

VISION

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THE NEWSLETTER OF THE UAB DEPARTMENT OF OPHTHALMOLOGY



The UAB Center for Low Vision Rehabilitation teaches patients to make the most of their remaining sight.

The UAB Center for Low Vision Rehabilitation

Diverse Disciplines Converge on a Complex Condition

VICTIMS OF DEBILITATING INJURIES or illnesses often receive therapy to make the most of their remaining abilities. Spinal cord injury victims train to regain the use of their legs and prevent atrophy of the muscles, for instance, and patients with cerebral palsy learn to adjust their living skills to make the daily tasks of life more manageable.

But that kind of treatment has often been unavailable to patients with severe vision impairment. Even those who have lost their independence—having to rely on relatives or nurses to read labels, sign checks, or prepare meals—have generally received only brief training with magnifiers and other devices. There have long been rehabilitation centers to help blind patients adjust to total loss of sight, but those with significant but not total vision loss have not had ready access to such resources.

All of this is changing at facilities such as the new UAB Center for Low Vision Rehabilitation—housed on the third floor of the Callahan Eye Foundation Hospital—where recent revisions in Medicare policy and state regulations have enabled usually-separate disciplines to come together in innovative ways. This has led to an unprecedented collaboration among the UAB Department of Ophthalmology, the School of Optometry, and the School of Health Related Professions's Department of Occupational Therapy. The Center for Low Vision Rehabilitation offers comprehensive treatment and training to help patients adapt to low vision, use their remaining vision more effectively, and regain some measure of independence in their daily lives.

Seeing the Need

It took both legislative and policy shifts to make the services of the center available, says Center director Don Fletcher, M.D. The Balanced Budget Refinement Act of 1999 (effective January 1, 2000) allowed optometrists to refer Medicare

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patients directly to occupational therapy; and the Centers for Medicaid and Medicare Services in 2002 announced full nationwide Medicare coverage for low-vision rehabilitation.

The faculty members participating in the center are enthusiastic about the collaboration facilitated by the Medicare changes. Medicare coverage makes therapy accessible to many patients who otherwise would go untreated—the elderly in particular, explains Mary Warren, O.T., an occupational therapist at the center. “Traditional low-vision rehabilitation



Occupational therapist Mary Warren teaches patients to use assistive tools and devices.

providers put a lot of emphasis on working-age adults and children, because they use a vocational/educational framework,” says Warren. “And they do an excellent job with that population—but it uses a lot of their resources, and it doesn’t allow them to work with many older adults. With Medicare as our reimbursement source, we can now address the older adults’ needs.”

Marsha Swanson, O.D., is assistant professor of optometry and co-director of the center. She says that while the Center for Low Vision Rehabilitation is not the first facility to

offer assistive devices to elderly patients with low vision, it is unique in its multidisciplinary nature and the depth of training and services it offers to patients with severe vision loss. Similar services are available at the Veterans Administration Hospital, but only for veterans. And the UAB School of Optometry’s Low Vision Clinic, which has served patients since the 1970s, is a one-day, outpatient setting, not structured for long-term rehabilitation. “That is the point of the Center for Low Vision Rehabilitation,” says Swanson. “To evaluate each patient, and then to refer the patient to occupational therapy for training with assistive devices, and perhaps even training in the home.”

Enabling Independence

That training is crucial to helping low-vision patients regain some measure of independence in their lives. As powerful as many electronic magnifiers and other assistive devices are, they are only useful if the patient knows how to use them effectively—and many patients have never learned basic skills for living with low vision.

“Our goal in working with patients is always for them to be as independent as possible,” says Mary Warren. “Low vision creates a lot of limitations in daily activities. When you can’t read due to low vision, you can’t read a bill. You can’t read instructions or read the numbers on your insulin. You can’t read the thermostat. You can’t identify money or read a price tag. It really impacts a person’s ability to stay independent.

“So the doctors will evaluate each patient and determine what kind of



Ophthalmologist Don Fletcher and optometrist Marsha Swanson evaluate low-vision patients.

magnifying device is needed—but magnifiers are sometimes much more difficult to use in application than in a doctor’s office. We make sure the patient is able to use the device that was prescribed.”

Warren says occupational therapists are uniquely suited to helping the center’s elderly patients: “We’re trained to address all aspects of disability, particularly things that are related to aging. Two-thirds of adults with vision loss also have a secondary impairment, and those impairments limit what they can do. So if I have a low-vision patient who also has severe arthritis in his hands, I also need to look at his ability to physically hold a magnifier and manipulate it.”

Patient Training, On-Site and In-Home

In addition to magnifiers, the center has a number of on-site training tools, such as the Dynavision, a wall-mounted electronic board studded with countless small lights, which is used to evaluate and improve patients’ peripheral vision—a vital skill for many low vision patients. The Dynavision gauges reaction time by measuring how quickly the patient can perceive and touch the randomly appearing lights. “It

came out of sports vision research, where it was used to train athletes—such as hockey players, tennis players, and skiers—to improve their peripheral vision,” says Warren. “We adapted it to people with vision loss who needed the same skills.”

There is also a working model kitchen, complete with sink, cabinets, and a stove. “For low-vision patients, cooking creates both safety and independence challenges—such as being able to set a temperature on a stove correctly, or being able to pour fluids and measure correctly, or being able to handle a knife safely,” says Warren. “We work with contrast, showing patients how to make things more visible—how a black background makes the edge of a white plate more visible, and how putting coffee in a white cup or milk in a dark cup has the same effect. It also helps to mark items, to give them tactile marks as well as large visual marks. Those things, in combination with good lighting, can often remove a lot of the difficulties that they have in meal preparation.”

