

ARVO Annual Meeting

April 28 – May 2

Vancouver Convention Centre

Vancouver, B.C.

ARVO

2019



from
BENCH



to
BEDSIDE



and
BACK

Pocket Guide

 **ARVO**[®]
The Association for Research
in Vision and Ophthalmology

ARVO.org/AM

Creating possibilities for Non-infectious Uveitis

**Find out more
at Booth 1527**



abbvie

COLE EYE INSTITUTE

Cole Eye Institute Chair **Daniel F. Martin, MD**, invites you to meet our presenters for lively discussions at the Cole Eye Institute booth (#713).

#ARVO2019

Sunday, April 28, 2019

10-11 a.m. | Rishi Singh, MD
Advancements in the Diagnosis and Treatment for AMD

12-1 p.m. | George Hoppe, PhD
HIF-1 α Stabilization for the Prevention of Retinopathy of Prematurity

2-3 p.m. | Alex Yuan, MD, PhD
Argus II Retinal Prosthesis Experience at Cole Eye Institute

Monday, April 29, 2019

10-11 a.m. | Bela Anand-Apte, MD, PhD
Research Training Programs at Cole Eye Institute

12-1 p.m. | Rachel Chen, MD
Ophthalmology Residency Training at Cole Eye Institute

2-3 p.m. | Fatema Ghasia, MD
Predicting Treatment Response to Occlusion Therapy: Insights from Fixation Eye Movements

Tuesday, April 30, 2019

10-11 a.m. | Connie Tam, PhD
Innate Immune Functions of Keratin Proteins in the Cornea

12-1 p.m. | Sujata Rao, PhD
Signaling Pathways Regulating Cone Degeneration

2-3 p.m. | Vera Bonilha, PhD
Oxidative Stress and Degeneration in the RPE and Retina: Role of DJ-1 and Aging

Program Overview

Sunday, April 28	Location	Time
Registration/Badge Printing	Main Lobby	7am–6pm
ARVO Central	Exhibit Hall	7am–6pm
Basic Clinical Lecture	East Ballroom B	8–10am
Symposia	See program listing	8–10am
Posters	See program listing	8–9:45am 1–2:45pm 3–4:45pm 5–6pm*
Exhibits	Exhibit Hall	8:30am–5pm
ARVO/Alcon Keynote Session	ARVO Ballroom	10:15–11:45am
Proctor Award Lecture	ARVO Ballroom	12noon – 12:45pm
China-ARVO Networking Forum	West 301	1–2:30pm
SIGs/Workshops	See program listing	1–2:30pm
Low Vision Group	West 223/224	1–2:30pm
Papers	See program listing	3–4:45pm
Sunday Social †	Vancouver Aquarium	7–10pm
Monday, April 29		
Registration/Badge Printing	Main Lobby	7am–6pm
ARVO Central	Exhibit Hall	7am–7pm
NAEVR Defense Briefing	West 109/110	7–8am
Posters	See program listing	8:15–10am 11:15am–1pm 4–5:45pm 6–7pm*
Papers/Minisymposia	See program listing	8:15–10am 11:15am–1pm 4–5:45pm
Exhibits	Exhibit Hall	8:30am–5pm
Section Business Meetings	See program listing	10:15–11am
Workshops	See program listing	1:15–2:45pm
SIGs	See program listing	1:15–2:45pm 7:30–9pm
MOI Group	East Ballroom B	1:15–2:45pm
WEAVR Luncheon †	Harbour Ballroom	1:15–2:45pm
Friedenwald Award Lecture	ARVO Ballroom	3–3:45pm
Special Sessions	See program listing	7:30–9pm
Student/Trainee Social	Harbour Ballroom Foyer	7:30–9pm
Tuesday, April 30		
Registration/Badge Printing	Main Lobby	7am–6pm
ARVO Central	Exhibit Hall	7am–6pm
Breakfast with the Experts†	Harbour Ballroom	7–8:30am
Exhibits	Exhibit Hall	8:30am–5pm
Posters	See program listing	8:45–10:30am 11:45–1:30pm 2:45–4:30pm 4:45–5:45pm*
Papers/Minisymposia	See program listing	8:45–10:30am 11:45–1:30pm 2:45–4:30pm
General Business Meeting	West 211	10:45–11:30am
Weisenfeld Award Lecture	ARVO Ballroom	1:45–2:30pm
MIT Poster Award Competition	Exhibit Hall	4:15–5:45pm
ARVO/Champalimaud Lecture	ARVO Ballroom	5:45–6:45pm
Wednesday, May 1		
Registration/Badge Printing	Main Lobby	7am–6pm
ARVO Central	Exhibit Hall	7am–6pm
Posters	See program listing	8:15–10am 10:15–12noon 3–4:45pm 5–6pm*
Papers/Minisymposia	See program listing	8:15–10am 10:15–12noon 3–4:45pm
Exhibits	Exhibit Hall	8:30am–5pm
Workshops	See program listing	12:15–1:45pm
Genetics Group	East Ballroom B	12:15–1:45pm
SIGs	See program listing	12:15–1:45pm 6:15–7:45pm
Cogan Award Lecture	ARVO Ballroom	2–2:45pm
Special Sessions	See program listing	6:15–7:45pm
Classical Concert	West 301	8–10pm
Karaoke Night †	Blackbird Public House	9pm –12midnight
Thursday, May 2		
Registration	Main Lobby	7am–4:30pm
ARVO Central	Exhibit Hall	7am–3pm
Symposia	See program listing	8–10am
Posters	See program listing	8–9:45am 10:15am–12noon 2–3pm*
Papers	See program listing	10:15am–12noon
SIGs/Workshops	See program listing	12:15–1:45pm
ARVO 2020 Kickoff Reception	Exhibit Hall	2–3pm
Beckman Argyros Award Lecture	ARVO Ballroom	3:15–4:15pm
ARVO/Alcon Keynote Session	ARVO Ballroom	4:30–6pm

†Separate registration/tickets required *All Posters — all first authors must be present at their poster.

Program Overview	2
Policies	6
Convention Center Maps	8
How to Connect	16
Safety and Security	16
Presenter Guidelines	18
Services	
Cash Machine/ATM.....	20
Mother's Lounge	20
Coat and Luggage Check	20
First-Aid or Medical Needs	20
Lost and Found.....	20
Prayer and Meditation Room	20
Recycling.....	20
Tourism Vancouver Information Desks	21
Security Services.....	21
Water Coolers.....	21
NAEVR Booth/DoD Session Information.....	22
Meeting Information	
Meeting Management Office.....	24
Press Activities/Press Registration	24
Registration.....	24
Registration/Badge Printing Hours (convention center).....	25
Badge Printing (downtown hotels)	25
ARVO Fellows.....	25
ARVO Members-in-Training	25
Travel Grant Recipients.....	25
Dowling Society Members	26
ARVO Awards and Award Lectures	
ARVO/Alcon Keynote Series.....	28
Proctor Award and Lecture	30
Friedenwald Award and Lecture	30
Weisenfeld Award and Lecture	30
Cogan Award and Lecture	30
ARVO/Champalimaud Award Lecture.....	31
Beckman-Argyros Award Lecture	31
General Business Meeting	
General Business Meeting agenda.....	32
ARVO Distinguished Service Awards	32
Joanne G. Angle Service Award	33
Fellows Class of 2019.....	34
Exhibits	
Exhibit Hall Hours	35
Exhibit Hall Floor Plan	36
Exhibits A-Z	38
Exhibitor Descriptions.....	43
Exhibitor Education Lounge.....	86

Table of Contents

Daily Program Schedules	
Sunday.....	89
Monday.....	93
Tuesday.....	98
Wednesday.....	103
Thursday.....	108
CME/CPD Information	
Physician Accreditation Statement.....	113
Physician Credit Designation.....	113
Instructions to Receive Credits.....	114
CME Credits and Certificate Fee.....	115
Disclosures of Conflicts of Interest —	
AMPC Committee/CME Committee.....	116
CME Sessions.....	121
Social Events.....	137
Section Business Meetings.....	138
Transportation	
Airport Transportation.....	140
Other Transportation Options.....	140
ARVO 2020 Hotel Information.....	142
Future Meetings.....	142
Visit Baltimore Activities/Giveaways.....	143
Travel Grant Supporters.....	144



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Disclaimer

The Association for Research in Vision and Ophthalmology (ARVO) Annual Meeting online program materials and print publications aim to promote vision research and scientific discourse for educational purposes. ARVO accepts no responsibility for any products, presentations, opinions, statements or positions expressed; and inclusion of such material within the meeting, the publications or posted online does not constitute an endorsement by ARVO.

Photography Release

By attending the ARVO Annual Meeting, attendees agree to allow their names, likenesses and images either in audio, photographic or video format recorded onsite to be used by ARVO and the ARVO Foundation for Eye Research for educational and promotional purposes.

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ARVO Policies

Use of recording/photography/audiotape/video equipment:

Recording by any means (photographing, audiotaping, videotaping) of any presentations or sessions at any ARVO meeting is prohibited, except by an ARVO-authorized agent for official purposes or by First Authors who want to photograph their own poster presentations. Violators risk confiscation of their equipment and/or dismissal from the Annual Meeting as deemed appropriate by ARVO.

Commercial Relationships Policy: Presenters must state and display all applicable commercial relationships. For more information on this important policy, refer to the Commercial Relationships Index at ARVO.org/Program-Summary.

Clinical Trials Registration Policy: All clinical trials that will be reported in ARVO Annual Meeting abstracts must be registered on a publicly available database. The required acknowledgement of the First Author, acting as the authorized agent for all authors, certifies that any research presented in the abstract that reports on a clinical trial is registered, and the registration location and number are included on the abstract, in compliance with the ARVO Statement on Registering Clinical Trials, ARVO.org/About/Policies/Statement-on-Registering-Clinical-Trials. For more information on this policy, refer to the Clinical Trials Registration Index at ARVO.org/Program-Summary.

Children in the convention center: Children under 18 years old must be accompanied by a parent or guardian at all times. Parents/guardians who bring children into paper sessions must remove them immediately if they become disruptive. Children are not allowed to accompany parents/guardians in sessions/events where tickets are required or food is provided, except events for which children's tickets are available for purchase. Under no circumstances are children permitted in the exhibit hall during set-up or dismantle times.



Continuing Medical Education

ARVO is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

ARVO designates this live activity for a maximum of 29.25 *AMA PRA Category 1 Credits*[™]. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Please refer to the CME information on page 113.

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Connect with ARVO on your favorite social media site to stay up-to-date on the latest news and information on eye and vision research.



twitter.com/ARVOinfo or include #ARVO2019



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 **ARVO**  **Connect** arvoconnect.arvo.org



INTERNATIONAL OCULAR INFLAMMATION SOCIETY CONGRESS

in conjunction with

5th Assembly of Ocular Inflammation Societies
8th Annual Meeting of Taiwan Retina Society

KAOHSIUNG
TAIWAN

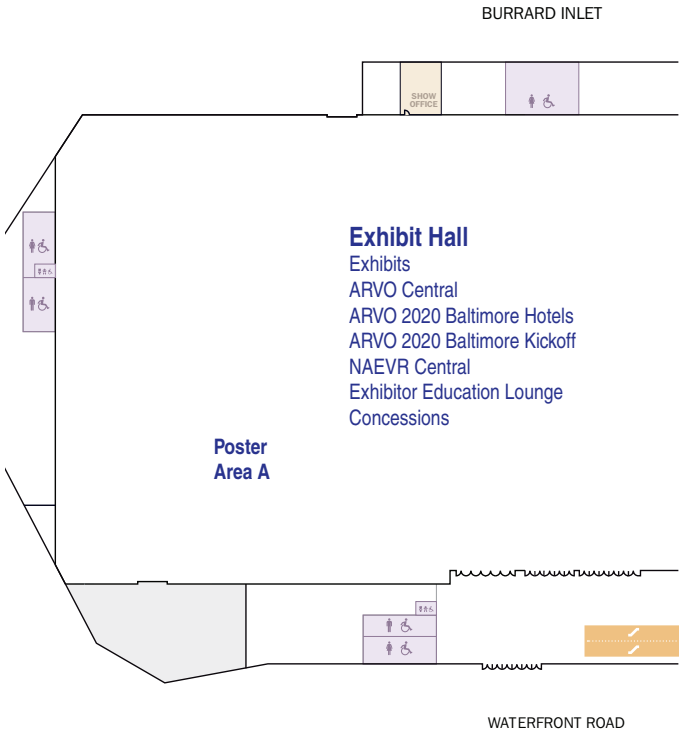


13 - 16
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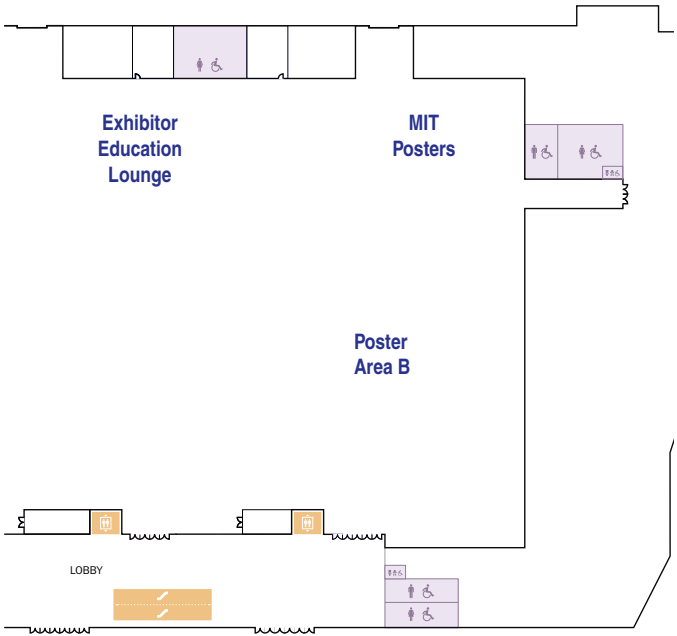
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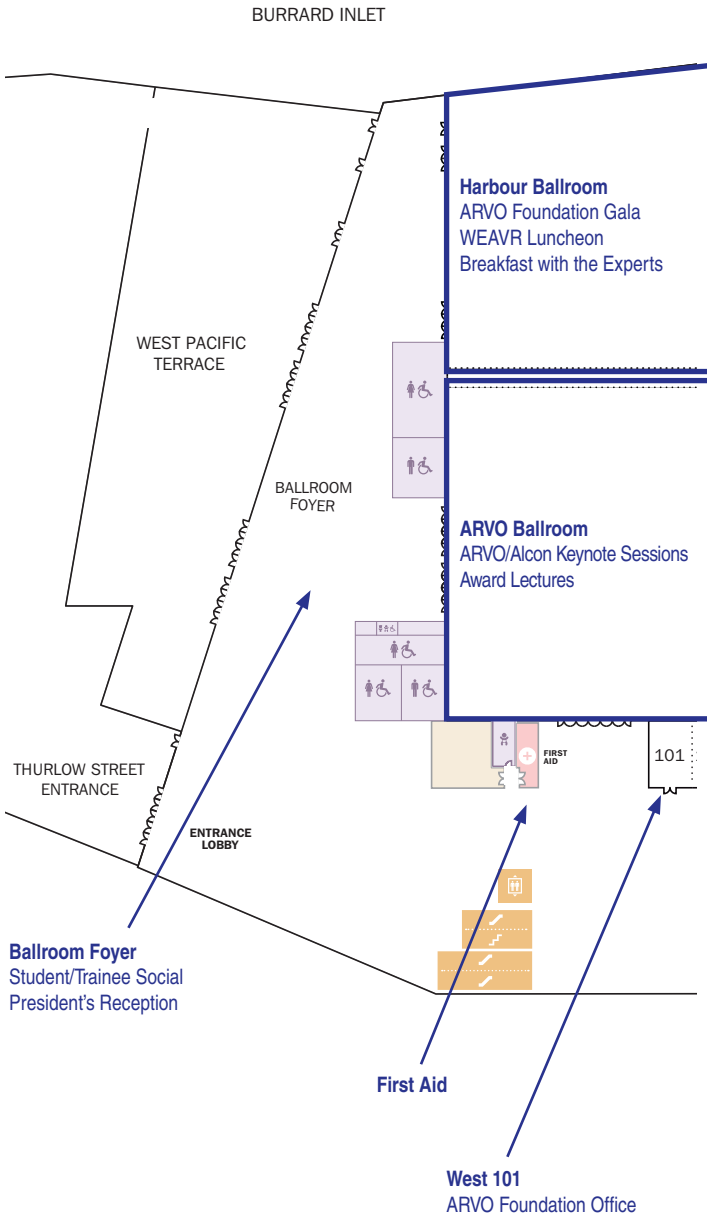
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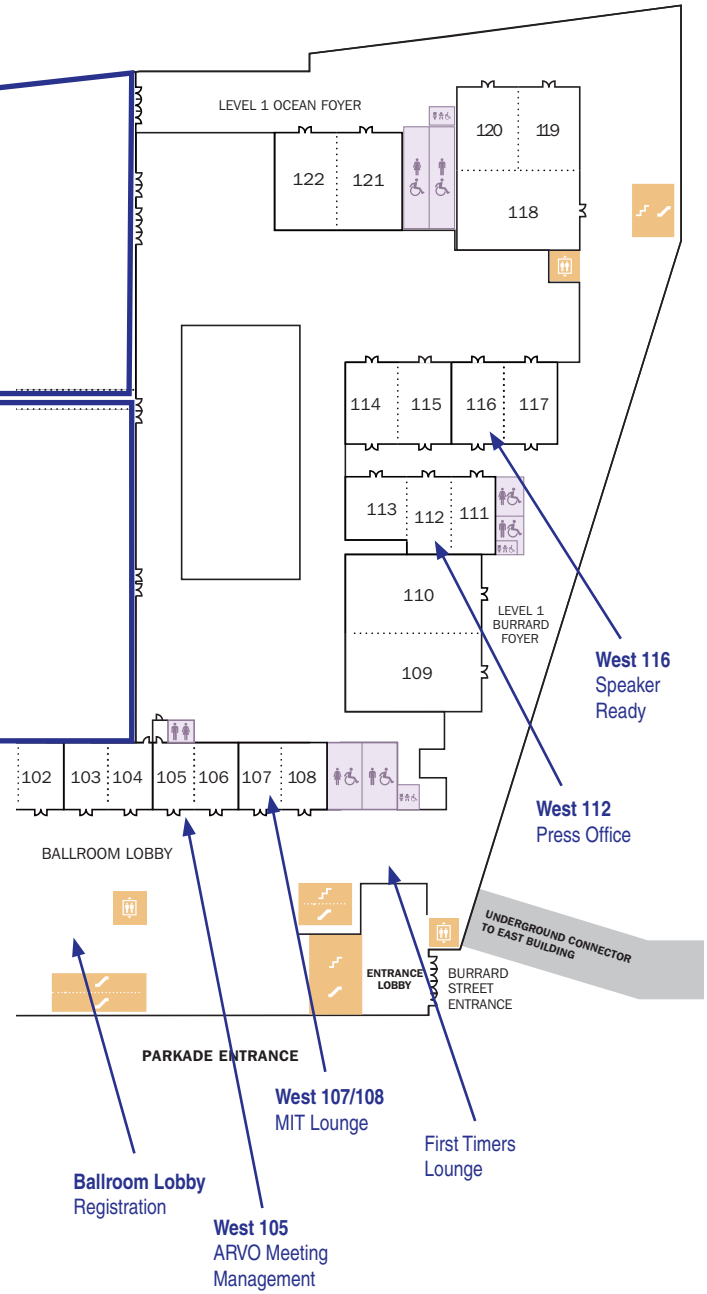


Vancouver Convention Centre (West Building)
Lower Level — West Exhibition



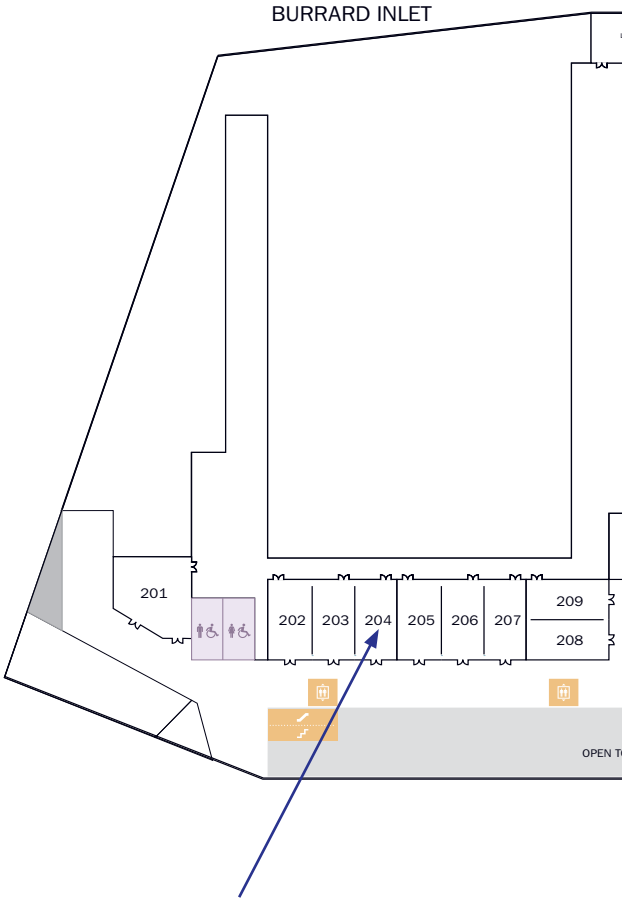


Vancouver Convention Centre (West Building) West Level 1

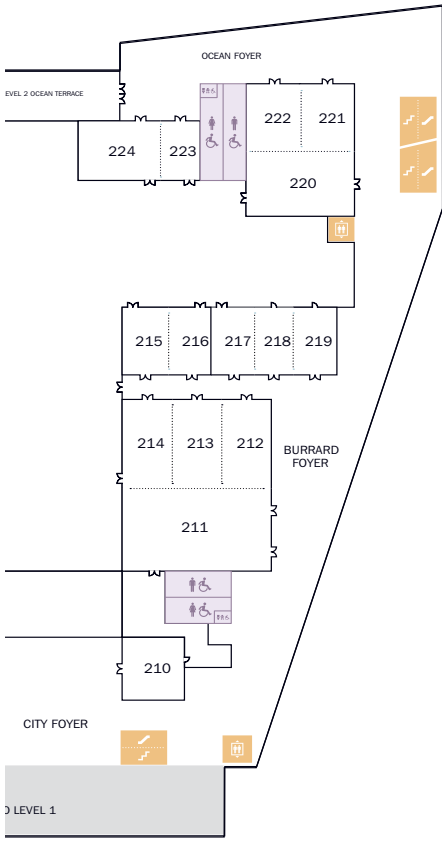


Vancouver Convention Centre (West Building)

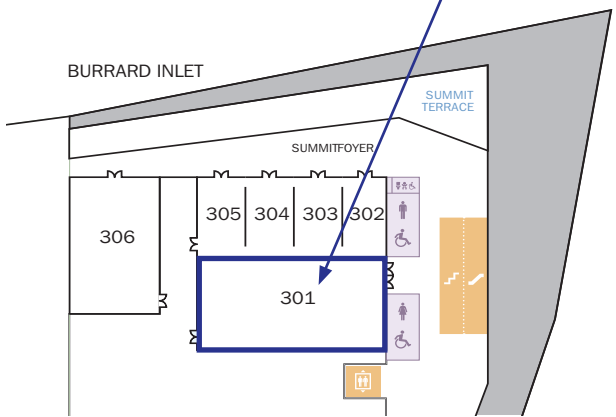
West Level 2



West 204
FARVO Lounge



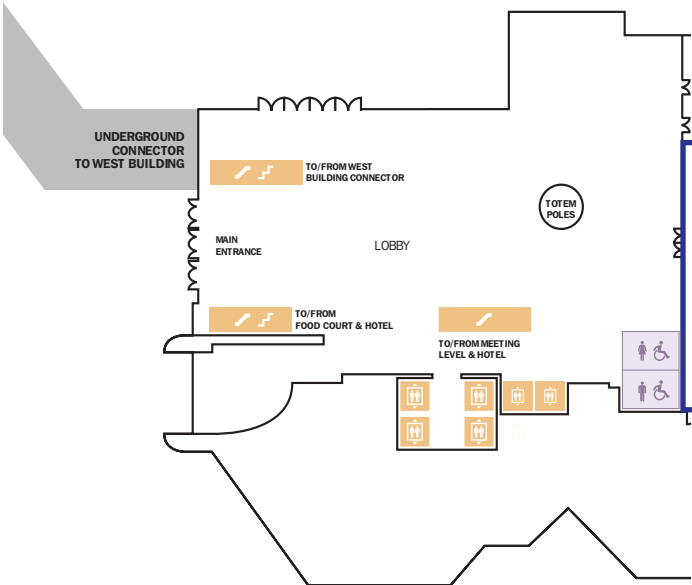
West 301
Classical Concert



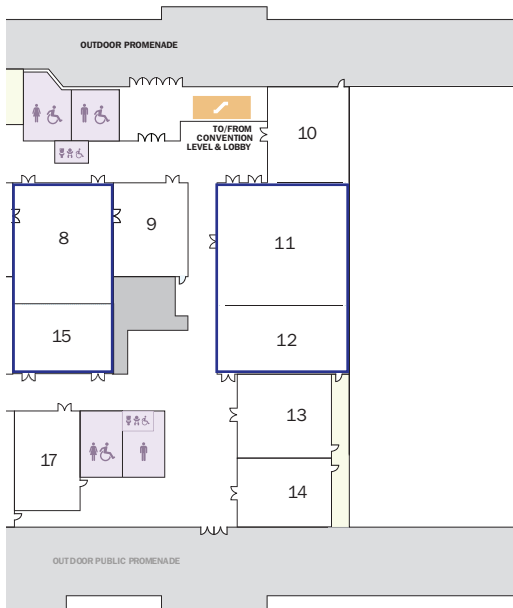
Vancouver Convention Centre (West Building) West Level 3



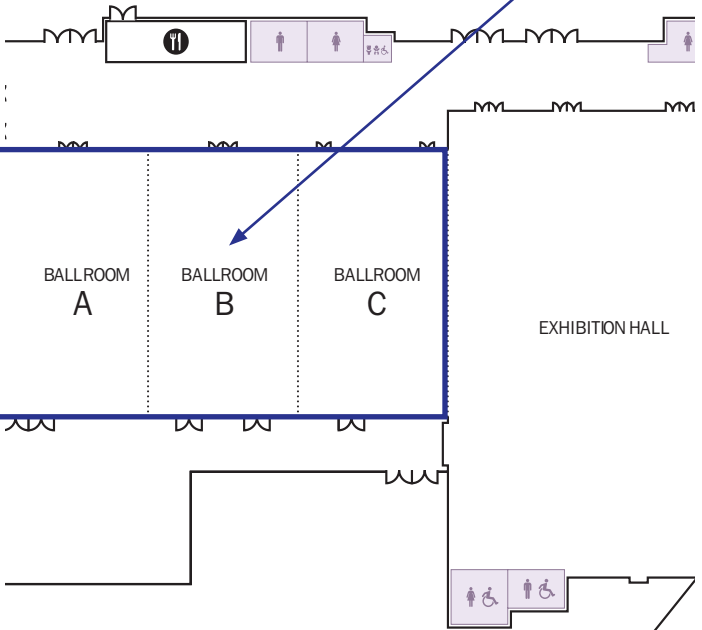
Vancouver Convention Centre (East Building)
East Level 2



Vancouver Convention Centre (East Building)
East Level 1



East Ballroom
Imaging Conference



Wireless Internet

Complimentary wireless Internet access will be available in designated areas throughout the Vancouver Convention Centre. Connect to the “ARVO” network on your device, and then open your browser. No password is needed.

Wi-Fi provided by ARVO is used by all attendees and ARVO asks that attendees limit their web use with regards to live streaming and downloading. The ARVO wireless network is an “open” network and does not use any encryption or security measures. We recommend that you avoid making online purchases or accessing personal information over the wireless network.

Safety/Security Tips

- Carry with you the name, address, phone numbers and email of an individual to contact in case of emergency. If you have a mobile phone, enter the emergency contact phone number in your contacts list under the heading “ICE” (In Case of Emergency).
- Be sure to carry a card describing any medical conditions or allergies you may have, or wear a medical alert tag.
- Do not wear your meeting name badge out and about in Vancouver.
- Avoid poorly lit streets and always walk with another person when sightseeing or shopping, particularly at night.
- Do not display large amounts of cash when paying for taxis or other purchases.
- Do not leave unsecured valuables in your hotel room; lock them in your in-room safe. Hotels are not responsible for items left in your room.
- At the meeting, check items at the coat and luggage check area located on the Exhibits Level of the Vancouver Convention Centre.

Lighthouse Guild

congratulates

Vladimir J. Kefalov, PhD

Washington University School of Medicine

recipient of the

2019 Bressler Prize

for his contributions to
the field of retinal physiology

and

Tiffany M. Schmidt, PhD

Northwestern University

recipient of the

2019 Pisart Award

for her work in the field
of visual system neuroscience

The Bressler Prize recognizes a mid-career vision clinicians or scientist whose leadership, research and service have led to substantive advancements in the understanding of vision loss, treatment of eye disease, or the rehabilitation of people with vision loss.

For both the Bressler Prize and the Pisart Award, non-clinicians may be eligible if their work has direct, immediate and readily translatable clinical relevance.

Call for nominations is now open for the 2020 Awards, visit lighthouseguild.org/awards



**Lighthouse
Guild**

lighthouseguild.org

Presenters

All speakers scheduled in session rooms are required to check into the Speaker Ready Room, West 116/117, preferably 24 hours, but no later than four hours before their presentations.

- Previously uploaded presentations must be reviewed and approved.
- All presentation slides and other files must be uploaded in advance of your presentation.
- Presenters will not be allowed to load PowerPoint slides or other files directly to the computer in the session room.
- Personal laptops cannot be used for presentations in the session rooms.
- Do not bring your laptop or other media devices to the session. **There are no exceptions to this policy.**

If you are unavoidably delayed, you must still go directly to the Speaker Ready Room.

