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## In D.C., Statisticians Flex Their Strength in Numbers

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Real superheroes, most people know, skip the capes and tights. Too bulky, too flashy, spandex doesn't breathe well, etc.

Which is why they can be easy to miss when they're in town, even when there are 6,000 of them, super-number crunchers, data heroes, with powers of finding meaning in digits far beyond those of mortal men and women.

The 6,000 is just rough data, not accounting for last-minute arrivals. Their median annual income is \$65,720. Their employment is expected to grow 9 percent by 2016.

That's not even getting into their standard deviations.

Ladies and gentlemen: statisticians. At the Washington Convention Center this week for the Joint Statistical Meetings, the largest international gathering of data junkies on the continent.

The geek-chic beacon of hope for a nation of thoroughly confused individuals.

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Signs you are at a statistics conference:

- 1) In the gift shop, a woman giggle-snorts over a T-shirt reading "Friends Don't Let Friends Drink and Derive."
- 2) At a job-fair booth, someone has categorized the candy by shape, color and chocolate/non-chocolate.
- 3) In a dimly lit session -- one of several hundred this week -- a speaker puts up a slide that makes the packed audience groan. It's a public service announcement for colon cancer awareness: "The Early Warning Signs of Cancer -- You feel great. You have a healthy appetite. You're over 50." Some 50,000 Americans will die from colon cancer, the PSA says.

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But die *when*? Next year? In their lifetimes? Who are these Americans? Old men? Infants? And what does 50,000 mean, anyway? Sounds like a lot. No. It's less than one-twentieth of 1 percent of the U.S. population.

"If there was a hall of fame for misleading statistics," presenter Steven Woloshin says dryly, "survival statistics would have a lifetime membership."

That's why he's leading this workshop on statistical literacy. Because the general population *does not get it*. Worse, they don't even get what they don't get. They use "random" when they mean "uniform." They confuse "cause" with "correlation." They do not question study designs, like the recent survey claiming Republicans were happier with their sex lives than Democrats, but failing to take into account that more Republicans are *men*, who always think they're studs. They can't tell the difference between relative and absolute risk. *They can't tell the difference between the mean and the median*. "That eats at me constantly," says Jim Cochran, a statistics professor from Louisiana.

Go ahead. Laugh. Roll your eyes at the number crunchers, and the way they flock excitedly to sessions with names such as "Alternatives to Proportional Hazards Survival Methods." But this stuff matters. Statistics on the recession -- you think those create themselves? What about tracking the spread of infectious diseases? Don't even get statisticians started on the 2010 Census, which for the first time will include an option for same-sex marriages. Which would be fine, except that some gay couples have actually self-identified as married on the Census for decades, which means that some valiant guy on a computer needs to figure out how to interpret the numbers.

Why do they do it?

"I think it must have been something that happened to us in childhood," Larry Featherston says. He's a member of the Committee on Statistics and Disability, which aims to improve disability research.

"We might like to hang around with numbers," says David Keer. "But the real question is, what can we use them for? In this country, if you're not counted you don't count."

(Prediction: Statistics programs will become the new hip destination, like 2003's library school.)

It's so true, even while sounding so . . . boring. Who wants to save the world using the Bayesian method?

The statisticians get that, and they're working on their image.

Enter: the statistician activist.

Enter: Statistics Without Borders.

The year-old group, led by Cochran, meets on a recent evening to discuss current projects. It's advising on a survey about bottled water in Mexico. It's partnering with Engineers Without Borders (geek super-group!) to build databases.

To be most effective, the group wants to focus on statistics related to public health. But broadly defined.

"How broad?" someone asks.

"Broad," Cochran replies.

"Homicide?"

"Hmm."

"It's not healthy to be shot."

In the middle of this discussion, Sally Morton walks in. Morton is the president of the American Statistical Association. The borderless statisticians reassure her that, though they want to push boundaries, they won't get the ASA into any trouble.

"Get us in a little bit of trouble," she encourages. "That's okay."

The room erupts into cheers.

The statisticians are ready to kick butt and take numbers.

"Well," Cochran says. "I think that's the highlight of the meeting!"

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