

Clemson prof fights high textbook costs



MYKAL MCELDOWNEY/STAFF

Furman chemistry professors Brian Goess and Greg Springsteen have come up with creative solutions to beat high textbook costs. For one class, they have students write their own textbooks.

NATHANIEL CARY
STAFF WRITER
NCARY@GREENVILLENEWS.COM

Clemson professor Leo Rebolz disliked every textbook available for an advanced mathematics course he taught for mechanical engineers.

Mostly, he hated the high costs publishers charged for the books.

"I eventually said we're not going to use a book anymore because I don't like any of them and I'm tired of you guys paying, I think it was, \$120 for the book we used for a while," Rebolz said.

So he wrote his own, culled from lecture notes and co-authored by Timo Heister, a mathematical science assistant professor.

The book was just published. He's selling it for \$19.90 and expects to make about 20 cents per copy.

And he did it on purpose, not expecting to make any money off the hundreds of hours of work writing, revising and editing the book.

He even got into a bidding war between two publishers to see which one could sell it for less than \$20.

Rebolz has joined a growing list of college professors who have become fed up with the skyrocketing costs of col-



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Leo Rebolz, Clemson mathematics professor, co-authored a textbook that he's selling for less than \$20.

lege textbooks.

The College Board estimated students spent \$1,225 on books and supplies, including computer software, in the 2014-15 school year.

Textbook costs rose 82 percent in a decade, from 2002 through 2012, according to a study by the Government Ac-

countability Office.

But recently, students have begun to spend less on course materials as they turn to other methods of accessing the information they need to learn class material.

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Textbooks

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Students are spending less on new textbooks, \$245 in 2013-14, down 31 percent over four years, according to market researcher Student Monitor.

Annual spending on required course materials has fallen from \$701 in 2007 to \$638 in 2014, according to the National Association of College Stores.

That's because more students are renting or borrowing books or downloading cheaper digital versions, NACS found.

One Clemson professor chose to self-publish a course textbook through Lulu, an online self-publishing company. Students can print out and bind the book themselves.

Another professor chose to go the non-published route and gave students a list of journals to access for free in the library at Clemson or online.

Publishers recognized student concerns as costs began to soar and launched CourseSmart, a digital rental service that carries 90 percent of published textbooks, said Marisa Bluestone, communications director at the Association of American Publishers.

They also offer digital versions of textbooks at a discount, black-and-white versions or digital copies of individual chapters, Bluestone said.

Publishers are turning away from simply turning a textbook into a .pdf to more interactive digital versions of course materials with quizzes, tests and learning games included, she said.

But the price of textbooks is driven by the cost of putting it together, she said.

"The cost of creating high-quality learning materials ... is significant," she said. "There's the cost of professional research, writing, editing, vetting, graphics and illustrations, design, production and distribution."

At Furman University, two professors' shared distaste for the high cost of traditional textbooks has led them down a unique path.

Chemistry professors Greg Springsteen and Brian Goess have eliminated the need for students to purchase any textbooks for a series of three organic chemistry courses.

For an accelerated introductory

course, they use an out-of-print textbook that the professors buy themselves for a few bucks apiece online and lend to students taking the course. For another course, Goess uses a flipped classroom, posting lectures online and using the class time to dive deep into problem solving.

They re-imagined a third course to emphasize biological chemistry and a decade ago began a process to collaborate with students to create their own textbook through an online wiki site.

The pair of professors penned a short introduction to each lecture, then allowed students to write the course materials themselves.

They want to combat the soaring costs of textbooks, but also believe the majority of textbooks are written by authors "far removed from learning the material themselves," Goess said.

"Textbooks tend to give students the idea that scientific knowledge is acquired in an orderly fashion and is then passed down from on-high from people who know what's going on to people who don't," Goess said.

That's not how scientific knowledge is acquired though, Goess said. It is instead collaboratively created by teams of researchers, then reviewed, tested, analyzed and revised, he said.

That's how it works in his classes. The first class wrote the material and each subsequent class has added to it, revised the material and corrected errors.

"They realize they are not now responsible just for their own learning, they are in some small sense responsible for the learning of future students in the course, so they are very careful with how they manage their contribution on the wiki," he said.

Goess has lectured on his approach to coursework collaboration and said he hasn't run into any other professor who has attempted a similar concept.

Goess estimates students save \$500-\$600 in material costs over the three courses.

But, he said, many professors will continue to use textbooks because they're easier. You can either put in a lot of work to create your own low-cost material or a little work to use a higher cost textbook, he said.

"But this can be done by anybody," Goess said. "If you find this intriguing, it doesn't have to cost you a thing."