



Taking Blindness Out of the Picture

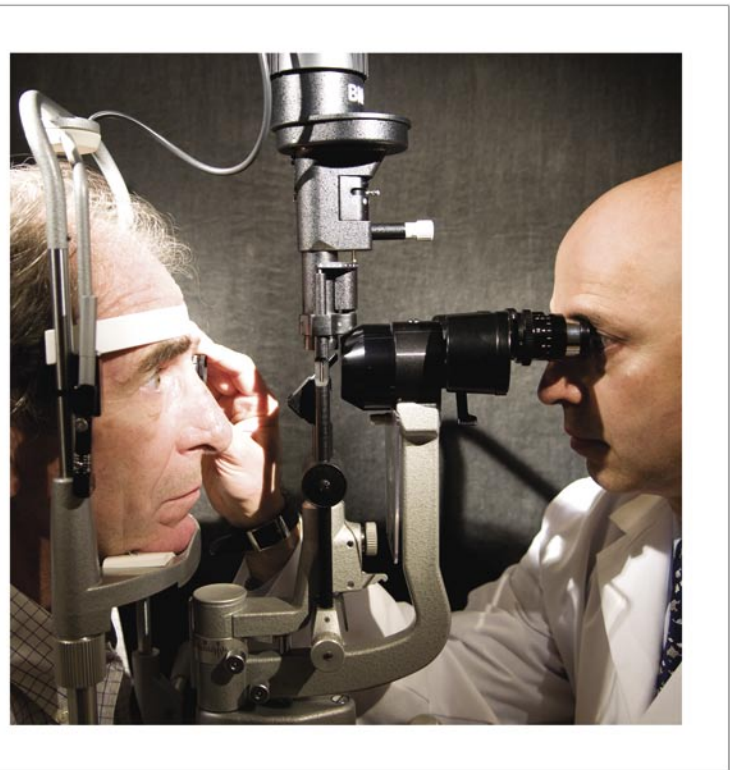
From the infant with retinopathy of prematurity to the grandmother losing her independence to diabetic retinopathy, macular degeneration or glaucoma – blindness can strike anyone, at any age.

Today, 14 million Americans suffer from visual impairments that severely limit their quality of life. As baby boomers age in the coming decade, we face an epidemic of blindness from eye diseases that, right now, cannot be cured.

Introducing the Centers of Excellence

Schepens Eye Research Institute is dedicated to taking blindness out of the picture at our new Centers of Excellence. Here, we've combined our world-class research programs into four interdisciplinary Centers to focus our academic and financial resources on patients with the most prevalent, blinding eye diseases.

At the Centers of Excellence, leading scientists collaborate with medical doctors in a translational research environment. Our faculty interface freely between Centers to ensure that new ideas are shared toward solving the intersecting facets of eye disease. This is how we move discovery more rapidly from laboratory to clinic and make the biggest difference to patients struggling with vision loss. □



DISEASE TARGETS: Dry AMD • Wet AMD • Diabetic Retinopathy
Choroidal Disorders • Diabetic Macular Edema • Glaucoma

Center for Age-Related Macular Degeneration (AMD) Research

About 12 million people nationwide suffer from AMD, a number that's projected to rise steadily as the population ages. Yet little is known about the causes of AMD and few treatments exist, especially for the more prevalent "dry" form.

The AMD Center of Excellence focuses on gaining a better understanding of the pathogenesis of AMD and other retinal diseases. Our goal is to treat, cure and ultimately prevent this growing cause of blindness. To reach it, we've joined a diverse and experienced team of 15 vision scientists and physicians in a basic, translational and clinical research program.

Directed by Dr. Patricia D'Amore, the AMD faculty is dedicated to unraveling the complex biologic events that contribute to the development and progression of AMD. Dr. D'Amore is an expert in angiogenesis, interested in the pathogenesis of dry AMD and in the relationship between the retinal pigment epithelium and the underlying choriocapillaris. She focuses the AMD faculty efforts in four research areas:

- Retinal Pigment Epithelium Biology and Pathology
- Bruch's Membrane and Choriocapillaris
- Inflammation and Neovascularization
- Diagnosis and Devices ■



DISEASE TARGETS: Retinitis Pigmentosa • Glaucoma • AMD
Diabetic Retinopathy • Stargardt's Disease

