For The Love of Teaching

FOCUS: INNOVATIONS IN EDUCATION

Denis O’Day, M.D. • Medical Students: Creating a Window for Ophthalmology
Resident Education: “Hands On” Is Key to Success • Research: Writing Papers from the Ground Up
Enhancing the Residence Experience: The Ezell Family
Dear Friends,

The fall is a special time for me, in that it signifies the formal beginning of the academic year. There is a wonderful sense of energy and renewal across the Vanderbilt campus as the undergraduate students return from summer break.

Each year, Dr. Jeffrey Balser, the Vice Chancellor for Health Affairs and Dean of the School of Medicine, kicks off the academic year with his annual State of the Medical Center. This year’s address was noteworthy for his exciting summary of our accomplishments, a discussion of the challenges of health care reform, and an introduction the institution’s striking progress in the innovative area of personalized medicine.

Dr. Balser’s presentation prompted my personal reflection on the State of the Eye Institute. In fact, we have made remarkable progress on all fronts. Our physicians saw over 100,000 outpatient visits in the 2010 fiscal year. We now see patients in over 15 locations throughout Tennessee and Kentucky. We have developed a robust quality improvement program that systematically reviews surgical complications and includes quarterly Morbidity, Mortality and Improvement conferences.

Our educational programs also continue to expand, with a significant increase in medical student exposure to ophthalmology, formal ophthalmic technician training and increased surgical wet laboratory time for our residents. And our commitment to education is stronger than ever, exemplified by the legacy of Dr. Denis O’Day, featured on the cover of this issue. We couldn’t have come nearly this far without Dr. O’Day’s insight, intellect and determination to make the Vanderbilt Eye Institute a world-renowned vision center.

In the area of research and discovery, we have three newly funded young investigators and exciting translational research programs in glaucoma, AMD, and retinal vascular disease. Our research funding is now in the top 20 in the nation. In addition, we are rolling out a groundbreaking initiative in ocular pharmacogenomics, providing the Eye Institute’s complement to the institutional initiative in personalized medicine.

Most importantly, we have a wonderful family of physicians and staff who live Vanderbilt’s culture of collegiality and collaboration. When the flooding led to two feet of water on the first floor of the Eye Institute and devastating damage to several homes, members of the VEI community responded broadly. One faculty member invited a stranded resident and his wife to move into his home while their home was rebuilt. It is times like these that we see the true fiber of our team, and I couldn’t be more proud.

Warmest regards,

Paul Sternberg, Jr., M.D.
G.W. Hale Professor & Chair, Vanderbilt Eye Institute
Associate Dean for Clinical Affairs, Vanderbilt School of Medicine
Assistant Vice Chancellor for Adult Health Affairs
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Denis O’Day, M.D., shares a moment with his wife, Ann, at a recent reception celebrating the establishment of the Denis M. O’Day, M.B.B.S., Chair in Ophthalmology and Visual Sciences. Photo: Mary Donaldson

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For The Love of Teaching

An Interview with Denis O’Day

“A university is about discovery,” Denis O’Day, M.D., explains, “but its primary objective is to hand on information for the good of society. We practice it on our patients, but when we teach it to our students we reach out into the larger community.”

Dr. O’Day learned the true value of a good teacher back in his residency days. Coming from Australia, where a hierarchical medical system was still in place, he arrived at the University of California at San Francisco to find the old barriers absent.

Instead, “I encountered these incredible people who treated us as equals and who wanted to teach us,” he recalls. “They were open to our criticisms; they respected our opinions. It was an environment that was so incredibly rich.”

The young ophthalmology resident learned from some of the top people in the field. His shelves were stocked with textbooks authored by his instructors. But it was clear to him that the UCSF faculty truly loved to teach. “They became our role models and they became our friends,” he remembers.

O’Day left the States for a fellowship in London but came back to Vanderbilt in 1972 to take his first faculty position. He knew immediately this was the sort of place he wanted to be.

“I love the mix of a clinical setting, the science and the teaching,” he says. “For me, it’s always been more interesting to have these three things swirling around. At Vanderbilt, I could do all three.”

A Career at the National Level

When he arrived in Nashville, the Department of Ophthalmology had only three full-time faculty members and nine residents. Since his exposure to medical students was limited, O’Day’s teaching was confined mostly to residents and small groups.

“Working in small groups is still the way I most like to teach,” he explains, “and I believe it to be the most effective way for me.”

Above: Denis O’Day, with students Danielle Wright (left), Piotr Pilarski (center) and Kelly Bingham (right) discussing their Emphasis projects
This is an unlikely statement from someone who has been at the national forefront in influencing the way ophthalmology is taught. Over the past thirty years, O’Day has compiled an impressive list of extracurricular activities related to ophthalmology education.

In 1979, he got involved with a program set up by the American Academy of Ophthalmology to develop a curriculum for residents-in-training. This new initiative was AAO’s attempt to formalize ophthalmic instruction throughout the United States.

Working with a group of dedicated academic educators helped O’Day formulate his thoughts about how to teach ophthalmology and what the content of that education should be. He eventually became the leader of the committee – charged with developing and administering in-training exams for ophthalmology residents.

