

LOUIS J. FOX

## Center for Vision Restoration

of UPMC and the University of Pittsburgh

A joint program of the UPMC Eye Center and the  
McGowan Institute for Regenerative Medicine.

**REGENERATE  
CONGREGATE  
EDUCATE**

2nd Annual International Conference

# Vision Restoration: Regenerative Medicine in Ophthalmology

May 11, 2012

University Club at the  
University of Pittsburgh  
Pittsburgh, PA

### Course Directors

Joel S. Schuman, MD, FACS  
Eye & Ear Foundation Professor  
and Chairman  
Department of Ophthalmology  
University of Pittsburgh  
Director, UPMC Eye Center  
Interim Director, Louis J. Fox Center  
for Vision Restoration

William R. Wagner, PhD  
Interim Director of the McGowan  
Institute for Regenerative Medicine  
Professor of Surgery, Bioengineering  
& Chemical Engineering  
University of Pittsburgh



Become a champion in advancing the exciting  
promise of regenerative ophthalmology.  
Learn how this growing field holds a powerful  
potential to improve the quality of lives for millions  
of people.

Join top researchers and clinicians in the fields  
of regenerative medicine and ophthalmology  
and learn about the latest developments and  
breakthroughs for restoring impaired vision.

### Organized by:

Louis J. Fox Center for Vision  
Restoration

UPMC Eye Center

The McGowan Institute for  
Regenerative Medicine

University of Pittsburgh School of  
Medicine Center for Continuing  
Education in the Health Sciences

## Intent

Medical advances in the field of Regenerative Medicine are accelerating at an unprecedented rate. Technologies, such as cellular therapies, bioscaffolds and assistive technologies are now being used or tested in clinical trials throughout the country. Based on these developments, Regenerative Ophthalmology emerged, a new field that promises opportunities to develop more effective and safer therapies for vision impairment.

The Louis J. Fox Center for Vision Restoration will be hosting the 2nd annual international conference on regenerative ophthalmology. The conference will bring together scientists and clinicians working in ophthalmology and regenerative

medicine to share ideas, present innovative research and clinical findings, and work towards creating sustainable collaborations between researchers, clinicians and industry.

## Objectives

During this conference, participants will:

- Discover the latest in Regenerative Ophthalmology
- Network and share ideas
- Present a poster
- Interact with industry

## Who Should Attend

- Clinicians with an interest in ophthalmology
- Scientists and engineers interested in tissue engineering, cellular therapies and assistive technologies
- Students, postdoctoral fellows, residents and research staff.

## This Program Includes

- Distinguished guest speakers from Europe, Asia and the United States
- Poster session
- Industry exhibits

## Accreditation and Designation Statement

The University of Pittsburgh School of Medicine is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The University of Pittsburgh designates this live activity for a maximum of 7.75 AMA PRA Category 1 Credit(s)<sup>™</sup>. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Other health care professionals are awarded 0.7 continuing education units (CEU's) which are equal to 7.75 contact hours.

## Agenda

7:00 am	Registration	Ballroom A7
8:00 am	<b>Welcome and Introductions:</b> Joel S. Schuman, MD, FACS William R. Wagner, PhD	Ballroom B
8:10 am	<b>Session A: Corneal Regeneration</b>	
8:10 am	<b>Plenary Address:</b> Tissue Engineering Human Cornea David Kaplan, PhD	
8:55 am	Corneal Regenerative Medicine with Cell Sheet Engineering Masayuki Yamato, PhD	
9:15am	Towards the Development of Biomimetic Cornea for Human Transplantation Julie T. Daniels, PhD	
9:35am	Cutting Edge in Corneal Regenerative Medicine Shigeru Kinoshita, MD, PhD, FARVO	
9:55am	<b>Refreshment Break</b>	