Speaker Ready Room — West 116/117

Fri., April 26	4 – 9pm
Sat., April 27	7am – 6pm
Sun., April 28	7am – 6pm
Mon., April 29	7am – 6pm
Tues., April 30	7am – 6pm
Wed., May 1	7am – 6pm
Thurs., May 2	7am – 2pm

For details see ARVO.org/AM/Abstracts then go to Paper, Invited Speaker, SIG Presentation Guidelines.

Poster Presenters

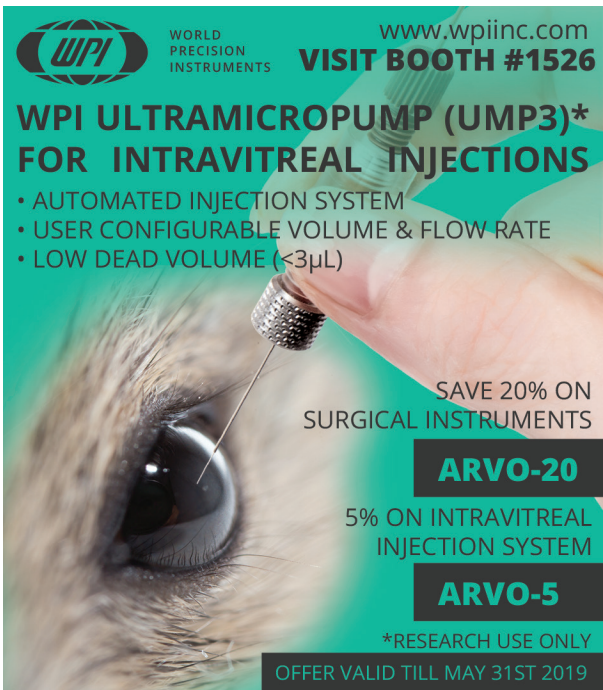
- Sunday poster presenters are strongly encouraged to register and print their badges on Saturday.
- All posters must be placed by 8am on the day of presentation and remain on display the entire day until after the All Posters session.
- Posters may not be displayed prior to the day of presentation.
- Presenters must be present at their poster boards during their scheduled presentation times. The poster area will be monitored and “no show” presenters will be recorded and will be ineligible for 2020 abstract submission as First Author.

- Posters should be removed immediately after the All Posters session for that day. All Posters ends at 6pm on Sunday, 7pm on Monday, 5:30pm on Tuesday, 6pm on Wednesday, and 3pm on Thursday.
- ARVO is not responsible for poster materials left at the end of day. Posters remaining on the poster boards will be removed and discarded.
- For details see Poster Presentation Guidelines at ARVO.org/AM/Abstracts.

Abstract Withdrawals and Substitute Presenters

If the First Author cannot attend and present, he or she must submit an online withdrawal or an online request for approval of a co-author as substitute presenter. Withdrawals and substitute presenter requests must be received by 2pm (U.S. PDT) the day before the scheduled presentation. Failure to comply will result in rejection of the First Author's abstract submission to the 2020 Annual Meeting.

For details see Abstract Withdrawal and Substitute Presenter Policy at ARVO.org/AM/Abstracts.



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Cash Machine/ATM

There are two ATM Machines in the Vancouver Convention Centre: one in the East Building lobby and one in the West Building lobby.

Mother's Lounge

There is a mother's lounge located in both the East Building and the West Building. In the West Building, the mother's lounge is located on the first floor near the ARVO Ballroom. In the East Building, the mother's lounge is located on the meeting level near the south foyer. Please call the phone number posted outside the rooms for access.

Coat and Luggage Check (Exhibits Level)

Check your coat, luggage, and other items.

Sat., April 27	6:30am – 6:30pm
Sun., April 28	6:30am – 6:30pm
Mon., April 29	6:30am – 9:30pm
Tues., April 30	6:30am – 7:30pm
Wed., May 1	6:30am – 8:30pm
Thurs., May 2	6:30am – 6:30pm

ARVO is not responsible for items left at the end of the meeting.

First-Aid or Medical Needs

The First Aid office is located on Level 1 of the West Building of the Vancouver Convention Centre near the ARVO Ballroom.

Lost and Found

All lost items are taken to Meeting Management Office, West 105. Please stop by this office or email arvoabstracts@arvo.org to see if your item has been found.

Prayer/Meditation Room

The Prayer/Meditation Room is in West 120 of the Vancouver Convention Centre.

Recycling

Recycling and compost bins are located throughout the Vancouver Convention Centre. Help ARVO in our efforts to be environmentally friendly and put your trash in the appropriate receptacle.

Tourism Vancouver Information Desks

(VCC East and West Lobbies)

Information is available on local attractions and activities as well as city maps, restaurant reservations and much more.

Security Services

If you need assistance while at the Vancouver Convention Centre contact the Information Desk in ARVO Central, Exhibit/Poster Hall or Meeting Management in West 105.

Water Coolers

Water coolers are available throughout the Vancouver Convention Centre.



Visit the
Gift Shop in
ARVO Central to
pick up the ARVO
2019 t-shirt

2019 Annual Meeting Survey

We want to hear from you! Following the Annual Meeting, all attendees will receive a link to the Online Annual Meeting Survey. Please respond and send us your thoughts about how ARVO can continue to improve the Annual Meeting. We appreciate your attendance and look forward to receiving your comments. Survey participants will be entered into a drawing for an Amazon gift card.



NAEVR

National Alliance For
Eye And Vision Research

Visit NAEVR Central in the Exhibit Hall

Hours: Sun. – Wed. 8:30am – 5pm

Hosted by NAEVR's James Jorkasky and David Epstein

- Contact Congress to support vision research funding increases
- Learn about research funding resources, such as multiple Department of Defense (DoD) funding opportunities to meet critical vision research gaps

NAEVR's Defense-Related Vision Research Opportunities Session

Mon., April 29, 7 – 8am | West 109/110

NAEVR has invited DoD representatives to speak about funding opportunities and past DoD awardees to offer insights into how researchers can be most responsive to the funding Program Announcement

EyeResearch.org



European Association for Vision and Eye Research



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April 10, 2019



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Meeting Management Office

Email: arvoabstracts@arvo.org.

Staff will be available in West 105 throughout the week to assist with meeting services.

Sat., April 27	7am – 5:30pm
Sun., April 28.....	7am – 6pm
Mon., April 29	7am – 8pm
Tues., April 30.....	7am – 6pm
Wed., May 1	7am – 7pm
Thurs., May 2.....	7am – 6pm

Press Activities/Press Registration

ARVO invites members of the press to cover paper and poster sessions at the meeting. Pre-registered press should bring their email confirmation to West 111/112 to pick up their badges. Other press may apply for press credentials in West 111/112. Please note that research presented at the meeting may be proprietary or submitted for publication.

Annual Meeting Registration

(Vancouver Convention Centre)

ARVO 2019 registration is on the first floor of the West Building Vancouver Convention Centre. Registration includes:

■ Badge Printing

Bring your email confirmation with the QR code to an ExpressPass badge printing kiosk. Simply scan the QR code and receive your badges and/or tickets. QR codes can also be scanned from your smartphone.

■ Onsite Registration

Complete the onsite registration form and submit payment at the onsite registration desk.

■ Onsite Guest

Complete the appropriate registration form and submit payment at the onsite registration desk.

■ Name badge replacement

Replace a lost or forgotten name badge at the Badge Replacement desk for a \$50 fee. Corrections to the badges are free.

■ Exhibitor registration

All pre-registered exhibitors should print their confirmation and bring it with them to the convention center. Simply scan the QR code at the Exhibitor registration desk. All non-registered exhibitors may register onsite at the Exhibitor registration desk.

Registration and Badge Printing

(Vancouver Convention Centre)

Sat., April 27	7am – 6pm
Sun., April 28	7am – 6pm
Mon., April 29	7am – 6pm
Tues., April 30	7am – 6pm
Wed., May 1	7am – 6pm
Thurs., May 2	7am – 2pm

Note: Sunday presenters are strongly encouraged to register and/or print their badges on Saturday.

Badge Printing

(Satellite Badge Printing — downtown hotels)

Bring your email confirmation with the QR code to an ARVO kiosk at the following hotels:

- Hyatt Regency Vancouver
655 Burrard Street, Vancouver, BC
- Vancouver Marriott Pinnacle Downtown (4th floor)
1128 W. Hastings Street, Vancouver, BC

Sat., April 27	7am – 9pm
Sun., April 28	7am – 3pm

ARVO Fellows

ARVO Fellows in the Class of 2019 may pick up their materials at the FARVO Lounge in West 204 of the Vancouver Convention Centre during registration hours. Please note: enter through West 203 to gain access to West 204. Ribbons for prior year Fellows will also be available.

ARVO Members-in-Training

Members-in-Training (MIT) are invited to network and relax together in the MIT lounge. Sunday-Wednesday, 8am-5pm, West 107/108.

Travel Grant Recipients

Pick up your Travel Grant packet during registration hours at the Travel Grants/Awards Desk on Saturday in the registration area on the First Floor of the West Building and Sunday – Thursday at ARVO Central in the Exhibit Hall.



Former ARVO Foundation chair John Dowling, PhD, FARVO; current chair Paul Sternberg, Jr., MD, FARVO; and former chairs Gary Abrams, MD, FARVO; Nicolas Bazan, MD, PhD, FARVO; and Mark Petrash, PhD, FARVO; present Alice McPherson, MD, with a Dowling Society medal in recognition of her 2018 pledge to the Foundation.

Dowling Society

The prestigious Dowling Society recognizes individuals for their significant support for eye and vision research. The society is named for vision researcher and first Chairman of the ARVO Foundation Board of Governors, John E. Dowling, PhD, FARVO, in honor of his accomplishments within the ARVO Foundation, ARVO and the vision research community.

Members of the Dowling Society have made a pledge or donation to the Foundation for \$10,000 or more. Members have the option of adding a spouse/partner for an additional contribution of \$5,000. Pledges may be paid over five years. Below are members of the Dowling Society that we wish to recognize for their contributions:

Gary W. Abrams, MD, FARVO and
Jane C. Werner, MD

Jayakrishna Ambati, MD, FARVO

Robert E. Anderson, MD, PhD,
FARVO

Joanne Angle*, MLS, MPA

Sally S. Atherton, PhD, FARVO
and Robert Atherton

Robert B. Barlow*, PhD, FARVO
and Patricia Barlow

Haydee E. P. Bazan, PhD, FARVO
and Nicolas G. Bazan, MD,
PhD, FARVO

Bernard Becker*, MD, FARVO

David C. Beebe*, PhD, FARVO
and Mrs. Betsy Beebe, PA-C

Paul S. Bernstein, MD, PhD,
FARVO

Eliot L. Berson*, MD, FARVO and
Kyra Kaplan-Berson

Roger W. Beuerman, PhD,
FARVO

Laszlo Z. Bito, PhD

Janet C. Blanks, PhD, FARVO

Jeffrey H. Boatright, PhD, FARVO

William J. Brunken, PhD, FARVO
and Dale D. Hunter, PhD, JD

Claude F. Burgoyne, MD, FARVO
and Vicki Smith

Patrick Burke, MD, PhD

Stanley Chang, MD, FARVO

Steve T. Charles, MD, FACS, FICS

Emily Y. Chew, MD, FARVO and
Robert P. Murphy, MD

Bruce E. Cohan, MD

Lancey B. Cowan, JD, CAE

- Cheryl M. Craft, PhD, FARVO
 Patricia A. D'Amore, MBA, PhD, FARVO
 Paulus T. V. M. de Jong, MD, PhD, FARVO, FEBOPhth, FRCOphth and Marij de Jong
 John E. Dowling, PhD, FARVO and Judith F. Dowling
 Joseph L. Dowling, MD
 Melinda K. Duncan, PhD, FARVO
 David L. Epstein*, MD, FARVO and Susan M. Epstein, RN, JD
 Rafal Farjo, PhD
 Steven J. Fliesler, PhD, FARVO
 Robert N. Frank, MD, FARVO
 Ronald E. P. Frenkel, MD
 Juan E. Gallo, MD, PhD, FARVO
 Ronnie Glaser and Bert M. Glaser*, MD, FARVO
 Israel A. Goldberg, PhD and Diane Goldberg
 Evangelos S. Gragoudas, MD, FARVO
 Hans E. Grossniklaus, MD, FARVO
 Julia A. Haller, MD, FARVO and John D. Gottsch, MD, FARVO
 Mary Elizabeth Hartnett, MD, FARVO
 Linda D. Hazlett, PhD, FARVO
 John R. Heckenlively, MD, FARVO
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 David Huang, MD, PhD, FARVO
 Martine J. Jager, MD, PhD, FARVO
 Murray A. Johnstone, MD, and Jeanie Johnstone
 Dimitrios Karamichos, PhD
 Paul L. Kaufman, MD, FARVO and Margaret Kaufman
 John L. Keltner, MD and Nancy Keltner
 Shigeru Kinoshita, MD, PhD, FARVO
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 Paul P. Lee, MD, JD, FARVO and Jennifer Lee
 Marmor Foundation/
 Michael F. Marmor, MD, FARVO
- Alice R. McPherson, MD
 Jennifer J. Kang-Mieler, PhD, FARVO and William F. Mieler, MD, FARVO
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 Carol B. Toris, PhD, FARVO
 Erik J. van Kuijk, MD, PhD and Virginia Brooke, RN, PhD
 David R. Williams, PhD, FARVO and Inger M. Williams, PhD
 Terri L. Young, MD, MBA, FARVO
 Thomas Yorio, PhD, FARVO and Elena Yorio

*deceased

To become a member of the Dowling Society, please contact the ARVO Foundation at +1.240.221.2950 or info@arvofoundation.org

ARVO/Alcon Opening Keynote

Sun., April 28, 10:15 – 11:45am | ARVO Ballroom



Randy W. Schekman, PhD

Nobel Laureate

Investigator, Howard Hughes Medical Institute

Professor of Cell and Developmental Biology, University of California at Berkeley

How cells export proteins and RNA — applications to the treatment of disease

Dr. Schekman has studied how cells transport proteins from their site of synthesis in the endoplasmic reticulum to their various ultimate destinations inside or outside the cell, using membrane vesicles as a vehicle. Using yeast as a model organism, his work has harnessed the power of yeast genetics to understand this fundamental biological process of intracellular vesicular trafficking.

ARVO/Alcon Closing Keynote

Thurs., May 2, 4:30 - 6pm | ARVO Ballroom



Martin Gleave, CM, MD, FRCSC, FACS

Director, The Vancouver Prostate Centre

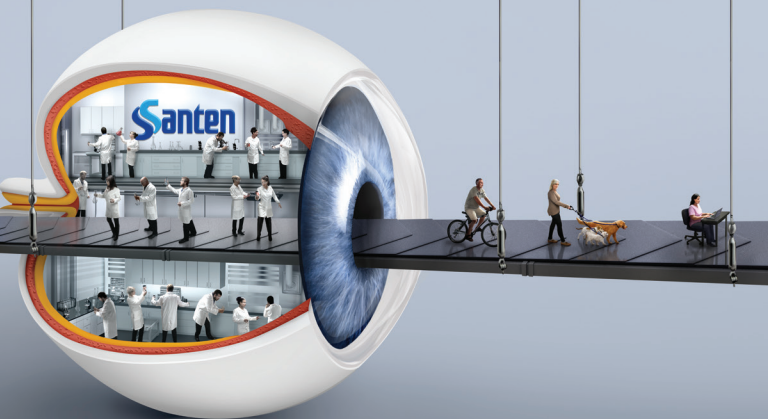
Professor and Vice Chair, Department of Urological Sciences, University of British Columbia, Vancouver

Models of translational science to span innovation gaps in academia

Dr. Gleave's studies have characterized molecular mechanisms that mediate treatment resistance in cancer, focusing on stress-activated adaptive responses that drive acquired treatment resistance. By designing rational combination co-targeting strategies to abrogate the stress response, conditional lethality improved cancer control. He has patented several anti-cancer drugs and, in 2001, founded OncoGenex Technologies, for which he serves as chief scientific officer.



The ARVO/Alcon Keynote Series is sponsored by the ARVO Foundation through the generous support of Alcon.



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Proctor Award and Lecture

Sun., April 28, 12noon – 12:45pm | ARVO Ballroom



Jerry Niederkorn, PhD, FARVO

University of Southwestern Texas Medical Center
Dallas, Texas

The eye sees eye to eye with the immune system

Friedenwald Award and Lecture

Mon., April 29, 3 – 3:45pm | ARVO Ballroom



Donald Zack, MD, PhD, FARVO

Wilmer Eye Institute, Johns Hopkins University
Baltimore, Md.

From transcription to drug discovery, and from photoreceptors to RGCs, a fun journey

Mildred Weisenfeld Award and Lecture

Tues., April 30, 1:45 – 2:30pm | ARVO Ballroom



Sheila West, PhD, FARVO

Wilmer Eye Institute, Johns Hopkins University
Baltimore, Md.

Toward the elimination of disease

Cogan Award and Lecture

Wed., May 1, 2 – 2:45pm | ARVO Ballroom



Przemyslaw Mike Sapienza, PhD

Maisonneuve-Rosemont Hospital
Research Centre
Montreal, QC

Neurovascular and neuroimmune communication in retinal vascular disease

ARVO/Champalimaud Award Lecture

Tues., April 30, 5:45 – 6:45pm
ARVO Ballroom



**Champalimaud
Foundation**

The 2018 António Champalimaud Vision Award was given to seven scientists recognized for the first successful gene-therapy treatment of an inherited disease that caused childhood blindness — a version of Leber Congenital Amaurosis. Their research demonstrated the potential for gene therapy to cure other inherited diseases.

2018 Awardees

Jean Bennett, MD, PhD, and Albert M. Maguire, MD, University of Pennsylvania School of Medicine and Children's Hospital of Philadelphia

Robin Ali, PhD and James Bainbridge MD, PhD, University College London and Moorfields Eye Hospital

Samuel G. Jacobson, MD, PhD, and William W. Hauswirth, PhD, University of Pennsylvania School of Medicine and University of Florida College of Medicine

Michael Redmond, PhD, NIH/National Eye Institute

Dr. Bennett and Dr. Ali will discuss their groundbreaking research on behalf of the awardees.

Beckman–Argyros Award

Mark F. Bear, PhD

Massachusetts Institute of Technology/
Howard Hughes Medical Institute
Cambridge, Mass.



Thurs., May 2, 3:15 – 4:15pm, ARVO Ballroom

Synaptic plasticity and amblyopia

The Beckman-Argyros Award in Vision Research funds potentially high-impact work that lacks the full suite of data necessary to secure government funding. This year's recipient is Mark F. Bear, PhD, a Picower Professor of Neuroscience in The Picower Institute for Learning and Memory and the Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology.

Bear's work is particularly focused on understanding developmental plasticity in the visual cortex and hippocampus. He has described novel forms of procedural learning in the visual system, and investigated synaptic function in models of fragile X syndrome and other autism spectrum disorders.

General Business Meeting

West 211 | Tues., April 30, 10:45 – 11:30am

- Welcome — ARVO President, Steven J. Fliesler, PhD, FARVO
- Presentation of ARVO Distinguished Service Awards
 - Claude F. Burgoyne, MD, FARVO
 - Raymond A. Applegate, OD, PhD, FARVO
 - Andrew D. Dick, MBBS, MD, FMedSci, FARVO
- Presentation of the Joanne G. Angle Award to Thomas Yorio, PhD, FARVO
- Presentation of Membership Update and Election Results
- Membership and Annual Meeting attendance update
- Introduction of Incoming Officers
- Recognition of the 2019 Achievement Award recipients
- Announcement of the 2020 Achievement Award recipients
- Conclude Meeting

ARVO Distinguished Service Awards

Distinguished Service Award recipients will be recognized at the General Business Meeting (Tues., April 30, 10:45 – 11:30am | West 211).



Claude F. Burgoyne, MD, FARVO

Devers Eye Institute, Portland, Ore.
2018 Immediate Past President
GL Section Trustee 2013-2018



Raymond A. Applegate, OD, PhD, FARVO

University of Houston, Houston, TX
2018 ARVO Vice President
VI Section Trustee, 2014-2019



Andrew D. Dick, MBBS, MD, FMedSci, FARVO

University of Bristol/Bristol Eye Hospital
Bristol, UK
2018 ARVO Vice President
IM Section Trustee, 2014-2019

Joanne G. Angle Service Award



The Joanne G. Angle Service Award is the highest service honor to a volunteer professional bestowed by ARVO. The 2019 award is presented to Thomas Yorio, PhD, FARVO, of the North Texas Eye Research Institute, University of North Texas Health Science Center, in Fort Worth.

Dr. Yorio joined the North Texas Eye Research Institute in 1977, later becoming Provost, and then Provost Emeritus when he stepped down from the position. Within ARVO, Yorio served as VP of the Board of Trustees, Chair of the Physiology and Pharmacology section within the Annual Meeting Program Committee and the Chair of the Finance Committee. He served as an Editorial Board Member, an Associate Editor and the Editor-in-Chief of *IOVS*. He is a Dowling Society member, and, as a North Texas Eye Research Institute member, he participates in evaluating the eyes of over 2,400 local school children a year.

The award will be presented to Dr. Yorio at the General Business Meeting (Tues., April 30, 10:45 – 11:30am, West 211).

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Fellows of ARVO

ARVO will induct the Fellows Class of 2019 at the opening ARVO/Alcon Keynote Lecture to recognize and honor these members for their leadership, dedication and contributions to the Association.

Gold Fellows

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Claudio Bucolo

Anne Coleman

Ales Cvekl

Francois Delori

Adriana Di Polo

Brad Fortune

Juana Gallar

Haiyan Gong

Jane Gwiazda

Jennifer Kang-Mieler

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Jennifer Lim

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Maureen McCall

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Austin Roorda

Leopold Schmetterer

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Steven Shevell

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Marlyn Langford

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Richard Libby

Allison McKendrick

Thomas Millar

Ian Morgan

Steven Nusinowitz

Darryl Overby

Luminita Paraoan

Eli Peli

Nancy Philp

Baerbel Rohrer

Hendrik Scholl

Mahnaz Shahidi

Sangly Srinivas

Alan Stitt

Angela Suburo

Geeta Vemuganti

Manuel Vidal-Sanz

Silver Fellows

Alistair Barber

Stefano Bonini

Ching-Kang Chen

Dong Feng Chen



ARVO 2019

APRIL 28 – MAY 2
VANCOUVER, B.C.

Exhibit Hall Hours

Sun., April 28	8:30am – 5pm
Mon., April 29	8:30am – 5pm
Tues., April 30	8:30am – 5pm
Wed., May 1	8:30am – 5pm

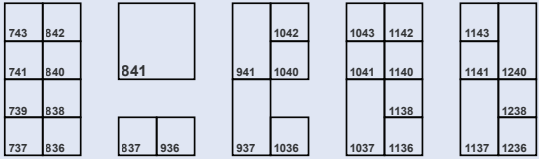
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Vancouver Convention Centre
Exhibit Hall

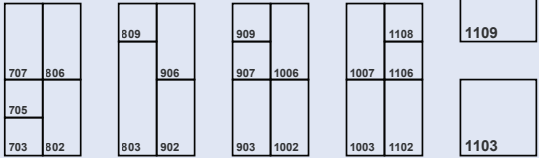
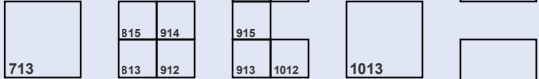
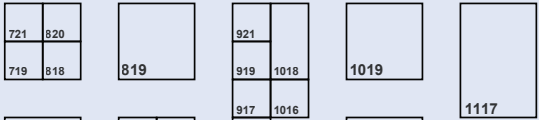
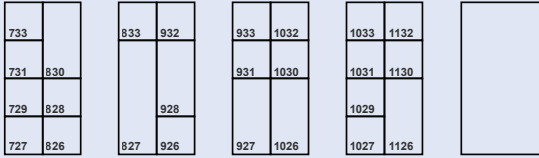


946

← Meeting Suites



Poster Area A



↑
Entrance

1255	1354
1253	1352
1251	1350
1249	1348

1355	1454
1353	1452
1351	1450
1349	1448

1455	1554
1453	1552
1451	1550
1449	1548

Exhibitor Presentation

MIT Poster Area →

	1342
1241	1340

NAEVR

1343	1442
	1440
	1438
1337	1436

	1542
1441	1540
1439	1538
1437	1536

1543	1642
1541	1640
1539	
1537	1636

1643	1742
1641	1740
1639	1738
1637	1736

ARVO Central
1127

	1530
	1528
1427	1526

1527

Poster Area B

1219

1317

1417

	1618
1517	1616

1621	
1619	1718
1615	1714

1209

1311

1411

	1610
1509	1608

1611	1710
	1708
1607	1706

1203

1307	1406
	1404
1303	1402

1407	1506
20'	20'
1403	1502

1505	1604
1503	1602

1605	1704
1603	1702

↑
Entrance

A

AbbVie	1527
Absorption Systems	1436
Abyss Processing	919
AcuiSee	1241
Aeon Imaging LLC.....	931
Aequus Pharmaceuticals	1538
Aerie Pharmaceuticals	1503
Aero Pump GmbH.....	1736
Alcon.....	1417
Allergan	1102
Allergan Medical Affairs	1006
Alpha Independent Review Board, Inc.....	1608
American Academy of Ophthalmology	1714
Aptar Pharma	928
AYOXXA Biosystems Inc.....	705

B

B. Braun CeGaT, LLC	1506
Bio-Concept Laboratories, Inc.	703
Biocytogen.....	1554
BioTime	MS14
Blueprint Genetics	1718
Boston Micromachines Corp.....	828
BrightFocus Foundation.....	913

C

Calvert Laboratories, Inc.....	914
Cambridge Research Systems	1621
Canon	1539
CenterVue, Inc.....	1537
Cerebral Mechanics, Inc.	739
Charles River.....	1219
Chengdu Kanghong Biotechnology Co., Ltd.....	1351
CiToxLAB North America.....	1030
Clearside Biomedical, Inc.....	1353
Cleveland Clinic Cole Eye Institute.....	713
Clinical Edge, Inc.....	1541
Comparative Biosciences, Inc.....	1016
Congressionally Directed Medical Research Programs (CDMRP).....	MS13
Congruence Medical Solutions	1639
Covance, Inc.....	1348
Custom colLABorators Buffalo Innovations	1450
Cylite.....	1619

D

Diagnosys LLC	1517
Doheny Eye Institute (DIRC)	707
Dompé Medical Affairs.....	840
Dove Medical Press.....	1706

E

Ellex.....	1502
Elsevier Inc.	1108
Emmes	826
Encompass Pharmaceutical Services, Inc.	1407
Epsilon.....	936
European Association Vision Eye Research (EVER)	731
Eversight.....	MS6
Eversight.....	727
Excalibur Pathology	1440
Experimentica Ltd.	1354
Exsera BioLabs	1704
Eye Pharma S.P.A.....	1708
EyeCRO.....	1337
EyeKor, Inc.....	1311
Eyenuk, Inc.....	1637
EyePoint Pharmaceuticals.....	1542
EyeQue Corp.....	1742
EyeTech Digital Systems	837

F

Fareva.....	1607
Foster Delivery Science.....	1536
Foundation Fighting Blindness	MS10

G

Genentech, Inc.	1103
Geuder AG	733
Gilead Sciences.....	1740
Glauconix Biosciences, Inc.....	1253
Gooch & Housego	1540
Good-Lite Company	802
Greenlight Clinical	1552
Guardian Health Sciences.....	1509
Gyros, Inc.	1255
Gyroscope Therapeutics.....	1641

H

HAI Laboratories, Inc.....	909
Hamamatsu Pharma Research USA, Inc.....	1352
Hamilton Eye Institute/University of Tennessee Health Science Center.....	1710
He University	1502
Heidelberg Engineering, Inc.	1117
Heidelberg Engineering, Inc.	MS11, MS12

I

icare USA	1449
Imagine Eyes.....	1403
Imedos Systems GmbH.....	721

Exhibits A–Z

INCYTO Co., Ltd.....	1349
Innova Systems, Inc.....	820
Integral BioSystems, LLC.....	813
International Society for Eye Research.....	1130
Iris Pharma.....	1002

J

JAMA Network.....	1406
Joynn Laboratories Co., Ltd.....	1442
Jorvec Corp.	1041

K

Keeler Instruments.....	903
Knight Therapeutics, Inc.	1548
Konan Medical USA, Inc.....	1007
Kugler Publications.....	1029

L

Leica Microsystems.....	937
Lexitas Pharma Services, Inc.	1618
Lions Eye Institute for Transplant and Research.....	1136
Lions Gift of Sight.....	1437
Lions VisionGift.....	815
LIV Medical Technoloty Inc.....	1141
LKC Technologies, Inc.	1003
LumiThera.....	1142

M

M&S Technologies.....	926
MacuLogix, Inc.....	1143
Mallinckrodt Pharmaceuticals.....	1251
Mary Ann Liebert Inc.....	1504
MedGenome, Inc.....	1603
Medical Innovation Partners International (RE-ONE).....	1238
Medmont International.....	1615
Metrovision.....	1236
MUHC-McGill University Eye Pathology & Translational Research Laboratory.....	1543

N

National Disease Research Interchange.....	1140
National Eye Institute.....	1427
Natus Medical Incorporated.....	912
Nemera.....	1611
Nidek.....	1019
NKT Photonics.....	836
NOF America Corporation.....	1036
Novartis.....	1411
Novartis.....	MS2

O

Oakwood Labs.....	1343
Ocular Instruments.....	1026

Exhibits current as of March 30, 2019

^{MS} Meeting Suite location

Oculus	1455
Oculus, Inc.....	1032
OcuMetrics, Inc.....	915
OcuScience	1018
<i>Ophthalmology Times</i>	1042
Optoprobe Science Ltd.	809
Optos Inc.	906
Optovue, Inc.	819
Optronics	1610
Ora, Inc.	1303
Orbit Biomedical, Inc.	MS5
OSOD, LLC.....	1311
Oxymap ehf	743

P

PharmOptima, LLC.....	1137
PhenoSys GmbH.....	921
Phoenix Technology Group.....	1013
Powered Research	1530
Precision Vision	1126
PreventionGenetics	1640
Promedica International	1012
ProQR.....	MS7
ProQR.....	1340

R

Regeneron Pharmaceuticals	1209
Reichert, Inc.	1132
Remidio Innovative Solutions PVT LTD.....	1342
RetinAi Medical GmbH	1043
Review of Ophthalmology/Jobson Publishing.....	1106
Roland Consult.....	1027
RxGen, Inc.....	806

S

Santen	1203
Saving Sight	842
SDC	1307
Second Sight Medical Products.....	841
Shenyang Xingqi Pharmaceutical Co., Ltd.	933
Shin Nippon Biomedical Laboratories, Ltd.	1643
Shire (Medical Affairs)	MS8
Shire (Medical Affairs)	827
Sichuan Primed Shines Bio-tech Co., Ltd.	1441
Silgan Dispensing Systems	1249
Singapore Eye Research Institute (SERI)	1033
Slack, Incorporated.....	917
Softcare Ltd.	741
Spark Therapeutics.....	1109
STEMCELL Technologies, Inc.	1642

Exhibits A–Z

Sterling IRB	1402
Striata Technologies	1636
Studylog Systems, Inc.	729
Syneos Health	830

T

Taylor & Francis Group	1404
Teledyne e2v	1528
Topcon	MS1
Topcon	803
tpm taberna pro medicum GmbH	1138
Translational Imaging Innovations.....	1448
Trial Runners LLC.....	927

U

Unither Pharmaceuticals	1438
-------------------------------	------

V

Vanrx Pharmsystems.....	907
Vasoptic Medical	941
Viewpoint Life Sciences, Inc.	737
Vision Tiffany Inc.....	719
Visionix- Luneau Technology	1702
VO-CRO	1240
Volk Optical, Inc.	902
Voxeleron LLC	932

W

Wasatch Photonics.....	1037
WCCT Global Ophthalmology Research Center	1550
Welch Allyn.....	818
West China-Frontier PhamaTech Co.,Ltd.....	1738
Wicab, Inc.	1605
Wolters Kluwer Health	833
World Glaucoma Association	1031
World Health Organization	1350
World Precision Instruments.....	1526
WuXi AppTec – Laboratory Testing Division	1439

Y

YuYu Pharma.....	MS4
------------------	-----

Z

Zeiss.....	1317
Zilia.....	838

A

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Allergan plc (NYSE: AGN), is a bold, global pharmaceutical company focused on developing, manufacturing and commercializing branded pharmaceuticals, devices and biologic products for patients around the world. For more information, visit Allergan's website at Allergan.com.

