

## American Association for the Advancement of Science

*Science* serves its readers as a forum for the presentation and discussion of important issues related to the advancement of science, including the presentation of minority or conflicting points of view, rather than by publishing only material on which a consensus has been reached. Accordingly, all articles published in *Science*—including editorials, news and comment, and book reviews—are signed and reflect the individual views of the authors and not official points of view adopted by the AAAS or the institutions with which the authors are affiliated.

**Publisher:** Richard S. Nicholson  
**Editor:** Daniel E. Koshland, Jr.  
**Deputy Editor:** Ellis Rubinstein  
**Managing Editor:** Monica M. Bradford  
**International Editor:** Alun Anderson  
**Deputy Editors:** Philip H. Abelson (*Engineering and Applied Sciences*); John I. Brauman (*Physical Sciences*); Thomas R. Cech (*Biological Sciences*)

## EDITORIAL STAFF

**Assistant Managing Editor:** Dawn Bennett  
**Senior Editors:** Eleanore Butz, Martha Coleman, Barbara Jasny, Katrina L. Kelner, Phillip D. Szuroimi, David F. Voss  
**Associate Editors:** R. Brooks Hanson, Pamela J. Hines, Kelly LaMarco, Linda J. Miller, L. Bryan Ray  
**Letters:** Christine Gilbert, *editor*; Steven S. Lapham  
**Book Reviews:** Katherine Livingston, *editor*; Teresa Fryberger  
**Contributing Editor:** Lawrence I. Grossman  
**Chief Production Editor:** Ellen E. Murphy  
**Editing Department:** Lois Schmitt, *head*; Denise Gipson, Julianne Hunt, Steven Powell  
**Copy Desk:** MaryBeth Branigan, Joi S. Granger, Margaret E. Gray, Beverly Shields  
**Production Director:** James Landry  
**Production Manager:** Wendy K. Shank  
**Assistant Production Manager:** Catherine S. Siskos  
**Production Associate:** Scherraine Mack  
**Art Director:** Amy Henry  
**Assistant Art Director:** Julie Cherry  
**Graphics and Production:** Holly Bishop, Diana DeFrancesco, Linda C. Owens  
**Systems Analyst:** William Carter

## NEWS STAFF

**Managing News Editor:** Colin Norman  
**Deputy News Editors:** Tim Appenzeller, John M. Benditt, Jean Marx  
**News and Comment/Research News:** Ivan Amato, Faye Flam, Troy Gately (copy), Ann Gibbons, David P. Hamilton, Constance Holden, Richard A. Kerr, Eliot Marshall, Joseph Palca, Leslie Roberts, Richard Stone  
**Bureaus:** Marcia Barinaga (West Coast), Michelle Hoffman (Northeast), Anne Simon Moffat (Midwest)  
**Contributing Correspondents:** Joseph Alper, Jeremy Cherfas, Barry A. Cipra, Robert Crease, Elizabeth Culotta, M. Mitchell Waldrop, Karen Wright

## BUSINESS STAFF

**Marketing Director:** Beth Rosner  
**Circulation Director:** Michael Spinella  
**Fulfillment Manager:** Marlene Zendell  
**Financial Analyst:** Deborah Rivera-Wienhold  
**Classified Advertising Supervisor:** Amie Charlene King

## ADVERTISING REPRESENTATIVES

**Director:** Earl J. Scherago  
**Traffic Manager:** Donna Rivera  
**Traffic Manager (Recruitment):** Gwen Canter  
**Advertising Sales Manager:** Richard L. Charles  
**Marketing Manager:** Herbert L. Burkland  
**Employment Sales Manager:** Edward C. Keller  
**Sales:** New York, NY 10036: J. Kevin Henebry, 1515 Broadway (212-730-1050); Scotch Plains, NJ 07076: C. Richard Callis, 12 Unami Lane (201-889-4873); Hoffman Estates, IL 60195: Jack Ryan, 525 W. Higgins Rd. (708-885-8675); San Jose, CA 95112: Bob Brindley, 310 S. 16th St. (408-998-4690); Dorset, VT 05251: Fred W. Dieffenbach, Kent Hill Rd. (802-867-5581); Damascus, MD 20872: Rick Sommer, 11318 Kings Valley Dr. (301-972-9270); U.K., Europe: Nick Jones, +44(0)64752918; Telex 42513; FAX (0647) 52053.