As an Associate Examiner for the American Board of Ophthalmology, Dr. O’Day listened to candidates’ responses to the oral examinations. Clearly, there were serious flaws in the way some ophthalmology programs went about their teaching. Patterns of deficit in medical knowledge soon became apparent.

**Push Toward Evidence-Based Care**

This led to another new AAO initiative: Develop educational guidelines for care and establish a process to implement them among practicing physicians.

It was a primitive step toward evidence-based care, practice-based learning and improvement in ophthalmology – long before the process was formalized in the Competencies. This experience led to a federal government post as chair of a multidisciplinary panel to develop guidelines and educational documents for the management of cataracts.

After a seven-year stint as a director of the American Board of Ophthalmology, Dr. O’Day was appointed its Executive Director in 1987. This gave him a chance to delve more deeply into educational issues confronting training programs – particularly curriculum issues – and to evaluate new approaches for monitoring the effectiveness of medical education in training programs.

Spurred on by the Institute of Medicine, progress was coming. The ABMS, the specialty boards and ACGME began work on the Competencies. As Executive Director of the Board, O’Day worked closely with the ACGME’s Residency Review Committee.

This was a revolutionary twist in the road toward better health care. It forced an assessment of the continued competence of physicians who were board-certified for life and brought the topic of lifelong physician education into the spotlight.

**Focus on Vanderbilt**

In 1992, Dr. O’Day was named Chairman of the Department of Ophthalmology & Visual Sciences – now included within the Vanderbilt Eye Institute – a position he would hold for 10 years. In recruiting faculty, he always looked to people who saw teaching as an important part of their position.

“We’ve been fortunate,” he admits, “that we’ve been able to recruit faculty who feel that way. But it’s tough when you’re a young faculty member. You’re caring for patients, you want to be a successful scientist and you’re teaching, too.”

All faculty members know they’re required to teach, but it doesn’t come as naturally to some as it does to others. So much of teaching happens to be informal – and that can be a challenge when there are so many other things going on. That’s why O’Day likes to work with faculty who want help improving their teaching skills.

“I believe this informal mentoring continued on page 4
is more valuable than a formal classroom. Teaching is actually fun...when you see the light bulb going off in someone’s head, that’s a great reward,” he says.

Dr. O’Day had many successes during his tenure as VEI Chairman, but he’s most proud of the Lions Eye Center for Children and its research and clinical programs (see Vision article, Spring 2006).

“When you use the knowledge you have gained through science to impact the lives of thousands of children – that’s what medicine is really about.”

Now Dr. O’Day focuses on educating physicians to be lifelong learners – from medical school to retirement.

“One of the challenges all medical schools face is how to place teaching in its proper place beside patient care and research. Pedagogic skills must be fostered among committed faculty, and the restructuring of the curriculum to accommodate the vision of the med student as a lifelong learner is critical.”

Each year, O’Day and his team have made design changes to the Emphasis Program as they’ve learned what works and what doesn’t. Three key initiatives have been implemented:

• An advisory group consisting of ten faculty members is available to meet with students.

• Project Opportunity Sessions give faculty a forum to present potential projects to students

• Meet-and-greet sessions with School of Medicine departments help faculty who wish to mentor and students who seek mentors find each other.

“We’ve gotten better at connecting students with faculty,” he says. “The first year of medical school is very difficult – they’ve got so much to do. Trying to figure out how to find faculty and how to approach them is an issue.”

Today, the Emphasis program has become fully entrenched in the psyche of Vanderbilt medical students, and has become an attractive consideration for prospective students.

“As a physician, if you’re teaching just to impart knowledge, you’re in the wrong business,” Dr. O’Day believes. “Medicine is a highly moral enterprise in which the integrity and authenticity of the physician are fundamental requirements. Our prime motivation should be to inculcate these values so they are experienced as an integral part of teaching.”

A Commitment to Lifelong Learning

In 2002, Dr. O’Day returned full circle to education through his appointment as Director of the Vanderbilt School of Medicine’s Emphasis Program. The objective of the Emphasis Program is to train medical students to be leaders and scholars through a mentoring relationship with a faculty member.

“I was excited about the opportunity to help create a new educational initiative with a strong emphasis on reflective learning,” says Dr. O’Day. “Leadership and scholarship can best be experienced in the context of an effective relationship with a faculty mentor.”
As a first-year medical student, Pimkwan Jaru-ampornpan knew she was interested in ophthalmology and molecular biology. For her Emphasis project Jaru-ampornpan decided to find a project where she could pursue both interests.

Ms. Jaru-ampornpan believes the future of ophthalmology is closely tied to research. “There are so many exciting discoveries being made,” she explains. “And I want to be in the middle of it.”

On the Vanderbilt Eye Institute’s Web site, she found Dr. Rachel Kuchtey. Dr. Kutchey is researching the genetics of open angle glaucoma in a particular experimental model, since the disease presents the same way it does in humans (see Vision article, Spring 2010).

The project intrigued Jaru-ampornpan, so she approached Dr. Kuchtey about working in her lab.

