



**JOHNS HOPKINS**  
M E D I C I N E

Office of Continuing Medical Education  
720 Rutland Avenue, Turner 20  
Baltimore, Maryland 21205-2195

**Johns Hopkins  
Retinal Degenerations and  
Clinical Electrophysiology  
Course 2020**

**January 31 – February 1, 2020  
Baltimore, Maryland**

**Early  
Bird Rates  
Available**



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**The Wilmer Eye Institute**

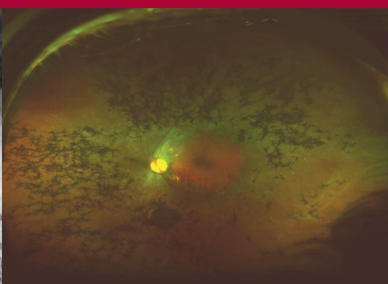


Johns Hopkins School of Medicine  
Presents

# **Johns Hopkins Retinal Degenerations and Clinical Electrophysiology Course 2020**

**January 31–February 1, 2020**

Mount Washington Conference Center  
Baltimore, Maryland



This activity has been approved for *AMA PRA Category 1 Credits™*.



**JOHNS HOPKINS**  
MEDICINE

## DESCRIPTION

This two-day course is designed to provide an update on the latest exciting and cutting-edge developments in the field of retinal degeneration, repair, and regeneration. The course covers recent advances in retinal stem cells and gene therapy, retinal implants, and pharmacotherapy. The program also includes a refresher course on visual electrophysiology for clinicians and researchers.

## WHO SHOULD ATTEND

This activity is intended for ophthalmologists, optometrists, researchers, trainees, and fellows.

## OBJECTIVES

After attending this activity, the participant will demonstrate the ability to:

- Review recommendations from the International Society of Clinical Electrophysiology of Vision (ISCEV) regarding visual neurophysiology testing.
- Analyze retinal stem cell and gene therapy clinical trials.
- Identify the latest developments in the field of retinal degeneration, repair and regeneration.

## ACCREDITATION STATEMENT

The Johns Hopkins University School of Medicine is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.



## CREDIT DESIGNATION STATEMENT

The Johns Hopkins University School of Medicine designates this live activity for a maximum of *16.75 AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

## OTHER CREDIT

COPE approval is pending.

## POLICY ON PRESENTER AND PROVIDER DISCLOSURE

It is the policy of the Johns Hopkins School of Medicine that the presenter and provider globally disclose conflicts of interest. The Johns Hopkins School of Medicine OCME has established policies that will identify and resolve conflicts of interest prior to this educational activity. Detailed disclosure will be made prior to presentation of the education.

# General Information

## REGISTRATION

January 31, 2020 • 7:00 am – 8:00 am, 12:30 pm – 1:30 pm  
February 1, 2020 • 7:00 am – 8:00 am

## LOCATION

Mount Washington Conference Center  
5801 Smith Avenue, Suite 1100  
Baltimore, Maryland 21209

Toll Free: (800) 488-8734  
Phone: (410) 735-7964  
Fax: (410) 735-4907

City close and country quiet, the Mount Washington Conference Center and its historic Octagon is a distinctive destination for meetings and events. Nestled among the hills just beyond the city limits of Baltimore, it combines over a century of educational traditions with progressive design and technology, creating an ideal setting for communicating and sharing ideas.

Overnight accommodations are available and must be reserved by **January 1, 2020**. Please call (410) 735-7964 and mention the **Wilmer Degeneration/Regeneration Conference** to receive the standard guest room rate of \$109, plus taxes. Check-in is 3:00 PM. Check-out is 11:00 AM.

Directions and campus parking information are available on our website under the Contact Us tab at [HopkinsCME.cloud-cme.com](http://HopkinsCME.cloud-cme.com). On-site complimentary parking is available.

*Johns Hopkins is smoke-free*

## FEES

### Register Online:

[hopkinscme.cloud-cme.com/default.aspx?P=5&EID=23954](http://hopkinscme.cloud-cme.com/default.aspx?P=5&EID=23954)

**Methods of Payment:** We require full payment prior to the start of the activity. On-site payments by credit card only. The registration fee includes instructional materials, continental breakfast, refreshment breaks and lunches.

