

CLINICAL CARE

Good Medicine Is Personal

Geneticist **Chin-To Fong**, associate professor of pediatrics, has received the 2012 Arnold P. Gold Humanism in Medicine Award. He was nominated by Rochester medical students who consider him a caring and compassionate mentor who doesn't just teach them to be caring physicians, but also exemplifies one.

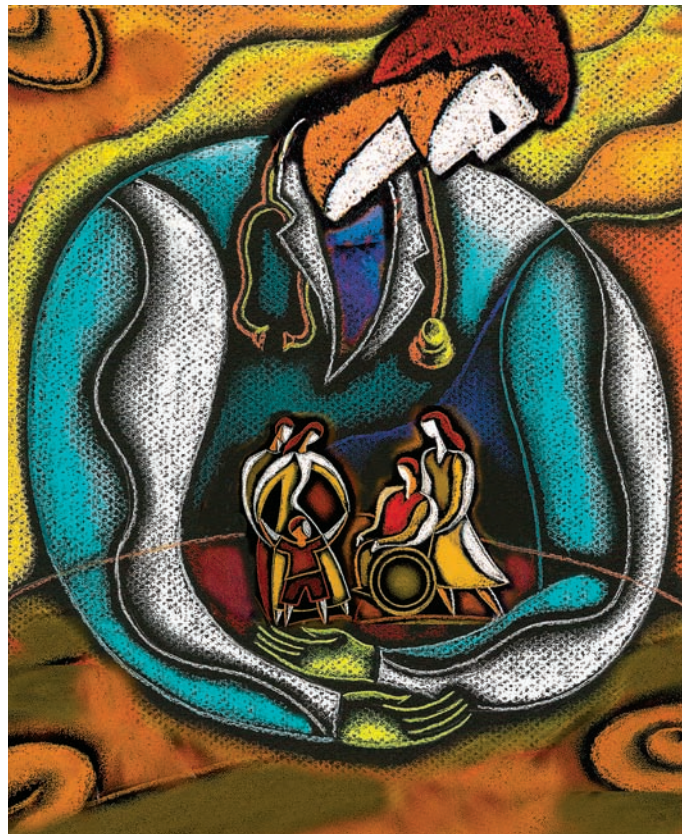
How did you realize the importance of human connection?

The patients teach you that. Every person you meet. Maybe it's because I'm in genetics—most of the time, we make diagnoses we can't fix. My job is really to understand where people come from, to get a sense of how to change their perspective so that they still can have a very high quality of life and a very positive outlook, despite the seeming odds against them.

How do you teach students to connect with patients?

In medical schools, we are very good at teaching science and technology—and I suppose a lot of the intellectual challenges lie in those arenas. But the medical science textbook doesn't teach you that you're working with real people.

For first-year medical students, I bring patients into the classroom, and I don't do it in the



traditional grand rounds sort of way. I usually have patients talk about their lives. So these sessions are not so much clinical-diagnosis-and-management-driven but life-perspective-driven.

Has it become harder for doctors and patients to connect?

Sometimes we get so wrapped up in the latest gadgets and

latest nuance about science and technology that we forget the underlying human essence really hasn't changed. A good example is the new push toward "personalized medicine"—the idea is that you can genetically determine each person's vulnerabilities and give appropriate lifestyle changes or preventive management. But the term is actually very

misleading in suggesting that being "personal" is something new. Good medicine has always been personal. You've just got to deal with each person, each patient, as an individual. You try to know what they do, how they were raised, what interests them, what is important to them—and when they get sick, what do they lose that matters to them? If it's somebody who likes to read and they can't read anymore, that's a huge suffering.

Do you rely on patients to tell you about themselves to get a sense of who they are?

You have to be observant. There's no magic. You've got to care to observe. And you've got to think to assess what the patient is thinking, what he or she really needs or wants, what he or she is missing. It sounds a little clichéd, but caring goes first. If you don't care enough to look, you won't find.

Knowing what to look for, of course, that takes some training. But people who never really care, they will never see.

Sometimes the word "caring" is limited to physical acts: you care for patients, meaning that you do things for them, but it really starts from the precept that you connect. You care in that sense. —Kathleen McGarvey

COGNITIVE SCIENCE

How Do You Make a Decision?