Another valuable component of the center’s treatment is home visits. The center’s occupational therapists will visit the homes of patients in the Birmingham area and teach them how to change their environments in order to make the most of their vision. This step has great value for the patients—and for Medicare—in preventing injuries and the need for further medical treatment. “We look at the safety of the patients,” says Warren, “particularly in terms of medication management. Can they identify their medications? Do they organize them appropriately? Also, can they tell if food is spoiled? Can they see if there’s water on the floor?” Through these home visits and repeated office visits, Warren says, the center helps patients learn to work around their vision loss.

(continued on back cover)

This issue of Vision features a new and innovative program: the UAB Center for Low Vision Rehabilitation. Located on the third floor of the Callahan Eye Foundation Hospital, the center is a cooperative venture within the university, involving ophthalmology, optometry, and occupational therapy. It provides a comprehensive, multidisciplinary approach to patients with profound visual impairment.

Donald Fletcher, M.D., director of the Center for Low Vision Rehabilitation and an international authority on low vision, joined the full-time faculty of the department in February 2002; he was recruited to Birmingham with the assistance of Robert Morris, M.D., president of the Helen Keller Foundation for Research and Education. Grant support for the Center was obtained from the UAB Health Services Foundation, the EyeSight Foundation of Alabama, and the UAB Provost.

*The UAB Center for Low Vision Rehabilitation is virtually unique in the country, with nearly unlimited potential for patient care, research, and education. It answers a pressing need—while great expenditures of effort and resources are being directed toward research in the fields of age-related macular degeneration, glaucoma, and other blinding diseases, more must be done **now** to help patients who suffer from severe vision loss. The UAB Center for Low Vision Rehabilitation is poised to make a profound difference in the lives of its patients, and hopefully to develop new and improved forms of therapy.*

Another innovative project under way in the department is the collaboration of a basic scientist, Clyde Guidry, Ph.D., and a clinician, John Mason, M.D., who are working together to develop a model of diabetic retinopathy in the pig. Their research, which holds great promise to translate bench research findings into new forms of treatment for humans, is supported by the International Retinal Research Foundation, created by Alston Callahan, M.D. We are proud to receive this support and hope it will yield great dividends in the future.

In this issue of Vision we also feature two faculty members at different stages of their careers. Russell Read, M.D., is just beginning his career as a clinician-scientist; he recently received a Career Development Award from the National Eye Institute, and his work in ocular inflammatory disease holds great promise. Christine Curcio, Ph.D., is a mid-career basic scientist with expertise in the field of age-related macular degeneration. Her creative approach to the study of this visually devastating disorder has been recognized with the first Roger Johnson Macular Degeneration Prize, awarded in June 2002. Faculty members such as these, making important contributions to their fields, will bring greater recognition to the UAB Department of Ophthalmology and the university.

For the first time, the department is asking for support from its alumni and friends. Virtually all medical schools and postgraduate medical education programs look to their graduates for intellectual and financial support. Support of the UAB Department of Ophthalmology will help improve and sustain our clinical facilities and research programs. We ask for support from those who have come before us in order to establish a strong foundation for those who will follow.



*Lanning B. Kline, M.D.
EyeSight Foundation of Alabama Chair and Professor
UAB Department of Ophthalmology*



from the department chair

Researching Retinopathy

An Innovative Study of Diabetic Eye Disease

IT'S AN ALL-TOO-COMMON event in adult diabetics. A patient goes to bed with good vision and wakes up in an unfocused blur—a blur that will turn to blindness if left untreated. The condition is proliferative diabetic retinopathy, and it develops frighteningly often in adults with diabetes.

The lesions caused by diabetic retinopathy affect about one-third of adults with diabetes. Proliferative diabetic retinopathy, the more serious condition, is due to new vessel formation and formation of scar tissue. This complex may extend into the vitreous, where poorly-understood forces can ultimately pull the retina itself out of place. Ophthalmologists are unable to prevent the condition; they can only watch diabetics closely for these changes, use laser treatment to destroy abnormal blood vessels when they appear, and perform surgery when detachment of the retina occurs. It can be a frustrating process, filled with unanswered questions. Why do those lesions develop? What is the nature of the force that creates retinal detachment?

UAB Department of Ophthalmology faculty members Clyde Guidry, Ph.D., and John O. Mason III, M.D., are undertaking an innovative study, supported by the International Retinal Research Foundation, to provide some answers. Their hypothesis is that the primary factor in traction retinal detachment in the diabetic eye is Insulin-like Growth Factor 1 (IGF-1), interacting with a specialized retinal cell, the Müller cell. And they decided on an unusual model for their research: pigs (Sinclair miniature swine, to be exact—full breeder hogs being somewhat large for the lab).

