

Notices

of the American Mathematical Society

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SUBSCRIPTION INFORMATION: Subscription prices for Volume 42 (1995) are \$255 list; \$204 institutional member; \$153 Individual member. (The subscription price for members is included in the annual dues.) A late charge of 10% of the subscription price will be imposed upon orders received from nonmembers after January 1 of the subscription year. Add for postage: Surface delivery outside the United States and India—\$15; in India—\$34; expedited delivery to destinations in North America—\$32; elsewhere—\$67. Subscriptions and orders for AMS publications should be addressed to the American Mathematical Society, P.O. Box 5904, Boston, MA 02206-5904. All orders must be prepaid.

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[*Notices of the American Mathematical Society* is published monthly by the American Mathematical Society at 201 Charles Street, Providence, RI 02904-2213. Second class postage paid at Providence, RI and additional mailing offices. POSTMASTER: Send address change notices to *Notices of the American Mathematical Society*, P.O. Box 6248, Providence, RI 02940-6248.] Publication here of the Society's street address, and the other information in brackets above, is a technical requirement of the U.S. Postal Service. All correspondence should be mailed to the Post Office box, not the street address. Tel: 401-455-4000. e-mail: ams@math.ams.org.

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ABOUT THE COVER

The top illustration depicts a Fullerene C_{60} molecule. Discovered around ten years ago, it has sixty carbon atoms positioned at the vertices of a truncated icosahedron. Each carbon atom is the endpoint of two single bonds (red) and one double bond (yellow). The bottom illustration depicts C_{60} molecules arranged in a face-centered cubic lattice. In this graphic, the carbon atoms (continued on page 958)

From the Editor

First-rate people attract first-rate people, second-rate people attract fifth-rate people

—Saying, variously attributed, often quoted, by third-rate mathematicians

Most mathematicians involved in research inhabit a world in which mathematical research is a common activity: we do it ourselves, some of our best friends are research mathematicians, and we belong to extensive professional networks of mathematicians. But reflect on how rare the profession of mathematical research actually is in the United States today.

Here are some numbers: The American Mathematical Society currently has about 30,000 members. The Society classifies its membership by dues category. Using this we find that about 10,500 members are nominees (graduate students nominated by their departments as a privilege of the department's institutional membership); an additional 2,100 members are in dues category S (members from weak-currency countries who pay at a special rate), and 1,500 members are in the emeritus category. That leaves about slightly under 16,000 paying dues at the employed members rate, including those not living in the United States (reciprocity members) and those whose profession is not mathematical educator/scholar/scientist (such as government officials). Let's estimate, therefore, that there are about 15,000 members of the society currently making a living in the mathematics profession.

But how large is the mathematical research community in America? Obviously, the answer depends on what one means by a research mathematician. For estimation purposes, we can use a study performed a few years ago by the National Science Foundation, which found that there were 24,500 full-time U.S. faculty in the mathematical sciences (mathematics, applied mathematics, and statistics) of whom 9,150 were active in research and publication. Of course, some of those researchers would naturally have their primary affiliation with SIAM or IMS rather than AMS, and there are research mathematicians employed other than as full-time faculty. As a rough estimate, let's say that there are 8,000 professional research mathematicians in the United States. Before considering the implications of this number, it's interesting to note that the NSF study found that 23 percent of the mathematical scientists doing research were receiving some federal support and to contrast that with the corresponding percentages for chemists (56 percent) and physicists (75 percent).

What does it mean to belong to a community of 8,000 in a nation of 250 million? An American chosen at random is eight times more likely to be licensed to practice law in the District of Columbia than to be a professional research mathematician; similar figures apply for being licensed to practice medicine in California. The odds against encountering a research mathematician at random are over 30,000 to 1. By any numerical measure, we are a tiny minority.

Or almost any measure: those 23 percent fortunate enough to enjoy federal support for their mathematical research collectively receive about \$100 million annually, which is about the same as the (proposed) appropriation for the National Endowment for the Arts, and about twice the amount of federal subsidies for tobacco farmers.

To retain, and hopefully expand, public financial support for mathematics research should be one of our outward facing goals as a mathematical society. But we should also take care to consider the consequences of the smallness of our numbers and the thinness of our ranks, to realize that every research mathematician is a precious resource, and to see that our Society is a supportive, nurturing community for its members. We need to be especially on guard against self-hating, and self-defeating, sentiments such as that in the quotation which begins this letter.

Andy Magid