Opinion

Welcome to Madrid for ICM2006: The Spanish Mathematical Fiesta

The International Congress of Mathematicians will be held for the first time in Madrid, Spain, August 22–30, 2006. The Spanish mathematics community is delighted to be hosting this event and wishes to extend its warmest welcome to mathematicians from all over the world. It will be without doubt not only the most important mathematical event ever held in Spain but probably the greatest in any scientific discipline in this country. The ICM2006 in Madrid follows the International Congress on Mathematical Education held in Seville in 1996 and the Third European Congress of Mathematics held in Barcelona in 2000.

Although the venue for the ICM2006 will be Madrid, the Spanish Mathematical Committee regards it as a collective project embracing the whole country, a fact that is borne out in the following two ways: the broad cross-section of members making up the Organizing Committee and the financial support provided by all the mathematics departments in Spanish universities.

The preparations for the congress have received invaluable support, not only from the city of Madrid, but also from government bodies at the regional and national levels. From the very beginning of our candidacy, the head of state, His Majesty D. Juan Carlos I, king of Spain, gave his backing to the event, and the Organizing Committee has requested the honor of his presence at the opening ceremony as well as at the award presentations of the Fields, Nevanlinna, and Gauss Medals. Furthermore, the committee has received vital funding from the community of Madrid, from the Madrid City Council, and from the Ministeries of Education and Foreign Affairs.

Given Spain's geopolitical location, the Organizing Committee has outlined three main axes for the ICM2006: the European axis, symbolized by the holding of the General Assembly, which will take place prior to the ICM, in the city of Santiago de Compostela, renowned for the Road to Santiago or Pilgrim's Way, an artery of European science and culture in the Middle Ages; the Latin American axis, an integral part of Spanish history and culture; and the Mediterranean axis, celebrating the Spain of the "three cultures", a universal example of tolerance and cohabitation. In support of this structure, the Organizing Committee aims to make many more grants available to both young and senior mathematicians coming from these last two areas.

Mathematics in Spain has a relatively short history, and if we look for mathematicians born in our country in the Middle Ages, we find names of Spanish Arabs and Jews. The need for naval pilots, architects, and engineers led King Philip II to found the Madrid Academy of Mathematics in 1572. Unfortunately, the venture was short-lived, but during the first third of the twentieth century, Spanish science, and mathematics in particular, experienced a period of development known as the Edad de Plata, or "Age of Silver", of which the Junta de Ampliación de Estudios, or Council for the Extension of Studies, formed the cornerstone. Spanish progress in science is also very recent, but in the case of mathematics it has been nothing short of spectacular. If we consider that in 1980 the contribution of Spanish mathematicians accounted for a mere 0.3 percent of all articles and papers published in ISI (Institute of Scientific Information) journals and compare this with the figure for the five-year period 2000–2004, which rose to 4.83 percent, we have an idea of the progress achieved in Spanish mathematical research.

Furthermore, the complex social organization of Spanish mathematics is a highly articulated structure. The pioneering mathematical body in this field is the Royal Spanish Mathematical Society, whose founding in 1911 culminated a process started in 1903. In 1931 the Catalan Society for Physics, Chemistry, and Mathematics was founded within the Institute of Catalan Studies; the Catalan Mathematical Society, as an independent body, was created in 1986. More recently, other societies have appeared on the scene, such as the Society of Statistics and Operations Research (1961), the Spanish Society of the History of Techniques and Sciences (1974), the Spanish Federation of Teachers of Mathematics (1989), the Spanish Society of Applied Mathematics (1991), and the Spanish Society for Research in Mathematical Education (1996). They all participate in the Spanish Mathematical Committee (CeMAT, http://www.ce-mat.org), which represents Spain in the International Mathematical Union (IMU) and whose structure is based on that of the IMU itself, providing a point of encounter for secondary and university education as well as for research. Some 8,500 mathematicians are represented in CeMAT.

The venue for the Madrid ICM is the Palacio Municipal de Congresos, a spectacular marble building designed by the Spanish architect Ricardo Bofill, an example of the modern, open Spain that has been forged since the transition to democratic rule. Organized around the congress will be over fifty satellite conferences, the highest number in the history of the ICM, many of them held in different parts of Spain and constituting an example of the experience and organizing ability of Spanish mathematicians. These achievements make us feel highly optimistic about the attendance at the ICM itself.