Guidry says the pigs have proven to be excellent research subjects. They have been used in studies of diabetes

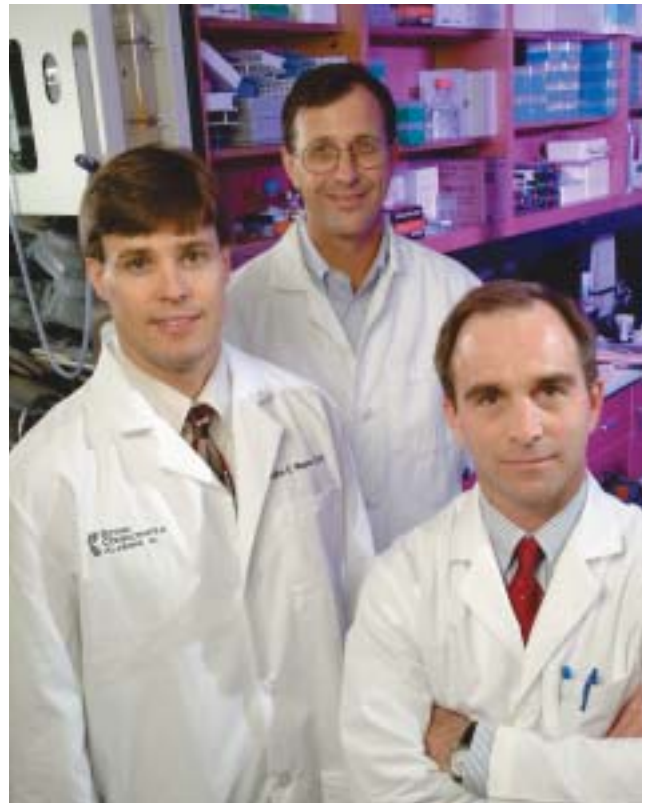
for years, and they are of appropriate size, anatomy, and physiology—their eyes in particular. “The beauty of a pig,” says Guidry, “is that it has nice large eyes, and the optics are pretty similar to humans, so you can use human instruments to do intraocular exams.”

In addition, pigs and humans have similar molecular biology—which is one reason pig organs are used in some human transplant surgeries. That similarity, says Sam Cartner, D.V.M., Ph.D., who is associate director of the UAB Animal Resources Program (and who maintains the animals), helps the researchers predict how drugs, such as anesthetics, will affect the pigs and the study.

The project's first hurdle, however, was establishing the viability of the pig as a retinopathy model in biochemical terms. Before the researchers could learn anything from the pigs, they had to know whether the pig eye and the human eye react to diabetes in the same way.

In fact, that is exactly what they found. Guidry and Mason have proven, for the first time, that the pig is a viable model for studying diabetic retinopathy. “As a research model, the pig contains growth factors and regulatory proteins similar to humans,” says Mason.

That conclusion allows the UAB researchers to move forward to the heart of the project: studying the cellular and biochemical interactions that lead to retinal detachment. “We are trying to prove that Insulin-like Growth



From left: John O. Mason III, Sam Cartner, and Clyde Guidry are studying biochemical changes in diabetic retinopathy.

Factor 1 promotes severe retinal damage in diabetic retinopathy,” Mason explains. They will inject Müller cells—which support the retina in humans and which appear to be involved in retinal detachment—into the eyes of diabetic pigs. If the Müller cells cause retinal detachment, they will then inject them into the eyes of diabetic pigs in which IGF-1 has been suppressed. If the hypothesis holds true, the retina will fail to detach—indicating that IGF-1 is indeed the key.

Those experiments will be ongoing over the next few months. The results could be dramatic. If Guidry and Mason can prove that IGF-1 is a major factor in retinal detachment, Mason says, the next step will be pharmacological research into drugs to block IGF-1 in the eyes of diabetic humans. And that may mean a large step closer to a wide-reaching goal: the prevention of diabetic blindness.

Grand Rounds: A Case for Corneal Rehab

Richard M. Bryant, M.D.

RICHARD M. BRYANT, M.D., presented “A Case for Corneal Rehab” at Grand Rounds in April 2002. Bryant is now a second-year resident in the UAB Department of Ophthalmology.

“Crack eye syndrome” describes a spectrum of corneal disease associated with the abuse of crack cocaine, leading to corneal epithelial defects and microbial keratitis. This syndrome has become more common in recent years with more widespread use of crack cocaine. However, the diagnosis can be elusive. Patients typically deny any cocaine abuse in routine questioning of their social habits, and questioning of family members is often necessary to develop an accurate history.

This syndrome was first described in the journal *Ophthalmology* by Sachs, et. al., in 1993, in which the authors described the mechanisms leading to the corneal changes. Five major pathological mechanisms are involved: direct toxic effects,

alkali chemical injury, neurotrophic changes, exposure keratopathy, and mechanical trauma.

During crack cocaine use, the smoke itself comes into contact with the eye. This smoke is thought to have a direct toxic effect by causing changes in the plasma membranes of the corneal epithelial cells, including a disruption of the intercellular spaces and a decrease in the epithelial microvilli. This leads to a decreased ocular surface barrier tension, predisposing the cornea to microbial keratitis. Furthermore, the smoke is an alkali form of cocaine. Repeated exposure leads to subclinical alkali burns, causing epithelial defects and further predisposing the patient to infection.

The smoke is also a potent anesthetic, and repeated exposure may lead to devitalization of the corneal sensation. This leads to a decrease in the neurogenic support to the corneal epithelium, similar to what is seen with topical anesthetic abuse. The loss of sensation also

disrupts the normal blink response, leading to exposure and increased risk of epithelial defects and resultant infection.

Finally, the smoke seems to cause direct irritation in a subset of patients. This causes patients to rub the eyelids repeatedly and vigorously. This rubbing may cause mechanical trauma to the epithelium and resultant defects. Because of the foreign body sensation, patients sometimes pull out their lashes in an attempt to relieve the pain, and often present with multiple broken or absent lashes.

