Cole Eye Institute
The Cleveland Clinic Foundation

Ophthalmology Residency Training Program
World’s Most Advanced Eye Institute

The Cole Eye Institute exemplifies the commitment The Cleveland Clinic Foundation has for the treatment and research of ophthalmic conditions.

- **One of the few centers in the world dedicated to comprehensive and highly specialized ophthalmic care**
- **Highest patient volume in the United States, with more than 130,000 patient visits and 5,000 eye operations annually**
- **Internationally recognized, all-subspecialty medical staff**
- **The latest, most advanced, state-of-the-art technology for diagnosis, evaluation and treatment**
- **Pioneering treatment protocols for complex vision-threatenning diseases**
- **Aggressive research program that bridges the gap between laboratory and patient care and offers access to clinical trials of the newest treatments**
- **Patient-centered care for maximum comfort, service and quality**
We are pleased to learn of your interest in the Cole Eye Institute Residency Training Program. To assist you in making your decision, this brochure provides details about the program and The Cleveland Clinic Foundation, as well as information about living in Greater Cleveland.

Ophthalmology at the Cleveland Clinic has a long-standing tradition of providing excellent care for one of the largest and most diverse patient populations in the country. Staffed by internationally recognized experts in their fields, the Cole Eye Institute has taken on a dynamic posture with the mission of becoming the preeminent center for patient care, vision research and education.

The Cole Eye Institute opened its doors in 1999 and is the most advanced facility of its type in the world. We care for more patients than any other eye institute in the country, and we have the most active, continuous medical education program.

Our training program covers the breadth and depth of ophthalmological subspecialties, including cataract, cornea and external disease, glaucoma, keratorefractive and corneal surgery, neuro-ophthalmology, ocular oncology, oculoplastics and orbital surgery, ophthalmic pathology, pediatric ophthalmology, uveitis, vitreoretinal diseases and surgery.

In addition to providing outstanding clinical training, our residency training program affords the opportunity for research to prepare interested residents for a career in academic ophthalmology. Residents are expected to participate in basic and clinical research projects and are encouraged to present findings at national meetings.

We are tremendously excited by the continuing innovation and excellence that characterize the Cleveland Clinic Cole Eye Institute. We look to the future with high expectations and great enthusiasm. Our goal is to continually improve on a tradition of excellence and to train the future leaders of our field.

Thank you for your interest. Best of luck in making your decision.

Sincerely,

Hilel Lewis, M.D.
Chairman, Division of Ophthalmology
Director, Cole Eye Institute
The Cleveland Clinic Foundation

A National Referral Center, an International Health Resource

The Cleveland Clinic Foundation is a multispecialty academic medical center, a National Referral Center and an international health resource dedicated to providing patients with excellence in all aspects of their care.

One of the world’s first group practices, the Cleveland Clinic was formed in 1921 when four Cleveland physicians came together and set forth their professional standards: Better care of the sick, investigation of their problems and further education of those who serve.

The second largest medical group practice in the world and the largest hospital in Ohio, the Cleveland Clinic includes the 12-story state-of-the-art Crile Building (where nearly 73,000 outpatient visits are recorded each month), a 959 staffed-bed hospital (including a Children’s Hospital), the Cleveland Clinic Educational Foundation, the Cleveland Clinic Lerner Research Institute, the Cleveland Clinic Taussig Cancer Center, the Inter-Continental Suite Hotel and the Cleveland Clinic Cole Eye Institute.

This integration of clinical and hospital care with research and education in a private, not-for-profit group practice distinguishes the Cleveland Clinic in American medicine.

The Cleveland Clinic annually records more than 1.6 million outpatient visits and 54,000 hospital admissions. Among them are patients from all 50 states and 100 foreign countries. More than 850 full-time physicians and scientists and 700 house staff/fellows provide patient care in 100 specialties and subspecialties.

