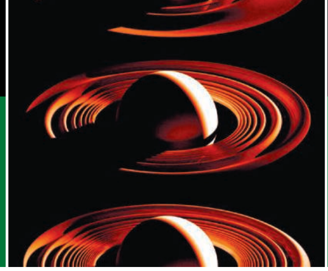
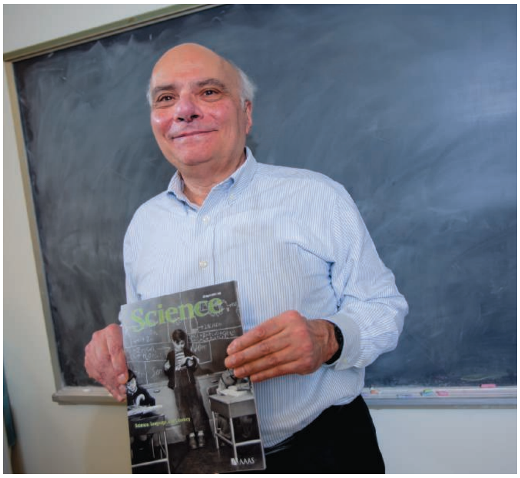


LETTERS

edited by Jennifer Sills

An Unexpected Spotlight



ON 22 MARCH 1948, *LIFE* MAGAZINE RAN AN ARTICLE titled "Genius school," about Hunter College Elementary School, then the only special elementary school in New York City for "gifted" children. Accompanying the article was a photograph of a 7-year-old boy with a chemistry book in hand, standing in front of a blackboard covered in chemistry equations. That little boy was me.

I had not thought about my brief moment of childhood fame in decades, when recently I received an e-mail from an elementary school friend, Judith Shulman Weis. From Judith, I learned that my 7-year-old self had earned a second moment of glory: *Science* magazine had run a version of the *Life* magazine photograph on the cover of the 23 April 2010 issue on Science, Language, and Literacy.

Upon seeing this snapshot of the past, I couldn't help thinking about my years at Hunter and how the school may have affected the path my life has taken. The photograph seems to imply that I learned those chemical equations at school. This was not the case. The staff at Hunter did not teach me advanced chemistry, but they did provide something even more important: an environment that encouraged independent learning and rewarded interest in science. With support from my teachers, I taught myself the chemistry displayed in the photograph by reading the high-school review book shown in my hand. My father had given me the book; he was a high school graduate but had always been interested in chemistry and was one of the smartest people I have ever known.

Throughout my childhood, I dreamed of being another Beethoven, but when reality set in, I turned back to my interest in chemistry. I majored in chemistry at the University of Michigan and then earned a master's degree in chemistry from Harvard. However, because of the way chemistry was taught at the time, I became frustrated with the subject. Even after my first year of graduate school, I did not understand what a chemist did. I changed course again and returned to the University of Michigan to get a master's in mathematics and a Ph.D. in psychology.

In the years since, my primary research has been measuring eye movements to gain insight into the reading process. I have also been involved in funded research on the understanding and misunderstanding of statistics, and more recently I have studied driving and driving safety, also using eye movements as a primary variable of attention.

I am still active in all three areas at age 70. I like to think that the inquisitive little boy that graced the cover of *Science* last year is still a part of me.

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New University Plan Skips Crucial Steps

I WAS SHOCKED BY THE NEWS & ANALYSIS story "Daring experiment in higher education opens its doors" (8 April, p. 161), in which R. Stone describes Zhu Qingshi's effort to build a new university, the Southern University of Science and Technology of China (SUSTC). I laud the goal of exploring new models to challenge China's education system, as educators and students alike in China believe the current system is inadequate for training independent and innovative thinkers. However, what President Zhu Qingshi is doing, while indeed daring, defies common sense.

Well-regarded and successful universities educate students by offering both a curriculum that comprises the collective wisdom of the faculty and a course selection that reflects the knowledge and style of individual faculty members. SUSTC currently meets neither of these criteria; Zhu has chosen to enroll undergraduates to his university before establishing a formal curriculum and permanent faculty. It is no surprise that the government will not promptly approve SUSTC's authority to grant undergraduate and graduate degrees.

The first step in building a new university—especially a research university with an overarching emphasis on undergraduate and graduate education, as SUSTC aspires to become—is not to enroll students but to build the necessary infrastructure and use it to recruit a diverse group of highly qualified faculty members. Faculty recruitment itself is an extremely challenging and time-consuming endeavor, and money often plays only a limited role in its success. Once the faculty has been assembled, the professors should be given a few years to establish their own research programs and develop the cur-

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riculum and individual courses. Students, especially undergraduates, should only be admitted after these are in place, so that they can make an informed decision as to whether the university is suitable for them.

SUSTC appears to be doing things backwards. There are many ills that need to be cured in China's education system, but, to borrow a phrase from medicine, "first, do no harm."