Alpha Independent Review Board, Inc..... 1608

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American Academy of Ophthalmology..... 1714

Customer Service
655 Beach St.
San Francisco, Calif. 94109
415-561-8540; customer_service@aao.org; aao.org

The American Academy of Ophthalmology is a global community of eye physicians and surgeons who are dedicated to protecting sight and empowering lives. As the leader in ophthalmic education, we offer a wealth of innovative resources, such as the ONE® Network, EyeWiki® and IRIS® Registry. Join us for AAO 2019 in San Francisco, Oct. 12 – 15.

Aptar Pharma..... 928

Pamela Moran
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Congers, N.Y. 10920
845-639-3700; pamela.moran@aptar.com; aptar.com

At Aptar Pharma, we have been setting the standard for the drug delivery industry for decades and continue to break new ground in innovative healthcare technologies. Respected for our proven regulatory expertise, we simplify and accelerate our partners' path through approval and compliance processes. We harness healthcare trends to continuously offer innovative, convenient and safe products for all customers.

AYOXXA Biosystems Inc..... 705

Santiago Fadul
1 Broadway, 14th Floor
Cambridge, Mass. 02142
760-277-3280; santiago.fadul@ayoxxa.com; ayoxxa.com

AYOXXA's offers LUNARIS™ Multiplex Ophthalmology Kits for human and mouse samples optimized to run on AYOXXA's platform that is specifically designed for multiple protein analysis of highly precious and scarce samples. Offering optimized preparation protocols for ocular fluids (vitreous and aqueous humor) requiring less than 5 µL sample volume, AYOXXA enable researchers to study eye disease underlying molecular mechanisms.

B

B. Braun CeGaT, LLC..... 1506

Dawn Brooke
824 Twelfth Ave.
Bethlehem, Pa. 18018-3524
773-255-3611; dawn.brooke@bbrauncegat.com; bbrauncegat.com

Our genetic diagnostic laboratory offers a wide range of services for the sequencing and analysis of genetic information. We have expertise in the genetic causes of eye disease having analyzed thousands of patients with these diseases. Our Panel for Eye Diseases covers 24 subpanels with 384 genes known to be associated with retinal and related disorders, our sequencing is at a high coverage (800-1000x) in order to increase the probability of finding causative variants in a patient's DNA.

Bio-Concept Laboratories, Inc..... 703

Francis Smith
13 Industrial Way
Salem, N.H. 03079
603-734-4990, ext. 2001; francis.smith@bioconcept.com; bioconcept.com

We offer a full range of formulation development, microbiology, analytical chemistry, process development, stability programs and aseptic clinical manufacturing in ophthalmic plastic bottles and IVT serum glass vials. Stop by our booth at space 703

Biocytogen 1554

Yanan Li
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Wakefield, Mass. 01880
781-587-3558; yli@biocytogen.com; biocytogen.com

Biocytogen Boston Corporation is a Biotech CRO offering custom gene targeting services, featuring CRISPR-based EGE® technology, which increases large fragment knockin efficiency by 10-20-fold. Biocytogen also offers Immuno-Oncology drug validation services that rely on independently-developed humanized immune-checkpoint mouse models (e.g. B-hPD-1 mice) and immune-deficient, human immune system-reconstituted mice (B-NDG model).

BioTimeMS14

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BioTime is leading the next revolution in medicine – regenerative medicine. BioTime is a late stage clinical biotechnology company focused on developing and commercializing products addressing degenerative diseases. Our Company's current clinical programs are targeting three primary sectors: Aesthetics, Ophthalmology, Cell/drug delivery. Together with our subsidiaries, we have a strong focus on improving patients' lives, and we are advancing clinical trials and a robust pipeline.

Blueprint Genetics..... 1718

Heidi Silander
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San Francisco, Calif. 94107
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Blueprint Genetics delivers quality genetics testing to the global clinical community. We provide clinicians, and their patients, with comprehensive and high-quality tools and resources for diagnostics of genetic conditions. Through our innovative laboratory process, latest sequencing technology with AI empowered data-crunching tools, and world-class professionals, we are advancing mainstream healthcare.

Boston Micromachines Corp..... 828

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Founded in 1999, Boston Micromachines Corporation (BMC) is a designer of advanced retinal imaging instrumentation and is the leading provider of microelectromechanical systems (MEMS) - based mirror products. BMC's customizable Apaeros Retinal Imaging Systems are adaptive optics scanning laser ophthalmoscopes (AOSLO). This family of instruments is designed for best-in-class performance and has the ability to add the latest features developed by leaders in retinal imaging instrument development.

BrightFocus Foundation..... 913

Kara Summers
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Clarksburg, Md. 20871
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BrightFocus Foundation is a donor-supported charity that funds research seeking cures for age-related macular degeneration, glaucoma, and Alzheimer's disease and provides the public with information about risk factors, preventative lifestyles, available treatments and coping strategies. Since inception, BrightFocus has committed more than \$190 million in support of its research aims. For more information, visit brightfocus.org.

C

Calvert Laboratories, Inc..... 914

Joe Winslow
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Scott Technology Park
Scott Township, Pa. 18447
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Calvert Labs is a collaborative preclinical CRO bringing extensive experience, an innovative, solutions-oriented approach and unsurpassed performance to your drug development program. We offer a range of lead identification and optimization services and a wide array of preclinical services in most therapeutic areas to meet your R&D needs, helping you navigate your GLP testing needs prior to advancing to clinical trials.

Cambridge Research Systems 1621

Carol Luscombe
80 Riverside Estate
Sir Thomas Longley Rd.
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Precise psychophysical assessment of visual function. Ready-to-run tests for measuring visual acuity and spatial, temporal, colour, and depth discrimination in individuals of all ages with normal or defective vision. Sufficiently sensitive to examine small changes in visual function used to monitor the progression or remission of disease quantitatively over time. Ideal for detecting subtle changes in contrast sensitivity at scotopic and mesopic levels as a biomarker of early onset of AMD.

Exhibitor Descriptions

Canon 1539

Jasbir Banwait
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Brampton, ON. L6Y 5Z7
Canada
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Canon's extensive line of ophthalmic diagnostic equipment spans cutting-edge digital retinal imaging systems, optical coherence tomography systems featuring Angiography, fully automatic Ref-Keratometers and Tonometers, as well as associated intuitive control software to enhance patient care.

CenterVue, Inc. 1537

Keshia Sanchez
979 Corporate Way
Fremont, Calif. 95439
408-988-8404; keshia.sanchez@centervue.com; centervue.com

CenterVue develops highly advanced and easy to use diagnostic systems for early detection and management of sight-threatening pathologies such as Diabetic Retinopathy, Glaucoma and Macular Degeneration. Our innovative devices employ imaging principles and fluid functionality that aid in precise diagnosis and efficient workflow. The CenterVue portfolio includes the DRS Automated Fundus Camera, the EIDON Wide-Field Confocal Scanner, the MAIA Microperimeter and the new COMPASS Fundus Perimeter.

Cerebral Mechanics, Inc. 739

Shauna Pringle
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CerebralMechanics Inc. develops, markets, and supports software, instruments, and integrated systems for behavioural neuroscience.

Charles River 1219

Shannon Spiliotis
251 Ballardvale St.
Wilmington, Mass. 01887-1000
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Charles River offers an integrated approach to ophthalmology research to guide new drugs from bench to market. Compounds or implantable devices intended for ocular treatment can be assessed for efficacy and safety. Ocular effects of compounds targeted to non-ocular conditions can also be characterized. GLP studies either as stand-alone studies or as part of general and specialty toxicology programs as well as Non-GLP pilot or proof-of-concept studies can also be conducted.

Chengdu Kanghong Biotechnology Co., Ltd. 1351

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Kanghong Pharmaceutical Group is a modern pharmaceutical enterprise group dedicated to the R&D, production, sales and after-sales service of proprietary Chinese medicines, chemical medicines and biologic products. We believe our company purpose is to fundamentally improve patients lives and promote the progress of human health. We hold offices in both the US and China with the company headquarters being located in Chengdu in the Sichuan Province.

- CiToxLAB North America**..... 1030
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 Citoxlab is a full-service non-clinical CRO, serving the Pharma/Biotech and Chemical/Agrochemical/Cosmetic industries through nine state-of-the-art GLP facilities in North America and Europe. Our service portfolio includes general and specialty toxicology (reproductive, juvenile, infusion, inhalation, carcinogenicity, transgenics), safety pharmacology (including EEGs and CV/CNS electrophysiology), genomics, biomarkers, bioanalysis, immunology, ecotoxicology, medical device and radiation safety.
- Clearside Biomedical, Inc.** 1353
 900 Northpoint Parkway
 Alpharetta, Ga. 30005
 678-270-3631; none@none.com; clearsidebio.com
- Cleveland Clinic Cole Eye Institute**..... 713
 Alan Steinberger
 9500 Euclid Ave.
 Cleveland, Ohio 44195
 216-444-5832;steinba1@ccf.org; ccf.org
 Cole Eye Institute is one of the few dedicated, comprehensive eye institutes in the world. Our internationally recognized staff diagnoses and treats the entire spectrum of eye conditions, managing over 310,000 clinical visits, performing more than 16,000 surgeries and 1,300 refractive surgical cases annually. It is one of 26 clinical and special expertise institutes at Cleveland Clinic, a nonprofit academic medical center ranked No. 2 hospital in the country by U.S. News & World Report.
- Clinical Edge, Inc.**..... 1541
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 Clinical Edge, Inc. provides certification in all areas of visual function including BCVA, low luminance, reading tests and IOP in order to assure a high level of quality and consistency amongst clinical sites participating in the conduct of ophthalmology drug, biologic, and device trials. Our Certifiers are licensed optometrists and ophthalmologists, with added experience in serving patients with low-vision. Our Team of professionals has an unparalleled level of expertise and experience.
- Comparative Biosciences, Inc.** 1016
 Rachel Stainton
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 Sunnyvale, Calif.94085
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 CBI provides the best resources and quality service to all sectors of the biomedical community. With a multitude of expertise, we are able to serve pharmaceutical and biotech companies as well as academic, industrial and governmental organizations. CBI's extensive experience performing ocular GLP and non-GLP preclinical toxicology, efficacy, pharmacology, pharmacokinetics-pharmacodynamics, histopathology, and safety studies make us the ideal collaborator for your next scientific breakthrough.

Exhibitor Descriptions

Congressionally Directed Medical Research Programs (CDMRP)MS13

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CDMRP originated in 1992 via a Congressional appropriation to foster novel approaches to biomedical research. Today, CDMRP manages 30 programs totaling >\$1B in annual appropriation for the Department of Defense and U. S. Army Medical Research & Materiel Command. The VRP (<https://cdmrp.army.mil/vrp/default>) was established in 2009 to fund impactful military-relevant vision research. Between FY09-17, the VRP has funded 83 awards ranging from hypothesis development to clinical trials.

Congruence Medical Solutions 1639

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Congruence Medical Solutions, LLC is a developer of injection devices for intraocular drug delivery. We have devices for accurate, precise injections for use in animals (as low as 0.5 microliter) and for use in human applications (5 microliters and above). All our systems use standard hypodermic needles and can be provided sterile, ready to use.

Covance, Inc..... 1348

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Covance Inc., the drug development business of Laboratory Corporation of America Holdings (LabCorp) headquartered in Princeton, New Jersey, USA, is the world's most comprehensive drug development company, dedicated to advancing healthcare and delivering Solutions Made Real®. Information on Covance's solutions can be obtained through its website at covance.com.

Custom colLABorators Buffalo Innovations 1450

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Cylite..... 1619

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Cylite's Hyperparallel OCT (HP-OCT) technology can acquire over 1000 simultaneous A-scans in one millisecond, freezing eye movement and allowing, for the first time in a commercial instrument, accurate in-vivo measurements of anterior ocular surface topography using OCT. Based on fully-automated image acquisition, Cylite's HP-OCT instrument also provides axial length measurement, high resolution volumetric imaging and volumetric retinal imaging.

D

Diagnosys LLC 1517

Anne Doran
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Celeris high-throughput ERG + VEP solution for disease research, drug discovery, gene and stem cell therapy in rodent and small animals models lets you can examine the entire visual system from photoreceptor to visual cortex. Clinical ERG, VEP, and Pyschophysical testing including Full-Field Scotopic Threshold (FST) and Dark Adaptometry (DA) are useful for functional examination and monitoring of disease progression in Clinics, Operating Rooms, Pediatrics, Private Practices, and beyond.

Doheny Eye Institute (DIRC) 707

Cecilia Zamudio
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Doheny Eye Institute, affiliated with UCLA Stein Eye Institute, is a global leader in vision research. Our physician-scientists lead the quest to improve vision—from precise diagnostic and analytic capacities of optical coherence tomography to history-making gene therapy that treats Leber’s hereditary optic neuropathy, to new methodologies for tracking aqueous fluid outflow in patients with glaucoma, and much, much more. Visit our booth to learn about our research programs and meet the team.

Dompe Medical Affairs 840

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Dove Medical Press 1706

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Dove Medical Press (dovepress.com) is an open access Publisher of 90+ peer reviewed biomedical and scientific journals, which focus on medicine, drug treatment, clinical risk management, outcomes research and adherence across a breadth of disease states and technologies, biology and basic sciences. The benefits of publishing in our open access journals include wider dissemination, increased visibility, better impact and increased downloads of your articles. Come visit us at booth 1706.

E

Ellex 1502

Kylie Brown
7138 Shady Oak Rd.
Minneapolis, Minn. 55344
800-824-7444; kbrown@ellex.com; ellex.com

Ellex Medical provides a comprehensive range of laser and imaging products for the diagnosis and treatment of cataract, glaucoma and retinal conditions. With our head office and manufacturing based in Adelaide, Australia, Ellex has sold more than 25,000 Ellex-branded laser and ultrasound systems worldwide.

Exhibitor Descriptions

Elsevier Inc..... 1108

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Elsevier is a world-leading provider of information solutions that enhance the performance of science, health, and technology professionals, empowering them to make better decisions, and deliver better care.

Emmes..... 826

Kimberly Dawkins
401 North Washington St., Suite 700
Rockville, Md. 20850
301-251-1161, ext. 236; kdawkins@emmes.com; emmes.com

Emmes clinical trials and research studies make a difference in developing new and improved treatment options and preventing threats to public health. A collaboration with Emmes is your assurance of excellence in the important areas of public health, quality visual function certification services, and electronic visual acuity assessment. Please stop by our booth, meet our representatives, and find out what a research collaboration with Emmes is all about.

Encompass Pharmaceutical Services, Inc..... 1407

Rick Coulon
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Norcross, Ga. 30092
770-248-4501, ext. 260; rick.coulon@encompass-pharma.com;
encompass-pharma.com

We offer a full range of ophthalmic drug development and formulation services from pre-formulation through manufacturing scale-up including: -Preclinical Support -Consulting -Drug Formulation -Drug Delivery -Analytical Support -Manufacturing Process Development -Clinical Supplies Manufacturing We have proprietary in-vitro models & drug delivery technologies to assist our clients in the efficient evaluation, & selection formulations. Our PROLOC delivery technology offers a 8 hour drug release profile.

Epsilon..... 936

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Epsilon USA is a custom manufacturer of hand held surgical instruments and aluminum surgical trays. Innovation is our specialty. New instrument designs and ideas are welcomed. Thank You.

European Association Vision Eye Research (EVER)..... 731

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Viale Matteotti, 7 - 50121
Florence, Italy
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EVER, the European Association for Vision and Eye Research, is currently the leading ophthalmological research association in Europe which covers all areas of ophthalmology and the visual sciences. Membership is open to individuals of any nationality engaging in or with an interest in ophthalmic and vision research. The EVER 2019 congress will be held in France at the Nice Acropolis Convention Center from October 17-19, 2019.

EversightMS6

Colleen Vrba
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Ann Arbor, Mich. 48108
312-469-5552; colleen@eversightvision.org; eversightvision.org

Eversight is a global network of eye banks restoring sight and preventing blindness through donation, transplantation and research. We accelerate discoveries in vision research by delivering human ocular tissue and critical funding to scientists seeking cures for eye diseases. The Eversight Vision Research Registry & Biorepository, launching in 2018, will connect researchers with well-characterized ocular tissue accompanied by detailed medical records.

Eversight 727

Colleen Vrba
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Eversight is a global network of eye banks restoring sight and preventing blindness through donation, transplantation and research. We accelerate discoveries in vision research by delivering human ocular tissue and critical funding to scientists seeking cures for eye diseases. The Eversight Vision Research Registry & Biorepository, launching in 2018, will connect researchers with well-characterized ocular tissue accompanied by detailed medical records.

Excalibur Pathology 1440

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Ophthalmic Histology Service All Species

Experimentica Ltd..... 1354

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Experimentica Ltd. is a contract research organization dedicated to developing and offering preclinical ocular models and services to clients in the pharmaceutical, biotech and academic sectors.

Exsera BioLabs..... 1704

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Let us introduce Exsera BioLabs, your source for complement testing. While our name may not be familiar, our expertise is evident. Our Director has written >100 Principal Investigator reports and has overseen many more studies. Combine that with a team with decades of experience in complement testing, Exsera BioLabs has the experience to exceed your expectations. We have a commitment to providing quality and timely results with the insight and expertise that makes a difference.

Exhibitor Descriptions

Eye Pharma S.P.A. 1708

Elena Meloni
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Thanks to advance technology and research we develop products and formulas from natural extracts. Our products are clinically studied and tested. We collaborate with several of the most important international research centers to create products that improve patients quality of life. Our objective is to slow down diseases progression with the correct intake of food supplements. Health and well-being are the cornerstones of the company's commitment.

EyeCRO 1337

Rafal Farjo
5301 N. Beverly Dr.
Oklahoma City, Okla. 73105
405-604-8954; rfarjo@eyecro.com; eyecro.com

Our team has decades of experience utilizing ophthalmic animal models for drug development. We specialize in preclinical ophthalmic studies of pharmacology/efficacy, PK/tox, and eyedrop formulation development. Efficacy models include dry eye, optic nerve crush, allergic conjunctivitis, corneal NV, laser-induced CNV, STZ-induced diabetes, ischemia/reperfusion, inherited retinal degenerations, quantification of A2E/retinoids, light-induced retinal degeneration, OIR, and autoimmune uveitis.

EyeKor, Inc..... 1311

Yijun Huang
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EyeKor provides image management and analysis services for ophthalmic clinical and preclinical studies through an innovative technology platform - EXCELSIOR™. From site certification through grading data export, EyeKor manages each step of clinical trial imaging. Data and images are easily shared between clinical sites, reading centers, CROs and sponsors. Ease of access and workflow control makes managing global ophthalmic trials with multiple reading centers not only feasible, but practical.

Eyenuk, Inc. 1637

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Eyenuk Inc., is a global artificial intelligence (AI) medical technology company and the leader in real-world AI Eye Screening™ for autonomous disease detection and AI Predictive Biomarkers™ for risk assessment and disease surveillance. Eyenuk is on a mission to screen every eye in the world to ensure timely diagnosis of life- and vision-threatening diseases, including diabetic retinopathy, glaucoma, age-related macular degeneration, stroke risk, cardiovascular risk, and Alzheimer's disease.

EyePoint Pharmaceuticals 1542

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EyePoint Pharmaceuticals, Inc. is a specialty biopharmaceutical company committed to developing and commercializing innovative ophthalmic products in indications with high unmet medical need to help improve the lives of patients with serious eye disorders.

EyeQue Corp..... 1742

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 Newark, Calif. 94560
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EyeQue is on a global mission to elevate eye care. Based on revolutionary patented technology, EyeQue is bringing self-administered eye tests to billions of people around the world, many of whom may not have had the opportunity to test their eyes and correct their vision without access to these low cost, convenient solutions. Our at home vision testing solutions include the award-winning Personal Vision Tracker, The EyeQue Insight, the award-winning VisionCheck, PDCheck, and The EyeQue Eye.

EyeTech Digital Systems 837

Simon Prosser
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EyeTech Digital Systems provides custom eye tracking solutions for both medical device and analytic/ research applications. Our dedicated and experienced team of engineers have been pioneering eye tracking technology for over 23 years. We pride ourselves in delivering innovative and cutting edge technology to meet our clients needs.

F

Fareva 1607

Robert Klehr
 24 West 57th St., Ste 505
 New York, N.Y. 10019
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 fareva.com/pharmaceuticalindustry.html

Fareva is a privately held, global CDMO developing and manufacturing OTC, prescription and cosmetic products. Fareva can develop and manufacture Ophthalmic products in conventional/preservative free bottles, blow, fill and seal (BFS) containers, and ophthalmic ointments and gels in tubes. To support our clients, our 40 sites are strategically located in the United States and Europe. We also produce injectable, tablets/capsules, creams, gels, oral liquids/suspensions, and food supplements.

Foster Delivery Science..... 1536

Amy Snow
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 Putnam, Conn. 06260
 860-630-4524; asnow@fostercomp.com

Foster Delivery Science is a contract manufacturer of drug/polymer blends, specializing in cGMP hot melt extrusion for solid oral dose and implantable drug delivery products. Foster DS offers a comprehensive range of development & manufacturing services, from pre-formulation studies, to solubility screenings, and formulation/process development and scale. Downstream processing capabilities allow for custom shaping of drug delivery dosage forms; pellets, fibers, films, tubes and pressed tablets.

Exhibitor Descriptions

Foundation Fighting Blindness.....MS10

Corrie Simkin-Brocato
7168 Columbia Gateway Dr., Suite 100
Columbia, Md. 21046
410-423-0600; csimkin-brocato@blindness.org; blindness.org

The Foundation Fighting Blindness is the world's leading private funder of retinal disease research. On an annual basis, the Foundation Fighting Blindness funds more than 100 research grants. The research projects are conducted by more than 150 research investigators at institutions, eye hospitals, and universities in the Australia, England, France, Germany, The Netherlands, Italy, Israel, and Mexico.

Genentech, Inc..... 1103

Dan Imamoto
1 DNA Way
South San Francisco, Calif. 94080
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Considered the founder of the industry, Genentech, now a member of the Roche Group, has been delivering on the promise of biotechnology for over 40 years. Genentech is a leading biotechnology company that discovers, develops, manufactures and commercializes medicines to treat patients with serious or life-threatening medical conditions. We are among the world's leading biotech companies, with multiple products on the market and a promising development pipeline.

Geuder AG..... 733

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The Geuder Group represents innovation and research. Modern procedures cannot be performed without precise instruments, innovative systems, highly effective and well tolerated vitreoretinal fluids and vitreous substitutes. By providing such products, the Geuder Group aims to contribute to the success and ongoing development of the procedures in anterior and posterior eye segment surgeries.

Gilead Sciences..... 1740

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Gilead's research and development program identifies and evaluates investigational compounds that show potential to advance the treatment of life-threatening diseases in areas of unmet medical need. Gilead is advancing a pipeline of novel investigational agents for inflammatory diseases, addressing multiple targets with potential application across a broad range of disorders.

Glauconix Biosciences, Inc. 1253

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Glauconix Biosciences novel tissue models and proprietary physiologic testing platforms have been used from discovery through clinical efforts. These microphysiological systems can detect induced changes in intraocular pressure at physiologically relevant levels with direct translatable, species and clinically relevant results. The models provide long-term dynamic studies, combined with human-based healthy or disease models, and able to test diverse genetic populations.

Gooch & Housego 1540

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Gooch & Housego researches, designs and manufactures high quality optical components and optical sub-systems for the biomedical imaging and laser surgery markets. Our acousto-optic and electro optic laser control devices are at the heart of many medical lasers systems including LASIK. We offer contract manufacturing of components, subsystems with FDA, CFDA, and CEA approval.

Good-Lite Company 802

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Elgin, Ill. 60123
847-841-1145; exhibits@good-lite.com; good-lite.com

Manufacturer of the Lea Test System including Lea Symbols and Lea Numbers. Complete range of vision testing products including the new self-calibrating ETDRS Standardized Viewer. Cortical Vision Assessment, high and low contrast, color vision, preferential looking tests will be on display at ARVO 2019

Greenlight Clinical..... 1552

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GreenLight Clinical is a global, full-service CRO with headquarters in Australia and offices throughout the Americas, Asia and Europe. As an ophthalmology-focused CRO, GreenLight benefits from senior management who have taken candidates from discovery through preclinical and clinical phases of development onward to marketing approval. The people we hire are the best in the industry and all our services are tailored. greenlightclinical.com

Guardion Health Sciences 1509

Brian Wilson
15150 Ave of Science, Suite 200
San Diego, Calif. 92128
858-999-5935; bwilson@guardionhealth.com

Guardion Health Sciences offers prescription medial nutrition and highly accurate measuring tools, to provide the first evidence based protocol designed to change the course of common eye diseases. Guardion has Lumega-Z, the only ocular health food on the market, providing the critical carotenoids needed to restore & maintain the macular pigment, alongside proprietary devices, the MapCat and VectorVision, to accurately measure macular pigment optical density and contrast sensitivity

Gyros, Inc. 1255

Joy Concepcion
30 Technology Dr., Suite 1F
Warren, N.J. 07059
650-755-0011; joy.concepcion@gyros.com; gyros.com

Gyros manufactures innovative laboratory platforms and kits that maximize productivity by miniaturizing and automating immunoassays at nanoliter-scale. Gyrolab open platforms accelerate assay development and bioanalysis for ocular research in R&D and preclinical tox. Its' affinity flow-through format, eliminates incubations with shorter run times. Gyros' technology ensures high reproducibility and productivity with Gyrolab platforms that process up to 112 data points per CD in an hour.

Exhibitor Descriptions

Gyroscope Therapeutics 1641

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Stevenage Herts SG1 2FX
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H

HAI Laboratories, Inc...... 909

Vivian Xue
320 Massachusetts Ave.
Lexington, Mass. 02420
781-862-9884; shows@hailabs.com; hailabs.com

HAI Laboratories, the leading US manufacturer of ophthalmic equipment, specializes in clinical (non-contact and contact), eye bank and laboratory specular microscopes, digital video slit lamps, full exam-lane equipment, and microsurgical instruments. Our software features live sequence imaging, comprehensive analysis and image-data correlation. We offer custom manufacturing for research and studies. HAI Labs also supply best quality & affordable surgical instrument at the show.

Hamamatsu Pharma Research USA, Inc. 1352

Ikuo Hayashi
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San Diego, Calif. 92122
858-535-4819; hayashi@hpharma.jp; hpharmausa.com

Hamamatsu Pharma Research is a Japan-based preclinical CRO specializing in pharmacological efficacy studies using nonhuman primate disease models including macular degeneration (wet- and dry-type) and glaucoma. As nonhuman primates are phylogenetically and physiologically more similar to humans than rodents, our NHP efficacy models will help you to obtain preclinical POC relevant to clinical efficacy. We support development of your novel therapeutics with our efficacy models!

Hamilton Eye Institute/ University of Tennessee Health Science Center 1710

Monique Dailey
930 Madison Ave., Suite 470
Memphis, Tenn. 38163
901-448-4133; mdailey@uthsc.edu; uthsc.edu

The researchers at the Hamilton Eye Institute undertake research that will advance ophthalmic care for patients of all ages. Working together, researchers and clinicians collaborate on projects that address a variety of conditions, including dry eye disease, glaucoma, traumatic injuries, age-related macular degeneration, Keratoconus and diabetic retinopathy among other conditions. An engaging environment provides the optimum setting for research and education.

