A. Welch, MD The Occipital Cortex is Hyperexcitable in Migraine: Evidence from TMS, fMRI, and MEG Studies
2008	Marcelo E. Bigal, MD, PhD (USA) Acute Migraine Medications and Evolution from Episodic to Chronic Migraine: A Longitudinal Population-Based Study	1998	Ann I. Scher, MS (USA) Walter F. Stewart, PhD; Joshua Liberman, MHS; Richard B. Lipton, MD Prevalence of Frequent Headache in a Population Sample
2007	Sheena K. Aurora, MD (USA) Brainstem Dysfunction in Chronic Migraine as Evidenced by Neurophysiological and Positron Emission Tomography (PET) Studies	1997	R.A. Oophoff, MD (Netherlands) G.M. Terwindt, MD; M.H. Ferrari, MD Involvement of a CA2+Channel Gene in Familial Hemiplegic Migraine and Migraine With and Without Aura
2006	Nancy E.J. Berman, PhD (USA) Serotonin in Trigeminal Ganglia of Female Rodents: Relevance to Menstrual Migraine	1996	F. Michael Cutrer, MD (USA) Actions of Valproate and Neurosteroids in a Model of Trigeminal Pain
2005	Rami Burstein, PhD (USA) Terminating Migraine with Allodynia and Ongoing Central Sensitization	1994	Peter J. Goadsby, MD, PhD (England) Central and Peripheral Trigemino-vascular Activation in the Cat is Blocked by the Serotonin (5HT) – 1D Receptor Against 311C90 NAOMI BRESLAU, PHD Migraine and Major Depression: A Longitudinal Study
2004	Peter J. Goadsby, MD, PhD (England) Posterior Hypothalamic and Brainstem Activation in Hemicrania Continua.	1993	S.J. Peroutka, MD, PhD (USA) S. Havlik, D. Oksenberg Anti-migraine Drug Interactions with Cloned Human 5-hydroxytryptamine Receptor Subtypes
2003	Rami Burstein, PhD (USA) Differential Effects of Triptans on Physiological Properties of Peripheral and Central Trigemino-vascular Neurons Reveal a Mechanism of Action Critical for Terminating Migraine	1992	Jean Schoenen, MD, PhD (Belgium) Exteroceptive Suppression of Temporalis Muscle Activity in Patients with Chronic Headache and in Normal Volunteers: Methodology, Clinical and Pathophysiological Relevance
2002	Anan Srikiatkachorn, MD (Thailand) 5-HT _{2A} Receptor Activation and Nitric Oxide Synthesis: A Possible Mechanism Determining Migraine Attacks		
2001	K.M.A. Welch, MD (USA) V. Nagesh, PhD; S.K. Aurora, MD; N. Gelman, PhD Periaqueductal Gray Matter Dysfunction in Migraine: Cause or the Burden of Illness?		

HAROLD G. WOLFF LECTURE AWARD - PAST RECIPIENTS CONT.