<b>Registration Fees:</b>	<b>Early Bird Rates Until 12/31/19</b>	<b>Regular Rates After 12/31/19</b>
<b>Clinical Electrophysiology Course</b> (Jan 31, Half Day – Part I)	<b>\$200</b>	<b>\$250</b>
<b>Retinal Degeneration Course</b> (Jan 31, Half Day – Part II and Feb 1, Full Day)	<b>\$400</b>	<b>\$500</b>
<b>Day 1 / Day 2 Bundle</b>	<b>\$585</b>	<b>\$685</b>

## LATE FEE AND REFUND POLICY

A \$50 late fee applies to registrations received after 5:00 p.m. ET on **January 25, 2020**. A handling fee of \$50 will be deducted for cancellation. An additional fee may apply for cancellation of other events, including workshops and social activities. Refund requests must be received by fax or mail by **January 25, 2020**. No refunds will be made thereafter. Transfer of registration to another Johns Hopkins activity in lieu of cancellation is not possible.

## SYLLABUS

The syllabus will be accessible online and via your mobile device in the CloudCME App prior to the activity. .

## HOW TO OBTAIN CREDIT

Post activity, an online evaluation will be available to attendees to evaluate the activity and individual presentations and to identify future educational needs. Upon completion of the evaluation, the learner must attest to the number of hours in attendance. Credits earned will be added to the learner's transcript and immediately available for print. **The last day to access the evaluation and attest to your credits is March 17, 2020.**

An outcome survey will be sent to all physician attendees within two months post activity to assist us in determining what impact this activity had on the learner's practice.

## AMERICANS WITH DISABILITIES ACT

The Johns Hopkins School of Medicine fully complies with the legal requirements of the ADA and the rules and regulations thereof. *Please notify us if you have any special needs.*

## TO REGISTER OR FOR FURTHER INFORMATION

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Register by Phone:

410-502-9636

Register by Fax:

866-510-7088

Confirmation/Certificates/Transcripts:

410-502-9636

General Information:

410-955-2959

E-mail the Office of CME:

[cmenet@jhmi.edu](mailto:cmenet@jhmi.edu)

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**CloudCME** 

For website and CloudCME mobile app technical difficulties, email: [cmetechnsupport@jhmi.edu](mailto:cmetechnsupport@jhmi.edu)

For general information, please visit the activity webpage at [hopkinscme.cloud-cme.com/aph.aspx?P=5&EID=23954](http://hopkinscme.cloud-cme.com/aph.aspx?P=5&EID=23954)

# Program

DAY I • JANUARY 31, 2020

## Clinical Electrophysiology Course (Half Day – Part I)

- 7:00 – 8:00 Registration, Breakfast and Exhibits
- 8:00 – 8:05 **Welcome, Introduction and Conference Goals**  
Fernando Arevalo, MD, PhD; Mandeep Singh, MD, PhD
- 8:05 – 8:30 **Origins of the Electroretinogram**  
Laura Frishman, PhD, FAAO, FARVO
- 8:30 – 8:55 **Full-Field Electroretinography**  
Janet Sunness, MD
- 8:55 – 9:20 **The Electronegative Electroretinogram**  
Stephen Tsang, MD PhD
- 9:20 – 9:55 **Multifocal Electroretinogram and Visual Evoked Potential**  
Mary Johnson, PhD
- 9:55 – 10:10 Refreshment Break and Exhibits
- 10:10 – 10:35 **Perimetry and Microperimetry**  
Robert Chun, OD
- 10:35 – 11:00 **Visual Electrophysiology in Children**  
Jefferson Doyle, MD, PhD, MHS, MA
- 11:00 – 11:25 **SCEV Standards for Visual Electrophysiology**  
Laura Frishman, PhD, FAAO, FARVO
- 11:25 – 12:35 **Clinical Cases**  
*Moderator:* Mandeep Singh, MD, PhD  
All Faculty
- 12:35 – 1:35 Lunch and Exhibits