“Dr. Kuchtey had never mentored a medical student in her lab before,” Ms. Jaru-ampornpan remembers. “But we discussed my interests and she agreed it was a good fit.”

Jaru-ampornpan and her lab mates analyzed genetic sequences in eye tissue and used a hypoxia chamber to screen elevated levels of Interleukin-8. As a result of her Emphasis project, she presented a paper at ARVO and was awarded an AMSA Best Lab Research award.

“The Emphasis Program is a unique experience,” says Ms. Jaru-ampornpan. “It allows medical students the dedicated time to get involved in lab-based projects and is very helpful in developing your lab, research and analytical skills.”

“I think the work I’ve done in Dr. Kuchtey’s lab will help me in applying for residency. It shows that I’m committed to discovery.”
Medical Students
Creating A Window Into Ophthalmology

Mark Melson, M.D., Vanderbilt Eye Institute liaison with Vanderbilt medical students

Fall means “back to school,” and for the Vanderbilt Eye Institute, it means a new crop of Vanderbilt medical students.

Vanderbilt School of Medicine students encounter the VEI at several points during their four years, and the VEI offers a variety of opportunities for them to explore ophthalmology more deeply. In 2008, Dr. Mark Melson – a new faculty member fresh out of his own fellowship – was recruited by Dr. Sternberg, VEI Chairman, to serve as the VEI liaison with Vanderbilt med students.

“Our goal is two-fold,” says Melson. “Give them some foundation in ophthalmology and encourage it as a potential specialty. When students are able to experience ophthalmology first-hand, they can really see what an exciting specialty it is – with amazing surgery techniques and highly advanced technology.”

Dr. Melson coordinates the schedules of students rotating through the department. In the second year, there’s an eye exam workshop led by Karla Johns, a community ophthalmologist. The third year students must complete a general surgery clerkship, and one of their options is ophthalmology. In the fourth year, there’s a month-long rotation through the department.

Melson explains, “Coordinating the students is getting more challenging as the VEI grows. Now we have more specialists and more satellite clinics.”

But Dr. Melson sees the benefit of trying to attract Vanderbilt medical students: “There’s a strong group of med students at Vanderbilt, and more of them are applying for our residency slots. If we can turn out better and better ophthalmologists, we raise the profile of the Vanderbilt Eye Institute overall.”
Vanderbilt medical students can also engage with the VEI through special courses and projects:

**Sentinel Course**

While the course titled “The Eye as the Sentinel of Disease” is at least a decade old, it got new leadership – and energy – last year when Dr. Paul Sternberg took it over. Sternberg now leads the course once a year and is assisted by Dr. Janice Law, who organizes the ophthalmology specialists who participate as session leaders.

Offered as an elective to 1st and 2nd-year medical students, the “Sentinel” course introduces them to the eye and demonstrates how problems in the eye can be a harbinger of systemic disease in the body. It also teaches them how other diseases and conditions – from lupus to sarcoid to pregnancy – can affect the eyes.

Students choose a topic of interest and present a paper at the end of the course to VEI faculty. While the course doesn’t include much biology or basic science, students are taught to recognize eye disease and to use the eye examination as a tool to diagnose more far-reaching issues.

**Emphasis Program**

The Emphasis Program (see O'Day article, page 2) pairs a first-year medical student with a clinician-scientist or basic scientist who has a project and would like to mentor a student. Sometimes, the student has an idea he or she wants to explore and seeks out a specialist that could facilitate that exploration.

“The objective of the Emphasis Program,” explains Dr. Denis O’Day, executive director of the program, “is to foster leadership and scholarship in medical students. We want the doctors who leave Vanderbilt to know how to think, to use the literature, to interact with their peers.”

VEI mentors have had great success with Emphasis students, with one actually co-authoring a paper and presenting at a national conference.

**Capstone Course**

A 2-day program for fourth-year students, the Capstone course was designed to teach future physicians the value of integrating research and clinical work. Students learn to ask the right questions and to evaluate the latest research literature. There are ten topics from which to choose, based on the student's interests.

The day-long VEI course studies ocular angiogenesis, and how the isolation of VEG-F has helped in the development of anti-angiogenesis drugs. On the first day, VEI faculty members give presentations on prevalent eye diseases with an angiogenesis component, like diabetic retinopathy and age-related macular degeneration. Other presentations discuss the fundamental biology of angiogenesis in the eye and the development of strategies designed to arrest the angiogenesis process.

The second day involves a journal-club style exploration of the academic literature. First there is a discussion of articles pre-selected by the topic leader. Next, there is a review and discussion of specific areas for student investigation. Finally, students make presentations to the group and the faculty preceptor on the particular areas they had investigated.

“As we offer more and more ways to experience ophthalmology,” says Dr. Melson, “the VEI is achieving the best measure of success: More Vanderbilt med students are interested in ophthalmology as a specialty and in Vanderbilt for their residencies.”
When the Vision spoke with Dr. Laura Wayman in 2007, she had just been at her post as VEI’s Residency Education Program Director for two years. She had already led the redesign of the curriculum, beefed up formal lectures and seminars, and established an ethics roundtable. She had also added a microsurgical skills “wet lab,” where residents could get hands-on practice in surgical skills before heading into the operating room.