Treatment in such patients can be difficult, as compliance with therapy and follow up is often very poor. The ulceration needs cultures with exclusion of keratomycosis and initial therapy with broad-spectrum antibiotics. Patients may require hospitalization secondary to poor compliance. Finally, patients require urgent drug rehabilitation in the hope of preventing repeated exposure and damage.

The patient is a 36-year-old female with a three-week history of itching, mattering, and mucous discharge in the right eye, and a two-day history of pain, foreign body sensation, and decrease of visual acuity from 20/20 to hand-motion only. She reported one similar episode six months earlier.

The figures at right show the right eye upon presentation. Note the multiple broken lashes, large geographic ulcer with stromal infiltrate, and anterior chamber reaction. Both corneas were found to have substantially decreased sensation, and the left eye showed some early epithelial changes. Cultures revealed alpha-hemolytic streptococcus and coagulase-negative staphylococcus.

The patient vehemently denied any topical anesthetic abuse or drug abuse. The family later confirmed extensive abuse of crack cocaine.



Russell Read, M.D.

Clinical Faculty Profile

A **DESIRE TO WORK** in a creative environment led Russell Read, M.D., into ophthalmology. It turned out to be a wise choice. An assistant professor in the UAB Department of Ophthalmology, Read specializes in uveitis/ocular inflammatory diseases and ophthalmic pathology—specialties that demand a creative, inquisitive approach.

Uveitis is a complex inflammatory condition that can have multiple causes within the eye, or it can be associated with inflammation in other parts of the body. Medical treatment must be aggressive to prevent glaucoma, cataract, scarring of the structures inside the eye, and possible blindness.

“Uveitis is a very perplexing condition,” Read says. “It is not a disease itself, but rather a general term that describes a class of diseases that have hundreds of potential causes.”

“There are subtle distinctions between the different forms of uveitis that can look very similar clinically. Making the distinction requires more than just being able to look through a slit lamp. You have to be a medical detective, checking family history and making connections between what might seem like minor findings, to come up with the correct diagnosis.”

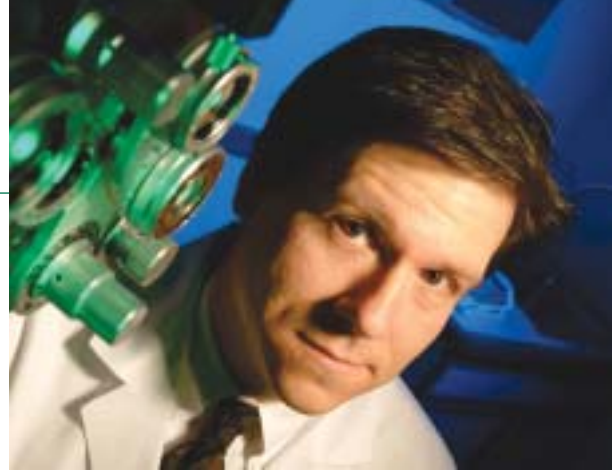
Uveitis is thought to have an autoimmune connection. “It

is similar to rheumatoid arthritis and lupus in that the body is attacking the patient’s eye for reasons

we don’t always understand,” Read says. “Uveitis is often associated with autoimmune diseases, although it is not always caused by those diseases. It also is associated with a number of infectious diseases, such as syphilis, tuberculosis, and herpes.”

Read earned a Bachelor of Science degree in pharmacy from Auburn University and then worked for two years as a hospital pharmacist. “I was exposed to doctors and had to be up on medical information so I could answer their questions,” he says. “It was enjoyable work, but I got to thinking, ‘Why couldn’t I do what they’re doing?’ I just wanted to do something more creative with my life.”

He entered the University of Alabama School of Medicine and graduated in 1994, going on to complete a residency in ophthalmology at the University of Washington, in Seattle.



Russell Read enjoys both the creativity and the subtlety of ophthalmic pathology.

Christine Curcio, Ph.D.

Research Faculty Profile

WHILE MACULAR DEGENERATION has drawn the attention of clinical researchers for many years, basic scientists have been relatively slow to study the underlying mechanisms of the disease, which is the leading cause of vision loss in adults.

Christine Curcio, Ph.D., professor of ophthalmology at UAB, is one notable scientist who’s trying to enhance the understanding of macular degeneration at the basic-science level. “We’re at the level researchers in Alzheimer’s disease had reached 20 years ago,” Curcio says. “At that time, they were doing basic biochemical experiments, and that’s what we have to do right now in macular degeneration research.”

Curcio recently received the first Roger H. Johnson Macular Degeneration Prize. The award, which carries a \$40,000 cash prize, was presented in June 2002 at the University of Washington, where Curcio served on the research faculty. The funds will be used to help establish a cell culture laboratory in the UAB Department of Ophthalmology. “This lab will allow us to study retinal pigment epithelial cells, to see how they handle cholesterol,”

Curcio says. “Work on diseased eyes has pointed us in the direction of that biochemical pathway.”

At the heart of Curcio’s research is a connection between coronary artery disease and eye disease. “People who have coronary artery disease have a buildup of cholesterol in the walls of the vessels of the heart,” Curcio says. “We think that similar events are happening in the eye.”