Benjamin Hayden, assistant professor of cognitive sciences, is helping unravel the mysteries of how we make decisions. Selected as a 2012 Sloan research fellow by the Alfred P. Sloan Foundation, Hayden, who

specializes in the new field of neuroeconomics, studies self-control and decision making from a range of perspectives, including psychology, animal behavior, philosophy, and popular culture.

When I'm making a decision, am I rationally weighing choices?

If you're like most people, you think of your decision making

as being like a scale. We believe that we think about the good things, the bad things, and we see where the balance is. And that's not at all the way it works. We really have a lot of mental shortcuts, rules of thumb—we call them heuristics—hundreds of them. They compete against each other, and that's what produces our choices. It's messy and complicated.

How do we create those shortcuts—and why?

From the moment you're born, you start coming up with these rules of thumb. Some of them might even be hardwired in your brain. These are things that we develop, learn about, and then are constantly cultivating, pruning, and improving.

Part of what we're doing as a research team is trying to dis-

MUSIC THEORY

Pitch Perfect?

Elizabeth West Marvin '81E (MA), '89E (PhD) was first appointed at the Eastman School to lead its aural skills program—teaching students to sing by sight, to hear music in their heads, and to write music in dictation. A professor of music theory and of brain and cognitive sciences, she has directed some of her research toward perfect pitch and how best to teach students who have it. This fall, she received the Gail Boyd de Stwolinski Prize for Lifetime Achievement in Music Theory Teaching and Scholarship for outstanding pedagogical contributions in the discipline.

What is perfect pitch?

In music-cognitive literature, it's known as absolute pitch. When you ask someone with absolute pitch to sing a G-sharp, they can. Or if you play a note, they can say, "That's B-flat," without any external reference note. Most people use relative pitch, hearing a pitch in relation to other pitches.

But people with absolute pitch have associated in long-term memory the names of notes, just the way most of us have names for colors. When you say something is blue, you don't have to think about it; you don't have to dredge it up from your memory.

It's just immediately available. That's how pitch is for people with absolute pitch.

Does everyone process pitches through absolute pitch or relative pitch?

There is a tiny minority of people, probably similar in size to the absolute pitch group, who have amusia, or tone deafness. People with amusia have difficulty discriminating small pitch changes, and so they never create a mental tonal hierarchy for the structure of scales and chords. For some of the people who have it, they can't even discriminate between musical timbres—the sound of one instrument as compared to another. For them, music can sound like noise, like crashing pots and pans.

What is it like to teach students with absolute pitch?

At Eastman, about 12 percent of our entering undergraduate class in any year has absolute pitch, which is much higher than the published norm—something like one in 10,000 people. It's because, as a music school, we have a biased sample: we only see the highest-caliber musicians, who have years of specialized training.

It's a challenge to have a

mixed class of some students with absolute pitch and some without. If you treat them all the same, the students with absolute pitch won't be challenged. But if you try to challenge them too much, they'll feel persecuted, imagining that you're intentionally putting barriers in the way of something that's normally simple for them.

Do people with absolute pitch have an advantage as music students?

That's a controversial topic. Certainly a person with absolute pitch has an advantage in playing atonal music, where there's no tonal center to use as a convenient reference point. But absolute pitch doesn't confer superior musicianship. Just because you can label a note doesn't mean you can play that note more beautifully or with more meaning.

—Kathleen McGarvey



entangle those, at least in some very simple cases, to see what those shortcuts and processes would be.

What's the effect of heuristics?

The brain is designed to be as efficient as possible, using as few calories as it can. But it's not as rational a process as we think it is. We're very easily swayed by things that should be completely irrel-

evant. Advertisers use this against us all the time. The take-home message is not to be so trusting of our gut feelings. We should educate ourselves on all kinds of biases, as a corrective to the heuristic. We want to keep a skeptical position, and if we reflect on the sort of decisions we've made, fairly openly and honestly, that helps cultivate new rules that we can use as we make decisions.

What's going on in the brain when we make a decision?

We now know that about seven or eight of the roughly 150 areas of the brain are really important to decision making, and we're starting to understand what they do.

The brain areas that seem to be the key areas for economic decisions are the same areas that are targeted by drugs of

abuse and that are dysregulated by mood disorders and depression. At the very basic level—the level of neurons—that my team is working at, drug addiction and mood disorders look very similar, so what we do is basic research that we hope will have implications for mental health and drug addiction.

—Kathleen McGarvey