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Profile: Dr. Alan Fogelman

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New Life for Orphan Organs

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Conversation

Dr. Molly J. Coye speaks the language of innovation

By Kim Kowsky *Photography by Michal Czerwonka*

PROFILE: DR. ALAN FOGELMAN

The Visionary

MEDICAL EDUCATION IN CALIFORNIA WAS AT A CROSSROADS WHEN DR. ALAN FOGELMAN BECAME CHAIR OF THE DEPARTMENT OF MEDICINE NEARLY 20 YEARS AGO. HIS LEADERSHIP HAS HELPED TO TRANSFORM THE DEPARTMENT AND INSTITUTE AN ERA OF RENEWED FOCUS ON PRIMARY CARE.

WITH HIS RECEDING HAIRLINE, warm, round face and thoughtful blue eyes, Alan Fogelman, M.D. '66, bears some resemblance to his hero Winston Churchill, whose image peers from a pair of portraits that face Dr. Fogelman's desk in an ornately decorated office replete with World War II memorabilia, sculpted frogs, antique clocks and custom, foot-tall chess pieces.

And indeed, Dr. Fogelman is a kindly man, as his features suggest. But he also is a determined man, with a measure of Churchill's grit, who, when he became chair of the Department of Medicine in 1992, ushered through a remarkable transformation that had a profound effect on the way UCLA would approach the teaching and practice of primary-care medicine in the future.

The early '90s was a tumultuous time to be taking over the department. California legislators, incited by the state's shortage of primary-care doctors, were threatening to require University of California medical schools to train at least half of their graduates as general practitioners. This at a time when only two of the Department of Medicine's 200 faculty members were themselves practicing primary-care medicine.

Rather than wait for a mandate from the state that would affect its curriculum, UCLA decided to meet the demand on its own. Dr. Fogelman spent the next several years working toward that goal – an enormous task with political and cultural hurdles for an academic institution that emphasized tertiary and quaternary care.

That he succeeded so well was a remarkable achievement, his admirers say, and in so doing, he not only reinvigorated primary care at UCLA, but also strengthened his department's basic medical-research programs as well as its subspecialty training and practice.

"He is a medical visionary," says Gerald S. Levey, M.D., dean emeritus of the David Geffen School of Medicine at UCLA and The Lincy Foundation Distinguished Service Chair. "He seems to have a special knack for knowing what to do and when to do it. When the history of this era is written, he will emerge as one of the most important chairpersons of a medical department, not only at UCLA, but across the nation."

IT WASN'T A DIFFICULT STRETCH FOR DR. FOGELMAN to focus his efforts on rebranding UCLA as an essential training center for primary-care physicians. He completed his internship and residency in internal medicine at UCLA before undertaking a fellowship in cardiology.

"I really believe that the best care for an individual is care that is coordinated, and that if you have a good general internist or family physician who is well-trained and provides most of your care, you are better off," Dr. Fogelman says.

To reach the goal of bolstering UCLA's training of primary-care physicians, Dr. Fogelman needed to achieve two things: entice a new generation of medical students to become internists and create a community of general internists to train them.

"We found that one of the reasons our trainees didn't go into general internal medicine was that they were trained in an environment of big clinics where many patients were underinsured," Dr. Fogelman says. "That doesn't make the patients any less important, but it makes it much more difficult to take care of them, because when they need something from a surgeon, for example, trying to get one to do something for them is much more difficult."

One way to overcome the frustrations of "big clinic" medicine was to start training young physicians in smaller offices that included a healthy mix of managed-care patients with fee-for-service PPO, Medicare and Medicaid patients. For the managed-care patients, if a doctor requests a test and it meets UCLA's guidelines, "it's approved, because we're paying ourselves," Dr. Fogelman notes.

"We began to recruit faculty who worked in Westwood, and we also began to open practices in the community," Dr. Fogelman says. "We would take over their leases and would pay them salaries and compensation that was probably better than they could do on their own. They had no risk, and they got to be members of the faculty."

The plan presented some obstacles. These newly recruited physicians would be entering a university culture that requires its faculty not only to teach medical students, residents and fellows, but also to publish papers, compete for grants and serve on national committees.

It was a daunting set of expectations for busy primary-care physicians, says Tom Rosenthal, M.D., chief medical officer for UCLA Health System. "Dr. Fogelman first had to change the university's promotion system itself. The success of getting the UCLA academic system to recognize the creative work of clinical physicians has been critical to the health system's ability to carry out UCLA's clinical mission over the past 15 years."

Then, an online journal for the Department of Medicine, *Proceedings of UCLA Health Care*, gave primary-care physicians an outlet for their creativity, with short articles focused on case studies of common conditions that demonstrate a teaching point.