He University..... 1502

Liang Yang
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China
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Heidelberg Engineering, Inc. 1117

Marc Crosier
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 Franklin, Mass. 02038
 508-530-7847; marc.crosier@heidelbergengineering.com;
 heidelbergengineering.com

Please visit Heidelberg Engineering at booth 1117

Heidelberg Engineering, Inc. MS11, MS12

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 heidelbergengineering.com

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icare USA..... 1449

John Floyd
 4700 Falls of Neuse Rd., Suite 245
 Raleigh, N.C. 27609
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Icare® is an advanced medical technology company which manufactures Icare® tonometers. Our devices use patented rebound technology to measure intraocular pressure. A light-weight probe makes momentary contact with the cornea, and requires no drops, air or specialized skills for its use.

Imagine Eyes..... 1403

Laurent Vabre
 18 Rue Charles de Gaulle
 Orsay, 91400
 France
 +33 164-86-15-66; lvabre@imagine-eyes.com; imagine-eyes.com

Imagine Eyes is a leading pioneer in ophthalmic imaging. Its rtx1 product enables examining patients' retinas with an unprecedented level of detail: the cellular level. Thanks to adaptive optics technology, the rtx1 images individual cells, blood vessel walls and microscopic lesions in the retina with the highest resolution on the market. Imagine Eyes also offers software for driving quick examinations, tracking microscopic changes over time, and analyzing cellular and microvascular biomarkers.

Imedos Systems GmbH 721

Cornelia Schmidt
 Am Nasstal 4
 Jena Thuringia D-07751
 Germany 67552
 +49 3641-63960; c.schmidt@imedos.de; imedos.de

Imedos – the Expert of Retinal Vessel Analysis. The retinal microcirculation is a perfect window to the body. Imedos is using ocular transparency to analyze the structure and function of retinal vessels both in humans and animal models. These results serve as valuable biomarkers in ophthalmology and in other medical disciplines. Important cohort studies could prove the relevance and clinical use of the biomarkers gained from Retinal Vessel Analysis. And there is great potential to discover more.

Exhibitor Descriptions

INCYTO Co., Ltd..... 1349

Yanni Yang
112 Seonggeo-gil, Seonggeo-eup, Seobuk-gu Cheonan-si, Chungnam-do
31044 Korea
South Korea
+82 41-550-9762-7; yanni@incyto.co; incyto.com

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Innova Systems, Inc. 820

Valerie Valentino
8330 S. Madison St., Suite 60
Burr Ridge, Ill. 60527
630-920-8880; valerie@innovasystemsusa.com; innovasys.com

Our product line ranges from visual acuity to quality of vision tests including Rabin Cone Test, contrast sensitivity and night vision. Innova Systems' Rabin Cone Test is quickly becoming known as the functional disease detection & management device. The Rabin Cone Test has been chosen for clinical trials by Duke University, UCSF and Shiga University for disease studies including Dry AMD, Glaucoma and MS. Stop by our booth to see how the Rabin Cone Test may be used in your practice or research!

Integral BioSystems, LLC 813

Dave Karasic
23 Crosby Dr., Suite 100A
Bedford, Mass. 01730
781-275-8059; dkarasic@integralbiosystems.com; integralbiosystems.com

Bedford, MA-based CRO Integral BioSystems specializes in ophthalmic delivery, partnering with pharmaceutical companies in formulation R&D, dissolution testing, corneal permeability, analytical methods, stability and process development. Dose Forms: Microspheres, Eye-drops, Hydrogels, CMC writing for INDs for 505b1/2, ANDA. Drugs: Small Molecules, Biologics. The company has also developed a proprietary licensable emulsion, OcuSurf, designed for high bioavailability and efficient drug absorption.

International Society for Eye Research 1130

Erik Rosales
655 Beach St.
San Francisco, Calif. 94109
415-561-8569; mail@iser.org; iser.org

The International Society for Eye Research (ISER) was founded in 1968 to establish an international organization to support eye & vision research and is comprised of vision research scientists from more than 34 countries. The ISER Biennial Meeting is held in some of the world's most distinctive and exciting cities. Research topics covered at these meeting vary from year to year, and include the most current areas of eye & vision research. ISER's official journal is Experimental Eye Research.

Iris Pharma 1002

Yann Quentric
Allee Hector Pintus
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Iris Pharma is a world-class Contract Research Organization (CRO) totally dedicated to ophthalmology. Since 1989, Iris Pharma has helped bring nearly 70 ocular drugs and medical devices to the American and European markets. Iris Pharma is your ideal partner to carry out proof of concept and GLP preclinical studies (tolerance, PK, efficacy), Phase I to IV clinical trials, bioanalysis and preclinical formulation development as well as to provide you with an on-hand specialist consulting service.

J

JAMA Network 1406

Millette Jackson-Bates
330 N. Wabash Ave., Suite 39300
Chicago, Ill. 60611
312-464-4868; millette.jackson-bates@ama-assn.org; jamanetwork.com

JAMA Network brings *JAMA* together with *JAMA Network Open* and eleven specialty journals to offer enhanced access to the research, reviews, and opinions shaping the future of medicine. *JAMA Oncology* has an Impact Factor of 20.9.

Joinn Laboratories Co., Ltd. 1442

Bo Wei
2600 Hilltop Dr.
Richmond, Calif. 94806
510-408-7722; bwei@joinnusa.com; joinnlabs.com

JOINN Labs is a leading CRO, conducting all spectrum of drug pre-/clinical studies in China. Our ophthalmology lab is fully equipped with advanced instruments. The team has demonstrated extensive expertise in full range of ocular studies. We provide services tailored to clients' specific needs for drug and device development, including efficacy, safety, PK/TK, clinical trials, in a GLP/GCP compliant environment, which allow us to obtain reliable data in supporting global IND/NDA submissions.

Jorvec Corp..... 1041

Edward Miskiel
6860 SW 81st St.
Miami, Fla. 33143
305-668-6102; info@jorvec.com; jorvec.com

See our advanced visual evoked potential VEP systems and our innovative pattern electroretinogram PERG system with its unique display tablets for high rate visual stimulation and our integrated rodent holder. Learn how our technologies can facilitate earlier detection and monitoring of glaucoma, LHON, and other optic neuropathies. We look forward to the opportunity to discuss how our instruments and services can meet your specific research needs.

K

Keeler Instruments 903

Liliana A. Gamba
3222 Phoenixville Pike, Bldg. 50
Malvern, Pa. 19355
610-353-4350; lag@keelerusa.com; keelerusa.com

Keeler Instruments, long known for their superior optics, will be exhibiting our wide range of optometric and ophthalmic instruments, including the Vantage Indirect Ophthalmoscopes Wired, Wireless and Digital Video systems, slit lamps, loupes, and Non Contact Tonometers. Keeler Instruments is also proud to showcase its line of ultrasound diagnostic and imaging devices, including the A-scan Connect, B-scan Plus, UBM Plus, 4Sight combination unit, AccuPen tonometer, and PachPen pachymeter.

Exhibitor Descriptions

Knight Therapeutics, Inc. 1548

Corey Richardson
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Montreal, QC. H3Z 3B8
Canada
514-484-4483; gud-knight.com

Knight Therapeutics Inc. is a publicly-traded, specialty pharmaceutical company focused on acquiring, in-licensing, out-licensing, marketing and distributing innovative prescription pharmaceuticals, consumer health products and medical devices in Canada and select international markets. Knight has acquired or in-licensed a portfolio of over 20 products that are marketed, under regulatory review or in various stages of development.

Konan Medical USA, Inc...... 1007

Ian McMillan
15770 Laguna Canyon Rd., Suite 150
Irvine, Calif. 92618
949-576-2200; tradeshows@konanmedical.com; konanmedical.com

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Kugler Publications 1029

Simon Bakker
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The Netherlands
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kuglerpublications.com

Kugler Publications (est. 1974) is an independent publishing company specialized in Ophthalmology, Otorhinolaryngology and related fields. Kugler Publications has built a rich experience and solid reputation in publishing books, journals, proceedings and congress program and abstracts books, both in print and electronic. Drop by our booth to for our newest publications or to discuss your publication ideas.

L

Leica Microsystems 937

Vicky Thoene
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leica-microsystems.com

Leica Microsystems develops and manufactures microscopes and scientific instruments for the analysis of microstructures and nanostructures. The company is one of the market leaders in compound and stereo microscopy, digital microscopy, confocal laser scanning microscopy, electron microscopy sample preparation, optical coherence tomography, and surgical microscopes.

Lexitas Pharma Services, Inc. 1618

Kim Morris
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Durham, N.C. 27701
919-280-9167; kim.morris@lexitas.com; lexitas.com

Lexitas is a full-service contract research organization specializing in ophthalmology. We are focused on providing both technical expertise and exceptional service to our sponsors. Lexitas is your clinical trial partner expert for clinical trial operations, study design, project management, clinical and medical monitoring, and site relations and training.

Lions Eye Institute for Transplant and Research..... 1136

Dana Caggia
 1410 N. 21st St.
 Tampa, Fla. 33605
 813-289-1200; Dcaggia@lionseyeinstitute.org; lionseyeinstitute.org

LEITR specializes in providing ocular tissues with a rapid death -to-preservation time, most globes in under 8 hours. We typically supply tissues with the following criteria - High quality, low death-to-preservation Age, race and gender-specific criteria Control and pathologically graded diseased tissue including Glaucoma, Age-Related Macular Degeneration We also offer custom on-site experiments, dissection of fresh eye tissues, fixation, flash-freezing, or RNAlater and histological processing,

Lions Gift of Sight 1437

Sung Lee
 1000 Westgate Drive St., Suite 260
 St. Paul, Minn. 55114
 612-626-2682; leex1878@umn.edu; lionsgiftofsight.org

Lions Gift of Sight (formerly Minnesota Lions Eye Bank) serves a critical role in vision research. One of the largest providers of research tissue with 58 years of experience, we have completed more than 30,000 ocular research tissue distributions. Serving industry and academic research initiatives, we offer stringent donor screening, tissue evaluation, custom recovery, and preservation in fulfilling heredity, disease-specific, and specialized tissue requests.

Lions VisionGift 815

Corrina Patzer
 2201 SE 11th Ave.
 Portland, Ore. 97214-5303
 503-808-7004; corrina@visiongift.org; visiongift.org

Lions VisionGift has proudly provided ocular tissue for research initiatives across the nation and around the world for more than 40 years. Our world-renowned Vision Research Laboratory is equipped to meet your unique research tissue requests both now and in the future, with both east and west coast locations. Our extensive donor referral network allows us to quickly recover more tissue to supply all of your research initiatives.

LIV Medical Technoloty Inc. 1141

Hyunchul Kim
 301 West 29th St., Suite 2004
 Baltimore, Md. 21211
 443-915-6706; hyunckim@livmedtech.com

LIV Medical Technology Inc. offers a solution for subretinal injection using an OCT sensor guided SMART micro-injector. Our innovative device employs optical coherence tomography imaging and sensing technology to enhance the surgeon's ability to identify delicate transparent tissue and maintain safe surgical positions in the retinal space. We also develop, build and commercialize various optical sensor guided surgical tools to assist clinicians perform the most demanding micro-surgical tasks.

Exhibitor Descriptions

LKC Technologies, Inc...... 1003

James Datovech
2 Professional Dr., Suite 222
Gaithersburg, Md. 20879
301-840-1992; sales@lkc.com; lkc.com

When vision issues impact your everyday life, LKC Technologies is here to help. Building on over 40 years of experience in the visual electrophysiology space, LKC's flagship product, the RETeval™ device, brings comprehensive electrophysiology technology to any office or clinical setting. LKC Technologies is committed to developing innovative products that lead to the preservation and treatment of sight. Visit LKC.com and visit us at booth #1003.

LumiThera 1142

Tracy Puckett
19332 Powder Hill Place NE
Poulsbo, Wash. 98370
844-342-3333; tpuckett@lumithera.com; lumithera.com

LumiThera is a commercial-stage medical device company focused on treating people affected by ocular disorders and diseases including dry AMD, a leading cause of blindness in adults over 65. The Company is a leader in the use of photobiomodulation for the treatment of acute and chronic ocular diseases and disorders. The Company is developing the office-based Valeda™ Light Delivery System to be used by eye care specialists as medical treatments.

M

M&S Technologies 926

Susan Tanaka
5715 W. Howard St.
Niles, Ill. 60714
847-763-0500; stanaka@mstech-eyes.com; mstech-eyes.com/products/category/clinical-trial-suite

M&S Technologies is pleased to release version 2.18 of our Clinical Trial Suite (CTS), which is comprised of a variety of automated, comprehensive, easy-to-use computerized protocols that ensure any phase of clinical trial testing maintains precision, accuracy and efficiency, at any distance. Customize the Suite based on your trial needs!

MacuLogix, Inc...... 1143

Ted Newill
1801 Oberlin Rd., Suite 301
Middletown, Pa. 17057
717-914-4067; tnewill@maculogix.com; maculogix.com

MacuLogix is a pioneer in the early detection and tracking of retinal diseases. We are introducing the AdaptDx, the first practical measurement tool for dark adaptation. Dark adaptation is known to be significantly impaired in macular diseases such as AMD and other macular dystrophies. Based on scientific advances, the AdaptDx provides doctors with an easy-to-use functional test similar to routine perimetry testing for glaucoma.

Mallinckrodt Pharmaceuticals 1251

Lida Clark
1425 Route 206
Bedminster, N.J. 07921
908-238-6321; lida.clark@mnk.com; mallinckrodt.com

Mallinckrodt Pharmaceuticals is a global specialty biopharmaceutical and medical imaging company. The company's Autoimmune and Rare Diseases business includes H.P. Acthar® Gel (repository corticotropin injection), indicated for use in multiple specialties. To learn more, visit Acthar.com.

Mary Ann Liebert, Inc. 1504

Nilda Rivera
140 Huguenot St., Floor 3
New Rochelle, N.Y. 10801-5215
914-740-2100; nriviera@liebertpub.com; liebertpub.com

Journal of Ocular Pharmacology and Therapeutics is the only peer-reviewed journal that combines the fields of ophthalmology and pharmacology to enable optimal treatment and prevention of ocular diseases and disorders. The Journal delivers the latest discoveries in the pharmacokinetics and pharmacodynamics of therapeutics for the treatment of ophthalmic disorders.

MedGenome, Inc...... 1603

Hiran Govindamangalam
348 Hatch Dr.
Foster City, Calif. 94404
888-440-0954; hiranjith.gh@medgenome.com; medgenome.com

MedGenome is a global genomics research company headquartered in California. We offer the most comprehensive phenotype knowledgebase (300,000+ patient records) for ophthalmological disease research. The knowledgebase offers an aggregate of sample access, phenotype/ treatment information and family pedigree data for researchers to dive deep into the underlying cause of the disease. Our Next Generation Sequencing labs are located in Singapore and India.

Medical Innovation Partners International (RE-ONE)..... 1238

Jolie Slaton
2101 Cedar Springs Rd., Suite 1050
Dallas, Texas 75201
214-347-0563; info@medicalinnovationpartners.international;
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We support the needs of vision research by providing devices to facilitate and enhance the delicate work of the researcher.

Medmont International..... 1615

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Australia
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Medmont has been a leader in providing high quality, high value ophthalmic instruments for the worldwide eye care market for over 20 years. Medmont is continuing to expand on its bespoke line of products and proprietary software. Medmont's current portfolio of products and software is used by ophthalmic and researchers professionals worldwide. Medmont International Pty Ltd is proud to have had, and continues to have, its equipment used in numerous unsponsored peer review studies.

Metrovision..... 1236

Jacques Charlier
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France
+33 32-017-1956; charlier@metrovision.com; metrovision.fr

MonCvONE, a full field projection perimeter available in 3 versions: -SAP for Standard Automated Perimetry, -PRO for SAP, Goldmann perimetry and video imaging, -CR for advanced clinical research MonPackONE, a multifunction instrument combining several tests in one compact unit: Psychophysics: visual field perimetry, contrast sensitivity, dark adaptation Electrophysiology: ganzfeld flash, pattern and multifocal ERG and VEP Eye movements: video oculography, scan path analysis, pupillometry.

Exhibitor Descriptions

McGill University Eye Pathology & Translational Research Laboratory (MUHC) 1543

Miguel N Burnier, Jr, MD, PhD
1001 Boul Decarie, Block E, E02.2389
Montreal, QC. H4A 3J1
Canada
514-934-1934, ext. 76129; tiffany.porraccio@mail.mcgill.ca; ocularpathlab.com

The MUHC/McGill University Eye Pathology & Translational Research Lab is the largest ocular pathology research & training center in Canada. As a global referral center for oncologists, pathologists & ophthalmologists, this unit offers a unique graduate program, which has trained more than 200 residents, MSc, PhD, Postdocs, medical students & fellows from 25 countries. In 2010, our trainees founded BIOPSY (Burnier International Ocular Pathology Society), which hosts biannual meetings.

N

National Disease Research Interchange 1140

Sara Zakarewsky
1628 John F. Kennedy Blvd., 8th Floor
8 Penn Center
Philadelphia, Pa. 19103
215-577-7361-290; szakarewsky@ndriresource.org; ndriresource.org

The National Disease Research Interchange (NDRI) is a 501(c)(3) not-for-profit, NIH-funded organization that provides project-driven human biospecimen service to academic and corporate scientists. NDRI has over 30 years of experience globally distributing human biospecimens for research. Our extensive recovery network has the expertise to provide anatomical structures, organs, and tissues with annotated data.

National Eye Institute 1427

Kerry Goetz
10 Center Dr., Room 10N109
Bethesda, Md. 20892-1860
301-443-7835; goetzke@nei.nih.gov; nei.nih.gov

The National Eye Institute supports basic, clinical, and translational research to increase understanding of the eye & visual system and promote prevention, treatment and rehabilitation of disease conditions. NEI is redesigning our website to more easily find eye health information, funding opportunities & other resources. Stop by our booth to get a sneak peek & share your feedback about the new design. We'll also be giving away Google Cardboard headsets, so come try our new virtual reality app!

Natus Medical, Inc..... 912

Carol Stone
1501 Industrial Rd.
San Carlos, Calif. 94070
847-573-5421; carol.stone@natus.com; natus.com

RETCAM Pediatric Eye Imaging is a fully integrated wide-field digital imaging system for the hospital and clinic. This state-of-the-art system provides ophthalmic visualization and photo documentation with features that help assure the capture of pediatric ocular images. natus.com

Nemera 1611

Manuela Basso
 20 Avenue de la Gare
 La Verpillière 38290
 France
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Nemera is a world leader in the design, development and manufacturing of drug delivery devices for the pharmaceutical, biotechnology & generics industries. The use of preservatives can cause irritations, allergies and other side effects to the eye, thus jeopardizing adherence to treatments and damaging patients' eyes. The multidose closing tip system Novelia® avoids the need for preservatives in the drug and prevents bacterial contamination over the duration of treatment.

Nidek 1019

Alicia Johnson
 47651 Westinghouse Dr.
 Fremont, Calif.94539-7474
 415-994-1758; alicia_johnson@nidek.com; usa.nidek.com

NIDEK offers a wide array of diagnostic and surgical equipment designed with simplicity, functionality and reliability to assist you with your patients having anterior and posterior disorders or diseases, including glaucoma, AMD, Visual function and other vision-impairing afflictions.

NKT Photonics 836

Nanda Sturm
 3514 N Vancouver Ave., Suite 310
 Portland, Ore. 97227
 503-444-8404; nast@nktphotonics.com; nktphotonics.com

NKT Photonics is the leading supplier of high performance fiber lasers, fiber optic sensing systems, and photonic crystal fibers. Our main markets are within imaging, sensing and material processing. Our products include ultrafast lasers, supercontinuum white light lasers, low noise fiber lasers, distributed temperature sensing systems and a wide range of specialty fibers. NKT Photonics has its headquarters in Denmark with sales and service worldwide.

NOF America Corporation 1036

Kentaro Miyake
 One North Broadway, Suite 912
 White Plains, N.Y. 10601
 914-682-9790; info@nofamerica.com; nofamerica.com

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Novartis MS2

Sarah Urben
 9 Rue Du Pre-Bouvier
 1242 Satigny
 Geneva, Switzerland
 +41 22 33 99 935
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Medical Engagement Suite - upon invitation

Exhibitor Descriptions

Novartis 1411

Grace Hoddy
One Health Plaza
East Hanover, N.J. 07936
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Novartis provides innovative healthcare solutions that address the evolving needs of patients and societies. Headquartered in Basel, Switzerland, Novartis offers a diversified portfolio to best meet these needs: innovative medicines, eye care, cost-saving generic pharmaceuticals, preventive vaccines and diagnostic tools, over-the-counter and animal health products. For more information, please visit novartis.com.

O

Oakwood Labs 1343

Mark Ilhan
7670 First Place, Suite A
Oakwood Village, Ohio 44146
440-703-3615; milhan@oakwoodlabs.com

Oakwood is focused on the design, development, and aseptic manufacturing of sustained-release injectable microsphere products through the use of our patented Chroniject technology. In addition we have an FDA approved aseptic manufacturing facility to support clinical and commercial manufacturing. Oakwood partners with companies worldwide to ensure a one-stop shop from formulation development through commercial supply.

Ocular Instruments..... 1026

Customer Service
2255 116th Ave., NE
Bellevue, Wash. 98004
425-455-5200; contact@ocularinc.com; ocularinc.com

Established in 1966, Ocular Instruments has been creating solutions to save sight. Our line of ophthalmic lenses for research are designed especially for use on small eyes of laboratory animals. Whether for examination, laser, surgery, or scientific research, Ocular makes the lenses you need. We invite to share your new product ideas with Ocular's R & D department. Who knows – your name could be the next to appear on an Ocular product!

Oculos 1455

Ben Burton
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Rush, N.Y. 14543
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Oculus, Inc..... 1032

Jennifer Conway
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OCULUS has been setting milestones in the eye care industry since 1895. In addition to the Pentacam®, we offer visual field perimeters, corneal topographers, slit-lamp cameras, pachymeters, autorefractors, keratometers, trial frames and loupes. OCULUS products are 100% made in Germany and fully supported in the United States and Canada.

OcuMetrics, Inc. 915

Bruce Ishimoto
2224-C Old Middlefield Way
Mountain View, Calif. 94043-2421
650-960-3955; brucei@ocumetrics.com; ocumetrics.com

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OcuScience 1018

Daniel Lindgren
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Henderson, Nev. 89014
866-250-3937; dl@Ocu-Science.com; Ocu-Science.com

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Ophthalmology Times 1042

Melissa Devlin
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203-523-7067; melissa.devlin@ubm.com; ophthalmologytimes.com

Ophthalmology Times, winner of six Jesse H. Neal National Business Journalism Awards, is a physician-driven media brand that presents cutting-edge advancements from around the world in surgery, clinical diagnosis, drug therapy, and technology to elevate the delivery of progressive eye health from physician to patient. Find out more at OphthalmologyTimes.com.

Optoprobe Science Ltd. 809

Junqiang Liang
Room 352, Langguang yunding Majiapu Rd., No.180
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Beijing, China
+86 17718471267; liangjunqiang@syutime.com; optoprobe.com

Optoprobe Science Ltd., founded in 2015, specializes in imaging and functional testing equipment for small animals. We have a series of scientific research instruments such as optical coherence tomography, adaptive optics optical coherence tomography, fundus camera, confocal fluorescein angiography, visual electrophysiology. We also provide experiment protocols and experiment analysis method.

Optos, Inc. 906

Emily Vieira
500 Nickerson Rd.
Suite 500-201
Marlborough, Mass. 01752
508-787-1585; optos.com

Optos develops retinal imaging and analysis tools for ophthalmologists. More than 400 peer reviewed studies confirm that optomap ultra-widefield imaging helps doctors more effectively detect and treat retinal pathology. optomap is revolutionizing ophthalmic practice flow and helping doctors save sight and save lives.

Exhibitor Descriptions

- Optovue, Inc.**..... 819
Kellie Archer
2800 Bayview Dr.
Fremont, Calif. 94538
510-623-8868; kellie_archer@optovue.com; optovue.com
Optovue is dedicated to the advancement of high-speed OCT and OCTA technology. Since our founding in 2003, we have installed over 12,000 systems worldwide. Optovue was the first to develop and commercialize the pioneering OCTA technology. The AngioVue® OCTA system is now used in more than 1,700 clinics and has been featured in over 400 peer-reviewed publications.
- Optronics**..... 1610
Matthew Bartos
1 S. Los Carneros Rd.
Goleta, Calif. 93117
805-968-3568; Matthew.Bartos@karlstorz.com; optronics.com
OPTRONICS Booth #1610 OPTRONICS offers 4K & HD microscope imaging solutions designed for the ophthalmic surgeon and clinical investigator. Our MICROCAST® 4K PRO & MICROCAST® HD PRO camera systems are compatible with all leading brands of microscopes and offer unrivaled performance surgical procedures. New: MICROCAST PRODUCER, personalized 1:1 online microsurgical video editing sessions.
- Ora, Inc.**..... 1303
Jeanne Hecht
300 Brickstone Square
Andover, Mass. 01810
919-601-8139; jhecht@oraclinical.com; oraclinical.com
Ora is the world's leading full-service ophthalmic-only CRO and product development firm, with offices in the United States, Europe and Japan. Over the past 40 years, we have proudly helped our clients earn 46 product approvals. Let Ora be your partner, whether you are at the preclinical, clinical, or post-approval stage of product development. Our disease models and site management organization will accelerate your timelines. Learn more at oraclinical.com
- Orbit Biomedical, Inc.**.....MS5
Eileen Edginton
300 Brookside Ave., Bldg 18, Suite 180
Ambler, Pa. 19002
267-523-2106; eedginton@orbitbiomedical.com
- OSOD, LLC** 1311
Gary Leatherberry
455 Science Dr., Suite 120
Madison, Wisc. 53711
608-206-3614; gleatherberry@ocularservices.com ocularservices.com
OSOD is a consortium of internationally recognized experts specializing in the delivery of world-class services to accelerate identification and development of leading therapeutic compounds and ophthalmic devices. OSOD has expertise in discovery, establishing proof of concept, accelerating drug/device development, and assessment of ocular toxicities. OSOD has an exclusive relationship with Covance, Inc. that allows us to provide our clients with a fully-integrated preclinical service.

Oxymap ehf 743

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The Oxymap T1 allows metabolic imaging of the retina for investigation of the pathophysiology of common eye diseases. It measures retinal vessel oxygen saturation as well as the vessel diameter. In addition it automatically evaluates the quality of the retinal images. The Oxymap T1 is a CE marked medical device which has been used in more than 30 research centres and hospitals on 4 continents.

PharmOptima, LLC 1137

Stephanie Thompson
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 Portage, Mich. 49002
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PharmOptima™ is a member of Genesis Drug Discovery and Development (GD3), a preclinical CRO offering a comprehensive portfolio of services for drug discovery and development. PharmOptima specializes in ADME and ocular models by using bioanalytical tandem mass spectrometry (MS/MS) method development, validation, sample analysis, and custom in vivo research models. We have expertise in micro-dissection of ocular tissues and development of cell lines for HTS and target validation.

PhenoSys GmbH 921

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PhenoSys is a technology company based in Berlin providing innovative solutions for animal behavior research. We offer several systems of interactive Virtual Reality for rodents. Furthermore, PhenoSys provides the first system for the automated measurement of the optomotor response in mice. Our experimental systems are used for behavioral phenotyping, brain research, experimental psychology, and the diagnostic characterization of animal models.

Phoenix Technology Group 1013

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 Pleasanton, Calif. 94588
 925-485-1100; marketing@phoenixtech.com; phoenixtech.com

For 10+ yrs the Phoenix MICRON in-vivo retinal imaging system has been the standard of quality in eye research. Today 10 out of 12 of the top research institutions employ Phoenix MICRON for their research. The Phoenix MICRON system offers the most essential modalities needed to power the best ophthalmic research-in a single imaging system. Modalities include a retinal microscope, FA, OCT, CNV & ERG in a modular system that makes capturing and processing high quality data easy to do.

Exhibitor Descriptions

Powered Research..... 1530

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Research Triangle Park, N.C. 27709
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Powered Research, LLC is a North Carolina based preclinical CRO specializing in ophthalmic models. Led by a Board Certified Veterinary Ophthalmologist & Toxicologist and our Director of Research, we have proven expertise in multiple models for the ocular space including Ophthalmic Examinations, Models of Disease, and Biocompatibility / Toxicity / PK studies. Our standard IACUC protocol review occurs within 3-4 days and we typically can begin a study within 2 weeks of protocol submission.

Precision Vision..... 1126

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Woodstock, Ill. 60098
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Precision Vision has been the leading producer of vision testing and visual acuity products worldwide for decades. They have been at the forefront of numerous milestones in the field and are still recognized as the premier manufacturer for standard and custom products.

PreventionGenetics..... 1640

Danielle Krohn
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preventiongenetics.com/index.php

Founded in 2004 and located in Marshfield, Wisconsin, PreventionGenetics is a CLIA and ISO 15189:2012 accredited clinical DNA testing laboratory. PreventionGenetics provides patients with sequencing and deletion/duplication tests for nearly all clinically relevant genes. These tests include our powerful and comprehensive whole exome sequencing test, PGxome®. PreventionGenetics also offers DNA Banking (PGDNABank), a long-term storage of a person's DNA. DNA Banking is available direct-to-consumer.

Promedica International..... 1012

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Promedica International is a privately held, full-service, ISO-certified CRO providing clinical trial services for the medical device, biotechnology and pharmaceutical industries. Founded in 1985, we are a woman-owned corporation headquartered in Orange County, California. We have successfully provided exceptional value to our clients in clinical trial project management, site recruitment and management, clinical study monitoring, data management, biostatistics, medical writing and GCP auditing.

