

## LETTERS

edited by Jennifer Sills

### Hope for Graduate School Childbirth Policies

A MAJORITY OF PROSPECTIVE AND CURRENT FEMALE GRADUATE STUDENTS BELIEVE THAT academia is incompatible with a fulfilling family life (1–4). These concerns are exacerbated when institutional support regarding childbirth is unstated, incoherent across disciplines, or informal in nature.

A well-defined university-wide childbirth accommodation policy aids in the recruitment and retention of the best and brightest graduate students (5, 6), yet many institutions still do not provide minimum guaranteed accommodation for pregnancy and childbirth during graduate school. In many U.S. universities, the traditional accommodation is a formal leave of absence,

in which the student effectively withdraws from graduate school and simultaneously loses her source of income and health insurance. Students who take a leave of absence for childbirth are stigmatized (5); they are viewed as abandoning their responsibilities rather than exercising their minimum rights. These students also face insecurity about academic standing and anxiety about their relationships with and obligations to advisers. Ultimately, some of these young scholars leave the field (7, 8).

A policy that provides paid leave and an extension of academic requirements (9) reassures students that they are supported and valued and also provides unambiguous guidelines to faculty, advisers, and administrators. Such policies are especially necessary to help maintain a strong

presence of women in the science and engineering disciplines.

Institutions are often supportive of such policies. The problem lies in initiative. Recently, at the University of California Santa Barbara, we—a group of graduate students—established an institutional voice through a committee sponsored by the Graduate Student Association. We provided quantitative evidence supporting the need for policy change (1–11), solicited letters of support from previously affected students and faculty, and collaborated with administrators. Our initiative resulted in a university-wide policy enhancement in less than a year. We found that the process of policy change catalyzed institutional discussions regarding the value of diversity in the academic pipeline. We hope our success will inspire action in those who see disparities at their own institutions.

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7. A. E. Preston, *Leaving Science: Occupational Exit from Scientific Careers* (Russell Sage Foundation, New York, 2004).
8. S. V. Rosser, M. Z. Taylor, "Why women leave science," *Technology Review* (2008); [www.technologyreview.com/article/21859](http://www.technologyreview.com/article/21859).
9. The University of California Berkeley, the University of California San Francisco, Stanford, Princeton, the University of North Carolina at Chapel Hill, Yale, the Massachusetts Institute of Technology, and Cornell, among others, have policies that provide a minimum of 6 weeks paid leave and a substantial extension of academic requirements upon childbirth and/or extraordinary parental responsibilities.
10. M. A. Mason, "Do babies matter in science?" *Chronicle of Higher Education* (2008); <http://chronicle.com/article/Do-Babies-Matter-in-Science-/45796>.
11. M. Goulden, K. Frasch, M. A. Mason, "Staying competitive: Patching America's leaky pipeline in the sciences" (Berkeley Center on Health, Economic, and Family Security Report, University of California, Berkeley, CA, 2009); [www.law.berkeley.edu/files/Women\\_Sciences\\_Final\\_Copy.pdf](http://www.law.berkeley.edu/files/Women_Sciences_Final_Copy.pdf).
12. We gratefully acknowledge the support of our advisers, the Academic Senate faculty members of the Graduate Council at the University of California Santa Barbara, and the members of the Childbirth Accommodation Committee.



7. A. E. Preston, *Leaving Science: Occupational Exit from Scientific Careers* (Russell Sage Foundation, New York, 2004).
8. S. V. Rosser, M. Z. Taylor, "Why women leave science," *Technology Review* (2008); [www.technologyreview.com/article/21859](http://www.technologyreview.com/article/21859).
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10. M. A. Mason, "Do babies matter in science?" *Chronicle of Higher Education* (2008); <http://chronicle.com/article/Do-Babies-Matter-in-Science-/45796>.
11. M. Goulden, K. Frasch, M. A. Mason, "Staying competitive: Patching America's leaky pipeline in the sciences" (Berkeley Center on Health, Economic, and Family Security Report, University of California, Berkeley, CA, 2009); [www.law.berkeley.edu/files/Women\\_Sciences\\_Final\\_Copy.pdf](http://www.law.berkeley.edu/files/Women_Sciences_Final_Copy.pdf).
12. We gratefully acknowledge the support of our advisers, the Academic Senate faculty members of the Graduate Council at the University of California Santa Barbara, and the members of the Childbirth Accommodation Committee.

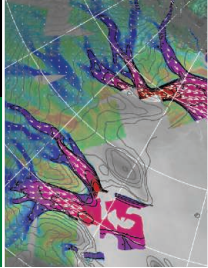
### Low Sperm Counts May Be Preventable

IN THE NEWS & ANALYSIS ARTICLE "DANISH sperm counts spark data dispute" (G. Vogel, 17 June, p. 1369), the Danish National Board of Health implies that it is normal for many young Danes to have a sperm count low enough to impair fertility. I disagree.

Two recent U.S. studies (1, 2) provide the first evidence that low sperm counts in normal unselected young men, as well as in infertility patients, are linked to mild androgen deficiency during fetal life. This deficiency causes other common male reproductive disorders as well (3). The results are consistent with previous animal experimental studies (4) as well as the testicular dysgenesis syndrome hypothesis (which stated that male reproductive disorders stemmed from a common cause, likely environmental factors during fetal life) proposed a decade ago by Niels Skakkebaek (5).