When the Vision spoke with Dr. Laura Wayman in 2007, she had just been at her post as VEI’s Residency Education Program Director for two years. She had already led the redesign of the curriculum, beefed up formal lectures and seminars, and established an ethics roundtable. She had also added a microsurgical skills “wet lab,” where residents could get hands-on practice in surgical skills before heading into the operating room.

The Vision caught up with her again, along with newly named Associate Director of Residency Education Dr. Janice Law, to find out how what’s new, what’s changed and what’s on the horizon for residency training at VEI.

Surgical Skills

The Microsurgical Skills program – unique to the VEI – has undergone continual improvement. In their first year, residents spend a 10-week rotation in the microsurgical “wet” lab, where they receive hands-on experience with cataract surgery before they ever leave the classroom.

First-year residents meet in the lab with Dr. Wayman for ten weeks. When she feels a resident has mastered a surgical skill, the resident take that skill into surgery: performing the step on an actual patient, supervised by Dr. Wayman. This immediate immersion in hands-on surgery helps the resident gain confidence and allows Dr. Wayman to focus on the training needs of each resident.

During the three-year residency, approximately nine months are spent at the Veterans Administration Medical Center. This is a rare opportunity only a few residency programs in the United States can offer. The VA is equipped to allow residents to perform comprehensive ophthalmology procedures as well as subspecialty procedures, supervised by physicians from the VA and Vanderbilt Eye Institute, as well as clinical faculty from the community.

Fourth-year residents spend part of a 10-week rotation at the Warfighter Refractive Eye Surgery Center in Ft. Campbell, Kentucky. This arrangement allows them to perform upwards of 25 bilateral cases as the primary surgeon.

To determine a patient’s candidacy and/or risk factors for refractive surgery, it’s important to learn about and perform preoperative evaluations. Each resident observes corneal laser refractive surgery – and then performs it as a primary surgeon. Finally, they become familiar with and provide postoperative care for patients. When the resident completes the rotation, he or she receives on-site certification in refractive surgery.

Clinical Skills

Office retinoscopy, refraction, keratometry, and biometry are all critical to diagnosis and to prescribing the correct prescription for glasses or intraocular lens implant during cataract surgery. While these skills are fundamental to a resident’s education, there is no current published metric to evaluate how well a resident can perform them. When Dr. Janice Law took the position last year as Associate Residency Education Director, she set out to ensure that VEI residents were getting the office exam skills training they needed.
“One of my passions in medical education is clinical skills development,” she shares. “We know these skills are being taught, but how well do we teach it? We want to make sure residents are competent before they leave here. This is something that really can’t be tested through conventional medical knowledge testing such as the OKAPs (Ophthalmic Knowledge Assessment Program).”

Dr. Law has developed a new assessment tool – called the Ophthalmic Skills Competency Assessment Tool, or OSCAT – which she hopes one day may be implemented in other ophthalmology residency programs across the country. This assessment tool is made up of clinical stations. The residents rotate through the timed stations and have to perform the correct steps of an office skill, in addition to deriving the correct measurement or prescription.

A faculty expert in that skill evaluates each resident with a score sheet to determine his or her competency. The assessment committee consists of Drs. Law and Wayman, as well as Drs. Amy Chomsky, Chasidy Singleton, Mark Ewald, Nancy Benegas, John Downing and Jennifer Lindsey.

The program first implemented the OSCAT on June 18 to capture baseline data. Dr. Law will correlate these findings along with a resident self-assessment survey and a survey to graduates of VEI to evaluate their perceived weaknesses and strengths in particular skills.

“Often residents can get to an answer, but the steps may not always be correct,” Dr. Law explains. “The scoresheet breaks down each step and helps us to target areas on which we need to work. We also need to be consistent in the way we teach these steps. Once the program has developed new teaching methodologies we will reassess the skill to evaluate the new curriculum.” Law sits in on lectures and workshops to see how the skills are currently being taught.

The residency program has also purchased a video indirect ophthalmoscope to teach residents indirect biomicroscopy, a very difficult skill. “We can also use it to assess the residents’ ability to identify peripheral retinal lesions,” explains Dr. Law, “because we can now see what they are seeing real time and can determine competency in this area.”

This Skills Assessment course is being funded by GIVME – Great Ideas in Vanderbilt Medical Education. This unique grant is sponsored by the School of Medicine, in conjunction with the Office of Undergraduate Medical Education and the Office for Teaching and Learning in Medicine.
Medicine, and provides start-up support for implementing a new curricular idea or researching an educational problem. Only one in three applications is accepted each year.

Mortality, Morbidity and Improvement

While the mortality and morbidity model has been used in medicine for many years, it’s only been fairly recently that the ‘I’ was added. Traditional MtM sessions examined what went wrong in cases with unsatisfactory outcomes, with the focus on medical knowledge, application or treatment. But recently, there has been a paradigm shift – away from a “blame” model and toward transformation to improvement.

The Vanderbilt Eye Institute uses MM&I not only as an assessment tool for faculty, but also as a teaching tool for residents. The MM&I team – Dr. Wayman, Dr. Law, Dr. Robert Estes (Risk Management Liaison), Dr. Uyen Tran (Quality Assurance Officer), and Brian Carlson (Administrator) – seeks out cases from each division to use as examples.