10:15am 12:00pm	<b>Session B: Retinal Regeneration</b>
10:15am	<b>Plenary Address:</b> Stem Cells and Epigenetic Strategies for Retinal Repair Igor O. Nasonkin, PhD
11:00am	Advancements in the Development of a Retinal Prosthesis for the Blind Shawn K. Kelly, PhD
11:20am	Engineering Approaches for Protecting and Repairing the Retina and Optic Nerve Erin Lavik, PhD
11:40am	Human Embryonic Stem Cells and Induced Pluripotent Stem Cells for Neural Repair Maisam Mitalipova, PhD
12:00pm 1:15pm	<b>Lunch. Poster Session. Industry Exhibits. Technology Demonstrations.</b>
1:15pm	<b>KEYNOTE ADDRESS</b> Strategies to Prolong Photoreceptor Survival Constance Cepko, PhD
2:00pm 3:20pm	<b>Session C: Regeneration of the Optic Nerve</b>
2:00pm	Regeneration of the Optic Nerve in Adult Mice Larry Benowitz, PhD
2:20pm	Nanoparticles and Neurotrophins: Engineering Regeneration Jeffrey L. Goldberg, MD, PhD
2:40pm	Neurodegeneration in Glaucoma: Defining and Exploiting the Intrinsic Stress Response of the Optic Projection David J. Calkins, PhD
3:00pm	Circulating Immune Cells Orchestrate Neuroprotection and Cell Renewal in the Eye Michal Schwartz, PhD
3:30pm 5:15pm	<b>Session D: Innovations in Vision Restoration</b>
3:30pm	<b>Plenary Address</b> Seeing With Subretinal Electronic Implants: The Tübingen Study with Wireless Implant Alpha-IMS Eberhart Zrenner, MD
4:15pm	Restoring Vision through Electronic Implants: A View of the Road Ahead Gislin Dagnelie, PhD
4:35pm	Advanced Controlled Release Systems for Next Generation Ophthalmic Therapy Steven R. Little, PhD
4:55pm	Translation of Artificial Vision out of the Lab and into the Clinic Amy C. Nau, OD, FAAO
5:15pm – 5:30pm	<b>Wrap Up and Final Comments</b>

**The schedule is subject to change.**

### Course Directors

**Joel S. Schuman, MD, FACS**  
Eye & Ear Foundation Professor  
and Chairman Department of  
Ophthalmology University of Pittsburgh  
Director, UPMC Eye Center  
Interim Director, Louis J. Fox Center  
for Vision Restoration

**William R. Wagner, PhD**  
Acting Director of the McGowan  
Institute for Regenerative Medicine  
Professor of Surgery, Bioengineering  
& Chemical Engineering  
University of Pittsburgh

**Gislin Dagnelie, PhD**  
Associate Professor of Ophthalmology  
Johns Hopkins University School of Medicine  
Baltimore, Md.

**Julie T. Daniels, PhD**  
Chair of Regenerative Medicine & Cellular Therapy  
Department of Ocular Biology & Therapeutics  
UCL Institute of Ophthalmology  
London, United Kingdom

**Jeffrey L. Goldberg, MD, PhD**  
Associate Professor of Ophthalmology  
Bascom Palmer Eye Institute  
Miami, Fl.

**David Kaplan, PhD**  
Professor and Chair  
Department of Biomedical Engineering  
Tufts University  
Medford, Ma.

**Shawn K. Kelly, PhD**  
Research Health Scientist  
VA Boston Healthcare System  
Research Faculty  
Carnegie Mellon University  
Pittsburgh, Pa.

**Shigeru Kinoshita MD, PhD, FARVO**  
Professor and Chairman of Ophthalmology  
Department of Ophthalmology  
Kyoto Prefectural University of Medicine  
Kyoto, Japan

**Erin Lavik, PhD**  
Elmer Lindseth Associate Professor  
of Biomedical Engineering  
Case Western Reserve University  
Cleveland, Oh.

**Maisam Mitalipova, PhD**  
Scientist, Director of Human Stem Cell Laboratory  
Whitehead Institute for Biomedical Research  
Massachusetts Institute of Technology  
Cambridge, Ma.