Curcio’s current work focuses on Bruch’s membrane, a specialized vessel wall in the back of the eye. “For a number of years, scientists have thought lipid build-up in this area was connected to the pathogenesis of macular degeneration. We’re the first ones to get specific about the molecules involved and the mechanisms that bring those molecules into Bruch’s membrane.”



Christine Curcio received the Roger H. Johnson Macular Degeneration Prize in 2002.

“When I was in residency training, I was pretty sure I was going to join a practice and be a community ophthalmologist,” Read says. “But then I realized that I enjoyed the intellectual stimulation of an academic setting.” So he completed a two-year fellowship at the University of Southern California and then joined the UAB faculty in August 2000.

Read wears a number of different hats at UAB. In addition to teaching and providing patient care, he conducts basic-science research, studying ocular inflammatory diseases in animal models. He also is involved in diagnostic ophthalmic pathology.

“Pathology is important for residents because it gives them a good foundation for all they will see clinically,” Read says. “If they can understand what they see at the slit lamp and under the microscope with me, they will have a better understanding of the processes affecting patients.

“Pathology plays a unique role in our specialty,” he points out. “Surgeons used to do a lot of pathology, but general pathologists have taken most of it over. Yet ophthalmologists are still the ones who usually do eye pathology. The eye is such a unique organ, functionally and structurally, that it just makes sense for ophthalmologists to do eye pathology.”

Read himself is happy to be doing that work. “It fulfills what I set out to do in medicine, which was to be creative in making diagnoses, dealing with patients, developing treatment regimens. It’s been a good choice for me. I can’t imagine doing anything else.”

Epidemiologists have reported a strong connection between the incidence of cardiovascular disease and macular degeneration. But the raised levels of plasma cholesterol that are associated with cardiovascular disease have not been shown to be associated with macular degeneration.

“That is a paradox,” Curcio says. “Our explanation is that the cholesterol in the eye is of local origin and not from blood circulation. We believe the eye is essentially making its own disease. Macular degeneration shares some characteristics with cardiovascular disease, but because of the different sources of lipids and cells involved, it looks uniquely like eye disease.

“Progress has been slow. But there has been a concerted effort by a few labs to understand the lesions that are characteristic of macular degeneration. One group of researchers has found that proteins related to inflammation are present, and of course we are looking at cholesterol. We now have a much better idea of what is in these lesions.”

This basic science work is vitally important to clinicians, Curcio says. “Macular degeneration is the number-one challenge facing ophthalmologists. When residents who start their training now are at the height of their professional careers, they will be treating Baby Boomers with macular degeneration all day long—unless we work on the problem now. The scope of this disease far overshadows all other causes of vision loss in older adults.”

UAB department of ophthalmology

TO PROVIDE our readers a glimpse into projects and personalities in the department, we profile selected faculty members in each issue of *Vision*. The names of faculty profiled in this issue appear in bold below.

Academic Faculty

Michael Callaban, M.D.	Professor
Martin Cogen, M.D.	Associate Professor
Jeffrey Crain, M.D.	Assistant Professor
Christine Curcio, Ph.D.	Professor
Ramon Dacheux, Ph.D.	Professor
Frederick Elsas, M.D.	Associate Professor
Richard Feist, M.D.	Assistant Professor
Donald Fletcher, M.D.	Associate Professor
Christopher Girkin, M.D.	Associate Professor
Clyde Guidry, Ph.D.	Associate Professor
Greg Jackson, Ph.D.	Assistant Professor
Wade Joiner, M.D.	Assistant Professor
James Kimble, M.D.	Associate Professor
Lanning Kline, M.D.	Professor and Chair
Virginia Lolley, M.D.	Assistant Professor
John Long, M.D.	Assistant Professor
John Mason, M.D.	Assistant Professor
Andrew Mays, M.D.	Assistant Professor
Robert Morris, M.D.	Associate Professor
Cynthia Owsley, Ph.D.	Professor
John Parker, M.D.	Assistant Professor
Robert Phillips, M.D.	Associate Professor
James Powell, M.D.	Associate Professor
Russell Read, M.D.	Assistant Professor
Carol Rosenstiel, O.D.	Associate Professor
Kay Scilley, Ph.D.	Assistant Professor
Harold Skalka, M.D.	Professor
Stephanie Turner, M.D.	Instructor
Shu-Zhen Wang, Ph.D.	Associate Professor
Milton White, M.D.	Assistant Professor
Douglas Witherspoon, M.D.	Associate Professor
Jeff Yee, M.D.	Instructor

Clinical Faculty

Wade Brock, M.D.	Instructor/Fellow
James Byrne, M.D.	Clinical Instructor
Alston Callaban, M.D.	Clinical Professor
Britton Carter, M.D.	Clinical Instructor
William Cox	Adjunct Assistant Clinical Professor
Susan Eiland, M.D.	Assistant Clinical Professor
Andy Everett, M.D.	Instructor/Fellow
Greer Geiger, M.D.	Assistant Clinical Professor
Paul Kaufman, M.D.	Instructor/Fellow
Christopher Kelly, M.D.	Clinical Instructor
James Kelly, M.D.	Clinical Instructor
Price Kloess, M.D.	Assistant Clinical Professor
Ferenc Kubn, M.D.	Associate Clinical Professor
Elmar Lawaczek, M.D.	Clinical Professor
Ralph Levene, M.D.	Clinical Professor
Michael Massey, M.D.	Assistant Clinical Professor
Nancy Medeiros, M.D.	Assistant Clinical Professor
Thomas H. Metz, M.D.	Assistant Clinical Professor
Marc Michelson, M.D.	Assistant Clinical Professor
John Morgan, M.D.	Assistant Clinical Professor
John Owen, M.D.	Clinical Instructor
Scott Parma, M.D.	Instructor/Fellow
Roswell Pfister, M.D.	Clinical Professor
Elise Cox Pratt	Adjunct Instructor
Steven Scott, M.D.	Instructor/Fellow
Mamta Somaiya, M.D.	Instructor/Fellow
Wayne Taylor, M.D.	Clinical Instructor
Len Tucker, M.D.	Instructor/Fellow
Donald Turnbull, M.D.	Associate Clinical Professor

