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From the issue dated July 28, 2006

The Problem With 'NUMB3RS'

By XIAO-BO YUAN

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Sarah J. Greenwald, an associate professor of mathematics at Appalachian State University, is no stranger to popular culture. She runs Web sites that track math references in *The Simpsons* and *Futurama*, two smart cartoons that have alluded to subjects like "hyperbolic topology," and she even knows that five writers for *The Simpsons* have math-related degrees from Harvard.

But there's one television bandwagon that Ms. Greenwald has hesitated to jump on: the CBS show *NUMB3RS*, a prime-time drama starring a crime-solving math genius. Like other crime shows, *NUMB3RS* — which averaged 11.7 million viewers in the 2005-6 season — often opens with a murder scene or explosion. The difference is that its hero, a tousled academic named Charlie Eppes, played by David Krumholtz, uses equations — not guns or interrogations — to help his FBI-agent brother solve crimes.

Many mathematicians have embraced the show, whose math content is incorporated in an educational program, "We All Use Math Every Day," developed by Texas Instruments Inc. and the National Council of Teachers of Mathematics for use by middle- and high-school students.

But in an essay to be published in the August issue of *Notices of the American Mathematics Society*, Ms. Greenwald says the show

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may not always be appropriate for the classroom.

"The violence, sexual innuendos, and representations of mathematicians on the show are complex for use with students," she writes.

For one thing, Ms. Greenwald says, enough with the "genius" clichés. (Like other fictional brainiacs, Charlie is a bit of an eccentric.) Using the show in the classroom, she says, "reinforces the stereotype that you have to be a genius to do mathematics."

She also thinks that the educational program should be tested in more classrooms before it becomes widely used. "The show's responsibility is not to educate but to entertain and make money," she says. "But if educators use the show as more than entertainment, how do we ensure good effects?"

The critique has already inspired responses from Gary A. Lorden, head of the math department at the California Institute of Technology and chief consultant for *NUMB3RS*, and from Johnny A. Lott, a former president of the math teachers' council. Both of them have written letters to *Notices* countering Ms. Greenwald's criticisms.

The educational program may not fit into any current school curricula, Mr. Lorden says, but it teaches students to think like real mathematicians. "Lots of kids think math is solved in books, or that everything is known by the teacher," he says, "yet in the real world there are plenty of mistakes — in textbooks and in journals."

In the end, says Mr. Lott, who is director of the Center for Teaching Excellence at the University of Montana, mathematicians should appreciate *NUMB3RS* for its answer to the dreaded question posed by nearly every math student: "But when am I ever going to *use* this?"

"The show gives kids a chance to see math in real use," he says. Even if that use is foiling Russian mobsters.

Send ideas to short.subjects@chronicle.com

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