Truth Is Beauty, Charm, Strange ...

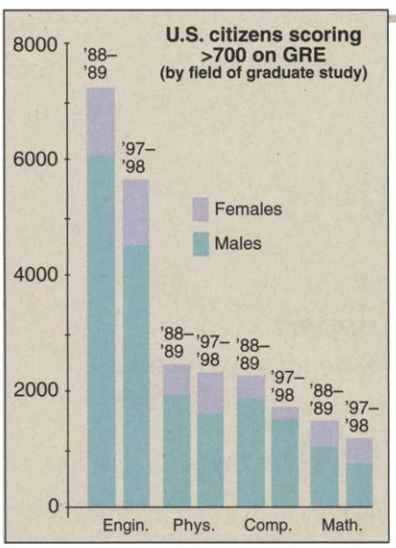
Most poets don't need to worry about radiation hazards, but Bridget Meeds has to wear a dosimeter when she works. Meeds is seeking inspiration these days not from daffodils but from quarks, in her role as poet-in-residence at Cornell University's Wilson Lab.

Meeds, a Cornell employee with a master's degree in poetry who teaches in Ireland in the summer, has a $2500 grant from the New York State Council on the Arts to spend a month at the lab fusing art and science. She has already found mythical significance at the Cornell Electron Storage Ring, a buried machine that smashes electrons and positrons together at great speeds. Her poem likens her experience to the descent of the goddess Persephone to the underworld:

... A sort of Persephone,
I have bitten a fruit
and swallowed twenty seeds.
Indentured, I descend
into this building
built deep into the earth,
seeking the unseen.

Cassel shows Meeds the synchrotron's vacuum status panel.

Associate lab director David Cassel says that the project has evoked a "very positive response" from lab workers, who will be treated to a "Poetry for Physicists" workshop at the end of the month. Perhaps the physicists will be inspired to take pen in hand? "I'm hopeful, but cautiously hopeful," says Cassel. As for Meeds, she says she's learning a lot from her gig. "It's beginning to put physics on a rational basis, and it doesn't seem like [a religion] anymore."



Best and Brightest Avoiding Science

Scientists who fret that the best and brightest students are avoiding science and engineering programs at U.S. graduate schools aren't just worrywarts, according to a new report from the Commission on Professionals in Science and Technology (CPST). Except in biology, the trend has been "sharply negative" over the last decade, as judged by Graduate Record Exams (GRE) scores, the commission found. U.S. GRE takers intending to pursue science and engineering have declined by 16% over the past decade. Among GRE takers scoring 700 or above on the quantitative test, whites—especially males—are continuing to pass up science. High-scoring minority women are entering science and engineering in greater numbers, but they can't compensate for the drop. Noncitizens can't either, says CPST—the number of high scorers going into these fields is declining too, except in computer science and electrical engineering.

* "Best and Brightest Part II: Are Science and Engineering Graduate Programs Still Attracting the Best Students?" the second of two reports sponsored by the Alfred P. Sloan Foundation, is at http://208.249.124.108/web/site/bbcharts/bbcharts/bb2.htm

Inspiring Tale

Jerri Nielsen, the physician who last year discovered she had breast cancer while overwintering at the South Pole with a team from the National Science Foundation, is preparing to break a long silence about her chilling experience.

After Nielsen found a lump in her breast in mid-June, the Air Force made a dramatic emergency mission to drop diagnostic supplies so she could treat herself while waiting almost 4 months for the Antarctic spring to allow her to be evacuated. The story played big in the media, including a cover story in *People* magazine, despite Nielsen's wish to remain anonymous. Now the doctor, who has kept mum about her condition, plans to tell all—in a book, as yet untitled, to appear next fall.

It may not rank with the classic Antarctic adventures, but Talk Miramax Books president Jonathan Burnham promises "an enthralling and deeply inspiring narrative of survival." Enthralling to aspiring authors, at any rate—according to *Variety* magazine, the company paid in the high six figures for book, magazine, and movie rights.

Cosmic Powerhouses

Never say that cosmologists are impractical. Two have invented a scheme for making the most efficient engine yet envisioned—a black hole engine.

Black holes, which are collapsed stars, qualify as engines because they convert matter into energy: Matter speeds up and radiates high-energy light as gravity causes it to plunge from a spinning disk into the hole. In 1974, physicist Kip Thorne of the California Institute of Technology showed that about 31% of the infalling mass is converted to usable energy. The rest is lost, as it goes into increasing the size of the hole.

For years, physicists were unable to figure how black holes might actually burn energy more efficiently than Thorne's calculations suggested. Now Princeton physicist Bohdan Paczyński and student Li-Xin Li have come up with a better model: a black hole that is, in effect, a two-cycle engine.

First, says Paczyński, you let matter fall into the black hole as Thorne did in his calculations. But then, as the infalling matter causes the black hole to spin faster, you stop feeding in the matter. The hole's magnetic field then increases the speed of the whirling disk, extracting another dollop of energy. "By magnetic coupling [of the hole] to the nearby disk, energy extraction from the spinning black hole can be made even more efficient," says Paczyński, who notes that the efficiency is now a whopping 43%.

But don't expect to get a car running more kilometers per matter anytime soon. "There are no specific applications," says Paczyński. "It's just a mental exercise."

CREDITS: (TOP) CHARLES HARRINGTON/CORNELL UNIVERSITY PHOTOGRAPHY