

Scientist Spotlight

Condensed matter scientist Arneil Reyes talks about his career as a real-life mythbuster

By Amy Mast

Magnet Lab staff scientists come from all over the world, building lives in Tallahassee and exploring some of the most intriguing questions posed by physics, chemistry and biology. Through the lab's user program, scientists are exposed to an ever-broadening exchange of ideas and to other cultures.

Mag Lab physicist **Arneil Reyes** is a native of the Philippines. His relationship with the Magnet Lab began when he landed a postdoctoral fellowship at the Magnet Lab's Condensed Matter and Thermal Physics group in Los Alamos, New Mexico, where he worked from 1990 to 1994. In 1997, he joined the scientific staff at the Tallahassee branch of the Magnet Lab.

Here, the father of four talks about his work at the Magnet Lab, his interest in science and how he balances a demanding scientific career with his family life.

How would you describe your job to a layperson?

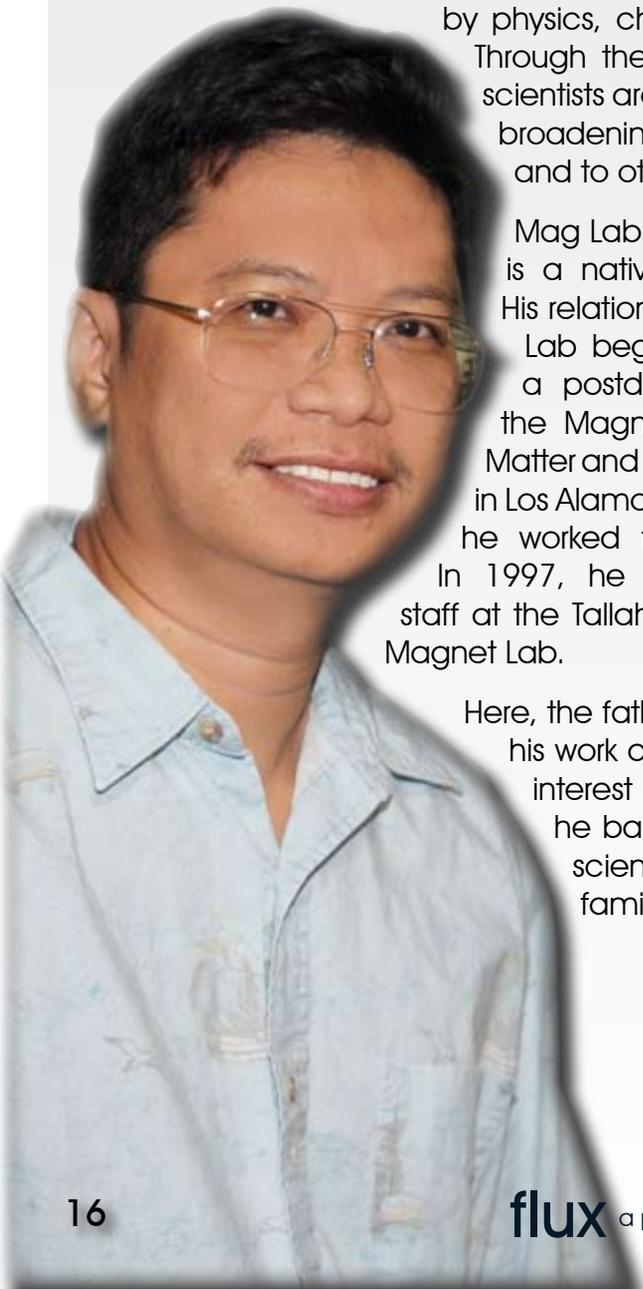
I'm a mythbuster. I get a chance to be creative, to make something original out of the resources at the lab; it allows me to test whether a myth is possible or busted. It's really exciting. I am an experimental physicist, which means I do a lot of testing of scientific theories. Where it departs from the mythbusters comparison is where we have the chance to discover something new.

How did you come to know you wanted to pursue physics as a career?

I was always fascinated by watching my uncles. None of them graduated college but they were so skillful with their hands. I have an uncle who's a painter. I have an uncle who can do a lot of electrical stuff; one who repairs radios. One has a junk shop and he can repair a lot of stuff. I was impressed with the things they could do. Physics was my favorite subject when I was in high school, and that combined with how I grew up and what I saw around me helped me to decide.

How did your career in physics begin?

I started at a junior school and got a scholarship, an opportunity to do physics. After college I was teaching at a high school and a college at the



same time. I would start at 7:30 a.m. and go until 9:30 p.m., from one school to another. In my country teaching is not a financially rewarding career, so I thought this would not be something I want to stay with if I had a family. Coming here to this country is very different and the experience has been very satisfying.

You have a degree in physics education. How is science education in the United States different from the Philippines?

A lot of things have changed since I left. I have spent half of my life here. The U.S. government gives a lot of support toward understanding how science works in this country and it's a very positive thing. There are a lot of resources for researchers and educators. I see my kids growing up here and they knew the Pythagorean theorem in middle school. I didn't learn that until college.

In the Philippines, in order to graduate, I had to go out to a village and teach the teachers how to teach physics. I had to do a lot of improvisation. What we do in the U.S., for example, when we measure a specific heat capacity of matter, we use dewars and a thermometer. There, we were using Styrofoam cups. Without instrumentation, you have to be resourceful.

You frequently mentor students here at the Magnet Lab. Why do you think it's important to keep working with students?

I still love to teach, primarily because I feel more useful to people in the community that way. It's not

just the picture of scientists we have in our mind of someone shut up in the lab all of a sudden having this big discovery... I think a scientist has a responsibility to the society he gets his funding from; he owes it because of his training, and most importantly, the society pays his salary. It's a privilege at this lab to do experiments without having to teach. Still, teaching is one way of sharing your knowledge.

Do you find it difficult to balance the demands of a scientific career with your family?

I have four children. I try to set an example – even if I am always busy I will always have time for my children, that's important. A career in science is very susceptible to getting ... addicted to. Once you get stimulated, you want to continue and finish it. When I have a problem, I want to go until I solve it. You have to kind of discipline yourself.

Somebody told me at the beginning of my career that there is more to life than physics, and I keep on remembering that, because the ultimate happiness is not only your career but also the people you love and understand.

When you retire and you leave the science, what's going to happen is people are not going to ask you, what did you do? They are going to ask you, how are your kids? How did your kids turn out? They are not going to say, did you do experiments with superconductors when you were a scientist? No one is going to ask me that at a party.