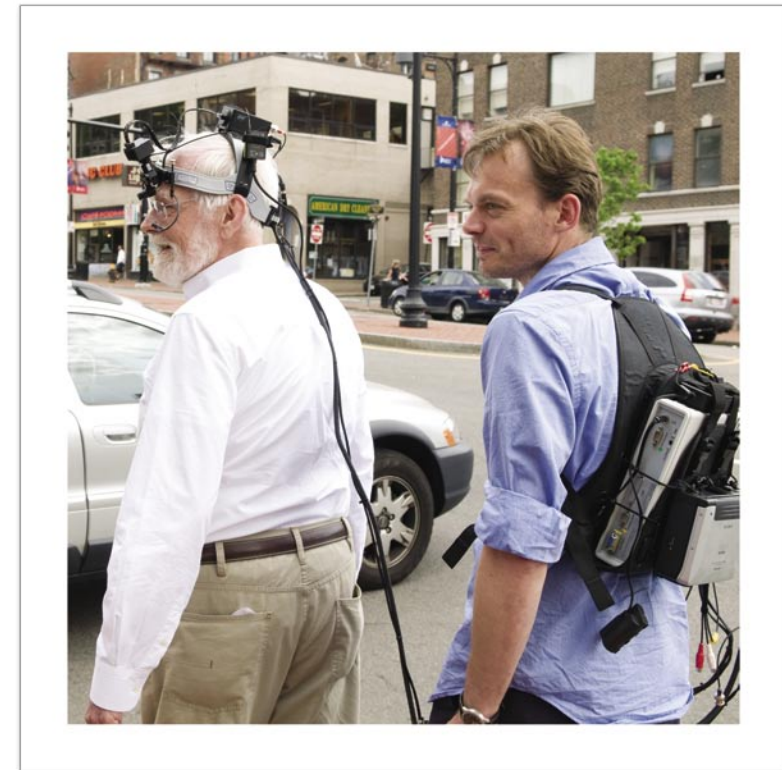
The Minda de Gunzburg Center for Ocular Regeneration

The Minda de Gunzburg Center for Ocular Regeneration was founded in 1997 through a generous grant from Mr. Charles de Gunzburg. Today, it is a leader in retinal stem cell and optic nerve regeneration, dedicated to restoring vision by regenerating, transplanting, or engineering healthy ocular structures.

A model of innovation, the Minda de Gunzburg Center is the inspiration behind the new Centers of Excellence. As part of our new approach to eye research, we've widened the Center focus to encompass corneal research in addition to our dynamic work in retinal and optic nerve study. The goal: to restore and regenerate ocular tissue from the eye's surface all the way to the brain.

Renowned for its expertise in stem cell immunology and immune privilege, the Minda de Gunzburg Center is directed by Dr. Michael Young. Dr. Young specializes in using stem and progenitor cells to repair and replace damaged retinal tissue. He leads a faculty of 12 scientists and physicians in ocular stem cell biology, tissue engineering and molecular biology to approach regeneration from three perspectives:

- Optic Nerve Regeneration
- Retinal Tissue Regeneration
- Ocular Surface Regeneration ■



DISEASE TARGETS:
AMD • Retinitis Pigmentosa • Glaucoma • Hemianopia

Mobility Enhancement and Rehabilitation Center

The Mobility Enhancement and Rehabilitation Center expands the Institute's leadership in the development of low vision aids and evaluation techniques.

With an overall mission to give visually impaired patients greater freedom of mobility and a higher quality of life; the Center will develop and apply real-world and virtual-environment techniques and clinical assessments to develop new ways to use devices and training in patient rehabilitation, thus enabling patients to navigate and move more safely on foot and by car.

Led by Dr. Eli Peli, a world authority on low vision rehabilitation, the Center faculty focuses its research on partial visual field loss from hemianopia (stroke), central vision loss from AMD and peripheral field vision loss from glaucoma and retinitis pigmentosa.

Scientists at the Mobility Enhancement and Rehabilitation Center apply a variety of innovative techniques to help people with impaired vision. These include advanced clinical measures to evaluate patients' vision, as well as test the effectiveness of novel devices developed at the Center. Other areas of study involve the design and application of driving and walking simulators, virtual reality and robotic mobility courses, and in-car surveillance systems. ■



DISEASE TARGETS: Dry Eye • Sjogren's Syndrome • Ocular Infections
Wound Repair • Transplantation • Fuch's Dystrophy
Ocular Surface Regeneration

