

For Zitterkopf, it was an exam on a woman in her 32nd week of pregnancy that had the deepest impact. “I had never seen a bimanual exam, let alone performed one,” she says. “As I witnessed a physician skillfully perform a bimanual exam . . . he turned to me and asked, ‘Any questions?’ After [I shook] my head ‘no,’ he handed me a glove and said, ‘Good. Your turn.’ I was very nervous.” But the physician guided her through the process. “I was able to feel the head of the fetus,” she recalls. “It was a feeling I will never forget.”

Static: Maureen Shyu was moved by a prenatal visit, too: “Through the static of a Dop-tone, I heard the thumping of a baby’s heartbeat. It was loud and rapid, so different from my own. . . . It was my first time hearing a life growing hidden inside a woman’s belly. Something shifted in me and I recognized it as a special moment in my life.”

For CECS student Clara Savage, working with the FNS was a “wonderful” experience. “There are a lot of pockets of society in this country that are disenfranchised from proper health care,” she says, “and I think that exists in rural Appalachia.”

Susan Linsey, codirector of Dartmouth Rural Health Programs and coordinator of the Kentucky trip, feels it was a great experience for the students who went. They showed “strong team spirit and good bonding,” she says. And FNS officials were pleased, too, she adds. “Frontier Nursing tells us over and over, ‘Please come back.’”

MATTHEW C. WIENCKE

INVESTIGATOR INSIGHT

In this section, we highlight the human side of biomedical investigation, putting a few questions to a researcher at DMS-DHMC.

T.K. Mohandas, Ph.D.

Professor of Pathology and of Genetics

Mohandas is the director of DHMC’s Cytogenetics Laboratory, which detects disease-causing abnormalities in human chromosomes. He also does research in human cytogenetics and human molecular cytogenetics. He joined the faculty in 1995.

How did you come to work in this field?

I became interested in genetics as an undergraduate in India. One of my professors was a world-class expert on cytogenetics and a role model for me. In the early ’70s, when I was completing my doctoral work at McGill and doing my postdoctoral work at the University of Manitoba, technical innovations were revolutionizing the study of human chromosomes.

Can you explain the impact of your work?

There are many disease-specific chromosomal abnormalities that are used as diagnostic and predictive markers in hematological malignancies—such as lymphoma and leukemia—as well as in certain genetic diseases.



What did you plan to be when you grew up?

I wanted to be a college lecturer—the typical career-ladder faculty positions in North America not being common in India

in those days—as I thought that would be the best way to remain a lifelong learner and also earn a living. I did not know the subject I would focus on until I encountered genetics as an undergraduate. Then I was hooked.

What misconceptions do people have about your field?

That it involves laboratory tests for very rare conditions.

What’s your favorite nonwork activity?

I like to travel, see places, and enjoy the arts, architecture, and food in different parts of the world. Unfortunately, I have not had time to do much of that lately.

What is a talent that you wish you had?

I wish I were musically talented, as musicians bring joy to so many people (including me) while doing something that they also enjoy.

What’s your favorite type of movie?

I enjoy comedies, as I like a good laugh.

What do you admire most in other people?

Intelligence, integrity, humility, altruism, and a sense of humor.

What are the greatest frustration and the greatest joy in your work?

Human genetics is a fast-moving field, and it is difficult to keep up with all the information. It is frustrating to see all the journals and papers on my desk waiting to be read. But it is exciting when we characterize chromosomal abnormalities that also provide novel insights into chromosome biology.

Of what professional accomplishment are you most proud?

The phenomenon of X-chromosome inactivation has been a subject of much interest and investigation in mammalian biology. I am best known in the human genetics community for the work that we did on X-inactivation. This is also the professional accomplishment that I am most proud of.

Where do you do your best thinking?

When I’m scanning slides under the microscope to find the right metaphase cells.

What are the keys to success in science?

Passion, diligence, talent, and a spot of luck.

If your house caught on fire (and everyone was safe), what things would you try to save?

First on the list would be family photographs; next would be passports and such documents.