## Retinal Degeneration Course (Half Day – Part II)

- 1:35 – 2:05 **Genetic Testing**  
Carolyn Applegate, MGC
- 2:05 – 2:35 **Retinitis Pigmentosa**  
Gislin Dagnelie, PhD
- 2:35 – 3:05 **Gyrate Atrophy**  
David Valle, MD
- 3:05 – 3:35 **Genetic and Cellular Basis of Color Vision**  
Jeremy Nathans, MD PhD
- 3:35 – 3:55 Refreshment Break
- 3:55 – 4:25 **Cone Dysfunction and Dystrophies**  
Matthew Simonovic, MB, BChir, PhD, FRANZCO
- 4:25 – 4:55 **Stargardt Disease:  
Lessons from the ProgStar Study**  
Xiangrong Kong, PhD
- 4:55 – 5:25 **Best Disease**  
Stephen Tsang, MD, PhD
- 5:25 – 5:55 **Autoimmune Retinopathy**  
Hatice Nida Sen, MD, MHS
- 5:55 Adjourn

## ACKNOWLEDGEMENT

Applications for commercial support from health care related industries are pending. A complete list of contributors will be provided in the syllabus. Please note that commercial support received is solely for the educational component of the activity and will not be used to provide food and beverage.

**Please note:** The Physician Payments Sunshine Act was enacted by Congress to increase public awareness of financial relationships between drug and medical device manufacturers and physicians. In compliance with the requirements of this Act, the commercial supporter/s of this activity may require the Johns Hopkins School of Medicine to report certain professional information (such as name, address, National Provider Identifier (NPI), and State License number) of physician attendees who receive complimentary food and beverage in conjunction with a CME activity. The commercial supporter is required to submit the collected data to the Centers for Medicare and Medicaid Services which will then publish the data on its website.

**Retinal Degenerations Course (Full Day)**

7:00 – 8:00	Registration, Breakfast and Exhibits
8:00 – 8:05	<b>Welcome, Introduction and Conference Goals</b> James Handa, MD
8:05 – 8:35	<b>Vitamin A Therapy</b> Robert Massof, PhD
8:35 – 9:05	<b>Retinal Prosthesis: Current Status</b> Fernando Arevalo, MD, PhD
9:05 – 9:35	<b>Antioxidant Treatment for Retinitis Pigmentosa</b> Peter Campochiaro, MD
9:35 – 10:00	Refreshment Break and Exhibits
10:00 – 10:30	<b>Gene Therapy: Concept &amp; Basic Science</b> Daniel Lipinski, PhD
10:30 – 11:00	<b>Clinical Development of Retinal Gene Therapy</b> Alun Barnard, BSc, PhD
11:00 – 11:30	<b>Leber Congenital Amaurosis Gene Therapy</b> Jason Comander, MD, PhD
11:30 – 12:30	<b>Keynote Lecture:</b> <b>“Ocular Albinism: Bench to Bedside”</b> Brian Brooks, MD, PhD
12:30 – 1:20	Lunch and Exhibits
1:20 – 1:50	<b>Choroidal and Vascular Regeneration</b> Gerard Lutty, PhD
1:50 – 2:20	<b>Retinal Organoids</b> Robert Johnston Jr., PhD
2:20 – 2:50	<b>Retinal Pigment Epithelium Transplantation: Concepts and Basic Science</b> Kapil Bharti, PhD
2:50 – 3:20	<b>Retinal Pigment Epithelium Transplantation: Clinical Trials</b> Marco Zarbin, MD, PhD, FACS
3:20 – 3:50	<b>Photoreceptor Transplantation</b> Mandeep Singh, MD, PhD
3:50 – 4:10	Refreshment Break
4:10 – 4:40	<b>Safety and Regulation of Retinal Stem Cell Therapy</b> Thomas Albin, MD
4:40 – 5:10	<b>Retinal Stem Cell Therapy Progress in South America</b> Rubens Belfort Jr., MD, PhD, MBA
5:10 – 5:40	<b>Antisense Oligonucleotide Therapy</b> Bart Leroy, MD, PhD
5:40 – 6:10	<b>Gene Editing: Concepts and Clinical Application</b> Donald Zack, MD, PhD
6:10 – 6:20	<b>Closing Remarks</b> Fernando Arevalo, MD, PhD; Mandeep Singh, MD, PhD
6:20	Adjourn

*You will receive an email notification to complete the evaluation form and to attest to the number of hours in attendance.*

*The registration desk will remain open during conference hours.*

*The Johns Hopkins School of Medicine takes responsibility for the content, quality and scientific integrity of this CME activity.*