The quality of medical care at the Cleveland Clinic has been recognized for excellence repeatedly. Every year since 1990, the Cleveland Clinic has been designated by U.S. News & World Report as one of only 10 hospitals in the United States considered “the Best of the Best.”
Research, one of the three cornerstones named by the founding fathers, is actively pursued by more than 350 research scientists, fellows and students. Through the years, the Cleveland Clinic has been a world leader in medical breakthroughs and innovations largely because of the collaboration of physicians and scientists. The Cleveland Clinic Lerner Research Institute has spearheaded numerous advances in the diagnosis and treatment of complex medical problems. The Research Institute oversees more than 1,000 research projects with a budget of more than $63 million. More than two-thirds of that amount is received from external grants and contracts, a dramatic endorsement by others of the quality of Cleveland Clinic research.

The Cleveland Clinic Lerner Research and Education building was completed in May of 1999. The building houses researchers, laboratories, a medical education library and a cafeteria.

The founding fathers’ dedication to training the next generation of physicians continues today. The Cleveland Clinic Educational Foundation has one of the largest freestanding medical education programs in the country and has made significant contributions to the dissemination of medical knowledge.

More than 500 medical students from throughout the world come to the Cleveland Clinic for their clinical electives each year.

The Educational Foundation sponsors accredited residency training programs in 48 specialties leading to board certification.
In addition to providing general adult and pediatric ophthalmology services, the division provides highly specialized tertiary care services through its various clinical departments. Residents actively participate in patient care in all departments.

**Cornea and External Disease**

Ophthalmologists in the Department of Cornea and External Disease provide state-of-the-art diagnosis and treatment of complex disorders of the cornea, conjunctiva and anterior segment through comprehensive medical and surgical management.

A wide variety of diagnostic services is available, including computerized video corneal topography, anterior segment photography, microbiologic evaluation, and immunopathologic and histopathologic evaluation of conjunctival and corneal disease. Residents learn corneal transplantation, therapeutic and refractive contact lens fitting, and treatment for corneal and external infections.

They are exposed to a diversity of unusual pathologies, such as external ocular tumors, corneal ulcers and inherited and congenital anterior segment disorders, including corneal dystrophies and anterior segment dysgenesis.

Department members maintain an active clinical research program in corneal disease surgical outcomes, including high-risk keratoplasties and corneal transplants combined with other subspecialty procedures. Clinical trials involving the investigation of topical Cidofovir to treat HSV keratitis and EKC are currently underway. Other studies are investigating treatment of dry eyes and ocular rosacea. The department has played an integral role in the identification and management of external and corneal infections and inflammatory diseases.

**Glaucoma**

The Glaucoma Department provides outpatient treatment of open-angle, angle-closure and congenital glaucomas. A full range of therapeutic options for glaucoma management is available, including medication, laser surgery, glaucoma filtering surgery with or without antifibrotic therapy, combined glaucoma and cataract surgery, glaucoma implant surgery, and contact laser cyclophotocoagulation.
The Cleveland Clinic Foundation is one of only 14 clinical centers participating in the National Collaborative Initial Glaucoma Treatment Study, funded by the National Institutes of Health. This study compares the initial management of open-angle glaucoma with medical or surgical therapy. Staff members of the department have organized and developed numerous clinical outcome studies on cataract, glaucoma, corneal and retinal surgery.

**Neuro-Ophthalmology**

Physicians in the Department of Neuro-Ophthalmology offer comprehensive diagnosis and treatment of complex visual disturbances resulting from optic nerve and/or brain pathology. The department treats a diverse mix of patients with disorders ranging from myasthenia gravis and multiple sclerosis to ischemic optic neuropathy, stroke, orbital tumors and cranial neuropathies.

Advanced technologies such as MRI and CT scanning and cerebral angiography play an important role in the diagnosis and management of these disorders, and physicians in the department collaborate closely with the Department of Diagnostic Radiology.

Residents are able to review patients’ MRI and MRA studies in the Clinic on a computer-based program, and discuss the findings with the faculty.

Residents learn how to evaluate patients with neuro-ophthalmic disease, as well as how to formulate a differential diagnosis. They also have the opportunity to learn the latest surgical techniques for problems such as cranial nerve palsies and thyroid eye disease, including lid surgery, optic nerve sheath decompression for pseudotumor cerebri, and non-arteritic ischemic neuropathy.

