

Diabetic Retinopathy: What's New

Course organizers

Renu A Kowluru, PhD, FARVO, Wayne State University, Kresge Eye Institute and Arup Das, MD, PhD, University of New Mexico School of Medicine, NM VA Health Care System

Presentations

Presenters and presentations may change.

Time	Presentation title	Presenter
8-8:05am	Introduction and Welcome	Renu A Kowluru, PhD, FARVO, Wayne State University, Kresge Eye Institute
8:05-8:30am	Clinical overview of Diabetic Retinopathy	Arup Das, MD, PhD, University of New Mexico School of Medicine, NM VA Health Care System
8:30-8:55am	Systemic Factors associated with Diabetic Retinopathy	Emily Y. Chew, MD, National Eye Institute (NEI), National Institutes of Health (NIH)
8:55-9:20am	Update on the genetics of diabetic retinopathy	Lucia Sobrin, MPH, MD, Harvard Medical School, Mass Eye & Ear Infirmary
9:20-9:45am	Molecular Mechanisms of Diabetic Retinopathy	George Liang King, MD, FARVO, Joslin Diabetes Center
9:45-9:55am	Discussion	
9:55-10:10am	Break	
10:10-10:35am	Experimental models of diabetic retinopathy - Pros and cond	Sayon Roy, PhD, FARVO, Boston University School of Medicine
10:35-11am	Interactions between microglia and Müller cells in diabetic retinopathy	Steven F Abcouwer, PhD, University of Michigan, Kellog Eye Center
11-11:25am	Mitochondrial epigenetics	Renu A Kowluru, PhD, FARVO, Wayne State University, Kresge Eye Institute
11:25-11:50am	Down-regulation of PPARalpha expression in retinal inflammation in diabetic retinopathy	Jian-Xing (Jay) Ma, MD, PhD, University of Oklahoma Health Science Center
11:50am-12pm	Discussion	
12-1pm	Lunch	

Time	Presentation title	Presenter
1-1:25pm	Lipids and diabetic retinopathy	Julia V Busik, PhD, Michigan State University
1:25-1:50pm	The gut microbiome in diabetic retinopathy	Maria B Grant, MD, FARVO, University of Alabama - Birmingham
1:50-2:15pm	Imaging in Diabetic Retinopathy	Caroline R Bauman, FRCSC, MD, New England Eye Center, Tufts University
2:15-2:40pm	Anti-VEGF therapy in diabetic retinopathy – Current status	Lloyd P. Aiello, MD, PhD, Joslin Diabetes Center
2:40-2:50pm	Discussion	
2:50-3:05pm	Break	
3:05-3:30pm	Novel Pharmacotherapies in Development for Diabetic Retinopathy and Diabetic Macular Edema	Quan Dong Nguyen, MD, MSc, Stanford University
3:30-3:55pm	How important are vascular stem cells for diabetic retinopathy	Alan W Stitt, PhD, FARVO, Queens University Belfast
Continuing Medical Education Agenda Ends		
The presentations that follow are not included in the CME agenda for this course.		
3:55-4:20pm	Emerging Concepts in Retinal Imaging and Drug Delivery	Ashwath Jayagopal, PhD F. Hoffmann-La Roche Ltd
4:20-4:25pm	Discussion	
4:25-4:30pm	Wrap up	

Continuing Medical Education Program Information

Statement of need

Despite great advances in the field of diabetic retinopathy, the projected number of patients with DR in the coming decades indicates the need for continued progress. Clinicians and clinician-scientists are not aware of, nor up-to-date on current research of molecular pathways, development of novel therapeutic agents, and use of nanotechnology, coupled with constantly improving diagnostic and imaging technology to maximize the management of this chronic systemic illness. As such, they do not know how to incorporate this new, cutting-edge information in to their professional practice therefore, patients with DR continue to experience vision loss and blindness.

Target audience

The target audience includes clinicians and basic scientists in the vision and ophthalmology field, specialized in diabetic retinopathy.