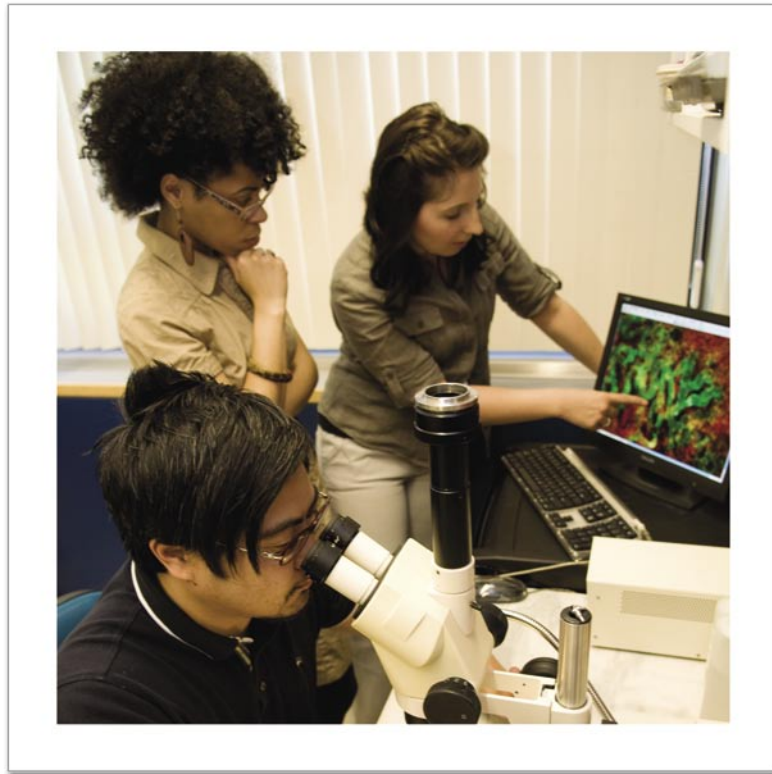
Center for Corneal and External Eye Disease Research

Corneal diseases and injuries represent some of the most prevalent and painful ocular disorders and are the leading cause of visits to eye care practitioners in the United States.

Corneal infections compromise the vision of 250 million people worldwide. Among Americans, dry eye syndrome afflicts over 30 million and ocular allergies over 20% of the population. Every year, more than 40,000 corneal transplants are performed nationwide for corneal degenerative, infectious, and dystrophic disorders.

To address this widespread health problem, the Schepens Eye Research Institute Center for Corneal and External Eye Disease Research is dedicated to basic research and its translation to the clinic to improve the understanding, treatment, and prevention of corneal and external eye diseases. Schepens Eye Research Institute is home to many of the world's most distinguished scientists in this area. The Center has nine faculty members, including two clinician-scientists. Research programs in the Center are multifaceted and focus primarily on the following areas of research:

- Treatment of corneal disease
- Ocular infection
- Dry eye syndrome ■



About Schepens Eye Research Institute

Building on a Legacy of Excellence

Over a half century ago, a famed retinal surgeon, Dr. Charles L. Schepens, set his sights on treating incurable eye disorders. Today, the institute he founded in 1950 bears his name and continues his legacy of excellence as one of the nation's most eminent independent eye research organizations.

An independently-funded affiliate of Harvard Medical School, Schepens Eye Research Institute brings together an award-winning faculty of scientists and physicians that fight blindness by developing new technologies, therapies and knowledge to retain and restore vision.

Leaders in their fields, Schepens' researchers hold faculty appointments at Harvard Medical School. Together, they have produced over 4,600 scientific publications, trained hundreds of scientists and physicians, and are the masterminds of countless breakthroughs and patented technologies.

Join Our Fight against Blindness

Learn how you can help Schepens Eye Research Institute make a difference today, and save others from the hardships and limitations of eye disease tomorrow. □

Schepens Eye Research Institute
20 Staniford Street
Boston, MA 02114

1.877.724.3736
www.schepens.harvard.edu

Focused on Excellence

The Centers of Excellence Faculty

The Minda de Gunzburg Center for Ocular Regeneration

- Michael Young, PhD LEADER
- Dong Feng Chen, MD, PhD
- Patricia D'Amore, PhD
- Darlene Dartt, PhD
- Meredith Gregory, PhD
- Nancy Joyce, PhD
- Bruce Ksander, PhD
- Kameran Lashkari, MD
- Joan Stein-Streilein, PhD
- Andrew Taylor, PhD
- Budd Tucker, PhD
- James Zieske, PhD