**Ophthalmic Pathology**

Ophthalmic Pathology is taught in an interactive setting with the participation of all first-year residents as a group and the supervision of the ophthalmic pathologist. This group approach encourages discussion and stimulates the learning process. The residents acquire basic knowledge of the pathophysiology of diseases encompassing all subspecialties of Ophthalmology during their Ophthalmic Pathology rotation. Excellent resources are available, including a vast teaching glass slide collection, the Armed Forces Institute Slide Collection, Teaching Slide Exchange Programs of the American Association of Ophthalmic Pathologists and Theobald Society Meeting Slide Collections. CD-ROM Interactive Study Sets are a requirement of the rotation, and the individual sections are reviewed in depth with the residents. Residents have, over the years, co-authored many scientific reports in peer review journals corroborating the clinico-pathological findings of unusual cases. Interested residents also have the opportunity to present and attend the Midwest Pathology Meeting of the Georgiana Theobald Society.

**Resources**

The Division of Ophthalmology offers world-class diagnostic and treatment modalities, including:

- argon diode and dye lasers
- corneal topography
- electrophysiology
- endothelial microscopy
- excimer lasers
- fluorescein angiography
- indocyanine green angiography (ICG)
- optical nerve head analyzers
- optical coherence tomography (OCT)
- scanning laser ophthalmoscopy
- ultrasonography
Ophthalmic Plastic, Reconstructive and Orbital Surgery

The Department of Ophthalmic Plastic, Reconstructive and Orbital Surgery provides care for eyelid, orbital and lacrimal system disorders. This includes trauma, tumors, cosmetic concerns, congenital problems, thyroid eye disease, microphthalmos/anophthalmos and other complex conditions. Residents learn blepharoplasty, ptosis surgery, eyelid repair, dacryocystorhinostomy, enucleation, socket reconstruction and brow position alteration, evisceration, endoscopic brow lift, botulinum toxin injections, among numerous other procedures on the Oculoplastics service.

The residents play an active role in patient care, surgery and research. While on the service, a resident may work in a cooperative manner with members of the departments of Dermatology, Endocrinology, General Plastic Surgery, Neurosurgery and Otolaryngology. Patients with complex craniofacial or traumatic disorders are managed with a team approach.

Pediatric Ophthalmology and Adult Strabismus

The Department of Pediatric Ophthalmology and Adult Strabismus offers total medical and surgical management of pediatric ophthalmic disorders, from infancy through adolescence — and eye muscle disorders in adults. Residents gain experience in treating important pediatric problems, including pediatric cataracts, simple and complex strabismus, congenital ocular anomalies, pediatric oculoplastics, pediatric glaucoma, and refractive errors in children.

The department has a vision assessment laboratory and specialty clinics that are devoted to comprehensive eye care for children.

The Cleveland Clinic Foundation includes a Children’s Hospital, a Pediatric Intensive Care Unit and numerous pediatric tertiary care specialists to help manage the most complex ophthalmic problems of infancy and childhood.

Refractive Surgery

Specialists in the Department of Refractive Surgery provide surgical management for refractive errors, including myopia, hyperopia and astigmatism.

Residents are exposed to state-of-the-art and innovative refractive techniques and surgical technologies, including incisional refractive surgery, photorefractive keratectomy (PRK), phototherapeutic keratectomy (PRK), and laser in situ keratomileusis (LASIK). They also have the opportunity to be involved in several new investigational protocols.

Center for Genetic Eye Diseases

The Center for Genetic Eye Diseases provides clinical diagnostic and therapeutic services for patients with inherited eye conditions such as corneal and retinal dystrophies and microphthalmia.

Patients with inherited disorders that involve the eye such as neurofibromatosis, albinism, neurodegenerative diseases, and the Marfan syndrome are referred to the Center by physicians at the Cleveland Clinic and around the country. A monthly specialty clinic is dedicated to patients with retinal dystrophies and their families.