Ophthalmic Expansions

The New Look at the UAB Department of Ophthalmology

VISITORS TO THE SIXTH FLOOR of the professional office building of Callahan Eye Foundation Hospital will be pleasantly surprised at what they see. During the



Patients enjoy the children's waiting area at the newly expanded Ophthalmology Services Foundation.

last few months there has been substantial expansion of both the Ophthalmology Services Foundation—the clinical practice of the department—and the Clinical Research Unit. Those expansions mean improvements for patients, faculty, and staff.

On the clinical side, the Ophthalmology Services Foundation has expanded from 9,500 to 14,000 square feet. The Optic Nerve Imaging Center has been renovated and upgraded, and ten new examination lanes have been added, along with an area for pediatric ophthalmology.

“We’ve doubled our capacity to see patients,” says ophthalmology department Chair Lanning Kline, M.D. “We’re going to be able to recruit more faculty, see more patients, and offer a broader spectrum of clinical services.”

On the research side, the Clinical Research Unit of the Department of Ophthalmology expanded into space that had been occupied by the medical offices of recently retired ophthalmologist David Davidson, M.D. The new facilities include conference and interview rooms, testing rooms, and space for expanded research faculty and staff. Cynthia Owsley, Ph.D., professor of ophthalmology and director of the Clinical Research Unit, says the expansions have already allowed the unit to grow: The National Eye Institute awarded the

Advancing Eye Care

EyeSight Foundation of Alabama

THE EYESIGHT FOUNDATION of Alabama (ESF) recently announced the recipients of 13 grants in support of eye research, education, and health care.

The grants were approved after several months of review, says Torrey Smitherman, executive director of the ESF. “We feel very good about the quality of all of the proposals that we received,” says Smitherman. “We’re especially pleased with the scope and depth of the research proposals.”

The ESF awarded two “invitational” grants, supporting Callahan Eye Foundation Hospital (\$660,000) and the UAB Department of Ophthalmology (\$1,200,000), and eleven “open” grants, which are reviewed and judged by an independent scientific advisory committee.

The “open” grants cover a wide range of patient care and vision research projects:

- *Sight Savers of Alabama Kindergarten*—vision health program: \$100,000
- *Birmingham Health Care*—indigent patient care: \$10,000 (over three years)
- *UAB Department of Occupational Therapy*—Internet-based curriculum in low vision rehabilitation: \$98,105 (over three years)
- *UAB Vision Science Research Center/School of Education*—training for rural teachers of the visually impaired: \$150,000 (over two years)

- *Alabama Lions Sight Conservation Association, Inc.*—mobile screening unit and equipment: \$100,000
- *Ramon F. Dacheux, Ph.D.* (ophthalmology)—vitreous lactate and optic neuropathy in glaucoma: \$119,521 (over two years)
- *Ferenc Kuhn, M.D.* (ophthalmology)—reduction of the impact of eye injuries among the elderly: \$98,000 (over three years)
- *Russell W. Read, M.D.* (ophthalmology)—complement inhibition in experimental autoimmune uveitis-supplement: \$149,856 (over three years)
- *David R. Whitehart, Ph.D.* (optometry)—characterization of endothelial, stem-like limbal cell: \$50,000 (over two years)

Treating Trauma

New Text Explains the Essentials

Clinical Research Unit a grant to staff the newly constructed facilities, and recently the EyeSight Foundation of Alabama awarded a matching-funds grant.

Owsley says that bringing the Clinical Research Unit and Ophthalmology Services Foundation closer together will advance both of their missions. “When you have the clinical and research faculty all together, there’s a synergy,” she explains. “People work with each other. A lot of times the physicians have insights that are useful to the researchers, and a lot of times we bring the physicians information that they need to be better clinicians. They’re providing the treatments of today; we’re providing information to improve those treatments for tomorrow.”

WHEN YOU OPEN the sturdy silver cover and thumb through the glossy pages, the most striking first impression of *Ocular Trauma: The Essentials* is how little it looks like an advanced medical text. There are no long paragraphs to muddle through and none of the density you might expect. The information in *Ocular Trauma* is presented cleanly and crisply, with short paragraphs, succinct bullet points, and simple tables and flow charts. The book—the first text on ocular trauma since 1990—is meant to be

user-friendly, says editor Ferenc Kuhn, M.D., Ph.D., vice president of the American Society of Ocular Trauma and associate clinical professor in the UAB Department of Ophthalmology. And that accessibility is only one way in which Kuhn hopes it will help improve ocular care.