*The schedule is subject to change.*

# Speakers

## ACTIVITY DIRECTORS

### **Fernando Arevalo, MD PhD**

Edmund F. and Virginia B. Ball  
Professor of Ophthalmology  
Chairman, Department of Ophthalmology,  
Johns Hopkins Bayview Medical Center  
Wilmer Eye Institute, Johns Hopkins University

### **Mandeep Singh, MD, PhD**

Assistant Professor of Ophthalmology  
Johns Hopkins Center for Stem Cells and Ocular  
Regenerative Medicine (STORM)  
Wilmer Eye Institute, Johns Hopkins University

## JOHNS HOPKINS SPEAKERS

### **Carolyn Applegate, MGC**

Genetic Counselor  
Department of Genetics, Johns Hopkins  
University

### **Peter Campochiaro, MD**

George S. and Dolores Dor Eccles Professor of  
Ophthalmology and Neuroscience  
Wilmer Eye Institute, Johns Hopkins University

### **Robert Chun, OD**

Assistant Professor of Ophthalmology  
Wilmer Eye Institute, Johns Hopkins University

### **Gislin Dagnelie, PhD**

Associate Director, Lions Vision Research and  
Rehabilitation Center  
Associate Professor of Ophthalmology  
Wilmer Eye Institute, Johns Hopkins University

### **Jefferson Doyle, MD, PhD, MHS, MA**

Assistant Professor of Ophthalmology  
and Genetics  
Wilmer Eye Institute, Johns Hopkins University

### **James Handa, MD**

Chief, Retina Division  
Robert Bond Welch Professor of Ophthalmology  
Wilmer Eye Institute, Johns Hopkins University

### **Robert Johnston Jr., PhD**

Assistant Professor  
Department of Biology  
Johns Hopkins University

### **Xiangrong Kong, PhD**

Associate Professor  
Dana Center for Preventive Ophthalmology  
Wilmer Eye Institute, Johns Hopkins University

### **Gerard Lutty, PhD**

Director, Ocular Vasculogenesis and  
Angiogenesis Laboratory  
Professor of Ophthalmology  
Wilmer Eye Institute, Johns Hopkins University

### **Robert Massof, PhD**

Professor of Ophthalmology and Neuroscience  
Founder and Director, Lions Vision Research  
and Rehabilitation Center  
Wilmer Eye Institute, Johns Hopkins University

### **Jeremy Nathans, MD, PhD**

Professor of Molecular Biology and Genetics,  
Neuroscience and Ophthalmology  
Department of Molecular Biology and Genetics  
Johns Hopkins University

### **David Valle, MD**

Professor of Pediatrics and Ophthalmology  
Director, Department of Genetics  
Johns Hopkins University

### **Donald Zack, MD, PhD**

Guerrieri Professor of Genetic Engineering and  
Molecular Ophthalmology  
Director, Johns Hopkins Center for Stem Cells  
and Ocular Regenerative Medicine (STORM)  
Wilmer Eye Institute, Johns Hopkins University

## GUEST SPEAKERS

### **Thomas Albin, MD**

Professor of Clinical Ophthalmology  
Bascom Palmer Eye Institute  
Miami, Florida

### **Alun Barnard, BSc, PhD**

Senior Postdoctoral Research Scientist  
Nuffield Department of Clinical Neurosciences  
University of Oxford  
Oxfordshire, United Kingdom

### **Rubens Belfort Jr., MD, PhD, MBA**

Head Professor of Ophthalmology  
Federal University of Sao Paulo  
Sao Paulo, Brazil

### **Kapil Bharti, PhD**

Earl Stadtman Tenure-Track Investigator  
Ocular and Stem Cell Translational  
Research Unit  
National Center for Advancing Translational  
Sciences  
National Eye Institute, National Institutes  
of Health  
Bethesda, Maryland

### **Brian Brooks, MD, PhD**

Chief, Unit of Genetic and Developmental Eye  
Disease  
Clinical Director, National Eye Institute  
National Institutes of Health  
Bethesda, Maryland

### **Jason Comander, MD, PhD**

Associate Director, Inherited Retinal  
Disorders Service  
Massachusetts Eye and Ear Institute  
Harvard University  
Boston, Massachusetts

### **Laura Frishman, PhD, FAAO, FARVO**

John and Rebecca Moores Professor  
University of Houston College of Optometry  
Houston, Texas