ProQRMS7

Megan Sessa
245 Main St.
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ProQR Therapeutics is dedicated to changing lives through the creation of transformative RNA medicines for the treatment of severe genetic rare diseases such as Leber's congenital amaurosis 10, Usher syndrome type 2 and dystrophic epidermolysis bullosa. Based on our unique proprietary RNA repair platform technologies we are growing our pipeline with patients and loved ones in mind.

ProQR 1340

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ProQR Therapeutics is dedicated to changing lives through the creation of transformative RNA medicines for the treatment of severe genetic rare diseases such as Leber's congenital amaurosis 10, Usher syndrome type 2 and dystrophic epidermolysis bullosa. Based on our unique proprietary RNA repair platform technologies we are growing our pipeline with patients and loved ones in mind.

R

Regeneron Pharmaceuticals 1209

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914-847-7000; medical.information@regeneron.com; regeneron.com

Regeneron is a leading biotechnology company that invents life-transforming medicines for people with serious diseases. Founded and led for 30 years by physician-scientists, our unique ability to consistently translate science into medicine has led to six FDA-approved treatments and numerous product candidates in development, all of which were homegrown in our laboratories.

Reichert, Inc. 1132

Linda Hauser
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Reichert Technologies of Buffalo, NY (unit of AMETEK, Inc.) is a global leader in the design and manufacture of diagnostic devices for optometry, ophthalmology, and retail eye centers. Inventors of the Phoroptor® and Non-Contact Tonometer, Reichert continues its American-made tradition by providing industry defining products, including the digital Phoroptor® VRx, Tono-Pen® Tonometer, the breakthrough Ocular Response Analyzer® featuring Corneal Hysteresis, and ClearChart Digital Acuity Systems.

Remidio Innovative Solutions, PVT, LTD 1342

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Remidio is an innovative medical device company that seeks to create Healthcare Access by combining simplicity of product design with technology & sustainable business models. Remidio's retinal imaging devices have helped screen and impact more than 7.5 million patients in 15 countries globally, as a result of increased access provided by the ease of use and affordability of Remidio's patented optics on the smartphone platform.

RetinAi Medical GmbH 1043

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RetinAI Medical develops healthcare solutions to protect patients from vision loss using artificial intelligence (AI). To achieve this goal, we build tools to collect, analyze and to organize health data, empowering healthcare professionals and patients with automatic image and data analysis supported by advanced machine learning.

Exhibitor Descriptions

Review of Ophthalmology/Jobson Publishing 1106

Casey Foster
11 Campus Blvd., Suite 100
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Review of Ophthalmology® features clinically relevant information on surgical technique, new technologies, disease diagnosis and management. *Review* presents timely articles on ophthalmic subspecialties such as glaucoma, retina, refractive surgery, cornea and external disease, pediatric ophthalmology, and oculoplastics. The Review Group is your resource for continuing medical education and promotional meetings, conferences, webinars, teleconferences, and events.

Roland Consult 1027

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Expert Roland-Consult is globally recognized for a tradition of innovation, developing high-quality Electrophysiological Diagnostics Systems for Vision which include; ERG, VEP, EOG, mfERG, mfVEP, Visual Acuity, Pupillometry, DARK adaptation. Please visit the Roland Consult booth to experience the all NEW RETImap, an ALL in One system combining Infrared Fundus Imaging cSLO, Focal and Multifocal ERG, OCT, FA and Auto Fluorescence diagnostic tool for animal and human research.

RxGen, Inc. 806

Christopher Stanley
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RxGen is a specialty translational research company developing and providing innovative in vivo disease modeling and related preclinical research and development services to meet preclinical and translational research needs of the global pharmaceutical, biotechnology, and life sciences industry. Our translational research platform is designed to accelerate the evaluation, selection, and development of candidate therapeutics while reducing the cost and risk of clinical failure.

S

Santen 1203

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As a global ophthalmology company, Santen specializes in the research, development and commercialization of pharmaceutical, surgical, and OTC eye care products. With over 3,600 employees and its worldwide headquarters in Japan, Santen continues to provide innovative solutions in glaucoma, retina, uveitis, dry eye, ocular allergy and infection to patients around the world. Santen is the market leader in Japan for prescription ophthalmic pharmaceuticals and sells products in over 60 countries.

Saving Sight..... 842

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Saving Sight is a nonprofit eye bank with a mission to change lives by saving sight. Saving Sight has grown to become one of the nation's leading eye banks and is focused on providing innovative solutions to its clinical and research partners. Headquartered in Kansas City, Mo., Saving Sight facilitates eye donation in Missouri, Kansas, and Illinois, serving transplantation and research specialists locally and around the world.

SDC..... 1307

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SDC delivers top-tier clinical trial services to pharma, biologic, & device/diagnostic companies. With strategic scientific consulting & clinical data services (statistics, data management/EDC, & IRT/IWRS) expertise at our core, our services are scalable via our strategic partnerships to provide full service clinical trial solutions. With extensive experience on 200+ ocular trials since 2005, speak with us today to see why SDC is The Right Fit for your ophthalmic study needs. sdcclinical.com

Second Sight Medical Products..... 841

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Second Sight Medical Products is the developer and manufacturer of the Argus II® Retinal Prosthesis System - the first and only approved long-term device therapy for people living with advanced Retinitis Pigmentosa in the U.S. Argus II is designed to provide artificial vision to people who are profoundly blind and provide them with increases in orientation and mobility skills and is intended to increase their independence and quality of life by restoring their ability to see objects and motion.

Shenyang Xingqi Pharmaceutical Co., Ltd..... 933

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Shenyang Xingqi Pharmaceutical Co., Ltd. is a state-level new and high-tech enterprise specializing in R&D, production and sales of ophthalmic drugs. With an eye on the rejuvenation of China's national pharmaceutical industry, it is committing itself to the ophthalmology.

Shin Nippon Biomedical Laboratories, Ltd..... 1643

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Shin Nippon Biomedical Laboratories, Ltd. (SNBL) is a full-service pre-clinical CRO that offers toxicology and efficacy services to bring your drug or device to market sooner. Founded in Japan in 1957, SNBL has expanded to offer services to clients all over the world. Our ocular services appeal to those who want quality data and attention to detail. We leverage our experience with a variety of imaging modalities to find just the right ocular solution for your drug or device development program.

Exhibitor Descriptions

Shire (Medical Affairs).....MS8

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Shire (Medical Affairs)..... 827

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Sichuan Primed Shines Bio-tech Co., Ltd. 1441

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Primed Shines has a large Non-Human Primate (NHP) population (n= ~3000) with both spontaneous and induced ocular disease models include DR, DME, AMD, Dry eye, Glaucoma, BRVO, RP. We provide pharmacology/efficacy, PK/toxicology services for the drug development of ocular, metabolic, cardiovascular, NASH, bone, kidney and CNS diseases. Our strong imaging and other biomarker research capabilities enable us to build the best platform with translatable NHP models to facilitate new drug development.

Silgan Dispensing Systems..... 1249

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Silgan Dispensing is a leading global supplier of highly engineered triggers, pumps, sprayers and dispensing closure solutions to major branded consumer goods product companies in the home, health and beauty markets. With several cGmp certified facilities around the world, approved medical device facility with ISO 7&8 clean room, consumer insights and manufacturing expertise, Silgan Dispensing provides innovative and customizable solutions that meet Brand owners' needs

Singapore Eye Research Institute (SERI)..... 1033

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Singapore Eye Research Institute, SERI is Singapore's national eye research institute. SERI has played key strategic roles in the conceptualization of research ideas & technologies with local & international institutions that has ensured a high level of research competency & skills transfer. Critically, SERI's research has translated to tangible outcomes, actual patient benefit, & success stories. Today, SERI is recognized as a preeminent pacesetters of eye research in Asia and globally.

Slack, Inc. 917

Ashley Seigfried
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SLACK Incorporated invites you to pick up your free issue of *OCULAR SURGERY NEWS* U.S. Edition and *OSLI RETINA*. Sign up for the free News Wire at Healio.com/OSN and digital Editions of *OSN Europe*, *OSN APAO* and *OSN Latin America*. Stop by for show specials on SLACK Incorporated books.

Softcare Ltd. 741

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811-3201 Japan
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Softcare's Laser Speckle Flowgraphy (LSFG-NAVI or Lite) visualizes the distribution of blood flow in the retina with a series of 2-D color coded maps and observes changes in retinal and choroidal blood flow in real time. Demonstrations of the latest version of LSFG-NAVI's value to the study of ocular blood circulation will be conducted at the exhibition. We can provide the equipment (LSFG-Micro and etc.) to observe blood flow of animal eye ground as laboratory mice, rats, rabbit, pig or monkey.

Spark Therapeutics 1109

Desiree Skipworth
3737 Market St., Suite 1300
Philadelphia, Pa. 19104
215-220-6300; desiree.skipworth@sparktx.com; sparktx.com

Spark Therapeutics, a fully integrated company, strives to challenge the inevitability of genetic disease by discovering, developing, and delivering gene therapies that address inherited retinal diseases (IRDs), neurodegenerative diseases, as well as diseases that can be addressed by targeting the liver. To learn more about us, visit sparktx.com.

STEMCELL Technologies, Inc. 1642

Briana Liau Chan-Kent
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STEMCELL Technologies Inc. is committed to providing specialized cell isolation products, standardized cell culture media and accessory tools for your cell biology research. Driven by science and a passion for quality, STEMCELL supports the advancement of scientific research around the world with our catalog of more than 2000 cell biology research tools. To learn more, visit STEMCELL.com.

Sterling IRB 1402

Kathye Richards
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For over 29 years, Sterling IRB has been overseeing clinical research trials for pharmaceutical and medical device companies specializing in treatments for eye diseases and vision correction. Our Board membership includes experts in ophthalmology and optometry. We are proud of our role in protecting those research participants who play such a vital part in the development of new medicines and medical technologies.

Exhibitor Descriptions

Striata Technologies..... 1636

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The OptoDrum system from Striata Technologies quantifies the visual abilities in mice based on their optomotor reflex. Mice (like other animals and humans) compensate for global image drift in the visual environment with reflexive eye and head movements. This behavior can be used to characterize the visual abilities of the animal, thus gaining information about its spatial acuity or contrast sensitivity. With our OptoDrum system, this is done in a fully automated way.

Studylog Systems, Inc...... 729

Eric Ibsen
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So. San Francisco, Calif. 94080
650-290-7540; eibsen@studylog.com; studylog.com

Studylog's Animal Study Workflow Software® is designed for biomedical animal research and provides features for the design, planning, execution, analysis, and reporting of animal studies in a standardized, highly efficient manner, while protecting data integrity. Reducing many labs' study-related labor by half, Studylog automates and streamlines the entire animal study process, making it easier, faster and cheaper, so researchers have more time and resources to get their job done.

Syneos Health..... 830

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919-876-9300; conferences@syneoshealth.com; syneoshealth.com

Syneos Health (Nasdaq:SYNH) is the only fully integrated biopharmaceutical solutions organization. Our company, including a Contract Research Organization (CRO) and Contract Commercial Organization (CCO), is purpose-built to accelerate customer performance to address modern market realities. Created through the merger of two industry leading companies, INC Research and inVentiv Health, we bring together 21,000+ clinical and commercial minds with the ability to support customers in 110+ countries

T

Taylor & Francis Group..... 1404

Kayla Daniel
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Taylor & Francis Group partners with researchers, scholarly societies, universities and libraries worldwide to bring knowledge to life. Our scholarly journals cover a wide variety of ophthalmology hot topic areas. Visit Taylor & Francis booth #1404 to learn more about our journals and to take advantage of special offers.

Teledyne e2v 1528

Lynn Todd
 765 Sycamore
 Milpitas, Calif. 95035
 949-212-3000; lynn.todd@teledyne-e2v.com

Teledyne e2v's CMOS, CCD and EM image sensors and subsystems deliver high performance across many applications. Teledyne e2v's unique approach involves listening to the market and application challenges of customers and partnering with them to provide innovative standard, semi-custom or fully custom imaging solutions.

Topcon MS1

Christina Peccini
 111 Bauer Dr.
 Oakland, N.J. 07436
 201-599-5100; tmsmarketing@topcon.com; topconmedical.com

Topcon presents a wide range of ophthalmic instruments and software solutions, including the Triton Swept Source OCT and the new Harmony Data Management System. Stop by our booth #803 or visit our website at topconmedical.com to learn more.

Topcon 803

Christina Peccini
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Topcon presents a wide range of ophthalmic instruments and software solutions, including the Triton Swept Source OCT and the new Harmony Data Management System. Stop by our booth #803 or visit our website at topconmedical.com to learn more.

tpm taberna pro medicum GmbH 1138

Sven Scharenberg
 Im Dorf 15a
 DE 21335 Lueneburg
 Germany
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tpm is launching the new Ocular Pressure Blood Flow Analyzer. Non-invasive diagnostic procedure to measure and record pulsatile ocular perfusion in support of the early detection of glaucoma and other circulatory irregularities. tpm is the global leader in high frequency ultrasound diagnostic for the skin, developed from the inspiration of Ophthalmology systems in 1983. tpm has always been active in Ophthalmology and Dermatology for new and inovative diagnostic products.

Translational Imaging Innovations 1448

Eric Buckland
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 919-827-1200;eric@tiinnovations.com; tiinnovations.com

TII integrates your imaging science workflows to shorten the timeline of ocular innovations. Lattice is a living subjects workflow manager designed for the R&D environment, combining protocols, consents, exam tracking, and image and biospecimen data collection into one interface. Mosaic is a flexible platform for the exploration, validation, and application of image processing and AI algorithms. Lattice and Mosaic interface to our Image Repository to accelerate your image-driven breakthroughs.

Exhibitor Descriptions

Trial Runners LLC..... 927

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Trial Runners is a global, niche ophthalmology CRO shaping the future of clinical trials to help others see the world. Founded in 2006, Trial Runners has worked as a partner on over 70 trials and helped over 10,000 patients on the mission to help improve the quality of life of those suffering from ophthalmology-related conditions around the globe. Utilizing customized strategies, Trial Runners is able to help the pharmaceutical community by providing unique value, innovation, and expertise.

U

Unither Pharmaceuticals 1438

Stacy McDonald-Mickey
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Unither Pharmaceuticals is a global leader in developing and manufacturing unit dose pharmaceutical products, using sterile blow-fill-seal (BFS) and stick pack technologies. Our unit dose solutions enable line extensions and product differentiation that support on-the-go lifestyles, with the potential to improve medication dosing safety and adherence. With our experience and technology, we can assist our customers at every stage of the development process to help ensure their product's success.

V

Vanrx Pharmasystems 907

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Vasoptic Medical..... 941

Amit Guruprasad
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Vasoptic Medical developed the XyCAM Retinal Imager for estimating blood flow in the retina with high spatio-temporal resolution. The XyCAM is portable and affordable, making it suitable for research involving collection of retinal blood flow data in point-of-care settings. Robust elucidation of blood flow is emerging as a frontier for retinal imaging. The XyCAM enables assessment of flow-derived trends and parameters that may lead to improved diagnostics and disease management.

Viewpoint Life Sciences, Inc..... 737

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ViewPoint offers various solutions with applications in the field of Vision The VisioBox system can accurately analyse movements of the zebrafish eyes subject to visual stimuli surrounding the larvae. Additionally ViewPoint has a patented technology to evaluate discomfort and eye irritation using worms. This easy to use and HTS solution can be used to evaluate quality of compounds used in shampoo or cream but its sensitivity is so high that we can also discriminate products such as eyewash.

Vision Tiffany Inc. 719

Tiffany Wang
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 847-287-6688; twang@visiontiffany.com; visiontiffany.com

Vision Tiffany Inc. Is a dedicated eye surgical instrument company • Titanium Instrument & Stainless Instrument reusable and disposables • Surgical Trays • I phone Adapter • Vision Chart and • Portable slit lamps • Slit lamp Digital Adapters Lens Meter

Visionix- Luneau Technology 1702

Claire Rzonca
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Visionix, a brand of the Luneau Technology Group, is a worldwide leader in wavefront technology for the optical industry. Known for technological innovation, Visionix has set the industry standard for high tech instrumentation utilizing wavefront technology with fully automated operational functionality, offering efficient and affordable technology for eye care professionals.

VO-CRO 1240

Taylor Smith
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 Nashville, Tenn. 37232-2569
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The Vanderbilt Ophthalmic Contract Research Organization (VO-CRO) is a research enterprise dedicated to producing the highest quality pre-clinical data using state-of-the-art technology in ophthalmic disease models. VO-CRO specializes in animal models of oxygen-induced retinopathy, diabetic retinopathy, and laser-induced choroidal neovascularization, along with numerous tissue-based and cell culture techniques. Our team is poised to offer consultation on selecting pre-clinical testing methods.

Volk Optical, Inc. 902

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 Mentor, Ohio 44060
 440-742-9888; carmella.cadusale@volk.com; volk.com

Volk Optical is the premier manufacturer of ophthalmic lenses for use in diagnosis, laser therapy and surgery. More recently we have diversified our product offering with an addition of diagnostic imaging equipment. * Pictor Plus a 2 lb portable fundus and anterior segment camera * Volk InView a 1lb portable fundus camera that works with your iPhone (5/6/6S) or iTouch * Single-use lenses, great for use on animals

Exhibitor Descriptions

Voxeleron LLC 932
Jonathan Oakley
4695 Chabot Dr., Suite 200
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925-558-2755; jonathan@voxeleron.com; voxeleron.com

Voxeleron's mission is to be the leader in delivering state-of-the-art artificial intelligence and computer vision software for applications in medicine, biology, and beyond. Voxeleron was the first to develop and commercially release platform-independent OCT analysis software in support of clinical and pharmaceutical research. At ARVO we will be demonstrating Orion, our advanced OCT retinal analysis software; and InSight, our animal OCT analysis software.

W

Wasatch Photonics..... 1037
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Wasatch Photonics provides high-resolution, high-sensitivity optical coherence tomography (OCT) solutions. We provide all the tools needed to obtain world class OCT images, including full plug and play systems for a variety of applications. Our OCT solutions are specifically developed for research and OEM applications. We also manufacture spectrometers for Hyperspectral Imaging, NIR, UV-VIS, and Raman spectroscopy. NEW! Software drivers to speed your acquisition, control, and image processing.

WCCT Global Ophthalmology Research Center..... 1550
Talia Hight
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WCCT Global is a multisite, full-service, early phase contract research organization (CRO) for pharmaceutical, biotechnology, and medical device industries. We are specialized regulatory and clinical development professionals who offer an innovative, agile and collaborative approach to every program we deliver.

Welch Allyn 818
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At ARVO, Welch Allyn is featuring the RetinaVue® care delivery model. A proven, turnkey teleretinal solution, RetinaVue is simple and affordable enough for individual practices and scalable for nationwide health programs. RetinaVue Imagers are the world's most advanced handheld fundus cameras and designed for ease of use allowing any clinician to capture and transmit high-quality retina images. Welch Allyn is a leading medical diagnostic device company and a division of Hill-Rom (NYSE: HRC).

West China-Frontier PhamaTech Co.,Ltd 1738

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 China
 +86 28-8515 4334, ext. 167; fengruitang@glpcd.com; glpcd.com

As a first-class professional organization in China specializing in the evaluation of non-clinical research, Chengdu WestChina-Frontier PharmaTech (National Chengdu New Drug Safety Evaluation Center) is established on international standards and dedicated to providing high-quality pharmacodynamics, toxicology, pharmacokinetics and biological analysis and evaluation, supporting the global applications and registration of drugs in China, North America, Europe, and Australia.

Wicab, Inc. 1605

Bill Conn
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 608-829-4504; info@wicab.com; wicab.com

Wicab, Inc. developed and sells the FDA approved BrainPort® Vision Pro vision aid that provides electro-tactile stimulation to aid profoundly blind users in orientation, mobility, and object recognition as an adjunctive device to other assistive methods such as the white cane or a guide dog. BrainPort V100 translates digital information from a wearable video camera into electrical stimulation patterns on the surface of the tongue. Some have described it as seeing with your tongue.

Wolters Kluwer Health..... 833

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 215-521-8300; joey-rose.jester@wolterskluwer.com; shop.lww.com

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World Glaucoma Association 1031

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The World Glaucoma Association (WGA) is an amalgamation of glaucoma societies throughout the world. In addition, the association has industry members as well as a patient organization. The WGA membership covers about 12,000 individuals involved in glaucoma in some aspect or another and touches many more glaucoma patients. Its core purpose is to eliminate glaucoma-related disability worldwide.

Exhibitor Descriptions

World Health Organization..... 1350

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Stylus Publishing is the North American distributor for The WHO. The WHO is a Specialized Agency of the United Nations, charged to act as the world's directing and coordinating authority on questions of human health. It is responsible for providing leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence-based policy options, providing technical support to countries and monitoring and assessing health trends.

World Precision Instruments..... 1526

Carmen Raymond
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WPI is a leading global laboratory product manufacturer focused on providing scientists with cutting edge laboratory instruments at cost-effective prices. Our popular ARVO display items will feature: surgical / microdissection instrumentation, surgical accessories, loupes and our UltraMicroPump (UMP3) with Nanofil for microinjection.

WuXi AppTec - Laboratory Testing Division..... 1439

Lindsey Schwenk
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WuXi AppTec Laboratory Testing Division, Toxicology department has established a professional ophthalmology laboratory so as to provide various services for ophthalmological studies. The provided services include comparative ophthalmologic examination in varieties of toxicity studies, eye irritation, new ocular drug toxicity and toxicokinetics, pharmacodynamics and pharmacokinetics.

Y

YuYu Pharma.....MS4

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Z

Zeiss 1317

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Uncovering the undiscovered relies on collaboration. At ZEISS, a new era in open collaboration is bringing clinicians, researchers and scientists together to explore the future of Swept-Source OCT Angiography and multimodality imaging solutions , to better support vision care around the world, today and into the future.

Zilia 838

Joannie Desroches
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Canada
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Zilia has developed Zilia Ocular, the first and only ocular oximeter to provide non-invasive, continuous, quantitative and accurate measurements of oxygenation in targeted regions of the retina. Since oxygen supply is proving to be an important factor in multiple ocular diseases, its versatility and high precision make it a powerful tool for researchers and eye care professionals involved in ocular diseases, physiological and metabolic mechanisms, and oxygen regulation.

Visit the Exhibitor Education Lounge in the Exhibit Hall

Mon., April 29

9am

EyeFind Demonstration

W. Daniel Stamer, PhD, FARVO, President-Elect, ARVO, and
Joseph A.C. Wadsworth Professor of Ophthalmology, Professor of Biomedical
Engineering, Duke University
Kevin Corcoran, CAE. President/CEO, Eye Bank Association of America

11am

A Future Outlook at Transforming Patient Care: From Advanced Intelligence to Advanced Collaboration

Angelo Rago, Head of Ophthalmic Diagnostics, Carl Zeiss Meditec, Inc.

1pm

Rodent Electrophysiology

Diagnosys LLC

Tues., April 30

10am

Microvascular biomarkers of Retinal Vessel Analysis and Ophthalmodynamometry

Cornelia Schmidt, Benedikt Krauss, Imedos Systems GmbH

2pm

NEI 3-D Retina Organoid Challenge 2020: Eligibility, Submission Criteria, and Sponsorship Opportunities

Steven Becker, PhD, Health Science Administrator, National Eye Institute

ARVO gratefully acknowledges our Exhibitor Education Lounge Sponsors





XXIV Biennial Meeting of the International
Society for Eye Research
Meeting Venue: Hilton Buenos Aires
October 25 – 29, 2020 | Buenos Aires, Argentina



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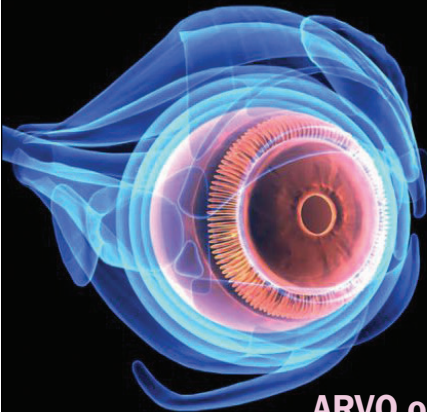
ARVO

**IMAGING IN THE EYE
CONFERENCE**

May 1 – 2, 2020

Baltimore Convention Center

Baltimore, Md.



ARVO.org/Imaging

Sunday, April 28 ■ Symposia, minisymposia, Keynote, lectures, workshop/SIGs

Time	Session	Title	Location
8 – 10am	101	Approaches to restoring vision: Where are we now? [VN, AP, EY, GL, PH, RE, RC, VI]	East Ballroom A
	102	A window on the soul: How systemic disease manifests in the eye [AP, EY, GL, RE, VN, GEN]	East Ballroom B
	103	The potential and pitfalls of big data [CL, CO, GL, RE, MOI, LV]	East Ballroom C
10:15 – 11:45am	115	ARVO/Alcon Opening Keynote: How cells export proteins and RNA — applications to the treatment of disease	ARVO Ballroom
12noon – 12:45pm	116	Proctor Award and Lecture	ARVO Ballroom
1– 2:30pm	117	New perspectives on sub-RPE deposit formation: discussing clinical and molecular progress — SIG [BI, RE, RC]	East 1
	118	Protection, Correction, Regeneration: Are combination therapies in the future for Inherited Retinal Degenerations? — SIG [RE, GEN, LV]	East 2/3
	119	New ideas about metabolic interactions between photoreceptors and Müller cells — SIG [RC, BI, RE]	East 8&15
	120	Diabetic Keratopathy: An Understudied Corneal Disease — SIG [CO]	East 11/12
	121	Tear film, inflammation and the nervous system—the three pillars of dry eye disease resulting in symptoms of discomfort — SIG [CO, IM]	East Ballroom A
	122	Biomechanical Injury and Inflammatory Signaling in the Eye — SIG [VN, BI, GL, IM, PH, RC, VN, GEN]	East Ballroom B
	123	Findings of the International Myopia Institute White Paper Reports — SIG [CL, AP, GEN]	East Ballroom C
	123a	Functional Imaging Technologies for Regenerative Medicine	West 211
	124	Grant writing: Early career funding opportunities	West 217-219
	125	Win-win collaborations between academia and industry	West 220
	126	The importance of animal research in the bench to bedside pipeline	West 221/222
127	Low Vision Group — The effects of mesopic light levels on vision and functional activities [LV]	West 223/224	
128	China-ARVO networking forum	West 301	

Symposia and minisymposia highlighted in **boldface**

Daily Program

Sunday, April 28 ■ Symposia, minisymposia, Keynote, lectures, workshop/SIGs

Time	Session	Title	Location
3 – 4:45pm	147	Uveal Melanoma [AP]	East 1
	148	Retina [PH]	East 2/3
	149	Emerging AMD Therapeutics [RE]	East 8&15
	150	Novel Pathogenic Mechanisms in Diabetic Retinopathy [RC]	East 11/12
	151	Myeloid and Innate Immunology of the Retina [IM, AP]	East Ballroom A
	152	New and emerging clinical trials endpoints — Minisymposium [RE, CL, GL, RE, RC, VI, GEN, MOI]	East Ballroom B
	153	Omics and systems biology approaches for profiling ocular tissues in health and disease [BI]	East Ballroom C
	154	Photoreceptors [VN]	West 212-214
	155	Cataract Surgery, Epidemiology and Clinical Outcomes [LE]	West 217-219
	156	Healthcare Delivery [CL]	West 220
	157	Amblyopia and Visual Plasticity [EY]	West 221/222
	158	Advanced Imaging of Retinal Structure and Function in Disease [VI]	West 223/224
	159	Epstein Award Session [GL]	ARVO Ballroom
	160	Emerging gene-driven therapies for anterior segment disease — Minisymposium [CO, BI, GL]	Harbour Ballroom

Symposia and minisymposia highlighted in **boldface**



Visit the Gift Shop in ARVO Central to pick up the children's t-shirt

Sunday, April 28 ■ Posters

Time	Session	Title	Board #
8 – 9:45am	104	Physiology/Pharmacology [PH]	A0091 - A0124
	105	AMD screening, risk factors, and consequences [CL]	A0125 - A0146
	106	AMD anti-VEGF I [RE]	A0253 - A0285
	107	AMD anti-VEGF II [RE]	A0287 - A0320
	108	Image Processing and Interpretation [MOI, CL]	A0549 - A0591
	109	Animal Imaging [MOI]	A0592 - A0617
	110	Amblyopia: Mechanisms and Associations [EY]	A0618 - A0636
	111	Strabismus: Surgical management and outcomes [EY]	A0637 - A0650
	112	Anti-inflammatory agents, antibiotics and antivirals [PH]	B0361 - B0380
	113	Dry Eye [CO]	B0401 - B0450
	114	Keratokonus and corneal crosslinking [CO]	B0504 - B0546
1 – 2:45pm	129	AMD therapies (excluding anti-VEGF) [RE]	A0232 - A0252
	130	Gene variants and regulation of ocular genes expression in health and disease [BI]	A0367 - A0420
	131	Retinal Degeneration: Animal Models [RC, LV, RE]	A0421 - A0458
	132	Cataract Surgery I [LE, RE]	A0459 - A0508
	133	Eye Movements and Nystagmus [EY]	A0651 - A0671
	134	Inner Retinal Circuits [VN]	B0001 - B0019
	135	Outer Retinal Function [VN]	B0020 - B0050
	136	Aberrations, Ocular Optics, and Retinal Image Quality [VI]	B0067 - B0090
	137	Neuroprotection [GL]	B0091 - B0124
	138	Neurodegeneration [GL]	B0125 - B0161
	139	Laser Therapy [GL]	B0162 - B0187
	140	Clinical Melanoma. Therapy and Complications [AP, CL, MOI]	B0188 - B0206
	141	Melanoma: Immunotherapy, Genomics, New Strategies [AP]	B0207 - B0240

Poster board numbers correspond to poster location in Exhibit Hall;
A = Poster Area A and B = Poster Area B.