1991	S.J. Peroutka, MD, PhD (USA) S. Havlik, D. Oksenberg Anti-migraine Drug Interactions with Cloned Human 5-hydroxytryptamine Receptor	1980	Bruno Anselmi, MD (Italy) Elisabetta Baldi, MD; Franco Casacci, MD; Silvia Salmon, MD Endogenous Opioids in Cerebrospinal Fluid and Blood in Idiopathic Headache Sufferers
1990	G.L. Barkley (USA) N. Tepley; S. Nagel-Leiby; J.E. Moran; R.T. Simkins; K.M.A. Welch Magnetoencephalographic Studies of Migraine	1979	John Stirling Meyer, MD (USA) Fumihiko Sakai, MD Abnormal Cerebrovascular Reactivity in Patients with Migraine and Cluster Headache
1989	N.M. Ramadan (USA) H. Halvorson; A. Vande-Linde; S.R. Levine; J.A. Helpert; K.M.A. Welch Low Brain Magnesium in Migraine	1978	Fumihiko Sakai, MD (USA) John Stirling Meyer, MD Regional Cerebral Hemodynamics During Migraine and Cluster Headache Measured by the ¹³³ xe Inhalation Method
1988	Rajiv Joseph, MD (USA) K.M.A. Welch, MD; S. Grunfeld, MS; S.B. Oster; G. D'Andrea, MD Cystolic Ionized Calcium Homeostasis in Platelets: An Abnormal Sensitivity to PAF-Activation in Migraine	1977	Sunanda V. Deshmukh, MD, FFARCS (USA) John Stirling Meyer, MD Cyclic Changes in Platelet Dynamics and the Pathogenesis and Prophylaxis of Migraine
1986	Rajiv Joseph, MD (USA) K.M.A. Welch, MD; Giovanni D'Andrea, MD; Steven R. Levine, MD ATP Hyposecretion from Platelet Dense Bodies - Evidence for the Purinergic Hypothesis and a Marker of Migraine	1976	K.M.A. Welch, MD (USA) Eva Chasi, BSc; Janet Nell, PhD; K. Bartosh, BSc; A.N.C. Chee, MS; Ninan T. Mathew, MD A Biochemical Comparison of Migraine and Stroke
1984	Jacqueline De Belleruche, PhD, MSCBA (England) F. Clifford Rose, MD, FRCP; Indrajit Das, PhD, BS; Graham Cook, MD, BS Metabolic Abnormalities in Cluster Headache	1975	Ottar Sjaastad, MD (Norway) Histamine and its Relations to Vascular Headache, with Particular Reference to Cluster Headache
1983	J.W. Lance (Australia) G.A. Lambert; R.J. Goadsby; J.W. Duckworth Brainstem Influences on the Cephalic Circulation: Experimental Data from Cat and Monkey of Relevance to the Mechanism of Migraine	1974	Zdenka Kalendovsky, MD (USA) James H. Austin, MD Complicated Migraine: Its Association with Increased Platelet Aggregability and Abnormal Plasma Coagulation Factors
1982	JES Olesen, MD (Denmark) Martin Lauritzen, MD Spreading Cerebral Oligemia in Classical and Normal Cerebral Blood Flow in Common Migraine	1973	Pramod R. Saxena, MD (Netherlands) Geertrude M. de Vlaam-Schluter Selective Vasoconstriction in the Carotid Bed by Ergotamine: Possible Relevance to its Anti-Migraine Action
1981	R.C. Peatfield, MD (England) M.J. Gawel, MD; F. Clifford Rose, MD The Effect of Infused Prostacyclin in Migraine and Cluster Headache	1972	Brian W. Somerville, MD, MRACP (Australia) The Influence of Progesterone and Estradiol Upon Migraine

HAROLD G. WOLFF LECTURE AWARD - PAST RECIPIENTS CONT.

1971	Gerald S. Barolin, MD (Austria) Bioelectric Findings in Migraine	1967	James W. Lance, MD, FRACP (Australia) Michael Anthony, MD, MRACP; Herta Hinterberger, BSc, PhD The Control at Cranial Arteries by Humoral Mechanisms and its Relation to the Migraine Syndrome
1970	Yoshio Hosobuchi, MD (USA) Descending Trigeminal Tractotomy Neurophysiological Approach	1966	C. Norman Shealy, MD (USA) The Physiological Substrate of Pain Federigo Sicuteri, MD Vasoneuractive Substances in Migraine
1969	Ernst Thonnard-Neumann, MD (USA) Some Interrelationships of Vasoactive Substances and Basophile Leukocytes in Migraine Headaches		
1968	Edda Hanington, MB, BS (Scotland) A. Murray Harper, MD The Role of Tyramine in the Etiology of Migraine and Related Studies on the Cerebral Extracerebral Circulations		

EARLY CAREER LECTURE AWARD

This award is for the best paper on headache, head or face pain, or the nature of pain itself written by an “early career” author. The recipient must be within 10 years of completing their graduate medical education (end of residency or fellowship, whichever ended last) or terminal research degree (whichever date is later).

PAST RECIPIENTS

2022 Chia-Chun Chiang, MD
Mayo Clinic

2021 Rebecca E. Wells, MD, MPH, FAHS
Atrium Health Wake Forest Baptist

2020 Nazia Karsan, MRCP, PhD
King's College London

2019 Elizabeth K. Seng, PhD, FAHS
Yeshiva University/Albert Einstein College of Medicine



2023 Recipient

Katherine Podraza, MD, PhD
Hartford Healthcare
Headache Center

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February 2023. PP-NNT-USA-0308.

