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Matt Morton

faculty interview

The Fight Against HIV: *An Interview with Dr. Michael Saag*

Infectious Diseases, Matt Morton

One wouldn't have thought it was a cold, gloomy morning upon meeting Michael Saag, M.D.—his optimism and energy filled the second-floor conference room of the Bevill Biomedical Research Building as we prepared to begin the interview. It was this same energy, this passion for research obvious to those who have heard him speak, which interested me in Dr. Saag's journey from undergraduate to Director of UAB Center for AIDS Research (CFAR).

As an undergraduate, he began work at Tulane with a pharmacy group studying the effects of Aspirin. Later, during medical school in Louisville, his research focused more on neurology and mapping the feline jaw-opening reflex. When asked about his diverse research experiences, Dr. Saag felt that "what's important as an undergraduate is to focus on gaining a lot of different experiences—really going broad; don't sit up in a certain mindset because your mind is likely to change multiple times in the course of a career path, especially through the educational process… Even though we all want to plan our careers, you can't, because a lot of it's serendipity, a lot of it's opportunity, and a lot of it is that as we all go through the education experience, we're learning, we're growing, and we're thinking in new ways."

In 1981, Saag was drawn to UAB for two reasons. At the time, his belief that he would pursue cardiology led him to choose a residency at UAB for their reputation in cardiology. Also, his wife was from Birmingham. By 1988, Saag and others had started the 1917 Clinic with a mission to mix HIV/AIDS patient care and research as a way of testing new therapies. Between 1999 and 2004, they converted the old patient database into an electronic medical record, making it possible to answer the "routine [questions] in practice like, 'if I use this drug does it perform the same way in practice as it did in the clinical trials?'" They also study unusual side effects and practice patterns for current therapies, but according to Saag, "the limitation now is basically imagination and time. If we can think of a question and we have the time to answer it, it'll get answered. It's like a little laboratory, it's an informatics laboratory."

With such a functional laboratory at his fingertips, my next question for Dr. Saag was how such information is applied in the real world. Information from the Clinic helps drive changes not only in clinical practice situations, but also in the policies affecting HIV/AIDS patient care and research.

"For best practices, we've defined how certain drugs work in practice versus how they work in the clinical trials. That's an important set of data. Recently we were part of a major study that helped define when to start Anti-Retroviral Therapy (ART) by pooling cohort data together. We're part of several groups like that, one of which I run in the United States called CNICS, or the CFAR Network of Integrated Clinical Systems, where we pool data from nine other centers from around the country. In the study of several thousand patients who started ART, we found that those who waited did worse. So the notion was to start treatment a little bit early."

"Something we've done policy-wise is shown cost of care. Cost of care analysis has informed congress on how to fund HIV care in the United States; what it said is that HIV clinics can't make money on their own and need government programs to help provide service to patients. Another thing we've done was a simple analysis of mortality, based on when patients start treatment. We've found that, if people wait until they have more advanced disease, their mortality in 10 years is 50%, whereas if they start earlier it's only about 5%. Moreover, the problem is, and this is where the policy comes in, that the majority of patients we have seen showing up for care show up very late and the only way to find those patients earlier is to test earlier. The proof of this is that the only group of patients we've seen come into care earlier are pregnant women. And the reason for that is that they're getting tested routinely for HIV. Data like that coming from a clinic like ours contributed to a discussion in 2006 with the CDC about changing its recommendations for universal opt-out testing so that every person, as I say, who is sexually active or has every thought about being sexually active should be tested for HIV."

"A final part of our mission is to perform medical education so that physicians, nurse practitioners, and physicians assistants can continue their education. Standing up in front of audiences a lot of times we're using data from our own clinic when we make points, so there's no question that it's having impact."

Next, we discussed the future focus of HIV/AIDS research. First, Dr. Saag addressed the groundbreaking research happening at UAB.