The team meets with the physician and uses the Healthcare Matrix, a tool developed at Vanderbilt, to organize thoughts and get to the answers. The Ichikawa Fishbone Diagram helps them develop action plans. The result is a patient-centered systems approach in which the faculty works together to find a solution for turning an MtM into an MM&I.

The cases are presented in front of the entire department – including residents.

“Residents are humbled,” says Law, “because faculty members are willing to get up and show their mistakes. It also instills competencies that are required of them. They’re able to see where the breakdown occurs and take steps to make those changes themselves. It’s a great teaching tool.”

Use of the Healthcare Matrix and Fishbone Diagram has helped the VEI move from a format focused on discussion of adverse events to a cross-disciplinary conference that removes the focus from the provider and identifies system failures, develops action plans, and prevents recurrence of failures. This engaged participation of faculty, trainees and staff contributes to improved patient care and prevention of adverse effects.

A Culture of Support and Success

Recently, the Accreditation Council of Graduate Medical Education (ACGME) reviewed the VEI’s residency education program. The program passed the very stringent Residency Review Committee peer review process with flying colors and received the maximum length of time a program can be reaccredited without peer review.

“The biggest reason for this success is the culture change that has occurred in the department,” explains Dr. Wayman. “The mood, the atmosphere, the work ethic, the interest – the culture – has changed. It’s been a gradual evolution and we’ve had a lot to do. It’s a great accomplishment for all of us.”
A key element of resident surgical training is the Dissection Course, led by Dr. Louise Mawn, whose specialty is orbital and reconstructive surgery.

“The bedrock of surgery is understanding anatomy,” explains Dr. Mawn. “You can’t put a traumatized eye ‘back to right’ when you don’t know the underlying structure and how things attach. And the best way to teach anatomy is through classic dissection.”

Dr. Mawn has taught the four-day course ever since she joined the Vanderbilt Eye Institute faculty in 1998. She got the idea from the University of Ottawa, where she did her fellowship: “The residents from Ottawa really seemed to stand out from the rest because they had taken this course.”

She presented the idea to Dr. Denis O’Day, then Chairman of the department, who supported it from the beginning. Dr. O’Day’s enthusiasm was shared by Dr. Art Dalley, the Director of Medical Gross Anatomy; with this combined University support, the course has continued for the last 12 years.

Anatomy of a Course
First the residents dissect the ocular and soft tissue around the eye, looking at the superficial features – the eyebrows, eyelids, and the tearing system. Then, they dissect the cranial nerves that serve the visual system; six of the total twelve cranial nerves impact the eye.

The eye socket is dissected, all the surrounding muscles that affect the eye, and the orbital connective tissue. The residents then dissect optic nerves with pathology and without. By dissecting the optic nerve, they are able to see the connection between the optic nerve and the carotid arteries.

The residents study the aesthetic and functional factors of the eye – “to better understand why when tendons and soft tissues are disrupted we want to put them back the way they were.” They also dissect the inferior oblique muscle and venous and arterial systems.

Coloring within the Lines
Dr. Mawn reviews clinical examples throughout the course to reinforce the anatomical points. She also has the residents color in the various components of the eye on black-and-white drawings.

“Many of the residents think it’s childish at first, but I believe multi-sensory education is much more likely to be remembered than didactic,” she says.

The course represents a personal investment for residents, because it takes them away from their clinical work, but Mawn thinks the benefit outweighs the time spent if it makes them better clinicians.

“Knowledge of the anatomy makes residents better surgeons and much safer surgeons,” says Dr. Mawn. “Outcomes are better, surgical results are better. It really all boils down to better patient care. When you’re able to touch that next generation of physicians, that’s when you touch more people.”
When VEI Chief Resident Chirag Patel was looking at residency programs, the culture of the department was an important factor.

“What appealed to me when I interviewed at the Vanderbilt Eye Institute,” he recalls, “was the fact that it seemed more collegial than hierarchical. There was camaraderie among the faculty and good relationships between the residents.”

As Chief Resident, Dr. Patel serves as the link between the faculty, the residency program director and the residents. It is his job to distribute departmental information to the other residents, and to manage schedules, logistics and other organizational functions.

He has been impressed with the quality of the resident experience at the VEI. “Much medical education is based on making you feel inadequate,” he explains. ”This is not the most effective way of teaching. At Vanderbilt, the way it’s delivered is much more personal – it’s a partnership.”

When asked about the first Skills Assessment in June, Dr. Patel was honest: “At first we were taken by surprise...we had no advance prep...it felt like a test. But it’s turned out to be a good thing. We have held sessions to address our deficiencies, so it becomes more than a critique of the residents. They truly take ownership!”

Dr. Patel appreciates the fact that residents are included in the MM&I process.”With the MM&I sessions,” he explains, “You learn that despite your best intentions you can’t be perfect. How you handle the complications is what’s most important. You have to be able to learn from the successes and the failures.”

