Q&A with Dr. Leonard Richardson

Chandler McArthur: What was your worst experience in a math class as a student?
Dr. Leonard Richardson: It was when I took my university’s equivalent of our Advanced Calculus. I liked it very much except for one topic: Fourier series. They were presented entirely in terms of calculations that were peculiar to trigonometric functions, which I didn’t find very interesting. I didn’t realize then that that would wind up being my specialty! The professor had simply taught it from its classical origins and not what it meant on a deeper level. So when I teach it in my book and class, I try to bring out what makes it attractive and explain the fundamental concepts.

CM: How has your perspective changed in your years of doing math?
LR: I really started doing mathematics when I was twelve; I wanted to know how astronomers figured out the distances to stars and the Sun, so I learned algebra, geometry, and trig. I then wanted to know why orbits were ellipses, so I learned calculus. A small confession: at nearly seventy-two, I don’t have quite the energy I did at twelve, but over nearly sixty years math has not lost any excitement.

CM: What piece of advice would you give a budding math major?
LR: Always go after what interests you. Try to prepare for and engage in what you wouldn’t want to retire from, what you wouldn’t need to get paid for — try to find which work isn’t drudgery. I wish everyone in the world could find an interest like that.

Mathematician of the Week: Marie-Sophie Germain

Sophie Germain was one of the most influential figures in mathematics, particularly in her pioneering work with number theory, differential geometry, and algebra.

Her accomplishments include the development of Sophie Germain prime numbers, Sophie Germain factoring, and her most famous work, the Germain Theorem, among others.

The Germain Theorem, which addresses the primed-powered case of Fermat's Last Theorem (FLT), laid the foundation for research in the notorious FLT for hundreds of years.

She accomplished all of her great work while facing immense criticism for being a woman in mathematics. Astoundingly, she did her work independently of any university because of this sexual prejudice.

However, her most notable correspondences include mathematical giants such as Lagrange, Legendre, and Gauss who respected her despite common views of women in society.