

Luckily for us, saner voices prevailed in the AMS. So here is my plea: Before proposing any action to combat human-rights violations, please consider how it will affect the very scientists whose rights are being violated.

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Physics makes do in Cuba and elsewhere

The story by Toni Feder (PHYSICS TODAY, March 2018, page 48) about the status of physics in Cuba was insightful and full of information. Large portions of it resonate with my own life and academic experience. I graduated with a physics diploma back in the 1990s, but it was tough to actively pursue research in my native Albania. At the time, the International Centre for Theoretical Physics (ICTP) was a lifeline of support to students and visitors from developing and Eastern European countries (see my Letter to the Editor, PHYSICS TODAY, April 2015, page 11) the same way it is doing now for some Cuban physicists featured in Feder's story. I completed the ICTP's condensed-matter-physics graduate program in 1994.

The answer to the important question raised about the next generation of physicists in Cuba depends heavily on what model Cuba will use in an evolving world to keep homegrown physics programs attractive for young researchers to want to return. Without carefully thought-out programs, the majority of those earning PhDs in developed countries will not return to Cuba, and as a result, excellence will be hard to sustain.

Apart from the economic hardships, the most serious challenge for the Cuban physics community is to simultaneously pursue international exchange collaborations while somehow reversing the brain drain of researchers. Highly skilled young researchers educated abroad need attractive reasons to return.

For me, the lack of such opportunities in my native Albania meant that I had little incentive to return after I obtained my PhD in theoretical condensed-matter physics in 1997. Obviously, the trend repeats in many developing countries. Pas-

sion and creativity are indeed driving forces, but they have their limits.

Both academics and government officials must offer young PhD researchers reasons to return and opportunities to grow. Otherwise, as has happened in other developing countries, physics education in Cuba will further decline.

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The interesting article on Cuban physics in the March 2018 issue reminded me of further evidence of Cuban physicists' ingenuity and skill. I discovered those traits while visiting Havana in 1999, when sanctions were still in full force, to attend a conference and to give a lecture at the University of Havana.

The sole nuclear-medicine gamma camera in Havana's principal hospital was a modern device made by GE, acquired at great expense through a European intermediary. The associated computer and its programs became unusable, and no funds were available for a replacement. So Cuban physicists produced a substitute computer and software, which were proudly demonstrated to me. Although the device was clumsy in appearance and the software awkward to use, it performed all required functions to record, display, and manipulate data. I was duly impressed. Not only do Cuban physicists ensure national intellectual self-reliance, they can also serve other scientific disciplines most satisfactorily.

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Correction

September 2018, page 13—The last sentences of the first paragraph of Charles W. McCutchen's letter should read as follows: Loaded cartilage slowly loses pore fluid, but with each step the flexing and unloading of the joint and the bad fit of the cartilages to each other expose the surface of each to free fluid that it can resorb. I called this cycle "weeping lubrication" because cartilage weeps fluid when squeezed. **PT**



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