-Chirag Patel, M.D.
Chief Resident
Vanderbilt Eye Institute
When you’re training to be a research scientist, the focus of your training is not on writing. In fact, when most scientists sit down to write their first paper, they are often at a loss as to how to describe their findings. That’s where Dr. David Calkins comes in.

Dr. Calkins has begun teaching a course for the Vanderbilt Eye Institute on developing and writing research papers. He offers the course to research students, fellows, and even residents. The course is a right-brain exercise for left-brain people – looking at the whole as a sum of its parts instead of as a sequential process.

The group – usually a mix of students at different levels, postdoctoral fellows, residents and senior lab members – learns to write a paper from the ground up.

First, they identify the pieces of data that are most important to the research and develop clear, concise language to define them.

Building on the facts, the group then works through the narrative, using a white board and colored markers to show the flow of ideas to logical conclusions. The final piece is how to present the results of the research in the most succinct, impactful manner.

“The great thing about the course is that you’re in there with people from all levels,” says Nick Ward, a graduate student who works in Dr. Calkins’ lab. “We learn from each other’s examples.”

Dr. Calkins: “Scientific communication is the most important part of modern research. Ironically, it is also the part that is the least taught. I try to instill a sense of pride and discovery into the writing process to overcome the natural fear of committing thoughts to paper.”
Nick Ward isn’t interested in research just for research’s sake. He wants to make a difference in people’s lives. When he graduated from Notre Dame in 2009 and was looking at graduate programs, he chose Vanderbilt over three other schools.

“When I interviewed at Vanderbilt,” he says, “I just liked the feel. I was impressed with the faculty and the program coordinators – and especially the students. I was also attracted to the program’s collegial and interdisciplinary approach to research.”

Ward has always been interested in the neurosciences, and as he puts it, “I keep coming back to vision.” These twin interests caught the attention of the Vanderbilt Vision Research Center, and Ward got funding through their National Eye Institute Training Grant.

In the initial year of their graduate work, pre-doctoral students are immersed in the “hot” topics in biomedical research. The next year, they have to pick a lab where they’ll work for the next couple of years.

Ward’s interests led him to the lab of Dr. David Calkins, the Vanderbilt Eye Institute’s Director of Research. As an undergraduate, he had done research work on opsin proteins and retinal degeneration. Now that he’s installed in the Calkins lab, he’ll be doing thesis work to further determine which subsets of retinal ganglion cells are most susceptible to dysfunction and death during the progression of glaucoma.

“Dr. Calkins takes a holistic approach to teaching, and mentoring students is a big part of that,” says Ward. “I am able to do my best work knowing that my mentor is so dedicated to my success as a trainee.”
When Dr. Roy Ezell returned to his hometown of Nashville after ten years in the Air Force, he came back trained as an ophthalmologist. Ezell settled in with his wife, Marian, and established his Nashville area practice in suburban Donelson. Almost immediately he got engaged with Vanderbilt. 

“There were no hospitals in the Donelson area at that time, so I had to rely on Vanderbilt and the other downtown hospitals to perform surgery,” he explains. 

Throughout his years of private practice, Dr. Ezell served on the Ophthalmology department’s clinical faculty, supervising resident surgery at both Nashville General and the Veterans Administration hospital. One of these residents was his daughter, Meredith.

Since Meredith’s Vanderbilt residency, she and her parents and younger sister, Carole, have supported Ophthalmology resident training. In 2004, the family established the Ezell Endowed Resident Education Fund.

Forty-five Years of Engagement

When Roy Ezell joined the clinical faculty of the Vanderbilt Ophthalmology department, Dr. James Elliott was its only full-time academic ophthalmologist. Dr. Ezell’s relationship with the department lasted through his 40 years of practice.

“It’s really rewarding to see how far the residents come in the time they’re here,” he laughs. “It’s scary... they get smarter than you are!”

Dr. Meredith Ezell earned her medical degree from the University of Tennessee’s College of Medicine in Memphis. She completed her internship at Methodist Hospital in Memphis and then came to Vanderbilt as a resident.

During her residency, she attended a summer-long ophthalmology course at Colby College in Maine. It surprised her that many of the other attending residents had been sponsored by their institutions.

“When she came home,” says her father, “she thought we should give Vanderbilt some money to support this kind of enhanced training experience for other residents – those who might not be able to afford to attend on their own.”

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The Vanderbilt Eye Institute is proud to announce that our national ranking is 20th in NIH funding among the top 50 ophthalmology departments in the United States. The ranking was determined by the Blue Ridge Institute for Medical Research.

**Grants**

**Dr. Rachel Kuchtey**, assistant professor of ophthalmology, received a new National Eye Institute RO1 grant to study the genetics of open-angle glaucoma.

**Dr. Rebecca Sappington**, assistant professor of ophthalmology, received a new National Eye Institute RO1 grant and a Research to Prevent Blindness Career Development Award for studies of glial signaling in optic nerve degeneration in glaucoma.

**Dr. Yan Chen**, postdoctoral fellow, has received a National Eye Institute K99/R00 transition to independence award for her work on oxidative stress in retinal degeneration.

**Dr. John Penn**, professor and vice-chair, has received a competing renewal of his National Eye Institute RO1 grant on studies of blood vessel proliferation in retinal disease.