Sunday, April 28 ■ Posters

Time	Session	Title	Board #
1 – 2:45pm continued	142	Mechanistic and translational studies of retinal degeneration and uveitis [IM]	B0241 - B0300
	143	Clinical and epidemiological aspects of infection [IM]	B0301 - B0360
	144	Corneal Immunology [CO, RC]	B0381 - B0400
	145	Corneal Epithelium [CO]	B0451 - B0482
	146	Corneal neovascularization [CO]	B0483 - B0503
	3 – 4:45pm	161	Visual Impairment - Impact on Daily Activities [LV]
162		Diabetic eye disease [CL]	A0023 - A0066
163		Cataractogenesis, Prevention, and Treatment [LE]	A0067 - A0090
164		AMD clinical research I [RE]	A0147 - A0190
165		AMD clinical research II [RE]	A0191 - A0231
166		AMD Pathogenic Mechanisms [RC, RE]	A0321 - A0350
167		From Modeling to Potential Therapies [RC]	A0351 - A0366
168		OCT - New Biomarkers and Technical Improvements [MOI]	A0509 - A0548
169		Color. Adaptation and Sensitivity [VI]	B0051 - B0066
5 – 6pm			All Posters



Poster board numbers correspond to poster location in Exhibit Hall;
A = Poster Area A and B = Poster Area B.

Monday, April 29 ■ Papers, minisymposia, section business meetings

Time	Session	Title	Location
7 – 8am	201	NAEVR Defense-Related Vision Research Opportunities	West 109/110
8:15 – 10am	202	Advances in Retinoblastoma and Radiation Retinopathy [AP]	East 1
	203	Gene therapy and delivery [PH]	East 2/3
	204	Miscellaneous Maculopathies [RE]	East 8&15
	205	AMD Pathobiology and New Models [RC]	East 11/12
	206	Adaptive and Innate Immunity in Ocular Health and Disease [IM]	East Ballroom A
	207	AMD Imaging I [RE]	East Ballroom B
	208	Frontiers in membrane dynamics and cellular communication: Impact on vision and disease mechanisms — Minisymposium [BI, AP, GL, IM, PH, RE, RC, VN, GEN]	East Ballroom C
	209	Corneal Cell and Molecular Biology [CO]	West 211
	210	Circadian rhythms and photoreceptors [VN]	West 212-214
	211	Cataractogenesis and Cataract Treatment [LE]	West 217-219
	212	Impact of Visual Impairment [CL]	West 220
	213	Systemic Disorders: Basic and Translational Studies [EY]	West 221/222
	214	Accommodation: Morphology and Mechanisms [VI]	West 223/224
		215	Healthcare transformation with AI: Impact in glaucoma and ophthalmology — Minisymposium [GL, BI, CL, RE, VI]
10:15 – 11am	216	Dry Eye I [CO]	West 109/110
	202a	AP Section Business Meeting	East 1
	203a	PH Section Business Meeting	East 2/3
	205a	RC Section Business Meeting	East 11/12
	206a	IM Section Business Meeting	East Ballroom A
	207a	RE Section Business Meeting	East Ballroom B
	208a	BI Section Business Meeting	East Ballroom C
	209a	CO Section Business Meeting	West 211
	210a	VN Section Business Meeting	West 212-214
	211a	LE Section Business Meeting	West 217-219
	212a	CL Section Business Meeting	West 220
	213a	EY Section Business Meeting	West 221/222
	214a	VI Section Business Meeting	West 223/224
	215a	GL Section Business Meeting	ARVO Ballroom

Symposia and minisymposia highlighted in **boldface**

Monday, April 29 ■ Papers, minisymposia and workshops/SIGs

Time	Session	Title	Location
11:15am – 1pm	226	Drug delivery, drug and gene delivery system [PH]	East 2/3
	227	Retinal Vascular Disease [RE]	East 8&15
	228	Retinal Bioenergetics and Metabolic Interactions [RC]	East 11/12
	229	Translational immunology in AMD, uveitis and thyroid eye disease [IM]	East Ballroom A
	230	Diabetic Retinopathy Therapeutics [RE]	East Ballroom B
	231	Molecular mechanisms of retinal function in health and disease [BI]	East Ballroom C
	232	Ocular Surface Disease [CO]	West 211
	233	Of mice and men: Comparing primate and rodent retina — Minisymposium [VN, AP, RE, RC]	West 212-214
	234	Mendelian Genetics and Animal Models of Retinal Disorder [GEN]	West 217-219
	235	Quality of life and the patient experience [CL]	West 220
	236	Strabismus and Nystagmus [EY]	West 221/222
	237	Advanced Imaging of Retinal Structure and Function in Healthy Eyes [VI]	West 223/224
	1:15 – 2:45pm	238	New Ideas in Glaucoma [GL]
253		Glia in blood-retina barrier disorders — SIG [RC, GL, IM]	East 1
254		Next generation sequencing for pathogen discovery, ready for prime time? — SIG [IM, RE]	East 2/3
255		Cellular and Molecular Imaging of the Retina in Health and Disease — SIG [RE, AP, BI, GL, IM, PH, RC, VI, VN, MOI]	East 8&15
256		Tear Biomarkers of Ocular Surface Diseases in the Clinic — SIG [CO]	East 11/12
257		Managing Patients with Diabetic Macular Edema, Diabetic Retinopathy, Neovascular and Non-Neovascular AMD, and Retinal Vein Occlusion: How Do We Best Utilize the Latest Data from Clinical Trials — SIG [RE, CL, CO, IM, PH, VI, VN, GEN, MOI]	East Ballroom A
258		Multidisciplinary Ophthalmic Imaging Group — OCT advances in vascular and functional imaging [MOI]	East Ballroom B
259		Aging as a factor in eye diseases — SIG [BI, CO, GL, LE, RE, RC, VN, LV]	East Ballroom C

Symposia and minisymposia highlighted in **boldface**

Monday, April 29 ■ Papers, minisymposia workshops/SIGs, lectures

Time	Session	Title	Location	
3 – 3:45pm	260	Members-in-Training career forum: Preparing for your future career NOW!	West 211	
	261	Getting published: The light and dark sides ...	West 212-214	
	262	Health disparities, social justice and vision research — SIG [CL, CO, EY, GL, GEN, LV]	West 217-219	
	263	Lipids in diverse functions and pathologies of the eye — SIG [BI, GL, IM, PH, RE, RC]	West 220	
	264	NIH-CSR peer review workshop	West 221/222	
	265	VSS at ARVO — Vision after sight restoration	West 223/224	
	266	Friedenwald Award and Lecture	ARVO Ballroom	
	4 – 5:45pm	267	Aqueous humor dynamics and IOP [PH]	East 2/3
		268	Imaging the Posterior Segment-Clinical [RE]	East 8&15
		269	Emerging cell-based therapies to tackle retinal diseases — Minisymposium [RC, RE]	East 11/12
270		Deep learning for classification and segmentation [MOI]	East Ballroom A	
271		AMD-clinical research [RE]	East Ballroom B	
272		Corneal surgery: non-refractive [CO]	West 211	
273		Corneal Tissue Engineering and Regenerative Medicine [CO]	West 212-214	
274		Lens Cell Biology [LE]	West 217-219	
275		Visual Impairment and Multi-Morbidity [LV]	West 221/222	
276		Biomechanics [GL]	ARVO Ballroom	
7:30 – 9pm	277	Neuroprotection [GL]	East Ballroom C	
	295	Diabetic Retinopathy Treatments: Clinically Relevant Results From the Diabetic Retinopathy Clinical Research Network — Special Session	West 211	
	296	New Clinical Trial Results in Retinal Vein Occlusion: SCORE2 and LEAVO Trials — Special Session	West 212-214	
	297	Changing What It Means To Be Blind: We're All in This Together — Special Session	West 217-219	
	298	New tools and techniques for functional and anatomical retinal circuit dissection — Special Session	West 223/224	

Symposia and minisymposia highlighted in **boldface**

Monday, April 29 ■ Posters

Time	Session	Title	Board #
8:15 – 10am	217	Imaging Science and Vision Assessment [VI, RC, VN]	A0102 - A0116
	218	Machine Learning I [MOI]	A0117 - A0160
	219	Machine Learning II [MOI]	A0161 - A0205
	220	Deep Learning & AI [RE]	A0206 - A0225
	221	Imaging: posterior segment, clinical [RE, LV, MOI, VI]	A0302 - A0360
	222	Glaucoma Genetics [GEN]	A0481 - A0507
	223	Retinal Vascular Biology [RC]	B0265 - B0277
	224	Retinal Angiogenesis and ROP [RC]	B0278 - B0301
	225	Metabolic and Oxidative Control of Retinal Homeostasis and Diseases [RC, RE]	B0302 - B0338
11:15am – 1pm	239	Accommodation, Binocular Function, TBI [VI]	A0056 - A0083
	240	Visual Impairment - Measures of Visual Function [LV, CL]	A0084 - A0101
	241	OCT - Clinical Applications I [MOI]	A0226 - A0262
	242	OCT - Clinical Applications II [MOI]	A0263 - A0301
	243	RPE Biology [RC, RE]	A0436 - A0463
	244	RPE: Potential Therapies [RC, RE]	A0464 - A0480
	245	Glaucoma risk factors, progression, and management [CL]	A0508 - A0551
	246	Vitreoretinal interface disease [RE]	B0019 - B0038
	247	Endophthalmitis: clinical [RE]	B0039 - B0059
	248	Cataract Surgery II [LE]	B0339 - B0374
	249	Posterior Capsular Opacification [LE]	B0375 - B0384
	250	Cornea and lens [PH, VI]	B0385 - B0400
	251	Corneal imaging and topography [CO, CL]	B0401 - B0448
	252	Corneal Endothelium I [CO]	B0449 - B0483
4 – 5:45pm	278	Optic Neuropathy [EY]	A0001 - A0021
	279	Multiple Sclerosis and the Eye [EY]	A0022 - A0034
	280	Idiopathic Intracranial Hypertension, Dementia and Neurodegenerative Disorders [EY]	A0035 - A0055
	281	Retinoblastoma [AP]	A0361 - A0380

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Monday, April 29 ■ Posters

Time	Session	Title	Board #
4 – 5:45pm continued	282	Biochemistry and Molecular Biology of the Retina [BI]	A0381 - A0435
	283	Clinical Studies [GL]	A0552 - A0568
	284	IOP Measurement [GL]	A0569 - A0601
	285	Visual Fields, Psychophysics, and Electrophysiology [GL, RC]	A0602 - A0654
	286	Advances in Human Electrophysiology [VN]	A0655 - A0674
	287	Ocular Trauma [CL]	B0001 - B0018
	288	Fundamentals of ocular infection 1 [IM]	B0060 - B0084
	289	Retinal Vascular Diseases II [RE]	B0085 - B0127
	290	Diabetic Macular Edema Clinical Research [RE]	B0128 - B0179
	291	Biochemistry and molecular mechanisms of diabetic retinopathy [BI]	B0180 - B0212
	292	Diabetic Retinopathy: Pathogenic Mechanisms [RC, RE]	B0213 - B0249
	293	New Therapeutic Avenues in Diabetic Retinopathy [RC]	B0250 - B0264
	294	Corneal Dry Eye Clinical II Epidemiology [CO]	B0484 - B0525
6 – 7pm		All Posters	

For the latest program information

This ARVO Annual Meeting program information is up to date as of **April 5, 2019**. For the latest changes to any program or session, download the ARVO 2019 mobile app or visit the Online Planner at ARVO.org/AM/Program.

Poster board numbers correspond to poster location in Exhibit Hall;
A = Poster Area A and B = Poster Area B.

Tuesday, April 30 ■ Papers, minisymposia, general business meeting

Time	Session	Title	Location
7 – 8:30am	301	Diabetes and its Ocular Complications — SIG [RE, CL, CO, GL, GEN, MOI]	East 1
	302	Cutting funding requirements of third world researchers by 3D-printers, drone slit-lamps and AIRBNB-style equipment sharing — SIG [RE]	East 8&15
	303	OCT Guided and Robotically Enabled Ophthalmic Surgery — SIG [MOI, CO, GL, RE]	East 11/12
	304	The New face of (presumed) Intraocular Tuberculosis — SIG [IM]	West 212-214
	305	Selective autophagy: a new therapeutic target for retinal diseases —SIG [RC, BI, PH, RE, GEN]	West 217-219
	306	Patient Engagement in Ophthalmology Research— SIG [CL, AP, BI, CO, EY, GL, IM, LE, PH, RE, RC, VI, VN, GEN, LV, MOI]	West 220
	307	Metamorphopsia – an update on diagnostic methods, treatment, and evaluation of novel instruments and questionnaires — SIG [LV, RE, VI, VN]	West 221/222
	308	Hyperreflective intraretinal spots (foci) in macular diseases: from bench to bedside — SIG [RE, RC, GEN, MOI]	West 223/224
	309	Breakfast with the experts	Harbour Ballroom
8:45 – 10:30am	310	Non-Melanoma Tumors: Genetics and Therapeutics [AP, RC]	East 1
	311	Diabetic retinopathy [PH]	East 2/3
	312	Macular edema and neuroprotection-translational studies [RE]	East 8&15
	313	Microglia and Innate Immunity [RC]	East 11/12
	314	Diabetic Retinopathy: Clinical Imaging [RE]	East Ballroom B
	315	Gene variants in major ocular diseases [BI]	East Ballroom C
	316	Dry Eye II [CO]	West 211
	317	Laser Therapy [GL, LE]	West 212-214
	318	Glaucoma Genetics Development with advanced technology & large datasets [GEN]	West 217-219
	319	Ageing with Vision Loss: Understanding the ageing consequences of visual impairment — Minisymposium [CL]	West 220
	320	Clinical outcomes and visual quality with retinal prosthetic vision restoration — Minisymposium [VI, EY, VN, LV]	West 223/224
	321	Neurodegeneration [GL]	ARVO Ballroom

Symposia and minisymposia highlighted in **boldface**

Tuesday, April 30 ■ Business meeting, papers, minisymposia, workshops/SIGs

Time	Session	Title	Location
8:45 – 10:30am continued	322	Visual Fields, Psychophysics, and Electrophysiology [GL]	East Ballroom A
10:45 – 11:30am	339	General Business Meeting	West 211
11:45am – 1:30pm	340	Retina/RPE New drugs, Mechanisms of action, and Toxicity [PH]	East 2/3
	341	Update on endophthalmitis [RE]	East 8&15
	342	Retinal Angiogenesis and Related Mechanisms in Vascular Biology [RC]	East 11/12
	343	Innate immune memory and the eye — Minisymposium [IM, AP, CO, RE]	East Ballroom A
	344	AMD Translational studies [RE]	East Ballroom B
	345	Highlights of OCT angiography [MOI]	East Ballroom C
	346	Lacrimal gland biology in homeostasis, disease, and repair — Minisymposium [CO]	West 211
	347	Unresolved issues in myopia — Minisymposium [AP, BI, CL, PH, RE, VI, VN]	West 212-214
	348	Lens Development [LE]	West 217-219
	349	Visual Training and Rehabilitation [LV]	West 221/222
1:45 – 2:30pm	367	Weisenfeld Award and Lecture	ARVO Ballroom
2:45 – 4:30pm	368	Retinal Development [RC]	East 8&15
	369	RPE Biology in Health and Disease [RC]	East 11/12
	370	Uveitis clinical epidemiology and therapeutics [IM]	East Ballroom A
	371	DME Therapies and Outcomes [RE]	East Ballroom B
	372	Retinal degeneration: molecular disease mechanisms [BI]	East Ballroom C
	373	Corneal endothelium and Fuchs corneal dystrophy [CO]	West 211
	374	Ganglion cells and beyond [VN]	West 212-214
	375	Contact lens [CO]	West 217-219
	376	Myopia: Behavior and interventions [CL]	West 220
	377	Mechanisms and biomechanics of traumatic retinal hemorrhage in children — Minisymposium [EY, RE]	West 221/222
378	Vision assessment and modeling in health, and with impairment [VI]	West 223/224	

Symposia and minisymposia highlighted in **boldface**

Tuesday, April 30 ■ Papers, MIT poster awards and lectures

Time	Session	Title	Location
2:45 – 4:30pm continued	379	Clinical Studies [GL]	ARVO Ballroom
	380	Structure-Function Relationships [GL]	Harbour Ballroom
4:15 – 5:45pm	390	MIT Outstanding Poster Award Competition	West Exhibit Hall
5:45 – 6:45pm	392	ARVO/Champalimaud Award Lecture	ARVO Ballroom

Symposia and minisymposia highlighted in **boldface**

Happening Tonight ...

MIT Outstanding Poster Competition

Tuesday, April 29, 4:15 – 5:45pm, Exhibit Hall

MIT First Authors of the top five scored poster abstracts from each Scientific Section and Cross-sectional Group will participate in the MIT Outstanding Poster Award Competition. One award recipient from each Scientific Section and Cross-sectional Group will be selected by the MIT Committee. Award recipients will be selected based on how well a poster displays the abstract's research and on how effectively the MIT First Author discusses the research with the judges and with meeting participants.

All meeting participants are invited to view the competing posters and presentations.

Tuesday, April 30 ■ Posters

Time	Session	Title	Board #
8:45 – 10:30am	323	Stem Cells and Retinal Organoids: Disease modeling [RC]	A0033 - A0049
	324	Stem Cell based Approaches for Transplantation and Therapies [RC]	A0050 - A0066
	325	Gene Therapy and Delivery [PH]	A0083 - A0113
	326	Retina genetics [GEN, CL]	A0210 - A0236
	327	AMD [GEN, LV]	A0237 - A0254
	328	AMD Translational Studies [RE, LE]	A0255 - A0281
	329	OCTA in AMD/DR/Glaucoma/Ischemia [MOI]	A0342 - A0393
	330	OCTA in Healthy/Aging Eyes [MOI]	A0394 - A0410
	331	OCTA - Experimental Applications and Technical Improvements [MOI]	A0411 - A0441
	332	Animal Models for Visual Disease and Restoration [VN]	A0490 - A0514
	333	Pediatric eye disease [CL]	B0041 - B0059
	334	Genetics and Light dependent mechanisms in myopia [AP]	B0190 - B0210
	335	Lens Physiology and Accommodation [LE, MOI]	B0211 - B0228
	336	Aqueous humor Dynamics and IOP [PH]	B0355 - B0376
	337	Corneal Epithelium Wound Repair and Healing [CO]	B0377 - B0407
338	Corneal neuropathy: Diabetic and other [CO]	B0476 - B0486	
11:45am – 1:30pm	350	Stem Cells and Retinal Organoids: Development [RC, CL, GL]	A0001 - A0032
	351	Drug delivery, drug and gene delivery system, implant delivery [PH]	A0114 - A0154
	352	Gene therapy for ocular disorders [BI]	A0156 - A0197
	353	Genome, chromatin structure and functional genomics [BI]	A0198 - A0209
	354	AMD Imaging [RE, VN]	A0282 - A0341
	355	Uveitis and scleritis - clinical therapeutics and checkpoint inhibitors [IM]	A0540 - A0576
	356	Non-Melanoma, Non-Retinoblastoma Intraocular Pathology & Retinopathy [AP, CL, CO, LV, RE, VN]	A0577 - A0594
	357	Tumors: Eyelids, Orbit, Ocular Surface, Conjunctiva, and Ocular Adnexa [AP, CO, EY]	A0595 - A0627

Poster board numbers correspond to poster location in Exhibit Hall;
A = Poster Area A and B = Poster Area B.

Tuesday, April 30 ■ Posters

Time	Session	Title	Board #
11:45am – 1:30pm continued	358	Neuro-ophthalmology: Genetics and Investigational modalities [EY]	B0001 - B0019
	359	Pediatric Ophthalmology [EY]	B0020 - B0041
	360	Consequences of vision impairment [CL]	B0060 - B0071
	361	DME anti-VEGF I [RE]	B0148 - B0178
	362	Retinal Laser Therapeutic Applications and Innovations [RE]	B0179 - B0189
	363	IOLs: Calculations, Vision, Implantation, Multifocals [VI]	B0229 - B0274
	364	Surgery and Wound Healing I [GL]	B0275 - B0314
	365	Pharmacologic Interventions and Cellular Mechanisms [GL, RE]	B0315 - B0354
	366	Corneal Endothelium II [CO]	B0487 - B0517
2:45 – 4:30pm	381	Retina/RPE transplantation and Stem Cell [RE, LV]	A0067 - A0082
	382	Retinal disease epidemiology [CL]	A0442- A0475
	383	Retinal Degenerations - Cilia and Ciliopathies [RC]	A0476 - A0489
	384	Retinal Microglia and Neuroinflammation [RC, GL]	A0515 - A0539
	385	Visual Impairment - Assistive Devices and Rehabilitation [LV]	B0072 - B0103
	386	Retinal Vascular Diseases I [RE]	B0104 - B0147
	387	Corneal Tissue Engineering and Regenerative Medicine [CO]	B0408 - B0465
	388	Corneal Development and Cell Differentiation [CO]	B0466 - B0475
	389	Tear film, Lacrimal and Meibomian Glands [CO, EY]	B0518 - B0557
4:45 – 5:45pm		All Posters	

Poster board numbers correspond to poster location in Exhibit Hall;
A = Poster Area A and B = Poster Area B.

Wednesday, May 1 ■ Papers and minisymposia

Time	Session	Title	Location
8:15 – 10am	401	P2X7 receptor: One target for inflammatory responses in different ocular diseases — Minisymposium [PH, CO, IM, RE, RC]	East 2/3
	402	Retinal Degeneration [RC]	East 8&15
	403	Repurposing drugs for the treatment of retinal diseases — Minisymposium [RC, BI, RE]	East 11/12
	404	AMD Imaging II [RE]	East Ballroom B
	405	Gene editing & new cell-based and animal models for ocular disease [BI]	East Ballroom C
	406	Corneal imaging and topography [CO]	West 211
	407	ERG: Advances, Disease and Injury [VN]	West 212-214
	408	GWAS & Beyond: Epigenetics and Functional Characterization [GEN]	West 217-219
	409	Epidemiology of Corneal Disease [CL]	West 220
	410	Visual Impairment- Impact on Driving and Mobility [LV]	West 221/222
	411	Refraction, Biometry, and Myopia [VI]	West 223/224
	412	Ocular Blood Flow [GL, RC]	ARVO Ballroom
	413	Corneal Neuropathy and Neovascularization [CO]	Harbour Ballroom
10:15am – 12noon	432	Advanced imaging technologies [MOI]	East 1
	433	Blood Flow [PH]	East 2/3
	434	Retinopathy of Prematurity [RE]	East 8&15
	435	Stem Cells and Organoids [RC]	East 11/12
	436	Precision through measurement: Biomarkers in health and disease — Minisymposium [IM, RE, VN]	East Ballroom A
	437	Diabetic Retinopathy-Screening and Clinical Imaging [RE]	East Ballroom B
	438	Corneal biomechanics, keratoconus and crosslinking [CO]	West 211
	439	Inner Retinal Function [VN]	West 212-214
	440	Lens Biochemistry [LE]	West 217-219
	441	Retinal disease screening and risk factors [CL]	West 220
	442	Optic Neuropathy [EY]	West 221/222
443	Myopia Progression and Control: Animal and Clinical Studies [AP]	West 223/224	

Symposia and minisymposia highlighted in **boldface**

Wednesday, May 1 ■ Papers, minisymposia, lectures and workshops/SIGs

Time	Session	Title	Location
10:15am – 12noon continued	444	Imaging [GL]	ARVO Ballroom
	445	Corneal Epithelium in Health and Disease [CO]	Harbour Ballroom
12:15 – 1:45pm	457	Eye and Brain - the interrelationship and pathology (Second Edition) — SIG [VN, EY, GL, IM, RE, MOI]	East 1
	458	Excellence in sight: enhancing the methodological rigor of clinical research to inform eye care practice and future research — SIG [CL, CO, GL, LE, RE]	East 2/3
	459	Integrating Robotics into Ophthalmic Surgery — SIG [RE]	East 8&15
	460	Retinal Ganglion Cell Differentiation from Pluripotent Stem Cells: Applications for Studying Development, Modeling Retinal Degeneration, and as a Vehicle for Cellular Replacement — SIG [RC, GL, RE, VN]	East 11/12
	461	Choriocapillaris Imaging with OCT Angiography — SIG [MOI, GL, RE]	East Ballroom A
	462	Genetics Group — Spotlight on retinal ciliopathy from genetics to mechanism [GEN]	East Ballroom B
	463	Developing Eye Drops in Ophthalmology: Practical Considerations for Smooth Translation to the Clinic — SIG [GL, AP, IM, LE, PH, RE, RC]	East Ballroom C
	464	Scientists as entrepreneurs (or how to apply your science to business)	West 211
	465	How do I tell m(e)y(e) story? Why effective communication is needed now more than ever to increase research funding	West 212-214
	466	Clinician-scientist forum: How to become a successful clinician-scientist	West 217-219
	467	The role of the human microbiome in ocular disease — SIG [IM, RE, GEN]	West 220
	468	Overcoming the challenges of international collaboration in ocular research	West 221/222
	469	Ethical challenges and solutions for CRISPR treatment in human eye disorders	West 223/224
	470	Advances and Challenges in Utilization of Artificial intelligence in Ophthalmology Research and Clinical Practice — SIG [RE, CO, GL, MOI]	Harbour Ballroom

Symposia and minisymposia highlighted in **boldface**

Wednesday, May 1 ■ Papers, minisymposia, lectures, SIGs and special sessions

Time	Session	Title	Location
2 – 2:45pm	471	Cogan Award and Lecture	ARVO Ballroom
3 – 4:45pm	472	Retinitis Pigmentosa-Clinical [RE]	East 8&15
	473	Neuroprotection [RC]	East 11/12
	474	Ocular surface infection and inflammation [IM]	East Ballroom A
	475	AMD clinical trials [RE]	East Ballroom B
	476	Advanced therapies for ocular disease [BI]	East Ballroom C
	477	Dry eye clinical [CO]	West 211
	478	Trabecular Meshwork and Ciliary Body [GL]	West 212-214
	479	Physiological biochemistry of the lens — Minisymposium [LE]	West 217-219
	480	Genetic Epidemiology [CL]	West 220
	481	Imaging in Neuro-ophthalmic Disorders [EY]	West 221/222
	482	The choroid in ocular physiology, pathology and myopia [AP]	West 223/224
	483	Surgery and Wound Healing [GL]	ARVO Ballroom
	484	Corneal Stroma Wound Healing and Repair [CO]	Harbour Ballroom
	6:15 – 7:45pm	498	Focal vs global: Is Keratoconus pathology driven by focal corneal tissue changes or is it a global corneal defect influenced by systemic factors? — SIG [CO, BI, GEN, MOI]
499		Fluorescence lifetime imaging ophthalmoscopy from bench to bedside — SIG [IM, RE]	East 2/3
499a		New perspectives on MIGS — SIG [GL]	East 8&15
499b		Using, fluid biopsies, for decision-making in personalized medicine in ophthalmology — SIG [CO, AP, GL, IM, RE, RC, GEN]	East 11/12
499d		Pathogenesis of TB-associated uveitis: current status and future directions — SIG [IM, AP, PH, RE]	East Ballroom B
499e		Wnt Signalling and regenerative medicine for retinal vascular disease — SIG [RE]	East Ballroom C
499f		Military Relevant Priorities and Strategies for Injury Diagnostics and Treatments — Special Session	West 211
499g	The Role of the Tie2 Pathway in Ocular Disease — Special Session	West 212/214	

Symposia and minisymposia highlighted in **boldface**

Wednesday, May 1 ■ Posters

Time	Session	Title	Board #	
8:15 – 10am	414	Lens Development [LE]	A0001 - A0014	
	415	Anatomical changes during ocular morphogenesis and disease [AP]	A0015 - A0045	
	416	Structure, function and optics in physiological and pathological myopia [AP]	A0046 - A0089	
	417	Peripheral Vision, Perimetry and Cortical Function [VI]	A0101 - A0113	
	418	Muller Cells in Health and Disease [RC, GL]	A0278 - A0293	
	419	Retinal Trauma, PVR and Mesenchymal Transition [RC]	A0294 - A0306	
	420	Amblyopia: Vision Screening and Epidemiology [EY]	A0307 - A0319	
	421	Strabismus: Diagnosis and Evaluation [EY]	A0320 - A0336	
	422	Prevalence of vision impairment [CL]	A0337 - A0351	
	423	Patient perspectives and reported outcomes [CL]	A0352 - A0366	
	424	Retinitis pigmentosa (clinical) I [RE]	A0405 - A0431	
	425	Retinitis pigmentosa (clinical) II [RE]	A0432 - A0457	
	426	OCTA in Ocular, Cerebral and Systemic Diseases/Disorders [MOI, RC]	A0514 - A0562	
	427	Adaptive Optics [MOI]	A0563 - A0598	
	428	Fundamentals of ocular infection 2 [IM]	B0108 - B0143	
	429	Corneal Stroma and Keratocytes [CO]	B0175 - B0186	
	430	Corneal Stroma and Keratocytes [CO]	B0187 - B0215	
	431	Microbiome, Ocular Surface Diseases [CO, VN]	B0254 - B0302	
	10:15am–12noon	446	Refractive Error. Ocular Biometry and Biomechanics [VI]	A0090 - A0100
		447	Retinal Ganglion Cells and Optic Neuropathies [RC]	A0164 - A0183
		448	Neuroprotection [RC]	A0184 - A0210
		449	Biochemical and molecular mechanisms of age-related macular degeneration [BI, LV]	A0211 - A0242
		450	Retinal disease: molecular mechanisms and gene editing [BI, LV]	A0243 - A0277
		451	Visual Impairment and Patient Reported Outcomes [LV]	A0367 - A0380
		452	Retinal Prostheses [RE]	A0381 - A0404

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Wednesday, May 1 ■ Posters

Time	Session	Title	Board #
3 – 4:45pm	453	Macular Diseases Excluding AMD [RE, RC]	A0458 - A0513
	454	Cornea surgery: refractive [CO]	B0144 - B0174
	455	Corneal Cell and Molecular Biology [CO]	B0216 - B0253
	456	Trabecular Meshwork and Ciliary Body [GL]	B0522 - B0568
	485	ipRGCs and Circadian Rhythms [VN]	A0114 - A0128
	486	Ganglion cells and Beyond [VN, VI]	A0129 - A0163
	487	Screening and Risk Factors in Diabetic Retinopathy [RE, VN]	B0001 - B0016
	488	Diabetic Retinopathy Imaging [RE, RC]	B0017 - B0048
	489	Diabetic retinopathy, cytokines and growth factors [PH]	B0049 - B0071
	490	AMD and Antiangiogenic agents [PH]	B0072 - B0107
	491	Cornea and diabetes-related disorders [GEN]	B0303 - B0322
	492	Healthcare Delivery [CL]	B0323 - B0374
	493	Medical education, training, and EHR implementation [CL]	B0375 - B0403
	494	Imaging I [GL]	B0404 - B0453
495	Imaging II [GL]	B0454 - B0504	
496	Ocular Blood Flow [GL]	B0505 - B0521	
5 – 6pm		All Posters	

Happening Tonight ...