Educational objectives

After participating in this CME activity, participants should be able to:

- Summarize the molecular mechanisms of diabetic retinopathy, including experimental models, inflammation, epigenetics, and roles of lipids and microbiome.
- Outline the epidemiology, systemic factors and genetics of diabetic retinopathy.
- Explain the role of diagnostic studies and novel biomarkers in diabetic retinopathy.
- Evaluate the major clinical trials on anti-VEGF therapies in diabetic retinopathy.
- Describe the novel therapies including pharmacotherapies and cell-based therapy.

Physician accreditation statement

The Association for Research in Vision and Ophthalmology (ARVO) is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Physician credit designation

ARVO designates this live activity for a maximum of 6.5 *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

International Attendees: The American Medical Association (AMA) has determined that physicians not licensed in the U.S. who participate in CME activities are eligible for *AMA PRA Category 1 Credit™*.

The following Annual Meeting session types are not certified as Continuing Medical Education (CME) and are not eligible for *AMA PRA Category 1 Credit™*: ALCON/Keynote series, Award lectures, Posters, SiGs, and Special sessions.

American Board of Ophthalmology (ABO) diplomates

Successful completion of this CME activity, which includes participation in the evaluation component, enables the learner to satisfy the Lifelong Learning, Self-Assessment, Improvement in Medical Practice and/or Patient Safety requirements for the American Board of Ophthalmology's Maintenance of Certification program. It is the CME activity provider's responsibility to submit learner completion information to ACCME for the purpose of granting MOC credit.

The Annual Meeting qualifies for Lifelong Learning (Part II). Credits will be reported to the ABO via the ACCME in September each year.

ARVO does not solicit commercial support so learner data will not be shared with any entity other than the ACCME for the purpose of granting MOC credit. Attendees will be able to provide the required information for MOC credit tracking on the Overall Meeting Evaluating Form. By providing the required information, attendees will be giving ARVO permission to share their learner data with the ACCME.

Royal College of Physicians and Surgeons of Canada

Fellows and Health Care Professionals participating in the Maintenance of Certification Program can record credits earned at the Annual Meeting toward Section 1: Group Learning Credits.

European Union of Medical Specialists (UEMS) CME/CPD requirements

European physicians can convert CME credit from the Annual Meeting to meet European Union of Medical Specialists (UEMS) CME/CPD requirements.

The American Medical Association has an agreement of mutual recognition of CME credits with the UEMS, the accreditation body for European countries. Physicians interested in *converting AMA PRA Category 1 Credit™* to UEMS-European Accreditation Council for Continuing Medical Education CME credits (ECMECs) should contact the UEMS at mutualrecognition@uems.eu.

Certificate of participation

ARVO is accredited to offer *AMA PRA Category 1 Credits™* to physicians. All other participants in the CME program may receive a Certificate of Participation that documents the number of CME hours attended* by following the same instructions listed above and paying the CME credits and certificates fee.

*Some accrediting agencies may award equivalent Continuing Education (CE) credit when presented with a Certificate of Participation from an activity that offered *AMA PRA Category 1 Credit™*. Check with your accrediting agency for information.

Instructions to receive credit and/or certificates

Attendees interested in claiming *AMA PRA Category 1 Credits™* for attendance at this Education Course must pay the CME credits and certificates fee. Payment is collected during the Annual Meeting registration process by adding “CME credits and certificates” as a session. **Attendees who do not register for CME before the conclusion of the course will not be able to claim and request credit.** Attendees registered as guests are not eligible to receive CME credit.

CME registrants will receive an email from “ARVO 2019 CME” with credit claiming instructions prior to the start of the Education Course. All requests for credit must be submitted no later than 11:59pm U.S. Eastern Time on Friday, Aug. 30, 2019.

Contact us

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Rockville, Md. 20852, USA
Email: education@arvo.org, p. +1.240.221.2900

Certificate of attendance

Certificates of attendance are available free to all attendees. These certificates state that one has attended the Education Course; but does not offer credit tracking. Contact education@arvo.org to request a certificate of attendance.

CME credits and certificate fee (paid in conjunction with Annual Meeting registration)	Advance	Onsite
MIT, Student Non-Member	\$59	\$59
Member, Non-Member, Exhibitor (paid full-meeting access badge)	\$79	\$99
Exhibitor (complimentary full-meeting access badge only)	\$89	\$89

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The Annual Meeting provides a forum for the open exchange and discussion of research results and scientific advancements in the field of ophthalmology; however, ARVO makes no representation or warranty as to the truth, originality, or accuracy of the information presented at the meeting or in materials distributed in connection with them. Nor are the views expressed by the individual speakers necessarily the views of ARVO. ARVO supports the ACCME’s policy on evidence-based content and encourages faculty to adhere to these standards when planning a presentation.