Such strategies worked. Over the next several years, the department recruited dozens of primary-care physicians in what spun off to become the Primary Care Network, with offices in Westwood and Santa Monica to support UCLA Health System's newly acquired Santa Monica-UCLA Medical Center and Orthopaedic Hospital.

When that initial effort suffered a financial setback in 2003 and some of the community offices were closed, Dr. Fogelman responded by quietly rebuilding the department's primary-care capacity – a project that coincided with construction of the new Ronald Reagan UCLA Medical Center. Because the new medical center would be smaller than the UCLA Medical Center it would replace, "The question was, who could move to Santa Monica?" Dr. Fogelman recalls. Tertiary and quaternary specialties were rooted in Westwood. "So it was decided a lot of internal medicine would move."

Dr. Fogelman was able to build a new network of primary-care physicians by recruiting internists and secondary physicians such as cardiologists, gastroenterologists, infectious-disease specialists and pulmonary physicians to work together in small offices operating under the UCLA Department of Medicine shingle.

TODAY, THE DEPARTMENT OF MEDICINE employs about 100 primary-care internists on its faculty, many of who practice in one of the two-dozen offices that make up its Community Practice Network. Inspired by these physician-faculty members, about half of the department's resident-graduates went into general internal medicine this past June.

It is not Dr. Fogelman's Churchillian grit so much as the quality he shares with another notable strategist that has helped to move UCLA forward, suggests David T. Feinberg, M.D., M.B.A., president of UCLA Health System. "Alan Fogelman to me is more like Wayne Gretkzy then Winston Churchill," Dr. Feinberg says. "Gretzkzy was known for skating to where the puck is going to be, not where it has been. Dr. Fogelman has that same sense about medicine. He knows before everyone else what changes are going to occur."

Indeed, the network that he helped to establish also has proved to be good business for the Department of Medicine. Earnings from the community practices pay about half of the $400 million that the department will spend this year on expenses such as the salaries of its 550 faculty members and 1,500 staff employees, as well as supporting infrastructure for research and education. (Grants and contracts make up most of the rest; state sources only cover about 2.5 percent of the budget, Dr. Fogelman adds.)

And by helping to fund the department's research and subspecialty training programs, Dr. Fogelman says, the network helped mitigate resistance to the changes it represented.

"Our faculty saw we were developing both primary care and the next generation of researchers," Dr. Fogelman says. "So we weren't abandoning the principles that the university is committed to in research and teaching. We were expanding that and also adding primary care at the same time." ❖

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Affair of the Heart

CARDIOLOGIST ALAN FOGELMAN IS THE MASTER DETECTIVE OF "GOOD" CHOLESTEROL. HIS LATEST CASE: TRYING TO DETERMINE HOW AND WHY GOOD CHOLESTEROL GOES BAD.

By Greg Critser

IN 2007, researchers released a state-of-the-art clinical study of a new Pfizer drug designed to treat high cholesterol: torcetrapib. The results were puzzling. The compound lowered low-density lipoprotein, a.k.a. LDL or "bad" cholesterol. It also substantially pushed up high-density lipoprotein, or HDL, the "good cholesterol." By all accrued medical wisdom, torcetrapib should have lowered the rate of cardiovascular events – heart attacks, strokes and, ultimately, deaths.

But it did not. Instead, to the chagrin of the entire cardio-establishment, it increased the risk of cardiovascular events like heart attacks by 25 percent. Worse, 58 percent more heart patients died than those in a control group.

What had happened? Why hadn't the "good" cholesterol improved their odds of living longer? It was a challenge tailor-made for Alan Fogelman, M.D. '66, a cardiologist and chair of the UCLA Department of Medicine

Cogitating quietly in his third-floor office in the Center for Health Sciences building, Dr. Fogelman has pursued the elusive molecule for nearly 40 years. His quest is not unlike that of a zoologist tracking down some strange and wondrous creature. "The reason HDL is constantly throwing a wrench into the whole business of cholesterol management is that it is not one thing all the time. It changes," he says, "like a chameleon."

DR. FOGELMAN'S TREK BEGAN IN THE LATE 1960S, when he was stationed at China Lake Naval Weapons Center. There, the young Navy physician was struck by a peculiar aspect of the patient population: A disproportionate number of them were dying of heart disease.

"It didn't make any sense," he recalls. "I mean, here was a pretty young population, guys in their 30s and early 40s, and they had all kinds of heart problems. I kept coming back to that picture in my mind and asking myself: What is happening here? The great minds of the day were mainly focused on heart failure, which was important, but I kept asking, 'Can't we find some way to prevent it?'"