**Larry Merin**, assistant professor, has received a competing renewal from Project Tennes-SEE-well.

Resident physician **Karen Schmitt** was awarded a 2010 Fight For Sight-NANOS Research Award to present her studies on drug delivery at the 37th Annual NANOS meeting in Feb.

**New Faces**

**Heather Cathcart, Ph.D.**, a postdoctoral fellow, has joined the lab of Dr. Rebecca Sappington.

**John Penn, Ph.D.**, welcomes graduate students **Colin Bretz** and **Sara Savage** to his lab. **Archana Narasanna** is the new lab manager.

**VEI New Residents**

**Lauren Butts, M.D.**, University of Florida College of Medicine; Internship: University of Florida

**Ajay Shalwala, M.D.**, Washington University in St. Louis School of Medicine; Internship: University of North Dakota

**Daniel Straka, M.D.**, University of Toledo College of Medicine; Internship: Riverside Methodist Hospital

**Sumeer Thinda, M.D.**, David Geffen School of Medicine at UCLA; Internship: University of California San Francisco, Fresno

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But this was just the beginning of their philanthropy. When Meredith started her own practice, she too joined the Vanderbilt Eye Institute’s clinical staff and began supervising resident surgery.

“We decided to take some of the money we were getting paid for teaching and put it back into resident education,” she explains. In 2007, when the new VEI clinic was built, the Ezells endowed the resident education suite.

“When I was a resident,” recalls Meredith, “we didn’t have a place to store our belongings or just hang out. I had to put my purse under the secretaries’ desks. I thought it would be great for residents to have this space of their own...with lockers!”

Both Ezells have seen the ophthalmology residency training program grow dramatically. And they plan to keep giving.

“Resident training has improved so much since I’ve been involved,” says Roy Ezell. “We want Vanderbilt to continue to be at the forefront of ophthalmology programs in the country.”
Vanderbilt Eye Institute

**FACULTY AND STAFF**

**Paul Sternberg, Jr., M.D.**
Chair, Vanderbilt Eye Institute

**RETI NA/ VITREOUS**
Special interests: age-related macular degeneration and complex retinal detachments.

**Anita Agarwal, M.D.**

**RETI NA/ VITREOUS**
Special interests: inflammatory diseases of the retina and diabetic retinopathy.

**Nancy M. Benegas, M.D.**

**PEDIATRIC OPHTHALMOLOGY/ADULT STRABISMUS**
Special interests: amblyopia, strabismus, complicated strabismus including reoperations in children and adults.

**Ronald J. Biernacki, C.O., C.O.M.T.**

**ORTHOPTICS**
Special interests: pediatric orthoptics.

**John B. Bond, III, M.D.**

**NEURO-OPHTHALMOLOGY**
Special interests: Veterans Administration Hospital trauma, diabetic eye disease, and glaucoma.

**Milam A. Brantley, Jr., M.D., Ph.D.**

**MEDICAL RETINA**
Special interests: inherited retinal diseases, genetics and age-related macular degeneration, ocular pharmacogenomics.

**Jiyang Cai, M.D., Ph.D.**

**VISION RESEARCH**
Special interests: mitochondrial oxidative damage and protection in aging and age-related degenerative diseases.

**David J. Calkins, Ph.D.**

**VISION RESEARCH**
Special interests: degenerative disorders of the visual system and the genetic mechanisms of retinal disease.

**Min S. Chang, M.D.**

**VISION RESEARCH**
Special interests: growth and maintenance of corneal epithelial cells.

**Edward D. Cherney, M.D.**

**RETI NA/ VITREOUS**
Special interests: macular degeneration, diabetic retinopathy, rural eye health care, telemedicine and international eye care.

**Amy S. Chomsky, M.D.**

**COMPREHENSIVE OPHTHALMOLOGY**
Special interests: Veterans Administration Hospital Chief Attending.

**Sean P. Donahue, M.D., Ph.D.**

**NEURO-OPHTHALMOLOGY/PEDIATRIC OPHTHALMOLOGY**
Special interests: amblyopia, surgical management of complicated strabismus, pediatric neuro-ophthalmology, and visual field testing.

**Robert Estes, M.D.**

**PEDIATRIC OPHTHALMOLOGY/ADULT STRABISMUS**
Special interests: childhood and adult strabismus, ophthalmic genetics.

**Mark D. Ewald, M.D.**

**CORNEA AND EXTERNAL DISEASE**
Special interests: endothelial dystrophies, ocular infections.

**James W. Felch, M.D., Ph.D., F.A.C.S.**

**COMPREHENSIVE OPHTHALMOLOGY**
Special interests: cataract surgery.

**Jin Hui-Shen, Ph.D.**

**VISION RESEARCH**
Special interests: laser surgery and the invention of surgical devices.

**Karen M. Joos, M.D., Ph.D.**

**GLAUCOMA**
Special interests: low-pressure glaucoma and pediatric glaucomas.

**Jeffrey A. Kammer, M.D.**

**GLAUCOMA**
Special interests: neovascular glaucoma and complicated glaucoma cases.

**Brad Kehler, O.D., F.A.A.O.**

**OPTOMETRY**
Special interests: low vision rehabilitation, specialty optics, contact lenses.

**Lori Ann F. Kehler, O.D., F.A.A.O.**

**OPTOMETRY**
Special interests: amblyopia, pediatric eye care.

**Stephen J. Kim, M.D.**

**RETI NA/ VITREOUS**
Special interests: uveitis.

**Mark A. Kroll, M.D., J.D.**

**COMPREHENSIVE OPHTHALMOLOGY**
Special interests: cataracts, refractive surgery, secondary IOL implantation, corneal transplantation.