### **Mary Johnson, PhD**

Associate Professor  
Ophthalmology and Visual Sciences  
Director, Visual Electrodiagnostics Laboratory  
University of Maryland School of Medicine  
Baltimore, Maryland

### **Bart Leroy, MD, PhD**

Director, Ophthalmic Genetics and Retinal  
Degenerations Clinic  
Division of Ophthalmology and Center for  
Cellular and Molecular Therapeutics  
The Children's Hospital of Philadelphia  
Philadelphia, Pennsylvania

### **Daniel Lipinski, PhD**

Assistant Professor of Ophthalmology and  
Visual Sciences, Cell Biology, Neurobiology  
and Anatomy  
Medical College of Wisconsin Eye Institute  
Milwaukee, Wisconsin

### **Hatice Nida Sen, MD, MHS**

Director, Uveitis and Ocular Immunology  
Fellowship Program  
National Eye Institute, National Institutes  
of Health  
Bethesda, Maryland

### **Matthew Simonovic, MB, BChir, PhD, FRANZCO**

Associate Professor of Ophthalmology  
University of Sydney  
Sydney, Australia

### **Janet Sunness, MD**

Medical Director  
Hoover Low Vision  
Towson, Maryland

### **Stephen Tsang, MD, PhD**

Professor of Ophthalmology  
Edward S. Harkness Eye Institute  
Columbia University  
New York, New York

### **Marco Zarbin, MD, PhD, FACS**

Professor and Chair, Institute of Ophthalmology  
and Visual Science  
Rutgers New Jersey Medical School  
Newark, New Jersey

# Registration Form Course Number 80050512 / 23954

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**To Register: Online:**

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**By fax: (866) 510-7088 By phone: (410) 502-9636**

Or mail this form to the Johns Hopkins University, Office of Continuing Medical Education, 720 Rutland Avenue, Turner Room 20, Baltimore, Maryland 21205-2195. Include e-check or credit card information below.

**FULL PAYMENT IS REQUIRED PRIOR TO THE START OF ACTIVITY.**

I am a Johns Hopkins speaker for this activity.

Please type or print clearly:

Last Name		First Name	M.I.	
Highest Degree	Primary Specialty		Hopkins Faculty/Staff Only – JHED ID	
For Physicians Only: NPI – 10 digits		State License #	State of License	
Organization		Mailing Address		
City	State	ZIP + 4 Code	Country	
Daytime Telephone		Fax Number		
E-Mail (required)				

Check here if you wish to receive e-mail notices about upcoming CME activities.

What do you hope to learn by attending this activity?

Please notify us if you have any special needs.

<b>Registration Fees:</b>	<b>Early Bird Rates Until 12/31/19</b>	<b>Regular Rates After 12/31/19</b>
<input type="checkbox"/> <b>Clinical Electrophysiology Course</b> (Jan 31, Half Day – Part I)	<b>\$200</b>	<b>\$250</b>
<input type="checkbox"/> <b>Retinal Degeneration Course</b> (Jan 31, Half Day – Part II and Feb 1, Full Day)	<b>\$400</b>	<b>\$500</b>
<input type="checkbox"/> <b>Day 1 / Day 2 Bundle</b>	<b>\$585</b>	<b>\$685</b>

The registration fee includes instructional materials and food and beverage. For registrations received after 5:00 p.m. ET on **January 25, 2020**, include a \$50 late fee. On-site registrations are payable only by credit card.

Total amount \$ \_\_\_\_\_

### Payment Type:

JHU Faculty/Staff Only: If you are using your Tuition Remission Benefit or an ION budget, please upload your fully completed and approved form in the payment section of the online activity link above.

TR Form: [benefits.jhu.edu/documents/trffacandstaff.pdf](http://benefits.jhu.edu/documents/trffacandstaff.pdf)

ION Form: [hopkinscme.edu/migration/ionRequest.pdf](http://hopkinscme.edu/migration/ionRequest.pdf)

### e-Check

Routing Number: \_\_\_\_\_ Account Number: \_\_\_\_\_

**Credit Card:**  VISA  MASTERCARD  DISCOVER  AMEX

Card # \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Exp. Date \_\_\_\_\_

Billing Zip Code: \_\_\_\_\_ Security Code: \_\_\_\_\_

\_\_\_\_\_  
Name on Card

\_\_\_\_\_  
Signature and Date