Dr. Fogelman next landed in a perfect place to find out: the UCLA School of Medicine. Early work by UCLA pioneers and others had already elucidated the chemical structure of LDL cholesterol and showed how it might inflame arteries. What followed was a mammoth effort to characterize exactly what the molecule consisted of and how it worked.

What Dr. Fogelman et al. found was mind-boggling. LDL, at its core, is part of our innate immune system. It likely once had an important beneficial function. By oxidizing in a sudden burst, it allowed humans to fight off the enormous number of patho-

gens – viruses, bacteria, etc. – that were present in the premodern world, before better sanitation and antibiotics made such a robust system unnecessary. But LDL-driven inflammation led to plaque build-up, rupture and artery-clogging.

"LDL problems will be with human beings for a long, long time," Dr. Fogelman says. Evolutionary processes have yet to eliminate it, he explains, "because its ill effects come so late in life – long after the typical evolutionary sorting before reproduction takes place."

Eventually, things like lifestyle modification and drugs, mainly statins, were found to lower LDL levels and cardio risk. Similarly, LDL's sister molecule, HDL, or good cholesterol, was found to have beneficial qualities: It seemed to transport bad cholesterol back to the liver. There were more drugs and more lifestyle recommendations. HDL levels went up in sizeable populations of Americans.

BUT BY THE LATE 1990S, Dr. Fogelman was asking a new and very uncomfortable question: If statins and such were so good at driving up HDL and driving down LDL, why did we still have so much heart disease?

He theorized that HDL might be much more complicated than previously imagined and then launched a new effort to characterize the molecule, from outer membrane to nucleus. What emerged was a complex molecule – the enzymes and antioxidants carried by normal HDL did turn out to prevent or reverse some of the consequences of the "bad" cholesterol, LDL.

In the process, however, Dr. Fogelman discovered something else: In a number of scenarios, HDL morphed into something entirely different. After the trauma of a surgery, for example, good cholesterol behaved even worse than the bad cholesterol. Why?

Thanks in part to the use of lab-bench techniques developed in his laboratory, Dr. Fogelman began teasing out the phenomenon. He found that for several weeks after someone comes down with the flu, the "fighter" enzymes inside HDL become dysfunctional. That wasn't all. Bad HDL started popping up in the blood of patients with common chronic diseases – uncontrolled diabetes, kidney disease and rheumatoid arthritis. Hence, the higher levels of HDL caused inflammation and atherosclerosis.

Perhaps this was why torcetrapib had failed as a cardiovascular drug: The compound pushed up HDL levels in such a way as to be inflammatory. Although Dr. Fogelman cautions that these observations are not ready for use in public-health policy, they may have an impact on postsurgical care, wherein standard practice now encourages physicians to prescribe statins.

Might there be a way to restore HDL's good characteristics? That is exactly what Dr. Fogelman and his colleagues are now trying to do.

DR. FOGELMAN'S EXPERTISE IN HDL DYNAMICS has also enabled UCLA to advance a huge and promising new medical discipline: environmental cardiology, the study of how one's surroundings interact with genes and behavior to instigate heart disease.

A remarkable example was a study that came out in 2008 by Jesus Araujo, M.D., Ph.D., whose research at UCLA focuses on environmental cardiology. Like Dr. Fogelman, Dr. Araujo was taken with the question: Why had heart disease remained so prevalent? Perhaps, he thought, it might have to do with smog. Epidemiologists had long posited a link between the two but never found a causal explanation for it.

To find out, Dr. Araujo placed cages of genetically altered mice in two distinct locations – one alongside the Harbor Freeway and one in Santa Monica. He then used a machine to collect and analyze the exhaust fumes the animals were breathing. When Dr. Araujo later examined the mouse arteries, he found advanced artery disease in the ones parked next to the freeway.

One other thing: Their HDL had become inflammatory. Might there be a way to restore HDL's good characteristics? That is exactly what Dr. Fogelman and his colleagues are now trying to do. Currently, there is at least one commercial study of a molecule from Dr. Fogelman's research that mimics some of the good properties of HDL. Another, an HDL mimetic peptide, was able to turn "bad" HDL into "good" HDL in lab animals.

What are the HDL peptide's chances? "It is so early to try to tell something like that," Dr. Fogelman says. "We have no idea where that effort will take us, or whether it will hit the target we hope for. We have to wait for the trials.

"After all, HDL – it's a chameleon." ❁

GREG CRITSER *is the author of* Fat Land: How Americans Became the Fattest People in the World *(Mariner, 256 pages) and* Generation Rx: How Prescription Drugs are Altering American Minds *(Mariner, 308 pages). This article was originally published in the January 2011 issue of* UCLA Magazine.