

IMU and Developing Countries

An Overview 1978–2006

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Die International Mathematical Union (IMU) unterstützt Aktivitäten zur Förderung von mathematischer Forschung und Ausbildung in Entwicklungsländern durch ihre Commission on Development and Exchanges (CDE) www.ictp.it/~cde und die Developing Countries Strategy Group (DCSG) www.ictp.it/~dcsg; eine Zusammenfassung dieser beiden Gremien zu einer Commission for Developing Countries (CDC) ist in der Diskussion. Sie arbeitet dabei unter anderem mit dem Committee on Developing Countries (EMS-CDC) der European Mathematical Society zusammen.

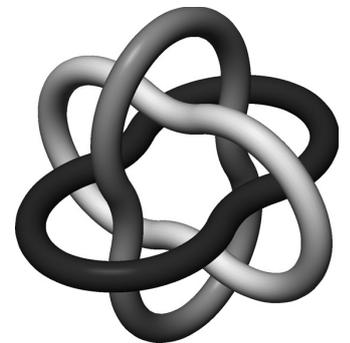
Der folgende Artikel, den wir im englischen Original abdrucken, beschreibt die Aktivitäten der IMU in diese Richtung näher. Wir möchten Ihnen insbesondere den letzten Absatz des Artikels ans Herz legen: Sie haben viele Möglichkeiten zu helfen, sei es durch Spenden, sei es, indem Sie Ihre Zeit und Ihr fachliches und organisatorisches Können einbringen! Die Kontaktadressen finden Sie am Ende des Artikels. (RSP)

Since 1978, IMU has been supporting mathematics in developing countries through its Commission on Development and Exchanges (CDE) (<http://www.ictp.it/~cde>). CDE runs two programmes, one in support of individual research visits by mathematicians based in developing and economically disadvantaged countries, and the other offering partial support to conferences organized in developing and economically disadvantaged countries. CDE also accepts applications for partial support for conferences in 'developed' countries under two conditions. First, the support sought must be used for the participation of mathematicians from developing countries, and, secondly, the organizers must demonstrate the availability of matching funds for the same purpose. Due to CDE's limited budget (approx. US\$ 45,000 per annum), research visit support is currently av-

eraging \$ 750 per person and conference support \$ 1,000 per event. While the level of CDE support for conferences may seem somewhat low, one must bear in mind that CDE support also brings with it some indication of IMU involvement. This can be instrumental in leveraging further support from other sources. Some figures: in 2006, CDE awarded 22 individual research travel grants and 41 conference grants. In 2005, of the total of 58 applications received, 10 individual research travel grants and 34 conference grants were awarded.

Spurred on by the 2002 IMU General Assembly, in 2003 the Executive Committee of the IMU formulated recommendations to increase IMU's attention to the needs of mathematics and mathematicians in developing and economically disadvantaged countries. Furthermore, this attention was to extend to countries that are not currently members of IMU. Subsequently, in 2004, the Developing Countries Strategy Group (DCSG) (www.ictp.it/~dcsg) was established, with the charge of increasing, guiding and coordinating IMU's activities in support of mathematics and mathematics education in the developing world. To facilitate and lend continuity to its work, as well as that of CDE, a part-time administrative position was created at UNESCO's Abdus Salam International Centre for Theoretical Physics (ICTP) in Trieste, Italy. Core funding for the work of DCSG has come from Norway's Niels Henrik Abel Memorial Fund. (Financial support has also been received from private and public sources in France, Japan, Sweden, the United Kingdom and the United States of America.)

To most effectively fulfil its charge, DCSG works in collaboration with other international bodies and organizations with similar goals and principles. Its work in support of mathematics education is closely coordinated with IMU's



International Commission on Mathematics Instruction (ICMI). DCSG's other partners include France's International Centre for Pure and Applied Mathematics (CIMPA), Britain's International Centre for Mathematical Sciences (ICMS) and the London Mathematical Society (LMS), the European Mathematical Society's Committee on Developing Countries (EMS-CDC), the Mathematical Society of Spain, ICTP, the U.S. National Committee on Mathematics, as well as the International Council for Industrial and Applied Mathematics (ICIAM).

Among its principal activities in the two-and-a-half years since its inception, the Developing Countries Strategy Group is supporting CIMPA's work towards the rebuilding of the mathematical infrastructure in Cambodia, and is supporting the work of the African Mathematics Millennium Science Initiative (AMMSI) towards the enhancement of mathematics and mathematics education in sub-Saharan Africa. In the latter area, DCSG, in collaboration with ICMS, LMS and AMMSI itself, has taken an active role in a pilot project of mentoring partnerships between British mathematicians and sub-Saharan African mathematics departments. The project is funded by Britain's prestigious Nuffield Foundation and Leverhulme Trust. At the time of writing, three such partnerships have been established, one in Cameroon, one in Ethiopia and the third in Ghana, and work is underway for the establishment of further partnerships in the immediate future. In the same spirit as the above projects, and, again, coordinated through DCSG, the U.S. National Committee on Mathematics is supporting lecture-ship/mentoring visits to the Republic of Benin and to Senegal by a senior U.S. mathematician in early 2007.