**John Kuchtey, Ph.D.**

**VISION RESEARCH**
Special interests: immunological aspects of anterior chamber pathology in glaucoma.

**Rachel W. Kuchtey, M.D., Ph.D.**

**GLAUCOMA**
Special interests: cellular and molecular mechanisms of aqueous outflow in glaucoma.

**Patrick Lavin, M.D.**

**NEURO-OPHTHALMOLOGY**
Special interests: eye movement disorders, nystagmus, neuro-otology, headache and metabolic disorders affecting the visual system.

**Janice Law, M.D.**

**RETI NA/ VITREOUS**
Special interests: diabetic retinopathy and age-related macular degeneration.

**Jennifer Lindsey, M.D.**

**COMPREHENSIVE OPHTHALMOLOGY**
Special interests: cataracts, eyelid disorders, ocular trauma, diabetic eye disease, and glaucoma.

**Louise A. Mawn, M.D.**

**NEURO-OPHTHALMOLOGY/OCULOPLASTICS**
Special interests: ophthalmic plastic surgery with a particular interest in orbital disease.

**Mark R. Melson, M.D.**

**OCULOPLASTICS**
Special interests: ophthalmic plastic surgery.

**Lawrence M. Merin, RBP, FIMI**

**OPHTHALMIC IMAGING CENTER**
Special interests: retinal imaging, epidemiology and diabetic eye disease.

**David Morrison, M.D.**

**PEDIATRIC OPHTHALMOLOGY**
Special interests: strabismus, pediatric cataracts, and retinopathy of prematurity.

**Denis, M. O’Day, M.D., F.A.C.S.**

**CORNEA and EXTERNAL DISEASE**
Special interests: ocular fungal infections.

**Franco Recchia, M.D.**

**RETI NA/ VITREOUS**
Special interests: pediatric retinal disorders and retinal vascular disorders.

**Rebecca M. Sappington, Ph.D.**

**VISION RESEARCH**
Special interests: neurodegenerative disorders of the visual system and neuroinflammatory processes in retinal disease.

**Chasidy D. Singleton, M.D.**

**COMPREHENSIVE OPHTHALMOLOGY**
Special interests: refractive errors, cornea disorders, cataracts, glaucoma, diabetic eye disease, ocular trauma, and strabismus.

**Jeffrey Sonsino, O.D., F.A.A.O.**

**OPTOMETRY**
Special interests: complicated and difficult-to-fit contact lenses, and low vision rehabilitation of adults and children.

**Uyen L. Tran, M.D.**

**CORNEA and EXTERNAL DISEASE/LASER SIGHT**
Special interests: corneal transplantation, cataract surgery, and refractive surgery.

**Laura L. Wayman, M.D.**

**COMPREHENSIVE OPHTHALMOLOGY**
Special interests: Director of Resident Training and cataracts.

**Daniel S. Weikert, M.D.**

**COMPREHENSIVE OPHTHALMOLOGY**
Special interests: cataracts, refractive surgery, secondary IOL implantation, sports ophthalmology - team physician for Tennessee Titans and Nashville Predators.
Vanderbilt Eye Institute is Proud to Host This Important Symposium

**Biomarkers in Eye Disease**

November 9-10

Join us as we explore new advances in understanding biomarkers for predicting incidence, susceptibility and diagnosis of ocular disease using imaging, proteomic and genomic approaches. The symposium will cover glaucoma, macular degeneration, diabetic retinopathy, dry eye, cataract and other degenerative conditions to encourage cross-fertilization between fields.

For more information:
www.VanderbiltEyeInstitute.com/biomarkers

DISTINGUISHED SPEAKERS INCLUDE:
Michael Anderson, PhD - University of Iowa
David Beebe, PhD - Washington University
Bruce Berkowitz, PhD - Wayne State University
Claude Burgoyne, MD - Devers Eye Institute
John Crabb, PhD - The Cleveland Clinic
Timothy Duong, PhD - University of Texas Health Science Center
Kari Green-Church, PhD - Ohio State University
Jonathan Haines, PhD - Vanderbilt University
Joe Hollyfield, PhD - The Cleveland Clinic
Dean Jones, PhD - Emory University
Barbara Klein, MD/MPH - University of Wisconsin
Kevin Schey, PhD - Vanderbilt University
Johanna Seddon, MD - Tufts University
Connie Weyand, MD/PhD - Emory University
Janey Wiggs, MD/PhD - Massachusetts Eye & Ear Infirmary
Kang Zhang, MD/PhD - University of California San Diego