ABOVE AND BEYOND AWARD

The Above and Beyond Awards acknowledge AHS members or other individual(s) who have provided significant service during the past 1-2 years.

2023 RECIPIENTS



Cynthia E. Armand, MD
Montefiore Headache Center,
Albert Einstein College of Medicine



Clarimar Borrero-Mejias, MD
Johns Hopkins
All Children's Hospital



Rebecca E. Wells, MD, MPH, FAHS
Atrium Health Wake Forest Baptist

PAST RECIPIENTS

- Stephanie J. Nahas, MD, FAHS
- Duren Michael Ready, MD, FAHS
- Adam Sprouse Blum, MD
- Jessica Ailani, MD, FAHS
- Sheena Aurora, MD, FAHS
- Dawn C. Buse, PhD, FAHS
- Deborah I. Friedman, MD, MPH, FAHS
- Rashmi B. Halker, MD, FAHS
- Christine L. Lay, MD, FAHS
- Robert Nicholson, PhD, FAHS
- Neil Parikh, MD, MBA
- Matthew S. Robbins, MD, FAHS
- Jason Roberts, PhD
- Noah Rosen, MD, FAHS
- Todd J. Schwedt, MD, MSCI, FAHS
- Robert A. Shapiro, MD, PhD, FAHS
- Amaal Starling, MD, FAHS
- Stewart Tepper, MD, FAHS
- Bert B. Vargas, MD, FAHS
- David B. Watson, MD, FAHS
- Paul Winner, DO, FAHS
- William Young, MD, FAHS

DISTINGUISHED SERVICE AWARD

The Distinguished Service Award is given to an individual(s) who has/have provided substantial, meritorious service to the field of Headache Medicine and whose contribution has been particularly valuable to the society or the field of headache.

PAST RECIPIENTS

- William B. Young, Jr, MD, FAHS
- Barry Baumel, MD
- Teri Robert
- David W. Dodick, MD, FAHS
- Robert E. Shapiro, MD, PhD, FAHS
- Cheryl A. Gallagher, CMP
- Thomas N. Ward, MD, FAHS
- Linda McGillicuddy
- Robert A. Shapiro, MD, PHD, FAHS
- Lawrence C. Newman, MD, FAHS



2023 Recipient

Brad C. Klein, MD, MBA, FAHS
Abington Neurological
Associates, LTD



BASIC SCIENCE PRIZE

Best Basic Science Manuscript Published in
Headache® in 2022

Gregory O. Dussor, PhD

University of Texas at Dallas
Dallas, TX

Prolactin signaling modulates stress-induced behavioral responses in a preclinical mouse model of migraine

Bianca N. Mason PhD, Rohini Kallianpur, Theodore J. Price PhD, Armen N. Akopian PhD, Gregory O. Dussor PhD



MEMBERS' CHOICE AWARD

Best Manuscript Published in *Headache*® in 2022

Each year, the *Headache*® Journal Editorial Board invites the members of the American Headache Society to vote for one standout piece published in the journal from the previous year. The nominated articles are selected by the journal's Editor-in-Chief, Amy Gelfand, MD, FAHS, and represent the most impactful work published over the previous 12 months.

The unique role of stigma in migraine-related disability and quality of life

Elizabeth K. Seng PhD, Robert E. Shapiro MD, PhD, Dawn C. Buse PhD, Matthew S. Robbins MD, Richard B. Lipton MD, Amanda Parker PhD

FRONTIERS IN HEADACHE RESEARCH SCHOLARSHIP AWARD RECIPIENTS

ORAL PRESENTERS

Sarah Louise Christensen, DVM, PhD

Beth Israel Deaconess Medical Center,
Harvard Medical School
Boston, MA
Migraine signaling events in the meninges

Danielle J. Kellier

University Of Pennsylvania
Philadelphia, PA
Racial and ethnic disparities in headache management in the pediatric emergency room

Ana B. Salinas-Abarca, PhD

University of Maryland Baltimore,
School of Dentistry
Baltimore, MD
Contribution of intra-ganglionic S1P-S1PR1 axis to peripheral and central sensitization in a migraine-like model.

