

## Pass It On®...

### Matter In Motion.

*How a physics professor is igniting the scientific passions of her female students.*

Dr. Tatiana Erukhimova is a human dynamo. The physics professor at Texas A&M aims to show her students, especially the young women, that there are no limits.

Only 25% of physics undergraduate students are female. Perhaps it is because boys grow up tinkering with machines and making drawings of fast cars and rocket explosions. But girls are just as curious about the way the world works — they just haven't jumped into the culture of chemical reactions, energy and magnetic force with as much enthusiasm. That is, until they see one of Tatiana's YouTube videos showing the science behind real life's magic.

Her videos get millions of views. She is a ball of energy with a pixie haircut, a Russian accent and an effervescent personality that makes physics accessible to the younger audience. Young girls are attracted to Tatiana's demonstrations the way they flock to pop concerts. This is real. This is science they can participate in. This is an open door to endless possibilities.

When young students see physics in action, they become excited about the mathematics that explains it, and math is the recipe for something awe-inspiring.

"These short clips are the spark that inspire," Tatiana says with so much excitement it lights up the room.

Everything she does involves students. She believes the magic in learning is when your peers are part of the demonstration, when you are part of the teaching process.

"She wants everything to be a celebration of science," says one of Tatiana's former students. And indeed, the classroom is a party atmosphere, with students cheering when amazed by Newton's law of motion, demonstrated by a spinning bicycle wheel held perpendicular to the diminutive professor. It's hard to tell who is more delighted, Tatiana or her students. She is a magnet for female

students who are graduating college and working in the sciences in higher numbers than ever before. Dr. Tatiana is indeed a catharsis for change.

Dr. Tatiana's story began in Russia, outside of Moscow. She was raised by parents who were both physicists. To see the petite and ponytailed schoolgirl, you would never have guessed so much personality could explode from such a tiny object. But like an atomic reaction, her life has launched the careers of many.

After the breakup of the Soviet Union, Tatiana moved to Texas with her husband, also a physicist. They both teach at Texas A&M, and when Tatiana isn't in the classroom, she is doing outreach with schoolchildren, amazing them with spinning lights that soon form words, liquid oxygen that shrinks objects and chemical reactions that expand matter to 10 times its size. But most importantly, she is expanding the audience of female physicists.

When asked the most important thing she learned in class, a former student said: "I can be my own advocate now." Unleashing confidence is a science in itself, and when it happens, the possibilities are limitless.

**Potential...** [PassItOn.com](https://www.passiton.com)

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