LETTERS

Edited by **Jennifer Sills**

The curtailed careers of women in China

IN THE WORKING LIFE "Reflections of a woman pioneer" (V. Venkatraman, 7 November 2014, p. 782), Mildred "Millie" Dresselhaus points out that women's careers often pick up steam after their childbearing years. She names a couple of examples of women who don't want to retire and work well into their 80s and beyond. Yet in China, the statutory retirement age of Chinese female researchers is age 55, a full 5 years lower than that of Chinese male researchers.

The average childbearing age for Chinese female researchers is 30 (*1*). It is usually women who take care of their young children before they begin kindergarten (at about 3 years old), which prevents the female researchers from spending as much time applying for grants and publishing as male researchers. By the time they are 36 years old, Chinese male researchers have begun to attain better academic titles, publish more papers, and receive more funding (*1*). To address this, China has introduced a number of policies to help female researchers deal with childbearing and raising children. For example, the National Natural Science Foundation of China stipulates that male and female researchers can apply for Young Scientist Funds before 35 and 40 years old, respectively (*2*). The China Association for Science and Technology stipulates that the upper age limit for female winners of the Youth Science and Technology Prize is 5 years higher than that for male winners (*3*). These policies have considered that female researchers can't work on the frontlines because of childbearing and raising children. The policies are effective (*1*, *4*, *5*); after 40 years old, the gap between male and female researchers begins to narrow. After 46 years old, the percentage of senior titles is even higher among women. But after 50 years old, once again, male researchers begin to open the gap. This is mainly because female researchers have to reduce the number of research projects before the statutory retirement age. To narrow the gap between male and female researchers, we should extend the retirement age for female researchers in Chinese universities.

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REFERENCES

1. Chinese Academy of Sciences (www.cas.cn/xw/zjsd/201305/t20130513_3837506.shtml) [in Chinese].
2. National Natural Science Foundation of China (www.nsfc.gov.cn/nsfc/cen/xmzn/2015xmzn/08/index.html) [in Chinese].
3. China Association for Science and Technology (http://qnkjj.cast.org.cn/cms/contentmanager.do?method=view&pageid=view&id=cms0d1b2a48084b2) [in Chinese].
4. Y. Ma, *Forum Sci. Technol. China* **11**, 126 (2011).
5. Y. Li, *Bull. Natl. Natural Sci. Foundation China* **5**, 274 (2013).

Converting Big Data into public health

WE CONCUR WITH M. J. Khoury and J. P. A. Ioannidis ("Big data meets public health," Perspectives, 28 November 2014, p. 1054) that "a strong epidemiologic foundation, robust knowledge integration, principles of evidence-based medicine, and an expanded translation research agenda" can facilitate public health applications of Big Data. However, Big Data scientists and public health practitioners must forge better relationships if this vision is to be realized.

Big Data analysis algorithms should be accessible to health practitioners (*1*). This requires more than freely accessible computer code and a user-friendly Graphical User Interface. Outreach programs, self-learning modules, and textbooks that are designed for users without a programming background will help facilitate the integration of these algorithms and statistical tools into public health, medical, nursing, and other health care–related degree programs, graduates of which are the bulk of the domestic and global public health workforce. The average public health practitioner is not a computer scientist.

The Ebola Response model from the Centers for Disease Control and Prevention (CDC) (*2*) provides a good example in the field of infectious disease modeling. The Modeling Task Force of CDC's Ebola Emergency Response fits epidemiological data to a spreadsheet-based Markov chain model to provide policy-makers with incidence projections, with and without scale-up of effective interventions. Using it as a communication tool, the task force communicated the possible dire consequences of the Ebola outbreak to senior decision-makers. This simple model had a substantial policy impact on the global Ebola response because of its ability to convey a powerful message to policy-makers and facilitate resource mobilization and prompt action. Ultimately, models are tools of communication to policy-makers. Consultation with the intended audience helps ensure that the product meets their needs. Likewise, Big Data analyses should help practitioners inform policy-makers about policy options and how they should craft their messages to the general public (*3*).

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REFERENCES

1. D. Lazer, R. Kennedy, G. King, A. Vespignani, *Science* **343**, 1203 (2014).
2. M. I. Meltzer *et al.*, *MMWR Surveill. Summ.* **63** (suppl. 3), 1 (2014).
3. A. B. Heldman, J. Schindelar, J. B. Weaver III, *Public Health Rev.* **35**, 1 (2013); www.publichealthreviews.eu/show/a/129.

Common diseases in China overlooked

ENVIRONMENTAL AND public health research in China has largely focused on the effects of environmental pollution on health. Few studies have addressed the environment's effect on noncommunicable diseases, despite the fact that almost one out of five people in China has been diagnosed with one (*1*). Surprisingly, the National Planning for Prevention and Treatment of Chronic Diseases of China (2012–2015), jointly promulgated by the