Paula Sureda-Gibert, DO

University of Maryland Baltimore
Baltimore, MD
Investigating the Role of Astrocytic Adenosine A3 Receptors (A3AR) in a Preclinical Model of Migraine

POSTER PRESENTERS

Richard Baron, MD

Stanford Healthcare
Palo Alto, CA
The Efficacy of Rimegepant in the Treatment of Vestibular Migraine: A Single-Arm, Open-Label Study

Jack Botros, DDS, MS

Herman Ostrow School of Dentistry of USC
Los Angeles, CA
The Effectiveness of Sphenopalatine Ganglion Block for V2 Trigeminal Neuropathic pain: A Randomised Double-blinded Placebo-controlled trial

Michelle Bravo, MD

University of Miami
Miami, FL
Telemedicine Adoption in a Tertiary Academic Outpatient Center amongst Hispanic Patients with Headache Disorders; Sociodemographic and Clinical Factors

Skyler L. Kanegi, MD

The University of Texas Health Science Center at San Antonio
San Antonio, TX
Neurofeedback as adjunct treatment in pharmacologically-managed migraine

Kristyn M. Pocock, MD

Atrium Health Wake Forest Baptist
Winston-Salem, NC
Macromastia and Headache: Defining the Headache Prior to Reduction Mammoplasty

Seonkyeong Yang, MS

University of Florida
Gainesville, FL
Patient Characteristics and Trends in Medication Use Among Medicare Beneficiaries with Migraine

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American Headache Society
www.AmericanHeadacheSociety.org

The American Headache Society (AHS) is a professional society of healthcare providers dedicated to the study and treatment of headache and face pain. AHS brings together physicians and other health providers from various fields and specialties to share concepts and developments about headache and related conditions.

American Migraine Foundation
www.AmericanMigraineFoundation.org

We provide free support for millions of Americans living with migraine.

Our mission is to mobilize a community for patient support and advocacy, as well as drive and support impactful research that translates into advances for patients with migraine and other disabling diseases that cause severe head pain.

Since 2010, the American Migraine Foundation has served as the center of hope for the migraine community. Our free doctor-verified resources aid the millions of Americans who find themselves in a battle with the unrelenting qualities of migraine.

201

Amgen
www.amgen.com

Amgen is committed to unlocking the potential of biology for patients suffering from serious illnesses by discovering, developing, manufacturing and delivering innovative human therapeutics. This approach begins by using tools like advanced human genetics to unravel the complexities of disease and understand the fundamentals of human biology.

413

Association Of Migraine Disorders
www.migrainedisorders.org

The Association of Migraine Disorders (AMD) is devoted to expanding the understanding of migraine disease. Migraine is a full-body condition with a broad spectrum of symptoms, AMD is focused on bridging the gap between many medical specialties in the management of this disease. The centerpiece of this effort is the Migraine Clinical Kit, a collection of resources to aid HCPs in caring for patients with migraine. Among other resources, this kit includes a thorough online course on diagnosing and treating migraine and an exam room poster. Finally, AMD has developed the Migraine Science Collaborative, a news and resource hub covering migraine and headache research.

301

Baylor Scott & White Health
www.bswhealth.com

Baylor Scott & White Health, an organization formed from the 2013 merger between Baylor Health Care System and Scott & White Healthcare, is today the largest not-for-profit health care system in the state of Texas. The organization now includes 49 hospitals, more than 800 patient care sites, more than 6,000 active physicians, 35,000 employees and the Scott & White Health Plan.

419

Dartmouth-Health
www.dartmouth-health.org

Dartmouth Hitchcock Medical Center is the state's only academic medical center and Level I Adult and Level II Pediatric Trauma Center in NH. Our main campus is located in Lebanon, NH at the Academic Medical Center. We offer positions in southern NH and VT as well. Why are we so unique? We are a nationally recognized Academic Medical Center set right in the middle of the White Mountains of New Hampshire. We recognize that "quality of life" means different things to different people, but we are very confident you will love it here as we have beautiful, rural and suburban housing options, world-class primary, secondary, and graduate schools, hundreds of lakes, thousands of miles of hiking trails and some of the best skiing in the country. This all means you can be a happy nurse with more quality time with friends, family, pets or maybe just quiet hikes by yourself. Our idea of traffic in the "Upper Valley" of New Hampshire is a line on the ski mountain at the chair lift.

electroCore, Inc.
www.gammaCore.com

gammaCore™ non-invasive vagus nerve stimulator (nVNS) is a hand-held, user-administered therapy for patients suffering from migraine or cluster headache that works by non-invasively stimulating the vagus nerve. Designed as an easy-to-use device with no downtime, it can be used alone or in combination with pharmacologic treatments without the risk of drug interactions. Visit gammaCore.com to learn more.