**Information for contributors** appears on pages 35–37 of the 4 January 1991 issue. Editorial correspondence, including requests for permission to reprint and reprint orders, should be sent to 1333 H Street, NW, Washington, DC 20005. Telephone: 202-326-6500. **Advertising correspondence** should be sent to Tenth Floor, 1515 Broadway, New York, NY 10036. Telephone 212-730-1050 or WU Telex 968082 SCHERAGO, or FAX 212-382-3725. **Subscription/Member Benefits Questions:** 202-326-6417. **Science:** 202-326-6500. **Other AAAS Programs:** 202-326-6400.

## Heroines and Role Models

The label “role model” is well intended, and the concept is useful. Yet, the term is bothersome. Why?

Young women in the 1930s and '40s, when I grew up, had real heroines. Isadora Duncan and Martha Graham were among them. Their extraordinary talents made dance into an original art form. They initiated schools, had followers, were leaders; their unconventional personal lives were romantic. Heroines, yes, but role models? Most American women of my generation could not have imagined an unconventional personal life, and most lacked the talents of Duncan and Graham, not to mention their courage.

Marie Curie was another heroine of ours. The biography of Curie, written by her daughter Eve, inspired scientifically inclined young women in an age when heroism still mattered and not many women were scientists. Through the book, and the famous movie based on it, we were touched by the image of Marie and Pierre Curie stirring great vats of pitchblend in their dark shed of a laboratory. Nor could anyone forget that this hard physical work led to two Nobel prizes: one in physics in 1903, shared by Marie and Pierre Curie with Antoine Becquerel, and another in 1911, for Marie alone in chemistry for the discovery of radium.

The description in Eve Curie's book is of a heroine, not a role model. No young American woman could imagine the sacrifice of the lonely years Marie Curie spent in Poland as a governess, sending money to her sister who was studying medicine in Paris, saving what was left for her own eventual opportunity to study. And none of us would want to emulate her disregard for the known dangers of radiation, a disregard that ended in the destruction of her life.

Still, these heroines are more worthy exemplars than contemporary women occupying the roles to which young American women aspire. For one thing, a heroine is distant while a role model's proximal reality encourages too close scrutiny and a destructive mimicry of both public and private behavior. More importantly a heroine is, by definition, known for courage and nobility of purpose, thereby uplifting our own ambitions out of narrow, self-centered concerns.

Why then do young women now speak so often of role models and so rarely of heroines? Why are heroines and even heroes so out of fashion? Nobility of purpose is not currently admired; our society is afraid that following such a leader will extract too high a cost from us as individuals or as a nation. Rather, we deny greatness and seek instead a false image of equality. In our compulsive effort to make everyone ordinary we assume license to delve into personal matters, from the trivial to the profound; unsurprisingly, the glorious images are tarnished. And for those who are truly great, where the effort to make them ordinary cannot succeed, we strive to make them evil. Not even the giants of our world can escape. Consider the sad efforts to tarnish Martin Luther King's image, as if that could undermine his greatness.

Technology makes this program easier. Television is unforgiving in its ability to reveal the personal flaws of everyone from athletic stars to scientists. Modern high-speed journalism sometimes seems to make the whole world into a soap opera.

People have always known that heroines and heroes are imperfect. But they chose to ignore the warts so that the greatness could inspire new achievement. We are all diminished by the disappearance of heroism. Role models will be for naught if there are no heroines and heroes from whom to learn about courage, about noble purpose, about how to reach within and beyond ourselves to find greatness.

Young women now have more freedom to shape themselves than young women anywhere or at anytime in history. That freedom is a lonely and difficult burden, but it is also a blessing. The burden cannot be conquered nor the blessing realized by standing in anyone's shadow. But both can be achieved by standing on the shoulders of the great heroines.—MAXINE F. SINGER, *President, Carnegie Institution of Washington, Washington, D.C. 20005*

From a commencement address, 14 May 1991, Barnard College, New York City.