The Center for Genetic Eye Diseases’ laboratory conducts molecular genetic research on genes that cause retinal dystrophies, congenital cataracts and ocular malformations. Second year residents participate in the activities of the Center during their rotation on the pediatric ophthalmology and strabismus service.
Retina and Vitreous

Specialists in the Department of Retina and Vitreous evaluate and treat a large volume of patients with a variety of retinal, macular and vitreous disorders.

Residents benefit from significant experience in retinal, macular and vitreous surgeries, as well as exposure to the full spectrum of vitreoretinal diseases. Cleveland Clinic specialists are internationally recognized not only for their expertise in state-of-the-art treatment, but also for advancing the frontiers of vitreoretinal surgery. Residents are exposed to many innovations that were developed here and are now used worldwide.

Newer treatment options available include photodynamic therapy, submacular surgery, macular translocation, pharmacologic therapy such as t-PA for submacular hemorrhage and choroidal neovascularization, perfluorocarbon liquids for management of complicated retinal detachment, giant retinal tears and dislocated lens, silicone oil for management of complicated retinal detachment, and radioactive iodine plaques. In Medical Retina, the latest technology is available, including indocyanine green angiography (ICG), optical coherence tomography (OCT) and scanning laser ophthalmoscopy. Residents also learn how to interpret fluorescein angiography and use the information to treat patients.

The department participates in several NIH and industry-sponsored research protocols. Resident participation in clinical and/or basic retinal research studies is encouraged.

Uveitis, Ocular Inflammatory Disease and Immunology

The Department of Uveitis, Ocular Inflammatory Disease and Immunology provides state-of-the-art consultative services for patients with all aspects of uveitis and ocular inflammatory diseases, with an emphasis on severe and complex disorders. Patients are evaluated by appropriate clinical, radiographic and pathologic workup, then offered medical and/or surgical therapy.

Cutting-edge management for uveitis includes the newest immunotherapeutics. Residents are exposed to the latest surgical approaches for the diagnosis and therapy of uveitis.

The department has gained national and international recognition in clinical studies of a vast array of ocular inflammatory diseases. The department’s credits include being among the first to implant intraocular lenses in uveitis patients and to identify and further characterize chronic infectious endophthalmitis and numerous AIDS-associated ocular infections.

Residents are encouraged to participate in ongoing clinical studies of the epidemiology, testing and treatment of ocular inflammatory diseases.
The program's mission is to produce superbly trained clinical and academic ophthalmologists and to inspire residents to become leaders in patient care, teaching and vision research. The program meets all the requirements of the American Board of Ophthalmology and the Accreditation Council for Graduate Medical Education. The three-year program is divided into the required rotations. Residents work under the direct supervision of the division staff during all rotations.

Interviews are conducted in late November and early December, and four applicants are accepted into the residency program each academic year. The program participates in the Ophthalmology Match Program held each January.

During training, residents rotate among the division’s nine departments and a resident-run clinic at MetroHealth Medical Center, while completing their board requirements. This curriculum provides a balanced exposure to all subspecialty areas of ophthalmology, ensuring graduates the ability to perform general ophthalmology with skill, knowledge and confidence.

At the Cole Eye Institute, each resident works in a one-on-one relationship with a staff physician. We feel this provides the best opportunity to study disease processes and their medical and surgical management. This arrangement also provides excellent supervision and optimal continuity of patient care in the outpatient and hospital settings.

On-call Schedule
Beginning in July of the third postgraduate year, the resident is on call from home approximately every fourth night, for a total of 13 weeks over the course of the year. The resident on call is backed up by two staff physicians who are also on call.

Clinic and Hospital Services
The Division of Ophthalmology is a growing, dynamic specialty at the Cleveland Clinic that attracts a diverse patient mix. In a typical 12-month period, the division records more than 130,000 clinic visits, more than 5,000 surgical procedures and more than 30,000 diagnostic studies.