ARVO Classical Concert

Wed., May 1, 8–10pm

Vancouver Convention Centre | West 301

Performed by multi-talented ARVO members.

Relax and enjoy the music.

ARVO Karaoke*

Wed., May 1, 9pm–12midnight

Blackbird Public House | 905 Dunsumir St.

Admission includes one drink. Cash bar and light snacks available.

You must be 21 years or older to attend this event.

*Ticket required. Tickets available on Sat. at Registration, and Sun. – Wed. at ARVO Central.



Poster board numbers correspond to poster location in Exhibit Hall;
A = Poster Area A and B = Poster Area B.

Thursday, May 2 ■ Symposia, papers and SIGs

Time	Session	Title	Location
8 – 10am	501	The gut-eye axis: Emerging roles of the microbiome in ocular immunity and diseases [RC, IM, RE, CL, CO, BI]	West 212-214
	502	The single cell revolution: Novel insights and applications for single cell RNA sequencing in eye research [IM, AP, BI, CO, PH, RC, VN, GEN]	West 217-219
10:15am – 12noon	528	Mechanistic analysis of ocular morphogenesis, growth and disease [AP]	East 1
	529	AMD and Antiangiogenic agents [PH]	East 2/3
	530	Advances in Retinal Gene Therapy and Stem Cells [RE]	East 8&15
	531	Biology of Retinal Neurons [RC]	East 11/12
	532	Ocular microbiology and vaccines [IM]	East Ballroom A
	533	Retinal Surgery and PVR [RE]	East Ballroom B
	534	Biochemistry and molecular biology of diabetic retinopathy [BI]	East Ballroom C
	535	Corneal surgery- refractive [CO]	West 211
	536	Visual Diseases and Protection [VN]	West 212-214
	537	Posterior Capsular Opacification [LE]	West 217-219
	538	Myopia prevalence and progression [CL]	West 220
	539	Brain and the Eye [EY]	West 221/222
	540	Intraocular Lenses and Presbyopia Correction [VI]	West 223/224
	541	Pharmacological Interventions and Cellular Interventions [GL]	ARVO Ballroom
12:15 – 1:45pm	552	The implications of immune response in ocular gene therapy — SIG [RE, CL, IM, PH]	East 1
	553	Re-Engineering Clinical Perimetry — SIG [GL, RE, VI, VN, LV]	East 8&15
	554	Exploring Controversial Issues in BEST1-related Retinal Disease — SIG [RC, RE]	East Ballroom A
	555	Optical Coherence Tomographic Angiography of the Eye — SIG [MOI, GL, RE]	East Ballroom B
	556	EVER/ARVO workshop: The breadcrumb trail in glaucoma: From biology to the patient	West 211
	557	Lipids and Eye Diseases- where should we focus? — SIG [BI, RC]	West 212-214

Symposia and minisymposia highlighted in **boldface**

Thursday, May 2 ■ Keynote, lecture and workshops

Time	Session	Title	Location
	558	Emerging Biological Functions of Non-canonical Photodetection — SIG [VN, AP, BI, RE, RC, GEN]	West 217-219
	559	Are there alternatives to in vivo models in eye research? — SIG [GL, BI, IM, PH, RE, GEN]	West 220
	560	Addressing global blindness through international research collaborations — Next frontier for 2020	West 221/222
	561	Chinese Ophthalmology Society (COS) workshop: Cell biology and stem cells	West 223/224
	562	NEI grants Workshop: New NIH regulations concerning human subject and animal research	Harbour Ballroom
3:15 – 4:15pm	564	Beckman-Argyros Award in Vision Research	ARVO Ballroom
4:30 – 6pm	565	ARVO/Alcon Closing Keynote: Models of translational science to span innovation gaps in academia	ARVO Ballroom





SAVE THE DATE!

9th WORLD GLAUCOMA CONGRESS

MARCH 24 - 27, 2021 KYOTO, JAPAN



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Thursday, May 2 ■ Posters

Time	Session	Title	Board #
8 – 9:45am	503	Glaucoma: biochemistry and molecular biology, genomics and proteomics [BI]	A0001 - A0030
	504	Proteomics, lipidomics, metabolomics and systems biology [BI]	A0031 - A0043
	505	Lens Biochemistry and Cell Biology [LE]	A0044 - A0062
	506	Retina/RPE new drugs, mechanism of action, and toxicity [PH]	A0099 - A0119
	507	Blood flow, Ischemia/reperfusion, hypoxia and oxidative stress [PH]	A0120 - A0140
	508	Vitreoretinal Surgery, Novel Techniques and Clinical Applications [RE]	A0191 - A0250
	509	Proliferative Vitreoretinopathy-Translational Studies [RE]	A0251 - A0261
	510	Myopia and Refractive Error [CL]	A0314 - A0358
	511	Molecular mechanisms and anatomical changes in experimental myopia [AP, CL]	A0359 - A0395
	512	Vision Assessment & Performance. Aging. Driving [VI, CL, LV, PH]	A0396 - A0442
	513	Visual Disease Models and Restoration: Humans [VN]	A0443 - A0461
	514	Animal Electrophysiology [VN]	A0462 - A0475
	515	Retinal Cell Biology [RC]	A0476 - A0503
	516	Retinal Development [RC]	A0504 - A0529
	517	Photoreceptor Cell & Developmental Biology [RC]	A0530 - A0549
	518	Functional Genomics Characterization and animal models [GEN, LE, LV, RE]	A0550 - A0573
	519	Functional and Molecular Imaging [MOI]	A0574 - A0584a
	520	Multidisciplinary Imaging Technologies and Applications [MOI, GEN, RC]	A0585 - A0631
	521	Structure/Function Relationships [GL, RE]	B0001 - B0033
	522	Biomechanics [GL]	B0034 - B0069
	523	Orbit and Thyroid eye Disease [EY]	B0184 - B0203
	524	Eyelid and Lacrimal System [EY]	B0204 - B0225
	525	Conjunctival Cell Biology, Disease and Surgery [CO, AP]	B0227 - B0252
	526	Corneal surgery-non refractive [CO]	B0323 - B0376
	527	Contact lens [CO]	B0414 - B0469

Poster board numbers correspond to poster location in Exhibit Hall;
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Thursday, May 2 ■ Posters

Time	Session	Title	Board #
10:15am – 12noon	542	Cataract, Cornea, and Ocular Surface Disease [CL]	A0063 - A0098
	543	Retinopathy of Prematurity, Detection and Clinical [RE]	A0141 - A0167
	544	Diabetic Retinopathy and Surgery [RE]	A0168 - A0190
	545	Retinal Detachment, Trauma and Repair [RE, BI, CO, RC]	A0262 - A0313
	546	Surgery and Wound Healing II [GL]	B0070 - B0111
	547	Uveitis / ocular inflammatory disease: Epidemiology, clinical characteristics and QoL [IM]	B0112 - B0158
	548	Non-infectious anterior segment / orbital inflammation and allergy [IM]	B0159 - B0183
	549	Cornea Dry Eye Clinical Treatment [CO]	B0253 - B0284
	550	Cornea Dry Eye Clinical I Diagnostics [CO, MOI]	B0285 - B0322
	551	Corneal biomechanics [CO]	B0377 - B0413
2 – 3pm		All Posters	

Visit the
gift shop in
ARVO Central
located in the
Exhibit Hall



Poster board numbers correspond to poster location in Exhibit Hall;
A = Poster Area A and B = Poster Area B.

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will support travel awards
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— Steve T. Charles, MD

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- In ARVO Central in the Exhibit Hall
- [ARVOfoundation.org/Donate](https://www.arvofoundation.org/Donate)
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ARVO Foundation
for Eye Research®

Statement of Need

Ophthalmic researchers and physicians are many times unaware of and/or have limited exposure to the most recent research advances in vision and ophthalmology. This research continuously evolves toward enhancing the general understanding of the eye and visual systems, which gives rise to new pre-clinical treatment options, and revised standards of practice. Exposure to this new information is a critical first step in enhancing the understanding of basic eye functions and vision disease processes.

Target Audience

The educational design of this activity addresses the needs of basic researchers, clinician-scientists, ophthalmologists, ophthalmology residents, optometrists, post-doctoral fellows, graduate students, PhD candidates, medical students and research assistants/associates involved in the treatment of patients with eye and vision diseases and disorders.

Educational Objectives

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

- Discuss the results of basic and clinical ophthalmology investigations and vision research underway, relevant to my area of interest or practice.
- Describe new models and methods being used by researchers and practitioners in eye and vision science.
- Cite ways in which new research data and methods may influence my research and/or practice.
- Discuss prospective advancements in eye and vision research and/or practice.

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 29.25 *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.

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CME registrants will receive an email from “ARVO 2019 CME” with credit claiming instructions prior to the start of the Annual Meeting or within two business days of your purchase (whichever is later). 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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Certificate of Attendance

Certificates of attendance are available free to all attendees. These certificates state that one has attended the Annual Meeting; but does not offer credit tracking. They will be available for pick-up onsite at the meeting registration desk and ARVO Central in the exhibit hall.

CME credits and certificate fee	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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Disclosure information for presenters will be provided within initial disclosure slides, prior to the start of their respective presentations.

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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:

Annual Meeting Program Committee (AMPC)

Chair: Justine R Smith, FRANZCO, PhD, FARVO; Nothing to disclose.

The following individuals on the AMPC reported financial relationships.

Name	Commercial interest (nature of the relationship)
Regan Scott Ashby, PhD	Australian International Patent Application PCT/AU2017/050310 relating to a treatment for myopia: (P)

Name	Commercial interest (nature of the relationship)
Alexandra Benavente-Perez, MCOptom, MS, PhD	Johnson and Johnson Vision: (F)
Nicole Ann Carnt, PhD, BOptom	CooperVision: (R); Alcon: (F)
Netan Choudhry, MD, FRCS(C)	Allergan: (C); Bayer: (C); Carl Zeiss Meditec: (F); Topcon: (C); Optos PLC (C, R); Ellex: (R)
Allen C. Clermont, MS	Kalvista Pharmaceuticals, Inc.: (C)
M. Francesca Cordeiro, MD, PhD	Allergan: (F,C,R); Visufarma: (F,C,R); DARC: (P); Dompe: (F,R); Santhera: (C,R); Annexon: (F,R); Thea: (F,R) Novartis: (F,R) Santen: (F,R); Heidelberg Engineering: (F, R)
Timothy W. Corson, PhD	62/664,601: (P); 62/664,584: (P); 62/628,093: (P); 15/889,464: (P); PCT/US2016/062851 (P); US 2016/0222388 A1: (P); US 2016/0060241 A1
Ross C. Ethier, PhD, FARVO	Camras Vision: (C); Equinox: (C)
Robert Finger, PhD	Novartis: (F,C); Bayer: (C); Santhera: (C); RetinalImplant: (C)
Murray Fingeret	Aerie: (C); Allergan: (C); Bausch + Lomb: (C); Carl Zeiss Meditec: (C,I); Diopsys: (C); Heidelberg Engineering: (C, I); Topcon: (C, I)
Thomas A. Fuchsluger, MD, PhD, FEBO, MSc	EVER: (P,S); Santen: (R); Ursapharm: (R); Alcon: (R)
Anat Galor, MD	Allergan: (F); Shire: (C); Novaliq: (C)
Paul D. Gamlin, PhD, FARVO	Editas Medicine: (F); AGTC: (F); Lacerta Therapeutics: (F)
Brian C. Gilger, DVM, MS, Dipl. ACVO, Dipl. ABT, FARVO	Bedrock Therapeutics: (I, P)
Neena B. Haider, PhD	Ocugen: (F,R,S); SPOUSE: Neurotech: (E)
Tatjana C. Jakobs, MD	Springer Science & Business Media: (R); Santen Inc.: (R); Qiagen: (I); Biogen: (I); Merck: (I)
Yali Jia, PhD	Optovue Inc.: (F, P)
Noriko Koizumi, MD, PhD	Kowa Company Ltd.: (F,C); M's Science Corporation: (F,C); Senju Pharmaceutical Co., Ltd.: (F,R); ActualEyes, Inc.: (R); Japan Innovative Therapeutics, Inc.: (F); Doshisha University: (P)

Name	Commercial interest (nature of the relationship)
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Richard W. J. Lee, MRCS, MRCOphth, PhD	US Patent App. 15/106,411 - Conjugates for treating inflammatory disease and identification of patients likely to benefit from such treatment. (P)
Thomas W. Raasch, OD, PhD, FARVO	Lentechs, LLC.: (C)
Vasanth Rao, PhD	Aerie: (C,I,P); Merck: (C,I,P); Teva: (C,I,P); Pfizer pharmaceutical: (C,I,P)
Tony Realini, MD, MPH	New World Medical: (C); Ellex: (C); iStarMed: (C); Palvella: (C); Aerie: (C); Reichert: (C); IRIS: (C)
Richard Rosen, MD	Opticology: (I); OD~OS: (C); Allergan: (C,F); Guardion Health: (C); Boehringer-Ingelheim: (C); CellView: (C); Diopsys: (C); Optovue: (C, P); Astellas: (C); Genentech-Roche: (F); Nano Retina: (C,F); Regeneron: (C); Zeavision: (C,F)
Nicole Ross, OD, MSc	Genentech: (R)
Stephen R. Russell, MD	IDx, LLC: (I); Spark Therapeutics, Inc.: (F,R); ProQR, Inc.: (F)
Daniel R. Saban, PhD	Allergan: (F)
Ursula Schmidt-Erfurth, MD, FARVO	Boehringer: (C); Genentech: (C); Novartis: (C); Roche: (C)
Alan W. Stitt, PhD	Oxurion: (F); Roche: (F); Elasmogen: (F)
Donny W. Suh, MD	NIH, Pediatric Eye Disease Investigator Group (PEDIG): (F); University of Nebraska Medical Center Research Center: (F)
Shiva K. Swamynathan, PhD	9,731,014 (P): SPOUSE: (P)
Akitaka Tsujikawa, MD	Pfizer: (F,R); Bayer: (F,R); Novartis: (F,R); Santen: (F,R); Senju: (F,R); Alcon: (F,R); AMO Japan: (F,R); Hoya: (F); Kowa: (F,R); Nidek: (R); Sanwa Kagaku: (R)

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Continuing Medical Education Committee (CME)

Chair: William J Foster, MD PhD FRCSC, Altasciences Clinical Research: (C); US Patent 9,050,171, Small diameter fragmatome 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)

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The following activity managers have reported no financial relationships.

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CONTINUING MEDICAL EDUCATION SESSIONS

All Annual Meeting sessions certified as Continuing Medical Education (CME) and eligible for *AMA PRA Category 1 Credit™* are listed below with their associated faculty presenters. Presenters are listed in presentation order. For a complete list of all individuals involved with each research project, refer to the online planner or the mobile app.

The following Annual Meeting formats 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.

Sunday, April 28: 8-10am

Session	Session title	Location
102	A window on the soul: How systemic disease manifests in the eye <i>Maya Koronyo-Hamaoui, Nicolas Cuenca, José E Capó-Aponte, Yang Sun, Colleen M Cebulla</i>	East Ballroom B
103	The potential and pitfalls of big data <i>Laura B Balzer, Michael F Chiang, Joshua D Stein, Christopher J Hammond, Anne L Coleman</i>	East Ballroom C

Sunday, April 28: 1-2:30pm

Session	Session title	Location
127	Low Vision Group - The effects of mesopic light levels on vision and functional activities <i>Aaron Johnson, Lauren Ayton, Cynthia Owsley, Bonnielin Swenor, Ava Bittner</i>	West 223/224

Sunday, April 28: 3-4:45pm

Session	Session title	Location
147	Uveal Melanoma <i>Prisca Bustamante, Matthew Field, Mohamed H Abdel-Rahman, Stephen S Phillips, John W Crabb, Niels J Brouwer, Stylianos Serghiou</i>	East 1
148	Retina <i>Husvinee Sundaramurthi, Nate Benner, Morven Cameron, Dorota L Stankowska, Hiroki Mieno, Kore Chan, Anmar Abdul-Rahman</i>	East 2/3
149	Emerging AMD Therapeutics <i>Daniel V Palanker, William R Freeman, Suruchi Bhardwaj Bhui, Nathan Steinle, Scott W Cousins, Francine F Behar-Cohen, Robert B Bhisitkul</i>	East 8&15

Session	Session title	Location
151	Myeloid and Innate Immunology of the Retina <i>Samantha Dando, Chen Yu, Elisabeth Andriessen, Sofia Theodoropoulou, Matt Rutar, Cristhian J Ildelfonso, Siddharth Narendran</i>	East Ballroom A
152	New and emerging clinical trials endpoints – Minisymposium <i>Srinivas R Sadda, Jacque L Duncan, Ursula Schmidt-Erfurth, Emily Y Chew, Donald C Hood, David Huang, Richard B Rosen</i>	East Ballroom B
153	Omics and systems biology approaches for profiling ocular tissues in health and disease <i>Ameera Mungale, Timothy Cherry, Vinay Swamy, Dan P Murphy, Sanjoy K Bhattacharya, Inez Oh, Ilhan Erkin Acar</i>	East Ballroom C
154	Photoreceptors <i>Michael Tri Hoang Do, Takahisa Furukawa, Trevor D Lamb, Marta Zuzic, Ching-Kang Jason Chen, Wei Li, Niklas Domdei</i>	West 212-214
155	Cataract Surgery, Epidemiology and Clinical Outcomes <i>Rachel Bishop, Harrison Dermer, Luca Schwarzenbacher, Chirag Shah, Yann Bouremel</i>	West 217-219
156	Healthcare Delivery <i>Hursuong Vongsachang, Shicheng Jin, Preeti Gupta, Sharon Ann Bentley, Alyssa Marie Kretz, Danielle Altman, Olivia Killeen</i>	West 220
157	Amblyopia and Visual Plasticity <i>Bin Zhang, Kimberly Meier, Simon Grant, Eileen E Birch, Jingyun Wang</i>	West 221/222
158	Advanced Imaging of Retinal Structure and Function in Disease <i>Andrew M Huang, Ethan Bensinger, Fenghua Wang, Stephen A Burns, Nicole M Putnam, Bianca Leonard, Allen M Y Cheong</i>	West 223/224
160	Emerging gene-driven therapies for anterior segment disease – Minisymposium <i>Alexander V Ljubimov, Abbot F Clark, Audrey M Bernstein, Rajiv R Mohan, Robert M Lavker, Tara C B Moore</i>	Harbour Ballroom

Monday, April 29: 8:15-10am

Session	Session title	Location
202	Advances in Retinoblastoma and Radiation Retinopathy <i>Hardeep Pal Singh, Rajesh C Rao, Anthony B Daniels, Sameh Gaballah, Zhao Xun Feng, Antonia M Jousseen, Brittany Powell</i>	East 1
203	Gene therapy and delivery <i>Brian C Gilger, Michael James Gilhooley, Robert E MacLaren, Ryan F Boyd, Andrea Korecki</i>	East 2/3
204	Miscellaneous Maculopathies <i>Philipp L Mueller, Martin Gliem, Simone Tzaridis, Emily Y Chew, Hendrik P Scholl, Winston Lee, E.H. Henrike Runhart</i>	East 8&15
205	AMD Pathobiology and New Models <i>Natalie Wagner, Sunghee Estelle Park, Amol Sura, Robert F Mullins, Venkata Ramana Murthy Chavali, Andrea García Llorca, Sayan Ghosh</i>	East 11/12
206	Adaptive and Innate Immunity in Ocular Health and Disease <i>Holly Rose Chinnery, Sudha Neelam, De-Quan Li, Andrew W Taylor, Jessica Wei, Darren J Lee, Haihan Jiao</i>	East Ballroom A
207	AMD Imaging I <i>Claus von der Burchard, Ferdinand Georg Schlanitz, Antoine Rivail, Wolf-Dieter Vogl, Sebastian M Waldstein, Stuart Keel, Minsu Jang</i>	East Ballroom B
208	Frontiers in membrane dynamics and cellular communication: Impact on vision and disease mechanisms – Minisymposium <i>Vadim Y Arshavsky, Yoshikazu Imanishi, Kapil Bharti, Kirill A Martemyanov, Luminita I Paraoan, Abbot F Clark</i>	East Ballroom C
209	Corneal Cell and Molecular Biology <i>Justin Ma, Aurelie Dos Santos, Carla Sanchez Martinez, Mohammad Zuhair Mustafa, Han Peng, Tiago Andre da Silva Ramos, Trevor Williams</i>	West 211
210	Circadian rhythms and photoreceptors <i>Sara Patterson, Tiffany M Schmidt, Seunghoon Lee, Nairouz Farah, Norianne T Ingram, Shuo Zhang, Stuart C Mangel</i>	West 212-214

Session	Session title	Location
212	Impact of Visual Impairment <i>Dean A VanNasdale, Jose Javier Estevez, Charumathi Sabanayagam, Lisa Keay, Dandan Diane Zheng, Asad Farooq Durrani, John Paul Bader</i>	West 220
213	Systemic Disorders: Basic and Translational Studies <i>Aida Sanchez-Bretano, Venu Talla, Oliver W Gramlich, Linda K McLoon, Zia Chaudhuri, Peter van Wijngaarden</i>	West 221/222
216	Dry Eye I <i>Richard Zhang, Lixing W Reneker, Stephen C Pflugfelder, Ashley Bascom, Nai-Wen Fan, Xin He, Helen P Makarenkova</i>	Harbour Ballroom

Monday, April 29: 11:15am-1pm

Session	Session title	Location
226	Drug delivery, drug and gene delivery system <i>Baruch D Kuppermann, Sven Schnichels, Lingyun Cheng, Anthoula Arta, Anne Zebitz Zebitz Eriksen, Vanessa Yanez, Michelle E McClements</i>	East 2/3
227	Retinal Vascular Disease <i>Gwenola Drouglazet, Salam Bachour, Martin Michl, Hee Eun Lee, Maria João Vieira, Sana Idrees</i>	East 8&15
228	Retinal Bioenergetics and Metabolic Interactions <i>Mo Wang, Vera L Bonilha, Jianhai Du, Qitao Zhang, John D Ash, Luis James Knight, Eric Weh</i>	East 11/12
229	Translational immunology in AMD, uveitis and thyroid eye disease <i>Chung-Jung Chiu, Florian Sennlaub, Kathryn L Pepple, Jerry Chien-Chieh Huang, Jay Siak, Svenja Ploehn, Sijie Fang</i>	East Ballroom A
230	Diabetic Retinopathy Therapeutics <i>Chirag Jhaveri, Rubbia Afridi, David S Boyer, Diana V Do, Mark W Johnson, Andreas Stahl</i>	East Ballroom B

Session	Session title	Location
231	Molecular mechanisms of retinal function in health and disease <i>Philip Ruzycski, Theodore G Wensel, Jeremy M Sivak, Srinivas Rao Sripathi, Binxing Li, Thomas Ray, Katya Lobanova</i>	East Ballroom C
232	Ocular Surface Disease <i>Giulio Ferrari, Yoko Ogawa, Marlies Gijs, Sharon Dsouza, Carol Kaplan, Douglas Borchman, Eugene Osae</i>	West 211
233	Of mice and men: Comparing primate and rodent retina – Minisymposium <i>Ulrike Grunert, Yi-Rong Peng, Greg D Field, Mabelle T Pardue, Jan J Kremers, Jens Duebel</i>	West 212-214
234	Mendelian Genetics and Animal Models of Retinal Disorder <i>Gavin Arno, Nieneke Wesseling, Pooja Biswas, Kaoru Fujinami, Douglas Vollrath, Gemma Marfany, Ala Moshiri</i>	West 217-219
235	Quality of life and the patient experience <i>Stefan Nickels, Jamie N T Enoch, Konrad Pesudovs, Lee Jones, Vijaya Gothwal, Nicole Ann Carnt, Bamini Gopinath</i>	West 220
236	Strabismus and Nystagmus <i>Mary Whitman, Samuel Adade, Richard W Hertle, Jonathan M Holmes, Krista R Kelly, Yuxi Zheng</i>	West 221/222
237	Advanced Imaging of Retinal Structure and Function in Healthy Eyes <i>Rigmor C Baraas, Jason Porter, Jenny Lorén Reiniger, Khang T Huynh, Furu Zhang, Ramkumar Sabesan, Kazuhiro Kurokawa</i>	West 223/224
238	New Ideas in Glaucoma <i>Donald C Hood, Michael Sullivan-Mee, Mingguang He, Thanadet Chuangsuwanich, Rory Murphy, Tave van Zyl, Sri Meghana Konda</i>	ARVO Ballroom
Monday, April 29: 1:15-2:45pm		
Session	Session title	Location
258	Multidisciplinary Ophthalmic Imaging Group - OCT advances in vascular and functional imaging <i>Ruikang K Wang, Hao F Zhang, Yali Jia, James G Fujimoto, Marinko V Sarunic, Michael Pircher</i>	East Ballroom B

Monday, April 29: 4-5:45pm

Session	Session title	Location
267	Aqueous humor dynamics and IOP <i>W Daniel Stamer, David L Swain, Michael H Elliott, Carol B Toris, Oleg Yarishkin, Ashok Sharma, Elfriede Friedmann</i>	East 2/3
268	Imaging the Posterior Segment-Clinical <i>Ian Han, Jennifer I Lim, Katie M Litts, Alison L Huckenpahler, Amir Sadeghipour, Imre Lengyel</i>	East 8&15
269	Emerging cell-based therapies to tackle retinal diseases – Minisymposium <i>David R Hyde, Susanna S Park, Amir H Kashani, Valeria Canto Soler, Rachael A Pearson</i>	East 11/12
272	Corneal surgery:non-refractive <i>Faraaz Khan, Andri K Riau, Steven A Greenstein, Pranita Sahay, Jennifer Rose-Nussbaumer, Sanjay V Patel, Klara Charlotte Borgardts</i>	West 211
273	Corneal Tissue Engineering and Regenerative Medicine <i>Yu Yoshinaga, James L Funderburgh, Sarah Tsurkan, Mengyuan Xie, Bruce Ksander, Vincent M Borderie, Miguel Gonzalez Andrades</i>	West 212-214
274	Lens Cell Biology <i>S Amer Riazuddin, M Joseph Costello, Yuki Sugiyama, Catherine Cheng, Vasanth Rao, Woo-Kuen Lo</i>	West 217-219
275	Visual Impairment and Multi-Morbidity <i>Jasmine Junge, Andrea Urqueta Alfaro, Aaron Johnson, Ruth M.A. Van Nispen, Ecosse Luc Lamoureux, Ken Kitayama</i>	West 221/222
276	Biomechanics <i>Rouzbeh Amini, Harry A Quigley, Yanhui Ma, Tasneem Putliwala Sharma, Katie Lucy, Mark R Lesk, Soledad Aguilar Munoa</i>	ARVO Ballroom
277	Neuroprotection <i>Margaret McDougal Runner, Julia Oswald, Liang Li, Mojdeh Abbasi, Amit K Patel, Anitha Krishnan, Meredith S Gregory-Ksander</i>	Harbour Ballroom

Tuesday, April 30: 8:45-10:30am

Session	Session title	Location
311	Diabetic retinopathy <i>Jurgen Sergeys, Colin R Green, Heidrun L Deissler, Konstantin Petrukhin, Xavier Guillonneau, Cristiano Pedrozo Vieira, Katrin Lorenz</i>	East 2/3
312	Macular edema and neuroprotection-translational studies <i>Zhongxiao Wang, Allen C Clermont, Tea Soon Park, Xiaohong Nancy Chen, Ellen Townes-Anderson, Alejandra Daruich</i>	East 8&15
313	Microglia and Innate Immunity <i>Xuan Du, Lian Zhao, Yvette Wooff, Eleftherios I Paschalis, Oliver Hugh Bell, Monica L Vetter, Sheri Peterson</i>	East 11/12
315	Gene variants in major ocular diseases <i>Dror Sharon, Kristof Van Schil, Cecile Delettre Cribaillet, Adrian Dockery, Mubeen Khan, Paul N Bishop, Mineo Ozaki</i>	East Ballroom C
317	Laser Therapy <i>David S Friedman, Rick Trevino, Murray A Johnstone, Jessica Minjy Kang, Richard Chitedze, Tony Realini, Lucas Bonafede</i>	West 212-214
318	Glaucoma Genetics Development with advanced technology & large datasets <i>Hannah Carrant, Omar García Rodríguez, Ayub Qassim, Shi Song Rong, Subhabrata Chakrabarti, Terri L Young, Wesley Goar</i>	West 217-219
319	Aging with Vision Loss: Understanding the aging consequences of visual impairment – Minisymposium <i>Heather Whitson, David J Lee, Ellen E Freeman, Ecosse Luc Lamoureux, Alan R Morse</i>	West 220
320	Clinical outcomes and visual quality with retinal prosthetic vision restoration – Minisymposium <i>Richard H Kramer, Yossi Mandel, Eli Peli, E.J. Chichilnisky, Avi Caspi, Gislin Dagnelie</i>	West 223/224
321	Neurodegeneration <i>Louis R Pasquale, Markus H Kuehn, Milica Margeta, Hangjing Wu, Melissa Cooper, Yaeram Jeong, Bailey Hannon</i>	ARVO Ballroom