**Igor O. Nasonkin, PhD**  
Senior Research Fellow  
National Institutes of Health/NEI  
Bethesda, Md.

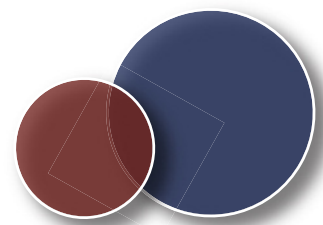
### Guest Faculty

**Larry Benowitz, PhD**  
Professor of Surgery and Ophthalmology  
Laboratories for Neuroscience Research in  
Neurosurgery  
Harvard Medical School  
Boston, Ma.

**David J. Calkins, PhD**  
Professor of Ophthalmology and Visual Sciences,  
Neuroscience and Psychology  
Vanderbilt University Medical Center  
Nashville, Tn.

**Constance Cepko, PhD**  
Investigator, Howard Hughes Medical Institute  
Professor of Genetics and Ophthalmology  
Harvard Medical School  
Boston, Ma.





**Michal Schwartz, PhD**

Ilze and Maurice Professorial Chair of  
Neuroimmunology  
The Department of Neurobiology  
The Weizmann Institute of Science  
Rehovot, Israel

**Masayuki Yamato, PhD**

Professor  
Institute of Advanced Biomedical Engineering  
and Science  
Tokyo Women's Medical University  
Tokyo, Japan

**Eberhart Zrenner, MD**

Chair Professor of Ophthalmology  
Centre for Ophthalmology  
University of Tuebingen  
Tuebingen, Germany

**Local Faculty**

**Steven R. Little, PhD**

Assistant Professor and Bicentennial Alumni  
Faculty Fellow  
Departments of Chemical and Petroleum Engineering  
McGowan Institute for Regenerative Medicine  
University of Pittsburgh

**Amy C. Nau, OD, FAAO**

Clinical Assistant Professor  
Department of Ophthalmology  
University of Pittsburgh School of Medicine  
Pittsburgh, Pa.

**Scientific Advisory Board**

**Joel S. Schuman, MD, FACS**

Eye & Ear Foundation Professor and Chairman  
Department of Ophthalmology  
University of Pittsburgh  
Pittsburgh, Pa.

**William R. Wagner, PhD**

Interim Director of the McGowan Institute  
for Regenerative Medicine  
Professor of Surgery, Bioengineering &  
Chemical Engineering  
University of Pittsburgh  
Pittsburgh, Pa.

**Robert L. Hendricks, PhD**

Joseph F. Novak Professor of  
Ophthalmology,  
Immunology, Microbiology and Molecular Genetics  
Department of Ophthalmology  
University of Pittsburgh  
Pittsburgh, Pa.

**Alan J. Russell, PhD**

Distinguished University Professor  
Founding Director of the  
McGowan Institute for Regenerative Medicine  
University of Pittsburgh  
Pittsburgh, Pa.

**James L. Funderburgh, PhD**

Professor of Ophthalmology  
Department of Ophthalmology  
University of Pittsburgh School of Medicine  
Pittsburgh, Pa.

**Stephen F. Badylak, DVM, PhD, MD**

Professor in the Department of Surgery  
Deputy Director of the McGowan Institute for  
Regenerative Medicine  
University of Pittsburgh  
Pittsburgh, Pa.

*In accordance with Accreditation Council for Continuing  
Medical Education requirements on disclosure, information  
about relationships of presenters with commercial interests  
(if any) will be included in materials distributed at the time  
of the conference.*



## CALL FOR POSTERS

All conference participants are welcome to present a poster. A poster is an opportunity for participants to present their own research and exchange views with the other attendees.

The posters will be on view throughout the event. A special time is allocated for poster presentation during lunch. The texts of the posters presented at the conference will be published on the Fox Center website.

### By presenting a poster, participants will:

- Encourage communication
- Explore future collaborations
- Increase the variety of points of view presented at the conference
- Receive valuable feedback from peers
- Gauge the impact of the presented research project

### Technical specifications

The poster stands are 6' wide and 4' tall. They are on legs which hold them about 30" from the floor.

The conference will supply the following:

- Bulletin-board style display boards
- Push pins, for mounting plain paper posters
- Blank flip-chart pages and markers, for ad hoc posters

Please submit your poster abstract for review before May 1, 2012 to Larisa Munsch at [munschl@upmc.edu](mailto:munschl@upmc.edu).

