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The University of Massachusetts Medical School Magazine

YEAR IN REVIEW 2013



Two UMMS researchers rock the scientific world:

For Katherine Luzuriaga,
'functional' HIV cure offers real hope

Jeanne Lawrence's long shot pays
off for silencing Down syndrome

A MEMORABLE YEAR TO REVIEW

Two remarkable discoveries by UMass Medical School faculty captured the attention of the world this year, as hope for a cure for HIV became less of a dream, and the extra chromosome causing Down syndrome was silenced in the lab. These are just two of the many accomplishments of our faculty, all of whom have their own stories to tell of how they became passionate about their work. This year-in-review issue of *UMass Med* magazine explores the different pathways to success taken by Katherine Luzuriaga, MD, and Jeanne Lawrence, PhD. It also showcases an institutional culture that nurtures scientific breakthroughs.



Photo on cover:
Katherine Luzuriaga, MD, left,
and Jeanne Lawrence, PhD,
in the Albert Sherman Center.
Photo by John Gillooly.

The University of Massachusetts Medical School, the state's first and only public academic health sciences center, educates physicians, scientists and advanced practice nurses to heal, discover, teach and care, with compassion. Our mission is to advance the health and well-being of the people of the commonwealth and the world through pioneering advances in education, research and health care delivery.

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4 Different approaches, similar determination

Two researchers took different approaches to tackling very different health issues. The common denominator was an institutional culture of support and creativity that nurtured their pathways to success.

6 'Functional' HIV cure offers real hope

Katherine Luzuriaga, MD, and her team of collaborators showed that intense antiretroviral therapy just hours after birth may cure HIV-infected infants, saving them from a lifetime of expensive treatment. Twenty years in the making, the development may also have global applications for adults with HIV.

12 A long shot pays off: Silencing Down syndrome's extra chromosome

Jeanne Lawrence, PhD, took an out-of-the-box approach to tackling the complex issues involved in silencing the extra chromosome that causes Down syndrome. Her non-traditional research pathway reflects a passion for human genetics that has deep and personal roots.

18 A biomarker for the baby blues

Research by Kristina Deligiannidis, MD, aims to determine why some women develop post-partum depression, with the ultimate goal of developing an inexpensive blood test to identify those most at risk.

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Medical student and cancer survivor Reza Hosseini Ghomi reflects on what a young friend taught him about living with uncertainty and learning to let go.

Bitter taste receptors in airway cells could help treat asthma attacks

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By Reza Hosseini Ghomi SOM '14



Two years ago, I remember sitting by the window in a hospital room with my eight-year-old Sidekick, who was being treated for rhabdomyosarcoma, there for chemotherapy. Sidekicks is a student-led initiative at UMass Medical School that matches medical students with pediatric oncology patients in order to build long-term, nonmedical relationships. On this visit, he was watching his favorite cartoons and so was unresponsive to my attempts at engagement.

My own five-year anniversary of remission from Hodgkin's lymphoma had just passed the week before. It was the day we had a chemotherapy lecture as part of our cancer course in my first year of medical school. I remember thinking how I couldn't believe it had been five years; it felt like a century at the time. I felt like it had to be a different person who went through all of that treatment, pain and fear five years prior. I am now officially cured, according to oncologists, although I don't really feel any different.

I sat wondering if my Sidekick would someday feel the same way, or if he would even have the opportunity. We had bonded quickly; I suppose our shared experience provided a comfort beyond words or gesture. He asked me questions that would break my heart each time: "Am I going to die?" or "Do you think my cancer will come back?" I never found a response for those questions I felt was sufficient. But thanks to my own experience, there were plenty of questions I did feel comfortable answering, and felt useful in doing so.

Now, I'm coming up on seven years cancer-free, and my Sidekick is into his second year. I have just returned from watching him play in his final football game of the year. The odds were certainly not in his favor, but look at him now. He's back to being a kid again. I recently attended his mother's wedding where, during the reception, she found us racing outside among the trees. I guess some of us never grow up.

No matter how hard I try, I can't find any sense in what he went through, and when I ask him, he just says he's glad it's over. It's hard to think he might be able to look back on his experience and see something positive in it like I have, but what do I know? What I did learn was to be comfortable with not knowing what to do and, often, doing nothing. I learned my presence could be healing as long as I was fully present with my Sidekick, or any patient for that matter. Practicing letting go of my preoccupation with my to-do list allowed for healing only realized in the moment.

Early in my third year of medical school, I had no idea where I was going or what field I was interested in. My head would spin just thinking

about it. Now in my final year, what helped me more than anything else decide on what type of medicine to practice was remembering what previous experience had taught me: to look for those little coincidences, those signs that somehow are always there to show us the way. Those situations that seem to just happen without you trying. The ones where you feel comfortable, beyond thought or explanation. The ones that give you a glimpse of yourself at your best. Those moments you truly participate in a patient's healing and know it without words or expression. They may be subtle and sometimes fleeting, especially in medical school, but they're there.

When I get caught up in all of the mental gymnastics to rationalize certain judgments about certain experiences and fields, I remind myself to step back and look for those signs. After all, it's not too hard to believe I'm on the right path when medical school has given me so many opportunities for learning—like those with my Sidekick.

REZA HOSSEINI GHOMI SOM '14, WHO GREW UP ON CAPE COD, CONTINUES TO CHECK IN REGULARLY WITH HIS SIDEKICK, DYLAN. AS HE REACHES THE HALFWAY POINT OF HIS FOURTH YEAR IN MEDICAL SCHOOL, HOSSEINI GHOMI IS INVESTIGATING PSYCHIATRY RESIDENCIES IN MASSACHUSETTS AND THE PACIFIC NORTH-WEST.