About the Program

Rotations
First Year
Anterior Segment/Uveitis
Neuro-Ophthalmology
Medical Retina
MetroHealth Medical Center

Second Year
Anterior Segment
Contact Lens
Low Vision
Oculoplastics and Orbital Surgery
Pediatric Ophthalmology
Keratorefractive Surgery
MetroHealth Medical Center

Third Year
Anterior Segment
Glaucoma
Surgical Retina
MetroHealth Medical Center
Resident Evaluations
Attending staff members provide written evaluations of the residents rotating on their service. Each resident is assigned to a staff person, who supervises the resident’s work, listens to the resident’s concerns, and monitors the resident’s clinical and academic progress. These staff advisors complete semi-annual written evaluations for each assigned resident that consider the resident’s technical ability in the operating room, clinical skills, academic performance and research activities, and make recommendations for improvement in relation to the resident’s career goals.

All residents are required to take the Ophthalmic Knowledge Assessment Program (OKAP) annually. Residents are expected to commit themselves to a disciplined study program and demonstrate adequate skills on this examination.

Residents are required semi-annually to evaluate the attending staff in confidence through a program supervised by the Cleveland Clinic Educational Foundation.

Members of the Division of Ophthalmology are nationally and internationally recognized leaders who are involved in clinical and basic research. Throughout the three-year program, residents are expected to participate in clinical and basic research activities, utilizing the staff’s expertise.

During the three-year training program, residents complete independent clinical research projects, which involve reviewing the literature, developing a hypothesis, and designing and executing the study. Research activities are carefully supervised by an experienced clinical investigator.

Residents are expected to submit and present their research at national meetings and to write several papers for publication based on their research activities. Each June, ophthalmology residents, fellows and staff participate in the annual Residents’ and Alumni Meeting, a scientific forum for the presentation of research projects. The emphasis is on submissions of the highest quality that present original, thought-provoking and clinically relevant research. The evening concludes with a social hour, awards and dinner.
Residents have access to an up-to-date ophthalmic library in the Eye Institute. The library includes journals, reference texts, videos and CD roms.

The James P. Storer Conference Center in the Cole Eye Institute hosts conferences, grand rounds and continuing medical education courses. Live surgery is broadcast in the conference room, allowing visitors, students and residents to see procedures without being in the operating room. The conference center is also used to teleconference with patients and doctors in other locations.
A comprehensive and up-to-date didactic program is an integral part of the residency training program. Residents are expected to attend the following lectures and conferences:

**Grand Rounds** *(weekly)*

**Basic Science Lectures** *(first-year residents only)*

**Fluorescein Angiography and ICG Conferences** *(weekly)*

**Retina Lectures** *(weekly)*

**Cornea and External Disease Lectures** *(2/month)*

**Ultrasonography Lectures** *(first-year residents only)*

**Pediatric Ophthalmology Lectures** *(monthly)*

**Refractive/Optics Lectures** *(monthly)*

**Glaucoma Lectures** *(2/month)*

**Neuro-Ophthalmology Lectures** *(monthly)*

**Ocular Pathology Conference** *(weekly)*

**Pediatric Journal Club** *(monthly)*

**Uveitis Lectures** *(monthly)*

**Resident Rounds** *(monthly)*

**Oculoplastics Lectures** *(monthly)*

First-year residents participate in a monthly microsurgery skills transfer course taught by staff members. The emphasis is on acquiring basic surgical skills as they pertain to each subspecialty.

Journal Club is held once a month as a dinner meeting, hosted by a staff member.

Residents also attend a one month basic science course.

**Visiting Professors**

Twenty to 40 visiting professors are invited to the Cleveland Clinic each year for a period of one to two days each. This popular program provides residents and staff the opportunity to interact with and learn from distinguished leaders in various ophthalmology subspecialties throughout the year.
The same vitality that charges the Cleveland Clinic extends to almost every aspect of life in Greater Cleveland. The melting-pot culture that has helped establish Cleveland as a vibrant and versatile metropolitan area adds unique flair to the lifestyle here. Cleveland is the only five-time winner of the National Civic League’s “All American City” award.

