PROFILE

Reaching for the Sky to Nurture Science

KUALA LUMPUR, MALAYSIA—Mazlan Othman doesn't like it when local newspapers focus on her achievements. But they're hard to ignore. One of only three Ph.D. astrophysicists in the country and a full professor at the National University of Malaysia, she is also the founding director of the National Planetarium and head of the space science division within the Ministry of Science, Technology, and the Environment. She has volunteered, in her spare time, to draft policies to govern the country's fledgling space program. And she's also responsible for overseeing the design and construction of Malaysia's first microsatellite, a 50-kilogram scientific payload to be launched before the end of the year.

So how does this 46-year-old dynamo feel about what she has accomplished since she "discovered $e=mc^2$" at the age of 15 and fell in love with the idea that "the world is so simple and so beautiful"? She pauses to straighten a pile of papers on a messy desk in an office crammed with law books, posters, scientific reports, and other evidence of her activities. Then she avoids the question. "I have a 2 1/2-year-old daughter who wrecks my office," she said during an interview last fall. "But I bring her to work sometimes because I feel guilty about not spending more time with her."

Indeed, even 24 hours is not nearly long enough for Mazlan to do everything that she would like to accomplish. "When I came back [from New Zealand] after getting my Ph.D., I wanted to do astrophysics," she recalls. "But there was no activity here. So I tried to sell the government on the idea of building an observatory." The effort failed, she explains, "because nobody understood what an observatory could do."

That setback led to her first foray into public education. Some 3 years later, she had convinced the Ministry of Education to add a 25-hour block of time on astronomy to the national curriculum. But she didn't stop there. "A planetarium is an obvious way to attract people and increase interest in the subject," she says. A few years later, she was presenting her plans to Prime Minister Mahathir Mohamad, who took a personal interest in the project. "He chose the color and the shape of the dome," she says about the building's distinctive architecture, which allows it to blend in with its neighbors, the National Mosque and the Islamic Center. "He even comes once a month, after hours, to look at the exhibits," she confides.

J. MERVIS

Selling science. Mazlan Othman prods prime minister and the public.

The museum opened in 1994, just in time for Mazlan to begin working on Mahathir's plans to make Malaysia a space-faring nation. The next year, the country signed a deal with a company owned by the University of Surrey in the U.K. to build a microsatellite that would be the first step in training a generation of space scientists and engineers. "It's the first time we will be doing real space science," she says. "And we're already starting to work on the next one, a bigger one with better technology," although the current economic downturn has put a hold on any new projects.

Work on a stand-alone space agency has been delayed for the same reason, she says, and the country's weakened currency has put a big dent in plans to upgrade the planetarium's exhibits and educational programs. And while Mazlan hopes this summer to turn over some responsibility for the planetarium's operations to a newly minted Ph.D., the move may not give her any more free time to spend with her family. That's because officials at the new graduate engineering university would like to hire her as provost (see sidebar on p. 1474). If they do, it will mean one more opportunity for Mazlan to apply her green thumb to nurturing scientific enterprises in Malaysia. –J.D.M.

requests, the Indonesian Academy of Sciences (LIPI), must consult with other, more powerful government bodies before a decision is made. And agency officials admit that the process can be frustrating.

"LIPI is not the only actor. And if one member of the committee doesn't agree, then we cannot give our approval," says Suparka, LIPI vice chair and former head of its geotechnology center in Bandung. "And sometimes the decision is not based on rational grounds. I'm a geologist, and 10 years ago I bought a GPS [global positioning system] receiver and showed it to the military. They said, 'Now you can give the exact location of our office to the enemy, so he can target a missile to hit us.' They didn't understand that it was an important scientific tool."

J. MERVIS

In his element. Stuart Davies explores Sarawak's rich biodiversity.

However, another type of threat to a country's national security can cement a collaboration. Raymundo Punongbayan, director of the Philippine Institute of Volcanology and Seismology, proudly points to a hefty volume of the collected papers that resulted from joint studies of the phenomenal eruption of Mount Pinatubo in 1991, done in cooperation with scientists from the U.S. Geological Survey. The collaboration began when the volcano first started rumbling and is still continuing. "They brought state-of-the-art equipment, but we were working together to set it up and interpret the data," Punongbayan says. Volcanologist Chris Newhall, of the University of Washington, agrees: "It was truly a joint effort."

Some foreign scientists have taken collaboration one step further by joining the local institutions with which they have worked. For such hired scientific guns, the natural resources of the area are a major attraction. "I love to be in the forest," says Stuart Davies, a recent Harvard Ph.D. who took a job at the University of Malaysia at Sarawak after completing his thesis on how plant communities in a nearby national park respond to both human and natural disturbances. Davies, who is advising three local master's students, says "There's really no longer any excuse, if there ever was, for our research not to be as good as anybody else's anywhere in the world."

For Davies and others, the long-term goal is to make the local scientific infrastructure as strong as the one in which they were trained. That would bring the region full circle from the days when two philanthropies had to build a research establishment from the ground up. Or as Salleh Mohd. Nor, executive director of TropBio Research, a Malaysian plant biotechnology company, puts it, "Robbing other countries of the best scientists should not be an American monopoly."

–Jeffrey Mervis and Dennis Normile