



## WHY SCIENCE 4 GIRLS NOW?

*"We especially need imagination in Science.  
It is not all mathematics, nor all logic,  
but is somewhat beauty and poetry."*

*María Mitchell*

*First Recognized American Woman Astronomer*

*1818-1889*

The ways science has been taught relies heavily on the male-influenced, non-emotive approach. Rational and emotional thinking are not mutually exclusive, as many Women Scientists continue to prove. Jane Goodall's work is revolutionary because she "didn't subscribe to the scientific thinking of the time."<sup>1</sup> Instead, she incorporated EMOTION into her work and the result changed the way the world views primates.

SCIENCE 4 GIRLS! imaginative, emotional scientific inquiry will connect with those<sup>2</sup> who traditional science education has not touched<sup>3</sup>. Violet Ray and her lab creations teach science basics through their adventures, acting out how scientific inquiry works. Violet Ray often discusses her work with real women scientists, which leads to credible scientific hilarity when the scientists interact with the characters. In our first episode, Ruzena Bajcsy<sup>4</sup>, an expert on robotics, artificial intelligence and machine perception, advises Violet Ray on how to solve the cranky behavior of her robot, Cat Ion.

SCIENCE 4 GIRLS! aims to tip the scales of the prejudice against female contribution to Science. One recent study proves such bias continues to exist. A neuroscientist at the University of Wisconsin sent more than 230 curricula vitae to randomly selected professors who were asked to evaluate the candidate as a job applicant. "The CVs were identical in every respect but one: Half were sent by 'Karen Miller' and half by 'Brian Miller.' Fewer than half the professors would hire Karen; Brian was endorsed by two-thirds."<sup>5</sup>

Although seventeen women were elected to the prestigious National Academy of Sciences in 2003, the member population remains 92.3 percent male. In order to bolster membership in our nation's Academy of Sciences, astronomer Vera Rubin, (a member since 1981 for her work that led to the discovery of dark matter) "calculates that 24 women would need to be in every class of those elected for women to make up one-quarter of the academy's membership by the year 2030."<sup>6</sup>

Instead of combating this inequality, SCIENCE 4 GIRLS! becomes the forum for women scientists' imaginative work. Like how Former NSF Director Rita Colwell combined her degrees of Bacteriology, Genetics and Oceanography to imagine a simple filtration method to purify water. Using the material women make saris with, her team removed 99% of the cholera bacteria--and reduced cholera by 50%. Says Colwell: "To put all of this together, which is fundamental research, and to have a practical

outcome, is the greatest reward to any scientist."<sup>7</sup>

It's time for the world to see women as integral in science. It's time for the female eye to influence scientific vision. It's time for SCIENCE 4 GIRLS!

### **Footnotes**

<sup>1</sup> Talking with Adventurers, Pat & Linda Cummings, 1998, National Geographic Society, Washington, D.C., p. 50

<sup>2</sup> Beginning at age 9, there are gender differences favoring males in both science proficiency and science achievement test scores." (1993, National Science Board)

<sup>3</sup> "In many areas of science at the secondary and post secondary level, teachers are overwhelmingly male. Teachers at all levels of education and of both sexes discriminate in the classroom and have lower expectations in science and math for females than for males." (AAUW, 1992; National Science Foundation)

<sup>4</sup> Who is a member of both the National Academy of Engineering and the Institute of Medicine, a distinction few people can match.

<sup>5</sup> "Why Science Must Adapt to Women; An elite survivor assesses the hidden costs of exclusion." By Peggy Orenstein, Discover, November 2002, p. 60

<sup>6</sup> "2003 Year in Science", by Kathy A. Svitil, Discover, January 2004, p. 55

<sup>7</sup> [http://www.the-scientist.com/yr2003/mar/upfront4\\_030310.html](http://www.the-scientist.com/yr2003/mar/upfront4_030310.html)