The Center for Age-Related Macular Degeneration Research

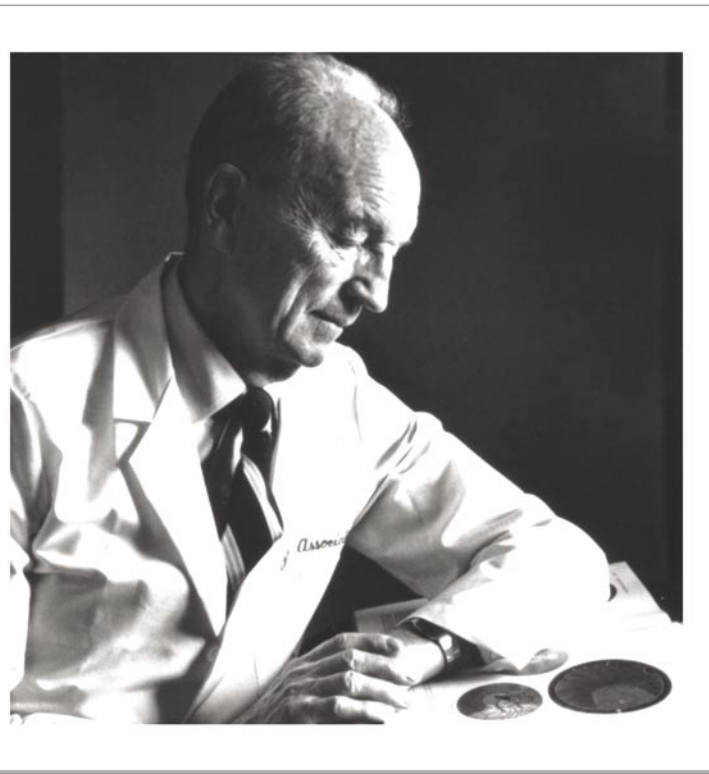
- Patricia D'Amore, PhD LEADER
- Peter Bex, PhD
- Dong Feng Chen, MD, PhD
- François Delori, PhD
- Chiara Gerhardinger, MD
- Meredith Gregory, PhD
- Andrius Kazlauskas, PhD
- Bruce Ksander, PhD
- Kameran Lashkari, MD
- Mara Lorenzi, MD
- Eli Peli, MSc, OD
- Magali Saint-Geniez, PhD
- Andrew Taylor, PhD
- Russell Woods, OD
- Michael Young, PhD

The Center for Corneal and External Eye Disease Research

- David Sullivan, PhD LEADER
- Pablo Argüeso, PhD
- Reza Dana, MD, MPH, MSc
- Michael Gilmore, PhD
- Ilene Gipson, PhD
- Meredith Gregory, PhD
- Ula Jurkunas, MD
- Bruce Ksander, PhD
- Sharmila Masli, MS, PhD

The Mobility Enhancement and Rehabilitation Center

- Eli Peli, MSc, OD LEADER
- Peter Bex, PhD
- Alexandra Bowers, PhD
- Russell Woods, PhD



About Dr. Charles L. Schepens (1912 - 2006)

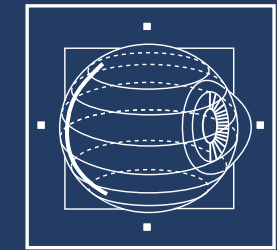
A Visionary from the First. An Inspiration for Years to Come.

Dr. Charles L. Schepens is the "father of modern retinal surgery" and a visionary whose innovative spirit inspires our quest for excellence at Schepens Eye Research Institute.

Born in Belgium, Dr. Schepens received his medical degree in 1935 from the State University of Ghent. After a heroic tour of service in World War II, he launched his distinguished career in eye research at Moorfields Eye Hospital in London.

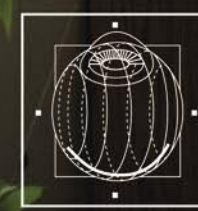
Dr. Schepens emigrated to the United States in 1947, joining the Howe Laboratory of Ophthalmology, Harvard Medical School. Two years later, he founded the world's first retina clinic at Massachusetts Eye and Ear Infirmary. He established an institute in 1950, which later became the Schepens Eye Research Institute. Today, it is among the nation's most renowned independent non-profit eye research organizations.

Inventor of many ophthalmic instruments, Dr. Schepens pioneered a long list of surgical procedures including the scleral buckling technique and "open-sky" vitrectomy. He is credited with raising the success rate of retinal reattachment surgery from 40% to 90%. A prolific writer, Dr. Schepens authored over 360 publications and was lauded by his peers as one of the "Ten Most Influential Ophthalmologists of the Twentieth Century." □



Schepens
Eye Research
Institute

Research Excellence
4 Centers
1 Focus



An affiliate of
Harvard Medical School



An affiliate of
Harvard Medical School