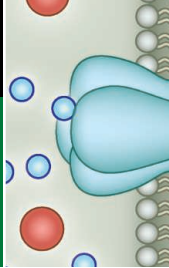
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A view of  
the Antarctic

1386



Converting stretch  
to signal in the heart

1388

Just because low sperm count has become commonplace—affecting one in six young men across Northern Europe (6)—is no reason to consider it acceptable. Indeed, these new findings indicate that a low sperm count is as abnormal as other testicular dysgenesis syndrome disorders such as cryptorchidism, hypospadias, and testicular germ cell cancer. Moreover, historical evidence shows that sperm counts used to be considerably higher (6).

It is time to stop accepting low sperm count as normal and confront the possibility that the fertility of present and future generations is at risk. We should determine whether recent changes in diet, lifestyle, and/or exposures in pregnancy are affecting the male fetus in a subtle, adverse way, thus impairing lifelong sperm production. If so, such changes are preventable. **RICHARD M. SHARPE**

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## Moving USAID Forward

R. SHAH'S POWERFUL EDITORIAL "BREAK-throughs for development" (22 July, p. 385) underscores the proud history of America's scientific and engineering contributions to development around the world. Many were privately funded and led; many were stimulated by the United States Agency for International Development (USAID). Yet USAID has drifted from its past strengths. Shah bluntly states that "budget cuts and shifting mandates pulled the agency's focus away from emphasizing science and technol-

ogy." He implicitly refers to blizzards of congressional earmarks and to USAID's deliberate and consistent de-emphasis on science over the past 30 years.

Observers have repeatedly criticized these trends and recommended exactly what Shah now sees as a priority. For example, 20 years ago, in 1992, the Carnegie Commission on Science, Technology, and Government argued for a new strategy for USAID and advocated "critical roles for science and technology" (1). Just 5 years ago, in 2007, the Bipartisan Congressional-Presidential HELP Commission called for a new unit in USAID, similar to the creative projects of the Defense Department's Advanced Research Projects Agency, that would invest \$50 million per year of "patient capital"—i.e., federal government funding for innovative long-range research (dubbed "patient" because it may not yield immediate results) (2). The reports sat on shelves. No administration took the initiative. Little changed, and the defects Shah cites became worse.

One objection to vigorous U.S. science and technology cooperation is that developing countries such as China and India become competitors as they flourish with economic growth powered by science. However, such countries also become larger markets for U.S. exports and more capable partners in global goods, such as protecting public health.

As the Congress weighs paths to prudent austerity in the overall federal budget, the scientific, medical, and engineering foundations of programs in foreign assistance are as important as such foundations are in defense. Let us move USAID out of its late-20th-century ruts and into the 21st century's frontiers. Shah deserves our help.

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## CORRECTIONS AND CLARIFICATIONS

**Cover Caption:** (17 June, p. 1349). The caption identified the location of the image as Rikuzentakada, Miyagi Prefecture. Rikuzentakada is in the Iwate Prefecture.

**Perspectives:** "Innate immunity in plants goes to the PUB" by L. A. J. O'Neill (17 June, p. 1386). In the figure and legend, the RD kinases BAK1 and BIK1 in *Arabidopsis*, and the equivalent kinases IRAK-1 and IRAK-2 in humans, were mislabeled as non-RD kinases. Pattern recognition receptors in plants such as FLS-2 associate with or carry kinases of the non-RD subclass to transduce early signaling events in innate immunity. They typically partner with RD kinases. How the RD kinases interact with non-RD kinases remains unknown.

**Research Articles:** "EPOXI at Comet Hartley 2" by M. F. A'Hearn *et al.* (17 June, p. 1396). An error in the author list and affiliations was introduced in proofs. The author list should have included two authors named Michael S. Kelley. One is affiliated with the Department of Astronomy, University of Maryland, College Park, MD 20742–2421, USA. The other is affiliated with the Planetary Science Division, NASA Headquarters, Mail Suite 3V71, 300 E Street SW, Washington, DC 20546, USA. The error has been corrected in the online PDF and HTML versions.

**Research Article:** "Staphylococcus aureus nonribosomal peptide secondary metabolites regulate virulence" by M. A. Wyatt *et al.* (16 July 2010, p. 294). During the construction of the *ausA* (responsible for making dipeptide secondary metabolites) deletion strain, an inadvertent secondary site mutation in the *sae* two-component regulator gene *saeS* occurred, as determined by subsequent genome sequencing. This incorrectly led to an association of the described aureusimine cyclic dipeptides with gene transcription affected by the *sae* secondary site mutation. Additional information is available at [www.sciencemag.org/cgi/content/full/science.1188888/DC2](http://www.sciencemag.org/cgi/content/full/science.1188888/DC2).

**Reports:** "Skyrmion lattice in a chiral magnet" by S. Mühlbauer *et al.* (13 February 2009, p. 915) and "Spin transfer torques in MnSi at ultralow current densities" by F. Jonietz *et al.* (17 December 2010, p. 1648). The authors clarify that the temperatures reported have an absolute uncertainty of less than 5% because the temperature values were determined with batch-calibrated Pt1000 thermometers (accuracy  $\pm 1$  K). In those experiments where the thermometer was not directly attached to the sample, a small additional temperature gradient between sample and thermometer was present. This explains small discrepancies in the location of the reported data points compared with the phase boundaries reported elsewhere. All relative temperatures are perfectly consistent with other papers, and therefore neither the identification of the A phase nor any other conclusions of the publications are affected.

## Letters to the Editor

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