Participants have an implied responsibility to use the newly acquired information to enhance patient outcomes and their own professional development. The information presented in this meeting is not meant to serve as a guideline for patient management. Any procedures, medications, or other courses of diagnosis or treatment discussed in this activity should not be used by clinicians without evaluation of patient conditions and possible

contraindications on dangers in use, review of any applicable manufacturer’s product information, and comparison with recommendations of other authorities.

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The Annual Meeting may contain discussion of published and/or investigational uses of agents that are not indicated by the FDA. ARVO does not recommend the use of any agent outside of the labeled indications.

The opinions expressed in the educational activity are those of the faculty and do not necessarily represent the views of any organization associated with this activity. Please refer to the official prescribing information for each product for discussion of approved indications, contraindications and warnings.

Disclosure of conflicts of interest

ARVO requires instructors, planners, managers and other individuals and their spouse/ partner who are in a position to control the content of this activity to disclose any real or apparent conflict of interest they may have as related to the content of this activity. All identified conflicts of interest are thoroughly vetted by ARVO for fair balance, scientific objectivity of studies mentioned in the materials or used as the basis for content, and appropriateness of patient care recommendations.

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Disclosure information for presenters will be provided within initial disclosure slides, prior to the start of their respective presentations. Disclosure for all individuals involved in planning and managing this CME activity are listed here with their relevant disclosure information.

The *planners and managers* reported the following financial relationships or relationships to products or devices that they or their spouse/life partners have with commercial interests related to the content of this CME activity:

Professional Development and Education Committee (PDEC)

Chair: Shlomit Schaal, MD PhD; Nothing to disclose.

The following individuals on the AMPC reported financial relationships.

Name	Commercial interest (nature of the relationship)
Bennie H Jeng, MD	Aquinox: (C); Aerie: (C); EyeGate: (I, C); Kedrion: (C); TissueTech: (C)

The following individuals on the PDEC committee reported no financial relationships.

Nizar Saleh Abdelfattah, MD, David Cordeiro Sousa, MD, MSc, Thomas Armin Fuchsluger, MD PhD FEBO MSc, Meredith Giblin, Bo Lei, MD PhD, Yureeda Qazi, M.D, Andrew T C Tsin, PhD FARVO, Fuensanta A Vera-Diaz, PhD, OD, Siamak Yousefi, PhD, Jie J Zheng, PhD

Continuing Medical Education Committee (CME)

Chair: William J Foster, MD PhD FRCSC, Altasciences Clinical Research: (C); US Patent 9,050,171, Small diameter phakic IOL for minimally traumatic retained lens fragments removal: (P)

The following individuals on the CME Committee reported financial relationships.

Name	Commercial interest (nature of the relationship)
Anton B. Hommer, MD	Santen: (R); Allergan: (R); Alcon: (R); Thea: (R)
Christina Y Weng, MD, MBA	Allergan, Inc.: (C); Alimera Sciences, Inc.: (C)

The following individuals on the CME Committee reported no financial relationships.

Helena Filipe, MD; Bruce Ira Gaynes, OD PharmD; Vivek Kumar Gupta, PhD; Ludwig M. Heindl, MD, PhD; Ines Cardoso Leal, MD; Jonathan H Lin, MD PhD; Jaime Tejedor, MD, PhD; Ann Sofia Skou Thomsen, MD; and Sarah Xin Zhang, MD.

The following activity managers have reported no financial relationships.

Regina Borkoski; Gayle Claman, MS, CAE; Cathy Conley; Kathy Cox; and Lancey Cowan, JD, CAE

The following clinical content reviewer has reported no financial relationships.

Lindsay Scott, PT, DPT, ATC

Category code: Specific financial interests

F (Financial Support) Indicates financial support received from an ACCME-defined commercial interest, in the form of research funding, grants, research materials or in-kind services (e.g., protein sequencing).

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