519

Eli Lilly and Company
www.lilly.com

Lilly unites caring with discovery to create medicines that make life better for people around the world. We've been pioneering life-changing discoveries for nearly 150 years, and today our medicines help more than 47 million people across the globe. Harnessing the power of biotechnology, chemistry and genetic medicine, our scientists are urgently advancing new discoveries to solve some of the world's most significant health challenges, redefining diabetes care, treating obesity and curtailing its most devastating long-term effects, advancing the fight against Alzheimer's disease, providing solutions to some of the most debilitating immune system disorders, and transforming the most difficult-to-treat cancers into manageable diseases. With each step toward a healthier world, we're motivated by one thing: making life better for millions more people. That includes delivering innovative clinical trials that reflect the diversity of our world and working to ensure our medicines are accessible and affordable. To learn more, visit lilly.com and lilly.com/newsroom or follow us on Facebook, Instagram, and LinkedIn.

401

International Headache Society (IHS)
www.ihs-headache.org

IHS is an international professional organization working with others for the benefit of people affected by headache disorders. As a charity, the purpose of IHS is to advance headache science, education, and management, and promote headache awareness worldwide.

421

Impel Pharmaceuticals
www.impelpharma.com

Impel Pharmaceuticals is focused on developing and providing transformative therapies for people suffering from diseases with high unmet medical needs through the pioneering of an optimized approach to drug delivery. We offer and develop treatments that pair the Company's proprietary Precision Olfactory Delivery (POD®) technology with well-established therapeutics. Trudhesa® (DHE) nasal spray (0.725 mg per spray) is now approved for the acute treatment of migraine with or without aura in adults. <https://www.trudhesahcp.com/>

119

EXHIBITOR DIRECTORY

Lundbeck

www.lundbeck.com/us

H. Lundbeck A/S (LUN.CO, LUN DC, HLUYY) is a global pharmaceutical company specializing in brain diseases. For more than 70 years, we have been at the forefront of neuroscience research. We are tirelessly dedicated to restoring brain health, so every person can be their best.

We are committed to fighting stigma and discrimination against people living with brain diseases and advocating for broader social acceptance of people with brain health conditions. Our research programs tackle some of the most complex challenges in neuroscience, and our pipeline is focused on bringing forward transformative treatments for brain diseases. We have research facilities in Denmark and the United States, and our production facilities are in Denmark, France, and Italy.

For additional information, we encourage you to visit our corporate site www.lundbeck.com and connect with us on Twitter at @Lundbeck and via LinkedIn.

Marion Bloch Neuroscience Institute

www.saintlukeskc.org

Saint Luke's Marion Bloch Neuroscience Institute, in Kansas City, Missouri, employs experts who treat the most complex cases. Our specialists in neurology, neurointerventional radiology, and neurosurgery collaborate for the highest quality care.

Pfizer

www.pfizer.com

At Pfizer, we apply science and our global resources to bring therapies to people that extend and significantly improve their lives. We strive to set the standard for quality, safety and value in the discovery, development and manufacture of health care products, including innovative medicines and vaccines. Every day, Pfizer colleagues work across developed and emerging markets to advance wellness, prevention, treatments and cures that challenge the most feared diseases of our time. Consistent with our responsibility as one of the world's premier innovative biopharmaceutical companies, we collaborate with health care providers, governments and local communities to support and expand access to reliable, affordable health care around the world. For more than 170 years, we have worked to make a difference for all who rely on us. We routinely post information that may be important to investors on our website at www.Pfizer.com. In addition, to learn more, please visit us on www.Pfizer.com and follow us on Twitter at @Pfizer and @Pfizer News, LinkedIn, YouTube and like us on Facebook at [Facebook.com/Pfizer](https://www.facebook.com/Pfizer).

101 Scilex Holding Company

www.scilexholding.com

SCILEX® Holding Company is an innovative revenue-generating company focused on acquiring, developing, and commercializing non-opioid pain management products for the treatment of acute and chronic pain. In February, Scilex in-licensed the exclusive rights to commercialize in North America, ELYXYB™ (celecoxib oral solution), the only FDA-approved liquid oral solution for the acute treatment of migraine, with or without aura, in adults.