Poster presenters must print their own posters and bring the posters to the conference.

## CORPORATE SUPPORT

Become an integral part of advancing the exciting promise of Regenerative Ophthalmology by providing corporate support to this program. Three distinct participation opportunities are available, each with many benefits for your company:

- Sponsorships
- Educational Grants
- Exhibits

### Sponsorships

Sponsorships are being offered to provide you with a direction connection to the 125+ scientists and clinicians through many of the program's activities. In addition, three general levels of sponsorship are

available providing companies with multiple exposure opportunities. Sponsorships can also be geared toward your specific interests.

### General Levels of Sponsorship

Level 1 - \$7,500 (Limit of 2 corporate sponsors)

- Use of a meeting room on evening prior to the start of the event for vendor sponsored event
- Additional signs in conference areas (must be hung by Conference Staff, approved by the University of Pittsburgh and UPMC)
- Premium or one-page flyer in the conference bag (if supplied by vendor by deadline set by conference coordinator)
- Listing on the program sponsorship page
- Three (maximum) conference registrations
- Name/logo on the Conference web site with a link to company page
- The equivalent of two vendor booth spaces

Level 2 - \$5,000

- Premium or one-page flyer in the conference bag (if supplied by vendor by deadline set by conference coordinator)
- Listing on the program sponsorship page
- Two (maximum) conference registrations
- Name/logo on the Conference web site with a link to company page
- The equivalent of one vendor booth space

Level 3 - \$2,500

- Listing on the program sponsorship page
- One (maximum) conference registration
- Name/logo on the Conference web site with a link to company page

### Conference Activities Sponsorships

Sponsorships are available to support specific activities during the conference. Activities include:

- Speakers Dinner
- Breakfasts
- Refreshment Breaks
- Lunches
- Poster Session

Each of these sponsorships will include placing your company's name as "activity" sponsor with credit printed on signs for that activity.

- Sponsors credit printed on signs for the specific activity

- Company name printed on the program sponsorship page
- Name/logo on the Conference web site with a link to company page
- The equivalent of one vendor booth space

### **Educational Grants**

The University is continuously striving to improve its medical education opportunities with the goal of ensuring regulatory compliance while providing pertinent programs that accelerate the translation of clinical science into quality patient care. The University seeks to offer opportunities for companies to provide a contribution in support of the continuing professional development of clinicians in regenerative ophthalmology. Decisions made related to the receipt of an educational grant will be bound by the guidelines and standards of the ACCME Standards for Commercial Support.

### **Exhibits**

Tabletop exhibits are available to display your company's products, materials or literature for all conference attendees to view. The displays will be available during dedicated hours of the conference including in the morning, during breakfast, and at lunch. Displays will be located in the same room as the poster session to optimize exposure. Tabletops are being offered at a cost of \$750.00 each.

Display Details:

- 6' draped(white) table
- 2 chairs

### **Corporate Support Contact Information**

In addition to the listing above, we are open to customize a support opportunity to meet your company's objectives. Please contact Larisa Munsch to discuss these opportunities or to secure your corporate participation in this valuable program.  
Larisa Munsch  
munschl@upmc.edu  
412-624-5247

## **REGISTRATION INFORMATION**

You may register online or by using the paper format.

### **Online Registration**

Registering online is the quickest and easiest way to reserve your space at CCEHS conferences.

Visit our online registration site at

<https://ccehs.upmc.com/liveFormalCourses.jsf>

Click the Registration button and enter all the requested information (including an email address) and follow the prompts to submit your registration after entering your payment information. Print the automatic electronic registration confirmation email sent to the email address you provided us when you registered. If you do not receive the registration confirmation, please contact us at 001-412-624-5247. You must bring the printed confirmation email with you to the conference.

### **Paper Registrations by Fax or Mail**

If you are unable to register online, please contact us and we will send you a paper registration form that you can e-mail, fax or mail to us.

We will fax or mail you a confirmation letter if you submitted a paper registration form one week after receipt of your document.

Please note: Registration is complete only when you receive the confirmation letter. If you do not receive the confirmation letter within 5-7 days of registration, please contact us at 001-412-624-5247. You must bring this confirmation letter with you to the conference.