DCSG has also assisted in the establishment of ICTP's Ramanujan Prize, awarded each year for outstanding mathematical research carried out in the developing world by mathematicians based there.

DCSG also attempts to fill a role as "clearinghouse" for the activities of individual countries and mathematics societies in support of mathematicians in the developing world. This role enhances the effects of those individual initiatives, and ensures that they complement and reinforce each other. One of DCSG's activities in this context was the facilitation of participation of mathematicians from the developing world in the 75th anniversary conference of the Chinese Mathematical Society in 2005.

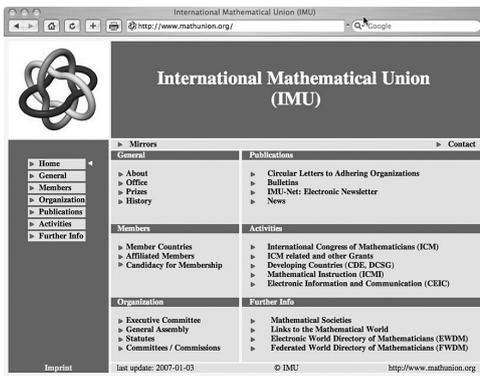
DCSG is also charged with co-ordinating IMU's programme of travel grants for the participation of mathematicians from developing and economically disadvantaged countries in the quadrennial International Congress of Mathe-

maticians. For ICM 2006, DCSG was successful in leveraging additional funds from other sources to increase developing and economically disadvantaged country participation.

The future

IMU's outgoing Executive Committee is proposing to the incoming Executive Committee the merging of CDE and DCSG into one IMU body for mathematics and mathematics education in the developing world, the Commission for Developing Countries (CDC). CDC would be charged with managing IMU's grants programmes (individual research travel, conference support and ICM travel grants) and Special Development Fund, as well as fundraising to increase resources for mathematical development. CDC would also be asked to serve as a web-based clearinghouse for mathematics and mathematics education programmes and projects in the developing world, and to leverage the work of existing projects and programmes in support of mathematics and mathematics education and facilitate cooperation between groups engaged in those projects and programmes. CDC would, furthermore, be asked to generate and publicize opportunities for networking, to foster programs of mentoring and short- or long(er)-term teaching in developing countries, to cooperate in the administration and management of development projects in mathematics and mathematics education, and to advise foundations, governments and non-governmental organizations on development issues in mathematics and mathematics education. Finally, CDC will cooperate with ICMI in projects in mathematics education. Indeed, the link between pre-university mathematics education and advanced mathematics instruction is often closer in the developing world than elsewhere.

It is proposed that CDC have six elected members (with regional representation), one of whom to be designated as *President*, one as *Secretary for Policy*, and one as *Secretary for Grant Selection*. In addition to the six members elected by the IMU General Assembly, three additional members would be appointed by the IMU Executive Committee. Regional and international organizations, as well as international and national mathematical societies with shared interests would be invited to name associate members to CDC to contribute to its work and represent their organizations' interests. CDC would also contain a Grant Selection Subcommittee of eight members, which would be chaired by the Secretary for Grant Selection.



the developing world. Pending a positive outcome of initial vetting, CDC will try to help locate funding and logistical support for the enterprise. Two such projects for which financial support is currently being sought by DCSG are a 2008 biomathematics graduate workshop and teacher programme in Uganda, and a similar 2010 initiative in Indo-China. The possibility of IMU projects of greater size and scope than the traditional involvement of IMU in the developing world hinges largely on IMU's ability to raise funding for these enterprises and to effect partnerships with other organizations. Readers from the mathematical community are urged to join this search for shared purpose in the service of mathematics with our colleagues and friends in the developing world. Help can take many forms, be it financial or by contributing one's own professional expertise.

For more information, please contact:

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It is anticipated that this new body would come into being in early 2007, with an initial leadership slate consisting of Shrikrishna G. Dani (Tata Institute of Fundamental Research, Mumbai, India) as President, C. Herbert Clemens (Ohio State University, Columbus, Ohio, USA) as Secretary for Policy, and Gérard Gonzalez-Sprinberg (University of Grenoble, France) as Secretary for Grant Selection. Pending approval by the incoming IMU Executive Committee, CDC will open a new website at <http://www.ictp.it/~cdc>.

CDC will encourage proposals and receive appeals for targeted support from mathematical organizations or individual mathematicians in