"In the big picture of AIDS research on our campus, the first and foremost thing we all want to do is find a cure. While that is not talked about very much, there are people here who are working on the concept of the virus going latent in cells. It's the latently infected cells that are the barrier to cure, so trying to focus on that in the laboratory and then thinking of new thera-

peutic interventions that might dig into that is very important."

In contrast to the laboratory work, much of Dr. Saag's other research at UAB is in finding new therapeutic interventions and exploring factors that affect treatment. For instance, the effects of depression on a patient's success taking medication, as well as the effect of HIV infection on the aging process are two interesting topics of research currently being studied.
Dr. Saag works with groups from around the world on various other research initiatives.

"We've been doing a lot of work in Africa, working particularly out of Lusaka, Zambia with the PEPFAR program, which sends funding from the U.S. to pay for medication. We now have 190,000 patients we've enrolled into care over the last five years, which is remarkable, and that's just in Lusaka."
Just as interesting as the work being completed in Zambia is the way the information from that study is being used in Alabama to make a local impact. With the Zambama project, Saag and his colleagues are taking the best practices they've learned in Zambia and applying them back to Alabama.

"We always had this almost condescending paternalistic view of us going in with white coats and 'S's' on our shirts to save the world. Well, we have a lot to learn, as well. As far as stigma against HIV, people not getting tested, and people not having access to care, believe it or not there are not a whole lot of differences between rural Alabama in some areas and Lusaka, Zambia. They also have a lot of stigma in Lusaka, but because the problem was so enormous there—up to 1 in 4-5 people in their entire country between the ages of 20 and 45 being infected with HIV—they figured they better do something about this, so they did. They've done a lot of really interesting things about reducing stigma, getting testing for patients and individuals, and getting them into care. We're using a lot of those best practices and starting to study how well they work in areas of Alabama where there are pockets of high concentrations of HIV infected people who don't know their status. If they don't know then they show up late and if they show up late they have a higher rate of dying, so if we find them early and get them into care, we'll save lives."

In the interest of HIV/AIDS prevention, Dr. Saag also shared with me his feelings on abstinence-only sex education.
"It's poor. It's ill informed. It makes the person who gives the message feel good, but the question is, does it have any impact? I'm not trying to say that people's intentions are wrong when they adopt an abstinence only education approach and I'm sure for a certain segment of people at risk it works, but, in my experience over 25 years of dealing with this epidemic, it's only touching maybe 10-15% of people and for 85% of people that message goes totally onto deaf ears. It's not that people are evil, or mean, or wrong, or anything, it just basically means that people are people and that the normal, innate, biologic drive for people to want to have sex is in the same part of the brain that drives eating. We have to understand how to help people manage their lives in a way that puts them at less risk for not just HIV, but other sexually transmitted diseases, as well."

Finally, I asked Dr. Saag what advice he would give to undergraduates considering research activities both now and later as a career?

"My advice would be three things. The first is to keep your options open and to not be afraid of exploring opportunities that feel outside of your comfort zone. The only way you're going to know what you like and what you don't like is by going out and doing something. The creative director at Actor's Theater of Louisville had a great commentary where he said, 'I want everybody to come to all the plays and have an experience.' If you walk away saying, 'I didn't like that play' or you go to a play you didn't like, he goes, 'Okay, at least now you know what you don't like,' and I think that's kind of the right attitude."

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"The second thing is not to stress too much over having a game plan. Everybody feels like they need to have a roadmap for success. 'I'm going to do this,' 'I'm going to do that'... and that you have to have your career path planned out. A lot of the career path is serendipity, a lot of it is opportunity, a lot of it is discovering down deep what you like and what you don't like. You've got to go do it. You've got to live life."

"The third thing is to have fun. Life should be a joy; it should be a great experience. When you're in the lab immerse yourself in it. Get excited by the science. Get excited by the discovery. Get excited by the people you're around. Then you can sort out what it is you like and what you don't like later."

When asked if he had any final comments, Dr. Saag simply replied, "I would like to see football season last all year. That would be good."