### **Registration Fees**

\$195 – Physicians and Faculty

\$150 – Group discount

\$125 – Students, Postdoctoral Fellows, Residents, Nurses and Research Staff

### **Registration fee includes**

(for conference registrants only)

- Continuing medical education credits
- Registration and course materials
- Continental breakfast, lunch and refreshments

## Group Registrations

Group registration discounts are available to University of Pittsburgh and UPMC departments registering 3 or more attendees for physicians and faculty status only. Please contact Larisa Munsch at [munschl@upmc.edu](mailto:munschl@upmc.edu) to make arrangements for a group registration for your department.

Group registration discount must be requested and confirmed before the first registration; discounts will not be applied to any existing registrations.

## Cancellation

All cancellations must be in writing and sent to us via U.S. mail, e-mail or fax. Tuition for cancellations postmarked or date stamped before April 11 will be completely refunded. After April 11 a \$35 administrative fee will be assessed. No refunds will be made after May 1. Cancellation requests can be made to Larisa Munsch at [munschl@upmc.edu](mailto:munschl@upmc.edu).

The UPMC Center for Continuing Education in the Health Sciences reserves the right to cancel this program if sufficient registrations are not received. In the case of cancellation, the department will fully refund registration fees.

## LOCATION

The conference will be held at the University Club at the University of Pittsburgh, 123 University Place, Pittsburgh, PA, 15260.

## OVERNIGHT ACCOMMODATIONS

The conference has contracted a limited number of hotel rooms at the Holiday Inn for guest speakers and conference attendees.

You may book a room by calling the hotel at 1-877-834-3613 and asking for the Vision Restoration block in order to receive our reduced rates. The special rate is \$129/night plus applicable tax.

These accommodations are not included in the registration fee. If you experience any problems booking your room, please call 412-624-5247.

Room availability cannot be guaranteed beyond the contracted block end date of April 19, 2012.

## Contact details:

Larisa Munsch  
Louis J. Fox Center for Vision  
Restoration  
450 Technology Drive, Suite 300  
Pittsburgh, PA 15219  
[www.foxcenter.pitt.edu](http://www.foxcenter.pitt.edu)  
Phone: +1 (412) 624-5247  
Fax: +1 (412) 624-5260  
E-mail: [munschl@upmc.edu](mailto:munschl@upmc.edu)

## SPECIAL NEEDS

Participation by all individuals is encouraged. Advance notification of any special need will help us provide better service. Please notify us at least two weeks in advance of the program by calling 412-624-5247.

## VISIT THE CENTER FOR CONTINUING EDUCATION IN THE HEALTH SCIENCES WEBSITE

Our Internet address is: <https://ccehs.upmc.com>. The UPMC Center for Continuing Education in the Health Sciences invites you to visit our web location. Receive information on CME programs, earn CME credits on the Internet, and access information about our formal courses and much more. Discover who we are and how you can contact us. Please visit our web location often to get updated information on upcoming programs.

*The University of Pittsburgh, as an educational institution and as an employer, values equality of opportunity, human dignity, and racial/ethnic and cultural diversity. Accordingly, the University prohibits and will not engage in discrimination or harassment on the basis of race, color, religion, national origin, ancestry, sex, age, marital status, familial status, sexual orientation, disability, or status as a disabled veteran or a veteran of the Vietnam era. Further, the University will continue to take affirmative steps to support and advance these values consistent with the University's mission. This policy applies to admissions, employment, access to and treatment in University programs and activities. This is a commitment made by the University and is in accordance with federal, state, and/or local laws and regulations. For information on University equal opportunity and affirmative action programs and complaint/grievance procedures, please contact: William A. Savage, Assistant to the Chancellor and Director of Affirmative Action (and Title IX and 504 Coordinator), Office of Affirmative Action, 901 William Pitt Union, University of Pittsburgh, Pittsburgh, PA 15260, (412) 648-7860.*



UPMC LIFE  
CHANGING  
MEDICINE



LOUIS J. FOX  
**Center for  
Vision Restoration**  
of UPMC and the University of Pittsburgh



University of Pittsburgh