Teva Pharmaceuticals

www.tevausea.com

Teva has been developing and producing medicines to improve people's lives for more than a century. We are a global leader in generic and specialty medicines with a portfolio of over 35,000 products.

Theranica

www.nervio.com

Theranica, creator of Nerivio, is on a mission to provide wearable therapeutic devices to improve the quality of life of people with pain disorders. Nerivio is a discreet migraine therapy that is safe and effective for preventing and treating migraine in patients ages 12 years and up. Wearable, non-invasive and drug-free, Nerivio is complete migraine care that integrates into daily life. Clinical trials demonstrate that Nerivio provides consistent relief of pain and associated migraine symptoms.

Upsher-Smith Laboratories, LLC

www.upsher-smith.com

Upsher-Smith Laboratories, LLC is a trusted U.S. pharmaceutical company striving to improve the health and lives of patients through an unwavering commitment to high-quality products and sustainable growth. For more information, visit www.upsher-smith.com.

121

UT Health Austin Pediatric Neurosciences at Dell Children's

<https://partnersincare.health/ut-health-austin-pediatric-neurosciences-at-dell-childrens>

The Pediatric Headache Center is a specialty program within UT Health Austin Pediatric Neurosciences at Dell Children's, a clinical partnership between Dell Children's Medical Center and UT Health Austin, and is the only multidisciplinary pediatric-specific headache program in Central Texas.

Our nationally recognized and highly specialized providers create a targeted, long-term treatment plan using medical and nonmedical therapies, giving patients and their families the best quality of life.

University of Texas at Dallas

www.paincenter.utdallas.edu

The research mission of the Center for Advanced Pain Studies (CAPS) at UT Dallas is to elucidate the fundamental mechanisms underlying chronic pain, migraines, and to discover novel therapeutics for the treatment of these diseases. The center, along with academic, public, and private support, catalyzes existing and ongoing research from around the world to make advancements in the basic science of pain and migraine to aid in therapeutic discovery. The center is also a launching pad for entrepreneurship and innovation. We recognize that private sector investment is key to getting new drugs to the marketplace. Since the founding of CAPS in 2019, four spin-off companies have been established that focus on our expertise: chronic pain and migraine.

420

Vector Psychometric Group LLC

www.vpgcentral.com

Vector Psychometric Group LLC's (VPG's) mission is to be scientific leaders in the assessment and modeling of health, behavioral, and academic outcomes. We focus on this mission through high quality health outcome/clinical outcome assessments (COA) consulting (both qualitative and quantitative), state-of-the-art psychometric software development and licensing, and flexible electronic COA (eCOA) data collection services.

VPG's expertise in qualitative and quantitative research as well as software development have come together to offer a new state-of-the-art eCOA platform. The flexCOA™ system is designed for bring-your-own-device (BYOD) studies of outcomes important to patients and sponsors. The system can support both quantitative and qualitative studies, can be customized to fit almost any study need, and allows for both static and adaptive administration of existing assessments (computerized adaptive tests or CATs). flexCOA™ offers intuitive user interfaces, both for respondents providing information on their personal journeys and experiences and for study personnel interacting with the study design and collected data. VPG is extremely proud of the flexCOA™ system. We invite AHS attendees to visit the VPG booth and experience this innovative electronic data collection system for themselves.

Wolters Kluwer

www.wolterskluwer.com/en/health

Wolters Kluwer provides trusted clinical technology and evidence-based solutions that engage clinicians, patients, researchers, and the next generation of healthcare providers. With a focus on clinical effectiveness, research and learning, safety and surveillance, and interoperability and data intelligence, our proven solutions drive effective decision-making and consistent outcomes across the continuum of care.

618

121

SAVE THE DATES!

2023 SCOTTSDALE HEADACHE SYMPOSIUM

November 16-19, 2023
JW Marriott Camelback Inn
Scottsdale, AZ

66TH ANNUAL SCIENTIFIC MEETING

June 13-16, 2024
Marriott Marquis San Diego Marina
San Diego, CA

2024 SCOTTSDALE HEADACHE SYMPOSIUM

November 14-17, 2024
JW Marriott Camelback Inn
Scottsdale, AZ

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APP CODE: AHS-ASM23