Session	Session title	Location
322	Visual Fields, Psychophysics, and Electrophysiology <i>Mengyu Wang, Alessandro Rabiolo, Gian-Gabriel P Garcia, Jorryt Gerlof Tichelaar, David F Garway-Heath, Pete R Jones, Vickie Hoi Ying Wong</i>	Harbour Ballroom

Tuesday, April 30: 11:45am-1:30pm

Session	Session title	Location
341	Update on endophthalmitis <i>Varsha M Rathi, Adriaan Heineken, Scott D Walter, Cecilia S Lee, Lindsay Chun, Diana Laura</i>	East 8&15
342	Retinal Angiogenesis and Related Mechanisms in Vascular Biology <i>Ruth B Caldwell, Michelle LeBlanc, Nader Sheibani, Guei-Sheung Liu, Da Long, Xi Lu, Lingli Zhou</i>	East 11/12
343	Innate immune memory and the eye – Minisymposium <i>Homayon Ghiasi, Martine J Jager, Andrew W Taylor, Wai T Wong, Holly Lallman Rosenzweig</i>	East Ballroom A
344	AMD Translational studies <i>Jeremy Lavine, Santiago Delgado-Tirado, Yingbin Fu, Dimitra Skondra MD, PhD, Sook Hyun Chung, Céline Koster, Timothy W Olsen</i>	East Ballroom B
345	Highlights of OCT angiography <i>Oscar Carrasco-Zevallos, Qisheng You, Minhaj Nur Alam, Qinqin Zhang, Huiyuan Hou, Giovanni Gregori, Zihan Sun</i>	East Ballroom C
346	Lacrimal gland biology in homeostasis, disease, and repair – Minisymposium <i>Darlene A Dartt, Kazuo Tsubota, Austin K Mircheff, Sarah F Hamm-Alvarez, Masatoshi Hirayama, Helen P Makarenkova</i>	West 211
347	Unresolved issues in myopia – Minisymposium <i>Frank Schaeffel, Earl L Smith, David Troilo, Daniel Ian Flitcroft, William K Stell, Christine Frances Wildsoet, Ian George Morgan, Pei-Chang Wu, Debora L Nickla, Kathryn Saunders</i>	West 212-214

Session	Session title	Location
348	Lens Development <i>Ales Cvekl, Rupalatha Maddala, Sandeep Aryal, Stephanie Padula, Anthony Sallese, Timothy F Plageman</i>	West 217-219
349	Visual Training and Rehabilitation <i>Natalie N Stepien-Bernabe, Rajkumar Nallour Raveendran, William H Seiple, Ahmed M Sayed, Zahide Pamir, Meghan J DeBenedictis</i>	West 221/222

Tuesday, April 30: 2:45-4:30pm

Session	Session title	Location
368	Retinal Development <i>Bernadett Bosze, Andrea S Viczian, Nicolas Lonfat, Clayton Santiago, Masaya Fukushima, Kayla Titalii, Robert Mackin</i>	East 8&15
369	RPE Biology in Health and Disease <i>Yini Wang, Goldis Malek, Thomas Ach, Anna G Figueroa, Lyndsay L Leach, Alyson Wolk, Kevin Eade</i>	East 11/12
370	Uveitis clinical epidemiology and therapeutics <i>Peizeng Yang, John H Kempen, Victor Llorens, Edmund Tsui, Muhammad Hassan, Glenn J Jaffe, Alessandro Invernizzi</i>	East Ballroom A
372	Retinal degeneration: molecular disease mechanisms <i>Weiyong Shen, Chi-Hsiu Liu, Zubair Ahmed, Alexander M Dizhoor, Valentina Cipriani, Liu Yang, Yuri V Sergeev</i>	East Ballroom C
373	Corneal endothelium and Fuchs corneal dystrophy <i>Wenlin Zhang, Marianne Fritz, Viridiana Kocaba, Keith H Baratz, Risako Nakagawa, Genta Nakayama, Vinod V Mootha</i>	West 211
374	Ganglion cells and beyond <i>Megan Lee Zipperer, Molis Yunzab, Vineeth Raghuram, Tyler Godat, Peter B Detwiler, Paul R Martin, Ming-fai Fong</i>	West 212-214
375	Contact lens <i>Simin Masoudi, W Gregory Sawyer, Gabriela Dieckmann, Angela Pitenis, Emiliano Teran, Ananya Datta, Katrina L Schmid</i>	West 217-219

Session	Session title	Location
376	Myopia: Behavior and interventions <i>Jeremy A Guggenheim, Matthew Boswell, Ahmed F Shakarchi, Longbo Wen, Han Yu Zhang, Lap Ki Alex Ng</i>	West 220
377	Mechanisms and biomechanics of traumatic retinal hemorrhage in children – Minisymposium <i>Donny W Suh, Joanne N Wood, Gil Binenbaum, Alex V Levin, Donny W Suh, Brittany Coats</i>	West 221/222
378	Vision assessment and modeling in health, and with impairment <i>Angela M Brown, Katarzyna Komar, Zhong-Lin Lu, MiYoung Kwon, Gislín Dagnelie, Eli Peli, Steven Savage</i>	West 223/224
379	Clinical Studies <i>Jessica V Jasien, Tanuj Dada, C Gustavo De Moraes, Jibran Mohamed-Noriega, Brian McMillan, Joanne C Wen, Yvonne M Buys</i>	ARVO Ballroom
380	Structure-Function Relationships <i>Vahid Mohammadzadeh, Henry Nicholas Marshall, Giovanni Montesano, Ou Tan, Mohammad Norouzfard, Ji Won Bang, Raymond Najjar</i>	Harbour Ballroom
Wednesday, May 1: 8:15-10am		
Session	Session title	Location
401	P2X7 receptor: One target for inflammatory responses in different ocular diseases – Minisymposium <i>Julie Sanderson, Claire H Mitchell, Erica L Fletcher, Claudio Bucolo, Vickery E Trinkaus-Randall, Darlene A Dartt</i>	East 2/3
402	Retinal Degeneration <i>Wei-Chieh Jerry Chiang, Hongwei Ma, Jingyu Yao, Rui Chen, Ayse Mine Genc, Mao Shengru, Brittni A Scruggs</i>	East 8&15
403	Repurposing drugs for the treatment of retinal diseases – Minisymposium <i>Breandan N Kennedy, Nawajes A Mandal, Aparna Lakkaraju, Benjamin J Kim, Alfred S Lewin, Brian S McKay</i>	East 11/12

Session	Session title	Location
405	Gene editing & new cell-based and animal models for ocular disease <i>Koji M Nishiguchi, Fan Li, Uwe Wolfrum, Manel Llado Santaularia, Maureen A McCall, Ivana Trapani, Alecia K Gross</i>	East Ballroom C
406	Corneal imaging and topography <i>Janelle Tong, Cristina Canavesi, Elias Pavlatos, Osama Ibrahim, Kiran Kumar Vupparaboina, Alessia Colonna, Amira M Eltony</i>	West 211
407	ERG: Advances, Disease and Injury <i>Gabriel Peinado, Mirella Telles Salgueiro Barboni, Rikard Frederiksen, Melanie R Lalonde, James D Akula, Fatima Abbas, Anna Brouwer</i>	West 212-214
408	GWAS & Beyond: Epigenetics and Functional Characterization <i>Anand Swaroop, Louise Frances Porter, Laura Lorés de Motta, Alison J Hardcastle, Hannah Webber, Nicholas Tolman, Ayellet Segre</i>	West 217-219
409	Epidemiology of Corneal Disease <i>Qinqin Liu, Vikram Paranjpe, Meraf Amde Wolle, Chris Bradley, Nakul Shekhawat</i>	West 220
410	Visual Impairment- Impact on Driving and Mobility <i>Garrett Swan, Joanne M Wood, Kierstyn Napier-Dovorany, Sagar Chapagain, Ursula White, Joseph Da</i>	West 221/222
411	Refraction, Biometry, and Myopia <i>Damien Gatineau, Victor Rodríguez-Lopez, Lene A Hagen, James A Kuchenbecker, Yifei Wu, Andrew Carkeet, Ashutosh Jnawali</i>	West 223/224
412	Ocular Blood Flow <i>Lutz E Pillunat, Ryuna Chang, Georgios Lazaridis, Tailoi Chan-Ling, Bryn Brazile, Jeremiah Kah Heng Lim, Lorenzo Sala</i>	ARVO Ballroom
Wednesday, May 1: 10:15am-12pm		
Session	Session title	Location
432	Advanced imaging technologies <i>Seung Woo Hong, Mathieu KUNZI, Danielle J Harper, Hao F Zhang, Kamal Dhakal, Maximilian Pawloff, Kevin C Chan</i>	East 1

Session	Session title	Location
433	Blood Flow <i>Ronald H Silverman, Antonio Longo, Leopold Schmetterer, Leo Puyo, Andres Guevara-Torres, Breanna Tracey</i>	East 2/3
434	Retinopathy of Prematurity <i>Sherina Thomas, Siva Balasubramanian, Xi Chen, Tianyu Liu, Sang Jin Kim, Rene Choi, Kellyn N Smith</i>	East 8&15
435	Stem Cells and Organoids <i>Jiansu Chen, Kevin Gregory-Evans, Heike Kroeger, Ruchira Singh, Brian G Ballios, Kirstin Brooke VanderWall, Donald J Zack</i>	East 11/12
436	Precision through measurement: Biomarkers in health and disease – Minisymposium <i>Sarah E Coupland, Darragh Duffy, Pearse Andrew Keane, Russell Foster</i>	East Ballroom A
437	Diabetic Retinopathy-Screening and Clinical Imaging <i>Siamak Shokrollahi, Paolo Sandico Silva, Julia Hafner, Thomas S Hwang, Jay M Stewart, Bianca S Gerendas, Felicia Widyaputri</i>	East Ballroom B
438	Corneal biomechanics, keratoconus and crosslinking <i>Elias Flockerzi, Jennifer J Ling, Cynthia J Roberts, Brecken Blackburn, Ananya Goyal, Dimitrios Karamichos, Yutao Liu</i>	West 211
439	Inner Retinal Function <i>Rachel Care, Steven H DeVries, Antonio F Ambrosio, Nazarul Hasan, Chase B Hellmer, Santhosh Sethuramanujam, Rong-Shan Yan</i>	West 212-214
440	Lens Biochemistry <i>Justin Parreno, Viviana M Berthoud, Jie Liu, Kulandaiappan Varadaraj, Kevin L Schey, Kirsten J Lampi</i>	West 217-219
441	Retinal disease screening and risk factors <i>Stine Byberg, Soufiane Ajana, Carol Yim-lui Cheung, Spencer D Fuller, Simon P Harding, Marion Ronit Munk, Benedicte MJ Merle</i>	West 220
442	Optic Neuropathy <i>Steven Roth, Patrick Yu-Wai-Man, Farzad Pakdel, Steven Laurie, Brandon Macias, Tonia S Rex</i>	West 221/222

Session	Session title	Location
444	Imaging <i>Hongli Yang, Laura P Pardon, Haogang Zhu, Maria V Castanos, Brad Fortune, Max Colbert, Kai Gao</i>	ARVO Ballroom
445	Corneal Epithelium in Health and Disease <i>Chidambaranathan Gowri Priya, Adam Poe, Justin Courson, Vickery E Trinkaus-Randall, Nick Di Girolamo, David Myung, Alison M McDermott</i>	Harbour Ballroom

Wednesday, May 1: 12:15-1:45pm

Session	Session title	Location
462	Genetics Group - Spotlight on retinal ciliopathy from genetics to mechanism <i>Ronald Roepman, Erica Davis, Robert S Molday, Anand Swaroop</i>	East Ballroom B
465	How do I tell m(e)y(e) story? - Why effective communication is needed now more than ever to increase research funding <i>Lauren N Ayton, Gadi Wollstein, Stacy Pagos Haller, Maria B Grant, Hosam Ibrahim-Elzembely</i>	West 212-214
468	Overcoming the challenges of international collaboration in ocular research <i>Rupesh Vijay Agrawal, Carmen Ayuso, Richard W J Lee, Cristos Ifantides</i>	West 221/222
469	Ethical challenges and solutions for CRISPR treatment in human eye disorders <i>Budd Tucker, Stephen H Tsang, Tara C B Moore, Peter A Campochiaro</i>	West 223/224

Wednesday, May 1: 3-4:45pm

Session	Session title	Location
472	Retinitis Pigmentosa-Clinical <i>Michalis Georgiou, Moreno Menghini, Katharina G Foote, Kirk Stephenson, Ahmed M Hagag, Adam M Dubis, Tomas S Aleman</i>	East 8&15

Session	Session title	Location
473	Neuroprotection <i>Ben Mead, Sean K Wang, Kimberly A Wong, Ayse Sahaboglu, Thomas Wubben, Jia Xie, Dragana Trifunovic</i>	East 11/12
474	Ocular surface infection and inflammation <i>Sandamali Amarasingha Ekanayaka, Ashley Behrens, Mohammad Sharifian Gh, Stephanie Wan, Shunbin Xu, David J Evans, Jaya Rajaiya</i>	East Ballroom A
475	AMD clinical trials <i>Atsuro Uchida, Srinivas R Satta, Jennifer Joan Arnold, Haley D'Souza, David Callanan, Derek Kunimoto, Rishi P Singh</i>	East Ballroom B
476	Advanced therapies for ocular disease <i>Harry Otway Orlans, Alaknanda Mishra, Daniel Grigsby, Michael Berry, Patrizia Tornabene, Karina E Guziewicz, Keiko Miyadera</i>	East Ballroom C
477	Dry eye clinical <i>Mario Joseph Rojas, Abraham Solomon, Leslie Small, Cameron K Postnikoff, John D Sheppard, Pedram Hamrah, Marko Oydanich</i>	West 211
478	Trabecular Meshwork and Ciliary Body <i>Terete Borrás, David Krizaj, Krishnakumar Kizhatil, Wei Zhu, C Ross Ethier, Jacques Alexander Bertrand, Gulab Zode</i>	West 212-214
479	Physiological biochemistry of the lens – Minisymposium <i>Paul J Donaldson, Stephen Barnes, Julie C Lim, Miduturu Srinivas, Xiaohua Gong</i>	West 217-219
480	Genetic Epidemiology <i>Ching-Yu Cheng, Robert Wojciechowski, Pirro G Hysi, Denis Plotnikov, Patrice Marie Hicks, Katie Williams, Mark James Simcoe</i>	West 220
481	Imaging in Neuro-ophthalmic Disorders <i>Heather Moss, Bill Morgan, Frank A Proudlock, Jui-Kai Wang, Zhanhan Tu, Aleid van de Kreeke</i>	West 221/222
482	The choroid in ocular physiology, pathology and myopia <i>Audra M. A. Shadforth, Falk Schroedel, Hosein Hoseini-Yazdi, Jody A Summers, Christin Hanke-Gogokhia, Xiao Yang, Sang A Kim</i>	West 223/224

Session	Session title	Location
483	Surgery and Wound Healing <i>Cynthia Yu-Wai-Man, Ali Salimi, Giacinto Triolo, Chen Xin, Pouya Alaghband, Hari Jayaram, Yingna Liu</i>	ARVO Ballroom
484	Corneal Stroma Wound Healing and Repair <i>Tina B McKay, Hon Shing Ong, Rajiv R Mohan, Steven E Wilson, Edgar M Espana, Paola Bargagna-Mohan, Paramananda Saikia</i>	Harbour Ballroom

Thursday, May 2: 8-10am

Session	Session title	Location
501	The gut-eye axis: Emerging roles of the microbiome in ocular immunity and diseases <i>John Bienenstock, Rachel R Caspi, Mihaela G Gadjeva, Allen Taylor, Maria B Grant</i>	West 212-214
502	The single cell revolution: Novel insights and applications for single cell RNA sequencing in eye research <i>Donald J Zack, Seth Blackshaw, Enrique J Rodriguez-Boulan, Marie E Burns, Daniel R Saban, Ido Amit</i>	West 217-219

Thursday, May 2: 10:15am-12pm

Session	Session title	Location
528	Mechanistic analysis of ocular morphogenesis, growth and disease <i>Friedrich P Paulsen, Jiali Ru, Katie L Wagner, Sophie Lemmens, MAI SHUYI, Steven L Bernstein, Meysam Yazdankhah</i>	East 1
530	Advances in Retinal Gene Therapy and Stem Cells <i>Qin Wan, Ebrahim Aboualizadeh, Jordi Mones, Huber Vasconcelos Junior, Andrew Chen, Rachel M Huckfeldt, Eyal Banin</i>	East 8&15
531	Biology of Retinal Neurons <i>Shyam S Chaurasia, Géraldine Millet Puel, Robert J Johnston, Joseph Fogerty, Jakub Famulski, Joel B Miesfeld, Reyna I Martinez-De Luna</i>	East 11/12

Session	Session title	Location
532	Ocular microbiology and vaccines <i>Md Huzzatul Mursalin, Abby Kroken, Robert M Q Shanks, Kati Tormanen, Derek J Royer, Jacob Beaver, Daniel J Carr</i>	East Ballroom A
533	Retinal Surgery and PVR <i>Annabel von Studnitz, Bing Liu, Joseph Arboleda-Velasquez, Hiroki Kaneko, Edward Casswell, Irina De la Huerta, Naryan Singh Sabherwal</i>	East Ballroom B
534	Biochemistry and molecular biology of diabetic retinopathy <i>Todd McLaughlin, yan shao, Michael D Dennis, Ward Fickweiler, Priyamvada M Pitale, Mandy Losiewicz, Jose Manuel Romero del Hombre</i>	East Ballroom C
536	Visual Diseases and Protection <i>Eric B Miller, Zhuo-Hua Pan, Rachael S Allen, Yvonne Ou, Crystal Sigulinsky, Asia Cahill, Christian Felix</i>	West 212-214
537	Posterior Capsular Opacification <i>Linda Musil, Daisy Shu, Mihyun Nam, Samuel Novo, Janice L Walker, Melinda K Duncan</i>	West 217- 219
541	Pharmacological Interventions and Cellular Interventions <i>Andras M Komaromy, Ajay Kumar, Joseph Hanna, Pinkal D Patel, Ian F Pitha, Yuan Lei, MinHee Kim Ko</i>	ARVO Ballroom
Thursday, May 2: 12:15-1:45pm		
560	Addressing global blindness through international research collaborations – Next frontier for 2020 <i>Gyan "John" Prakash, Janey L Wiggs, Pamela C Sieving, Takeshi Iwata, Paul N Baird, Calvin C P Pang, Sudha K Iyengar, Sinnakaruppan Mathavan, Sundaram Natarajan</i>	West 221/222

ARVO Social Events

Everyone is welcome!

Sunday Social at the Vancouver Aquarium*

Sun., April 28, 7–10pm

845 Avison Way

Always a popular event, this year's Sunday Social features exhibits, animals, a dolphin and sea lion show and a 4-D movie experience. Ticket includes admission and two drinks.



Shuttles will run on a loop from the Convention Centre to the Aquarium starting at 6:30pm. The last shuttle will leave the aquarium at 10pm.

Student/Trainee Social

Mon., April 29, 7:30–9pm

Vancouver Convention Centre | Ballroom Foyer

All trainees attending the Meeting are invited to join us in honoring the 2019 Travel Grant Recipients. Come and mingle with your colleagues, make new acquaintances, and meet members of the ARVO Board of Trustees.

ARVO Classical Concert

Wed., May 1, 8–10pm

Vancouver Convention Centre | West 301



The popular ARVO Classical Concert is performed by multi-talented ARVO members. Relax and enjoy the music.

ARVO Karaoke*

Wed., May 1, 9pm–12midnight

Blackbird Public House

905 Dunsumir St.

Show your vocal talents or cheer on your favorite performer at the ARVO karaoke night! Admission includes one drink. Cash bar and light snacks will also be available. You must be 21 years or older to attend this event.

Visit Baltimore Welcomes ARVO 2020

Kick-Off Reception

Thurs., May 2, 2–3pm

Vancouver Convention Centre | Exhibit Hall



Join ARVO and Visit Baltimore as we look forward to the ARVO 2020 Annual Meeting, May 3–7.

*Admission ticket required. Tickets available Sat. on the first floor of Convention Centre in the West Building and Sun.–Wed. at ARVO Central.

Monday, April 29, 10:15 – 11am

AP Section Business Meeting — East 1

1. Trustee's Report of Status of Association
2. ARVO Strategic Plan
3. Annual Meeting Program Committee Chair's Report
4. Annual Meeting Program Committee Election Results
5. Other Business

BI Section Business Meeting — East Ballroom C

1. Trustee's Report of Status of Association
2. ARVO Strategic Plan
3. Annual Meeting Program Committee Chair's Report
4. Annual Meeting Program Committee Election Results
5. Other Business

CL Section Business Meeting — West 220

1. Trustee's Report of Status of Association
2. ARVO Strategic Plan
3. Annual Meeting Program Committee Chair's Report
4. Annual Meeting Program Committee Election Results
5. Other Business

CO Section Business Meeting — West 211

1. Trustees Report of Status of Association
2. ARVO Strategic Plan
3. Annual Meeting Program Committee Chairs Report
4. Annual Meeting Program Committee Election Results
5. Other Business

EY Section Business Meeting — West 221/222

1. Trustees Report of Status of Association
2. ARVO Strategic Plan
3. Annual Meeting Program Committee Chairs Report
4. Annual Meeting Program Committee Election Results
5. Other Business

GL Section Business Meeting — ARVO Ballroom

1. Trustee's Report of Status of Association
2. ARVO Strategic Plan
3. Annual Meeting Program Committee Chair's Report
4. Annual Meeting Program Committee Election Results
5. Other Business

IM Section Business Meeting — East Ballroom A

1. Trustees Report of Status of Association
2. ARVO Strategic Plan
3. Annual Meeting Program Committee Chairs Report
4. Annual Meeting Program Committee Election Results
5. 2019 Trustee Election Results
6. Cora Verhagen Award
7. Dr. Raniyah Ramadan Foundation Award
8. Mallinckrodt Uveitis Research Fellowship
9. Other Business

LE Section Business Meeting — West 217-219

1. Trustees Report of Status of Association
2. ARVO Strategic Plan
3. Presentation of the National Foundation for Eye Research 2019 Cataract Research Award to Frank J. Lovicu, PhD and Catherine K. Cheng, PhD
4. Annual Meeting Program Committee Chairs Report
5. Annual Meeting Program Committee Election Results
6. Other Business

PH Section Business Meeting — East 2/3

1. Trustees Report of Status of Association
2. ARVO Strategic Plan
3. Annual Meeting Program Committee Chairs Report
4. Annual Meeting Program Committee Election Results
5. PH Section Trustee nomination(s) update
6. Other Business

RC Section Business Meeting — East 11/12

1. Trustees Report of Status of Association
2. ARVO Strategic Plan
3. Annual Meeting Program Committee Chairs Report
4. Annual Meeting Program Committee Election Results
5. 2019 Trustee Election Results
6. Other Business East Ballroom A

RE Section Business Meeting — East Ballroom B

1. Trustees Report of Status of the Association
2. ARVO Strategic Plan
3. Annual Meeting Program Committee Chairs Report
4. Annual Meeting Program Committee Elections Results
5. Trustees Report of Status of Association
6. Other Business

VI Section Business Meeting — West 223/224

1. Trustees Report of Status of Association
2. ARVO Strategic Plan
3. Annual Meeting Program Committee Chairs Report
4. Annual Meeting Program Committee Election Results
5. 2019 Trustee Election Results
6. Other Business

VN Section Business Meeting — West 212-214

1. Trustees Report of Status of Association
2. ARVO Strategic Plan
3. Annual Meeting Program Committee Chairs Report
4. Annual Meeting Program Committee Election Results
5. Other Business

Airport Transportation

There are several options to go between Vancouver Airport (YVR) and downtown:

Taxi — Taxi stands are located on Level 2 of YVR. Taxis operating from the airport are licensed, and will use a zoned fare rate that will depend on downtown destination. Average fare is \$27 – \$34.

SkyTrain — The rapid rail service linking YVR to downtown Vancouver and parts of Richmond leaves the airport station approximately every seven minutes during most times of the day. There are 16 stops along the line, with downtown stops including Yaletown, Vancouver City Centre and Waterfront. The trip from YVR to downtown Vancouver takes 26 minutes on a two zone fare of \$4.20, plus the \$5 Canada Line YVR AddFare.

Car Service/Limousine — Ride in style with a luxury sedan or limousine. Simply use YVR's official licenced limousine company – no booking required. Average town car is \$35 – \$140.

Other Transportation Options

Nearly everything you need in Vancouver is within walking distance or a short cab ride of the Vancouver Convention Centre. The Information Desk at the entrance of the West Building of the Vancouver Convention Centre has more information. Taxis (including accessible wheelchair taxis) are plentiful and can be hailed on the street, as well as found at designated stands, and called for pick-up.

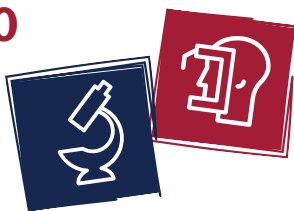
Getting around Vancouver

Buses & Sky Train — Vancouver's busiest bus routes run from 5am to 1am. Many buses will transit through Granville Street, Burrard Street and Georgia Street. Vancouver's SkyTrain is a completely automated light rapid transit system, offering fast, efficient service between downtown and Metro Vancouver's suburbs. For Trip Planning tools visit www.translink.ca.

New in 2020

Bench to Bedside (B2B)

May 1, 2020
Baltimore, Md.



ARVO is introducing a new program to encourage and foster innovation amongst members.

- Unique one-day meeting geared towards research innovators and venture capitalists
- Learn how to advance translational ideas to clinically applied products
- Early-stage pipeline companies will share their trials and tribulations of taking a new discovery to the market

ARVO.org/Meetings/Bench-To-Bedside



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ARVO 2020

MAY 3–7 | BALTIMORE, MD

Reserve your ARVO 2020 hotel online before you go home!

Hotel reservations for ARVO 2020 in Baltimore, Md., open on Sunday, April 28. All attendees are encouraged to book their hotel for the 2020 Annual Meeting before heading home.

Two ways to book:

- Stop by the Visit Baltimore kiosk in ARVO Central
- Reserve online at ARVO.org/HOTELS

Hotels are available in all price ranges and service levels, and your favorite hotel brands are represented.

Please note: ARVO cannot assume responsibility for rooms reserved at hotels outside the ARVO block (either at hotels not listed or booked directly with the hotels). Special requests (i.e., king-size bed, non-smoking) may be noted but cannot be guaranteed. If you require accessible accommodations, contact ARVO's Housing Bureau with details.

ARVO.org/Hotels

Future ARVO Annual Meetings

May 3 – 7, 2020
Baltimore, Md.

April 23 – 27, 2023
New Orleans, La.

May 2 – 6, 2021
San Francisco, Calif.

May 5 – 9, 2024
Seattle, Wash.

May 1 – 5, 2022
Denver, Colo.

May 4 – 8, 2025
Austin, Texas

Great photos, great giveaways! Visit Baltimore in ARVO Central

Baltimore is excited to welcome back ARVO for its 2020 Annual Meeting. Stop by the Visit Baltimore booth in ARVO Central and to make your hotel reservation and learn more about the city.

The Oriole Bird and the Baltimore Hons will be on hand for photos. The Oriole Bird is the mascot for the Baltimore MLB baseball team, the Orioles. He will be at the booth on Monday and Tuesday. The Hons, made famous by Cafe Hon in the Hampden neighborhood of Baltimore are known for their 1950s beehive hairdos, bright printed dresses and outdated glasses. Referring to everyone as “hon,” short for honey, the Hons will be at the booth on Wednesday and Thursday.



Visit Baltimore will have packets of the city’s legendary Old Bay spice used to season one of its favorite foods, the blue crab, as well as some caramel creams from Goetze Candy, a Baltimore confectionary company.

Drop off your business card for a chance to win a \$100 gift card from Under Armour, whose headquarters is in Baltimore. The first 250 people to make a reservation in ARVO Central will receive a Visit Baltimore travel coffee mug!

ARVO and the ARVO Foundation are grateful to the supporters of the following named travel grants:

Travel grants supporters:

- American Macular Degeneration Foundation Travel Grants
- American Uveitis Society Travel Grant
- ARVO International Travel Grants
- ARVO Staff Travel Grants
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- Reader's Digest Partners for Sight Foundation Travel Grants
- Retina Research Foundation/Joseph M. and Eula C. Lawrence Travel Grants
- Societa Italiana Laser in Oftalmologia Travel Grants
- Josh Wallman Travel Grant[⌘]
- Women in Eye and Vision Research (WEAVR) Travel Grants
- Gerhard Zinser Memorial Travel Grant[⌘]

[⌘] Supported by memorial donations

* Funding of grants for attendance at this conference was made possible in part by grant 2U13EY002143-40 from NEI. The views expressed in written conference materials or publications and by speakers and moderators do not necessarily reflect the official policies of the DHHS; nor does mention by trade names, commercial practices or organization imply endorsement by the U.S. Government.

ARVO Foundation awards & fellowships

- Alcon Early Career Clinician-Scientist Research Awards
- Dr. David L. Epstein Award (supported by the family of Dr. Epstein)
- Genentech AMD Research Fellowships
- Bert M. Glaser, MD Award for Innovative Research in Retina (supported by the family of Dr. Glaser)
- Mallinckrodt Uveitis Research Fellowship
- Oberdorfer Award for Low Vision Research (supported by The Lighthouse Guild)
- Pfizer Ophthalmics Carl Camras Translational Research Awards
- Publications grants
- Roche Collaborative Research Fellowships
- Lewis Rudin Glaucoma Prize
- Ludwig von Sallmann Clinician-Scientist Award

ARVO Foundation Developing Country Eye Researcher Travel Fellowships

- Alcon Foundation
- ARVO Foundation Annual Meeting donors
- ARVO member donors
- University of Wisconsin — Madison
- Women in Eye and Vision Research (WEAVR)

ARVO gratefully acknowledges the generous support for the 2019 Annual Meeting and its programs.

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216

PAPERS

+70

PRODUCT APPROVALS



iris
PHARMA