We cordially invite you to visit our website at http://www.icm2006.org, which contains up-to-date information about the congress.

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Letters to the Editor

Winter Meeting Sites

Years ago the AMS had its January meeting in Chicago, and the participants experienced a couple of days with maximum temperatures below zero; all interest in meeting again in Chicago during January vanished. Since then we have had extreme winter experiences in St. Louis and Cincinnati, and ice and cold in Washington. A number of meetings in warmer climates have followed, but it seems the lessons of the past have not been learned, as the AMS will meet in Washington in 2009 and Boston in 2012. Prepare for the worst again.

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Pure and Applied

Regarding the Letter from the Editor, November 2005 ("Graduate Students and Applications"): At Brown we have a Division of Applied Mathematics and a mathematics department, physically separated by about a block's distance but fortunately not so distantly separated in our associations. People at Brown outside the two sections would usually ask me, "Are you in the applied math department or the pure math department?" and I decided to reply, "No, I'm in the unmodified math department."

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Pure and Applied Mathematics

Regarding the brief discussion of "pure" vs. "applied" mathematics in the November *Notices* (Letter from the Editor):

I've always thought that "applied mathematics" simply meant mathematics motivated by questions in other, nonmathematical, fields, whereas "pure mathematics" meant questions motivated mainly by mathematical considerations. This is, on the face of it, an a priori dichotomy and does not depend on the uses one finds for a mathematical theory after it has been developed, so I don't agree that the area to which a problem or a result belongs can't be predicted in advance. (And, of course, I certainly don't agree with some people that one area is in any way superior to the other.)

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Another Textbook Policy

We have the following reply to the letter titled "A Textbook Editions Policy" that originally appeared in the Sept. 2005 *Notices of the AMS*, Vol. 52, No. 8, p. 830:

We see some problems with the new textbook editions policy adopted by the UCLA math department (as appeared in the Sept. 2005 *Notices*, Vol. 52, No. 8, p. 830), in which they automatically search for a replacement text whenever a new edition of a textbook appears beyond the third unless it is pedagogically justified.

The stated goal, with which we agree, is to reduce the number of editions of textbooks and increase the shelf life of each edition. The current practice serves no purpose other than enriching publishers at the expense of students. Yet the suggested policy is likely to cause the department to search for new textbooks much more frequently for all courses. For every new textbook, instructors have to make substantial changes in the course outlines, and students will be unable to buy used copies of the new text on campus, since they are unlikely to be available. Moreover, the policy is unlikely to achieve its goals in the long run. Even if most departments adopt it, the net effect might simply be a regular reshuffling of the textbooks used by various math departments, thus actually increasing the number of new textbooks students have to buy. Since the publishers' main interest is in the overall number of new textbooks sold, they might embrace this policy and produce new editions even more frequently.

What should we do instead? It seems to us that the important goal should be to ease the financial burden on our students. Thus our policy should help them buy significantly cheaper (i.e., used) copies of textbooks. As soon as we realize this, we can see that the solution is simple: allow the students to use previous editions of the textbook, not necessarily the latest one, with the obvious caveat that we are discussing here the typical "new edition" that offers no significant advantage over the previous one. In the case of a fundamentally new edition, we may decide to require it, or, alternatively, we may decide to consider an entirely new text, since a radically different edition may not suit our course anymore. In a way, we are then falling back on the UCLA policy.

The big advantage of this approach is that we need no cooperation from the publishers or other math departments. As long as used copies of old editions are available, students can buy those cheaply even if (or especially if) a new edition comes out. The only disadvantage is that instructors can't assume that every student has the same edition of the textbook; thus assignments have to be given explicitly instead of by problem number only. This minor inconvenience is a small price to pay for the immediate gain by the students. Moreover, some gain can be realized by adopting the policy even for just one course! Thus each of us can adopt this policy without waiting for department discussions and approval.

To get the most benefits, it is necessary that the department officially adopts a variant of this policy so bookstores will buy back used textbooks of the old editions. In the meantime, students can use the Internet to find used copies if our syllabi clearly state which editions of the text are acceptable.

If adopted by most departments, will this policy decrease the frequency of new editions coming out? Our guess is yes, but it really doesn't matter. The important goal is achieved anyway.

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