

# Chemistry Ph.D. student illustrates her thesis in comic book

April 20 2015, by Dana Ferguson

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Late last spring, a doctoral student worked late into the night. As she doodled, her chemistry thesis took on a life of its own, transforming into a comic book.

Veronica Berns, 28, was working on her Ph. D. in chemistry at the University of Wisconsin -Madison. Berns said she long struggled to explain her work to her parents and friends. The self-described comic book fan said she began drafting her thesis on quasicrystals—a subset of crystals that diverge from the usual structural characteristics of crystals. Berns quickly concluded that she would be best able to describe the oddball compounds with illustrations.

"They're not very well-polished illustrations. That's on purpose," Berns said. "I wanted it to be like I'm explaining on the back of an envelope."

And on many occasions, it was on the back of an envelope or on a napkin that she doodled sketches of the chemical bonds to better show her parents what she was working on in the lab. Jody Berns, Veronica's mother, said their family has a history of doodling and has shared comics for years.

Berns surprised her family with her comic book "Atomic Size Matters" at her graduation last year. The book depicts cartoons of Berns wearing various costumes and uses humor as well as simple comparisons to describe elaborate chemistry.

"We're just really proud that she can take something so complex and put it into a fun visual explanation that everyone can enjoy," Jody Berns said.

Veronica Berns' professor Danny Fredrickson said Berns was the first of his students to construct her thesis in an artistic way. He said often it is difficult for scientists to explain what they do with proper context.

"If it's worth doing, we should be able to explain it," Fredrickson said.

And he said Berns managed to accomplish that.

Berns said she hopes other scientists will find ways to illustrate what they're doing in the lab. She now lives in Chicago and works as a chemist. Berns also writes a blog in which she uses comics to explain the work of Nobel Prize winning scientists.

Berns started a Kickstarter fundraising campaign to finance printing a small batch of the books. She said she wanted to raise \$5,965 to cover the costs of professional printing. The website says she has raised more than \$14,000.

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