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Symmetrical Transparency in Science

IN RECENT MONTHS, THERE HAS BEEN CONSIDERABLE discussion in the scientific community of the need for increased transparency, openness, and data access [Dealing with Data special section, 11 February, "Making data maximally available," B. Hanson *et al.*, Editorial, p. 649, and "Climate data challenges in the 21st century," J. T. Overpeck *et al.*, Perspective, p. 700, as well as (*1*–*4*)]. Missing from the discussion, however, is recognition that a good deal of science relevant to public and environmental health and welfare is done in the private sector and, largely because of the 1999 U.S. Data Access Act and the 2001 U.S. Data Quality Act, this private science is not subject to the same scrutiny as public science. Much or even most private science may well be of high quality, but it is difficult to judge because private science does not face the same transparency requirements as public science, even when it assesses public health, safety, or environmental threats; supports product licenses or pollution permits; or is supposed to support industry's regulatory compliance. This constitutes a seriously tilted playing field.

Ideally, both the Data Access and Data Quality Acts would be amended to apply equitably to public and private science. Because this is unlikely in the near term, we suggest that the scientific community, perhaps through the National Research Council, provide guidance for best practices regarding data access and transparency for private science affecting public health and the environment. For example, privately funded science used for public or regulatory purposes should be subject to the same transparency requirements as publicly funded science, and industry requests to protect data, under claims of confidential business interests, should be granted only when public health and safety are demonstrably not at stake (*5*, *6*).

Of course, some data requests may well be harassing or malicious, designed to block sound public policy rather than promote it. The scientific community should therefore also suggest criteria to evaluate when data requests, under the Freedom of Information Act or other federal statutes, constitute an unreasonable burden on researchers.

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Bringing Research into the Classroom

AS A HIGH SCHOOL STUDENT LOOKING TO pursue science, I was happy to read J. Durant and A. Ibrahim's Editorial "Celebrating the culture of science" (11 March, p. 1242). I feel that engaging the public in Science, Technology, Engineering, and Math (STEM) is an often-overlooked aspect of bringing STEM into the mainstream.

I believe that before there can be a revolution in STEM education, there needs to be a paradigm shift in the way our culture and society embrace STEM, beginning with the youngest age groups. STEM taught in the classroom should be reinforced at the dinner table and on the school bus. Presently STEM is regarded by both students and teachers as a static subject, instead of appreciated as an interactive and dynamic field.

To help cultivate an infectious interest in STEM, I believe that the idea of celebrating STEM should proliferate into the classroom. I propose a graduate school–style approach to primary and secondary school STEM education.

This curriculum would not focus only on the core material, but would also emphasize current research in each subject. I think that a freely available journal publication that takes groundbreaking current STEM reports and edits them for a younger audience should be created and integrated into the classroom.

Incorporating journal discussions in the classroom would stimulate the teachers who choose the papers and pique the curiosity of the students. Only then, when students are self-motivated by curiosity to study STEM, will they go on to achieve STEM excellence.

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CORRECTIONS AND CLARIFICATIONS

News Focus: "Early farmers went heavy on the starch" (22 April, p. 416). The research detailed in the story was led by Cheryl Makarewicz at Germany's Christian-Albrechts University at Kiel. Sadie Weber, who presented the research, is an undergraduate on Makarewicz's team. In the HTML version online, the last sentence of the second paragraph has been corrected and two instances of "Weber" have been changed to "Makarewicz."

Review: "Beyond predictions: Biodiversity conservation in a changing climate" by T. P. Dawson *et al*. (1 April, p. 53). When originally published, Fig. 2 was incorrect due to an editorial error. The third column in Fig. 2 was mislabeled as "Habitat shift." The PDF and HTML versions were corrected on the day of publication.

News & Analysis: "Waves of destruction" by D. Normile (18 March, p. 1376). Geologist Kazuhisa Goto is at Chiba Institute of Technology, not Chiba University.

Reports: "Aryl hydrocarbon receptor antagonists promote the expansion of human hematopoietic stem cells" by A. E. Boitano *et al*. (10 September 2010, p. 1345). Microarray data for this paper were not immediately available but have now been deposited in the National Center for Biotechnology Information's Gene Expression Omnibus (GEO) with accession numbers GSM701153, GSM701154, GSM701155, GSM701156, GSM701157, GSM701158, GSM701159, and GSM701160.

Reports: "A topoisomerase IIβ–mediated dsDNA break required for regulated transcription" by B.-G. Ju *et al*. (23 June 2006, p. 1798). In Fig. 1B, ChIP assays were performed using the same samples as in Fig. 1A. The TopoIIβ track from Fig. 1A is reproduced in Fig. 1B to facilitate direct comparison to TopoIIα. Mer treatments in Fig. 2C were performed as part of the same experiment shown in Fig. 1, A and B, with the 0- and 30-min time points for E2-only data from Fig. 1, A and B, reproduced in Fig. 2C to facilitate comparison to E2+Mer data. These details, not delineated on the images, should have been clearly described in the legends.

Letters to the Editor

Letters (~300 words) discuss material published in *Science* in the past 3 months or matters of general interest. Letters are not acknowledged upon receipt. Whether published in full or in part, Letters are subject to editing for clarity and space. Letters submitted, published, or posted elsewhere, in print or online, will be disqualified. To submit a Letter, go to www.submit2science.org.