**Arts and Entertainment**

The Cleveland Clinic campus is just a stone’s throw from University Circle, Cleveland’s cultural center. University Circle has the greatest concentration of museums, cultural activities and churches in the country. The Cleveland Museum of Art houses one of the country’s most highly acclaimed art collections. The Cleveland Orchestra, one of the finest in the world, performs at the recently restored, elegant Severance Hall and, during the summer, at the beautiful Blossom Music Center outdoor amphitheater.

Blossom Music Center and the Cleveland State University Convocation Center attract big-name rock, pop, country and jazz performers. The Rock and Roll Hall of Fame and Museum is a popular attraction for people of all ages. The Cleveland Playhouse, within a block of the Clinic, is one of America’s foremost professional regional theaters. Playhouse Square also offers the Cleveland Ballet, Cleveland Opera and Great Lakes Theater Festival (a professional classical theater company), as well as touring Broadway shows. The three-theater complex, restored to its original 1920s elegance, is one of the city’s showplaces.

The Flats, a several-mile stretch of nightclubs, restaurants and entertainment spots along the banks of the Cuyahoga River, is one of Cleveland’s most popular areas, particularly in the summer. Thousands of people come by boat — as well as car — to enjoy the view, dance, dine, take in a show at one of the area’s several outdoor stages, or simply stroll the Flats and watch the crowd. The Flats is quieter in the winter but still popular as a lunchtime and evening gathering spot for lively entertainment and excellent dining.

**Recreation and Sports**

The Cleveland Metroparks Zoo — which unveiled a world-class Rain Forest in 1992 — Cedar Point Amusement Park, Six Flags Ohio and Sea World offer fun and relaxation for the entire family. Winter offers the opportunity for cross-country and downhill skiing,
tobogganing, snowmobiling and ice skating. And as the Great Lakes City on America’s “North Coast,” Cleveland offers sailing enthusiasts, boaters, swimmers and fishermen abundant lakeshore to enjoy.

When it comes to professional sports, Cleveland has something for everyone: Major League Baseball’s Indians, the National Football League’s Browns, the National Basketball Association’s CAVS, the Women’s National Basketball Association’s Rockers, the International Hockey League’s Lumberjacks and the National Professional Soccer League’s Crunch.

In 1994, the Indians and Cavaliers moved their home games to Gateway, a brand-new open-air ball park and arena which has attracted national headlines for its design. And every summer, racing fans welcome the Cleveland Grand Prix to Burke Lakefront Airport.

For those who would rather play than watch, Cleveland offers hundreds of public and private golf courses, tennis courts and swimming pools.

Outdoor enthusiasts of all ages enjoy the “Emerald Necklace,” Cleveland’s Metroparks system which encircles the city. The Metroparks offer picnicking, hiking, boating on inland lakes, swimming, golf, tennis, horseback riding and cross-country skiing, as well as an impressive year-round schedule of nature programs for the entire family.

Residential Areas
Cleveland has nearly 80 residential communities and a score of other suburbs located just beyond the metropolitan area. Affordable housing is one of the attractive aspects of Cleveland. Whatever your housing preference — Tudor, modern, colonial or high-rise — you will find the apartment, home or condominium of your choice here. Fine residential areas are located within minutes of the Cleveland Clinic, some of which have a national reputation for their elegance and beauty. Excellent private as well as public schools characterize Cleveland’s family-oriented suburbs. And hundreds of places of worship of various denominations dot the Greater Cleveland area.

Shopping and Dining
Greater Cleveland offers an abundance of shopping malls and retail stores. Options for those “born to shop” range from outlet malls to Saks Fifth Avenue. Downtown, shoppers may browse through shops in the elegant Galleria and The Avenue at Tower City, a contemporary renovation of Cleveland’s original train station. A trip to the West Side Market, a traditional open-air market minutes from downtown, captures the flavor of Cleveland’s ethnic diversity.

For more information about the Ophthalmology Residency Training Program or for an application, contact:

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The Cole Eye Institute at The Cleveland Clinic Foundation is one of the few centers in the world dedicated to comprehensive, specialized ophthalmic care. Its staff of nearly 100 clinicians and scientists work together to integrate pioneering research with state-of-the-art patient care. The Cleveland Clinic is an independent, not-for-profit, multispecialty academic medical center.

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