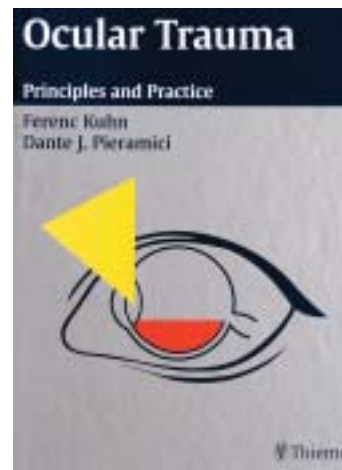
Providing a comprehensive review of the literature is another. *Ocular Trauma* presents statistics, conclusions, and treatment recommendations for various ocular trauma conditions, scattered throughout many different medical journals. The data include 2,500 cases from the United States and a similar database from Kuhn’s native Hungary. “It took us about three years to analyze the international scene and come up with a system that has a clear definition for each term,” says Kuhn.

That data have important implications for both treatment and prevention. Efforts to prevent certain types of injury have had marked effects, says Kuhn, such as the

sharp drop in workplace eye injuries in the United States due to government regulations and the risk of liability. But he says the book may have the most deeply-felt impact in treatment of the most devastating cases—total loss of sight. The data indicate a greater likelihood of effective treatment with modern techniques than is often appreciated, and Kuhn hopes to encourage ophthalmologists to go to greater lengths to salvage badly damaged eyes.

Ocular Trauma also offers unique insights into the patient experience, with a chapter describing two cases of near-blindness as told by the patients, and another on counseling trauma patients effectively. It includes chapters authored or co-authored by a number of UAB Department of Ophthalmology faculty, such as a chapter on optic nerve injuries by Lanning Kline, M.D., and Christopher Girkin, M.D.; a chapter on corneal replacement, co-authored by Robert Phillips, M.D.; a chapter on rehabilitation by Donald Fletcher, M.D.; and chapters by Michael Callahan, M.D., John Long, M.D., Robert Morris, M.D., and Douglas Witherspoon, M.D.

Kuhn hopes ophthalmologists who specialize in trauma will be encouraged by the book and by the impact that they can have in the lives of their patients. “What modest improvement in sight you give to the patients may be little to you,” says Kuhn, “but it’s not little to them. It can make a major difference.”



- *Cynthia Owsley, Ph.D., M.S.P.H.* (ophthalmology)—matching federal funds for Clinical Research Unit infrastructure: \$500,000 (over five years)

- *Paul D. Gamlin, Ph.D.* (optometry)—photoreceptive retinal ganglion cells in the primate: \$64,290

“We feel very fortunate as a foundation to have so many strong organizations that are actively engaged in the activities that our mission supports,” says Smitherman.

For more information, visit the ESF’s Web site: [<http://www.eyesightfoundation.org>].

Alumni for Ophthalmology

The Department Grows, One Supporter at a time

ALUMNI OF THE UAB Department of Ophthalmology might get an unexpected letter in the mail this fall—an invitation from the department to participate in its growth. James O. Powell, M.D., and Milton “Luke” White, M.D., are organizing the UAB Department of Ophthalmology Alumni Support Fund, one of the first efforts to reach out to alumni and encourage them to contribute to the department’s continued success.

Traditionally, every major ophthalmology department has relied on alumni for support, says Powell. “After all, the alumni reap the benefits of the training, and most of them go out and do well. Supporting the department is something they can feel proud of. It’s a worthy cause.”

There are several specific areas that need alumni support. The first is the

ocular pathology laboratory in the basement of the Callahan Eye Foundation Hospital, which is to be updated with new microscopes and tissue processing equipment. “Pathology is one of the basic ingredients of medical education,” says Powell. “All residents in ophthalmology spend a rotation in eye pathology. It’s an integral part of their training.”

The department also hopes to establish a number of new professorships—particularly in neuro-ophthalmology, retina research, and glaucoma research—and to expand its physical facilities. These efforts will enhance the educational opportunities for prospective students and help obtain research grants, which will be critical for future growth.



James O. Powell (left) and Luke White encourage alumni support.

But the department wants its graduates, and others who have been affiliated with it, to contribute in more ways than financial support. “We’re looking for ideas as well as financial contributions,” says White. “We’ve got a great department here, and it’s going to get better. We’d like to give the people who trained here an opportunity to participate in that success.”

For more information, please contact James Powell at (205) 591-2311 or Luke White at (205) 918-0047.

Alumni Spotlight

Richard Fish, M.D.

RICHARD FISH, M.D., spent only three days of his four years in medical school studying ophthalmology. But that was enough. “Ophthalmology appeals to people who have a great love of detail. The precision of it, the



Richard Fish, M.D.

elegance of it, appeals to a certain kind of personality,” he says. “I found myself completely fascinated.”

Fish graduated from Baylor College of Medicine in 1985 and did a residency at UAB from 1986 to 1989. He did a fellowship in retinal and vitreous diseases at California Pacific Medical Center, in San Francisco, for one year, and then joined the full-time faculty of the University of Texas Southwestern Medical School. In late 1992 he entered private practice, specializing in retina and vitreous surgery.

His practice, a group practice with four doctors, has nine offices in Houston and southeast Texas. Fish continues to see changes in his practice thanks to advances in medicine. One of the most dramatic of recent years, he says, was in the treatment of

HIV. “In the early 1990s, about half of my practice was HIV-related, specifically cytomegalovirus retinitis” he says. “Since that time, the entire landscape has changed because of HAART—Highly Active Anti-Retroviral Therapy—a ‘drug cocktail’ that helps AIDS patients live longer and enjoy better immune status. Now I may see only one or two of those patients a year.”

Fish often recalls his years at UAB. “There are so many things we learn as physicians in training that we absorb from our professors, such as many of the maneuvers that I do in an operating room or even the way I interact with patients. I find myself gratefully remembering the people who taught me at UAB, because they were brilliant clinicians and tremendous surgeons. I learned a great deal from them.”

Clinical and Research Symposium 2002

Review of Events

THE UAB DEPARTMENT of Ophthalmology's Annual Clinical and Research Symposium was held June 1, 2002, at the J. Craig and Page T. Smith Education Center in the Callahan Eye Foundation Hospital. The program featured guest speakers Dan B. Jones, M.D., chair of the Ophthalmology Department of Baylor College of Medicine, and Robert B. Nussenblatt, M.D., of the National Institutes of Health.

Jones, a noted cornea and external eye disease specialist, delivered the Hellen Keller Lecture, "Evidence-Based Management of Herpetic Eye Disease." He discussed the literature of treatment of herpetic eye disease, the value of studying new data, and the importance of being open to new forms of treatment when the evidence demands it. Jones also spoke on "New Antibiotics for Microbial Keratitis: Super Drugs for Super Bugs," highlighting the latest generations of antimicrobial therapy.

Nussenblatt presented the Special Rich Lecture, "Treatments of Ocular Inflammatory Disease: Evolution of Thinking Based on Research." He emphasized the importance of the relationship between clinical research and patient care. "One of his key points was that we can't ignore what goes on in the lab," says Lanning Kline, M.D., chair of the UAB Department of Ophthalmology. "But the researchers in the lab can't ignore the patient. There have to be links between the bench and the bedside." Nussenblatt's second lecture,

"Uveitic Masquerade Syndrome," highlighted the danger of cancers that can "masquerade" as benign inflammation of the eye.

The symposium also featured platform and poster presentations from the department's residents (the awards for best presentation are listed below), a Friday night reception recognizing the contributions of former department chair Harold Skalka, M.D., and a Saturday night graduation banquet at Woodward House.

Details about next year's Clinical and Research Symposium will be featured in the Spring 2003 issue of *Vision*. We look forward to another successful and informative program.



Dan B. Jones (top) and Robert B. Nussenblatt were guest speakers at the 2002 Clinical and Research Symposium.

Incoming

Michael A. Albert, Jr., M.D.
West Virginia University
School of Medicine

Timothy L. Austin, M.D.
University of South Carolina
School of Medicine

J. Waid Blackstone, M.D.
University of Alabama
School of Medicine

William M. Hammonds, M.D.
Medical College of Georgia

Denton R. Roberts, M.D.
University of Utah
School of Medicine

Graduated

William H. (Will) Bearden III, M.D.
Oculoplastics Fellowship—
Richard L. Anderson, M.D.,
Salt Lake City, Utah

Jay Andrew Brown, M.D.
Practice—
Baldwin County Eye Institute,
Fairhope, Alabama

Jason C. Swanner, M.D.
Glaucoma Fellowship—
Massachusetts Eye and Ear
Infirmary, Boston

Charles Leonard (Len) Tucker, M.D.
Retina Fellowship—
Retina Specialists of Alabama,
Birmingham

Stephanie Compton Turner, M.D.
Part-Time Clinical Faculty—
UAB Department of
Ophthalmology

incoming and graduated residents

Lynn B. McMahan, M.D., Awards

Outstanding First-Year Poster Presentation

Richard M. Bryant, M.D.

"Biosynthesis of Insulin-like Growth Factor Binding Proteins"

Outstanding Second-Year Platform Presentation

David G. Morrison, M.D.

"Transplantation and Incorporation of Cultured RPE Cells into the Damaged Retina"

Outstanding Third-Year Platform Presentation

Charles Leonard (Len) Tucker, M.D.

"Vogt-Koyanagi-Harada Disease in African Americans"

(cover story continued)

In the next few months, the center will incorporate another discipline into its programs—psychological counseling. “Hopefully, we’re going to have group discussions with patients,” says Swanson, “so they don’t feel that they’re alone, that they’re the only ones with vision loss. So they can vent their frustrations a little and learn to cope with what has happened to them.” That service is expected in 2003.

Sharing the Light at the End of the Tunnel

Education and research are indispensable elements of the Center for Low Vision Rehabilitation, says Fletcher. “We present papers at scientific meetings, and we have an active research

team and seek grants for research—not to cure these eye conditions, but to find successful rehabilitation techniques and devices.

“And we’ll be educating other professionals,” he says. “We’ll have optometry, ophthalmology, occupational therapy, and eventually psychology students rotating through the center. We’ll speak at hospitals and professional meetings. We’ll provide continuing education seminars and professional symposia with national and international attendance.”

In the meantime, Swanson says her work at the center is already very rewarding. “Most of the time, patients meet the goals we expect them to meet. Of course, there are patients

who are very significantly impaired and don’t benefit from vision aids, and we have to go a different route with them and teach them daily living skills. But there’s always something we can teach them—whether it’s mobility skills to get around on their own at home, or tactile skills to get by with what little sight they do have. There’s always a light at the end of the tunnel.”

Official opening ceremonies for the UAB Center for Low Vision Rehabilitation will be held Friday, November 1, 2002.

FOR MORE INFORMATION, PLEASE CONTACT
THE UAB CENTER FOR LOW VISION
REHABILITATION AT (205) 488-0736.

UAB Ophthalmology on the Web

www.uab.edu/eyedoc

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