REPORT OF THE NINTH MEETING OF
THE COMMITTEE ON
ELECTRONIC INFORMATION AND COMMUNICATION (CEIC)
OF THE INTERNATIONAL MATHEMATICAL UNION
HELD AT KONRAD-ZUSE ZENTRUM
BERLIN, GERMANY   FEBRUARY 24–26, 2006

Membership and Participation. Jonathan Borwein (Canada), Pierre Bérard (France), John Ewing (USA), Alejandro Jofre (Chile), Martin Grötschel (Germany), Peter Michor (Austria), David Morrison (USA), Alf van der Poorten (Australia).

Rolf Jeltsch (Switzerland) and David Mumford (USA) were unable to attend.

The CEIC met on Friday, March 11 (12:00) and through Sunday, March 13, 2006 with the meeting closing at 16:45. The Sunday afternoon session was a meeting joint with the EC of the IMU.

1. CEIC Budget

The Committee noted that it is in the first instance an advisory committee to the EC. Given financial pressures on the IMU it was agreed that any activities undertaken by the CEIC would require funding from sources directly accessible to the active members or from other sponsors attracted by the Committee. Just so, the Committee should be kept as small as practicable to minimize travel costs required for occasional meetings of the Committee. The Committee considered the possibility of reducing the necessity for it to meet physically by appropriate use of electronic meetings but agreed that its expected rollover in membership in August 2006 would at the least necessitate a physical meeting of the new Committee soon after in 2006.

2. Review of Current CEIC Activities

2.1. **IMU on the Web.** It was agreed that the CEIC site be fully moved from SFU to Dalhousie (and this was promptly effected following the meeting). The Committee also resolved that a subcommittee consisting of JMB, PM, and AvdP be responsible for the bi-monthly item in IMU-Net.

Topics that might be covered in future columns by brief essays include

(1) Versioning (AvdP, JMB)
(2) Electronic refereeing processes (PM, AJ)
(3) Citations, impact factors, and other statistics (JE)
(4) Digital Library of Math DLMF (JMB)
(5) MathML (DM)

---

(6) The NUMDAM experience (PB)

(7) Academic Journals, Bundling, Repositories, Portico (PB, JE)

(8) How is a small academic publishing effort to survive? (JMB, JE)

(9) What is an esearch mathematician

(10) Advice to Authors, Referees Editors, and Publishers

(11) Common e-gripes and e-tiquette

As regards the last item, it was mooted that it might be useful to include 'an e-gripe of the month' with each IMU on the Web item.

Several of the statements to be prepared will be, or will be precursors to, formal addenda to related Best Practice Statements.

2.2. **FWDM.** JMB reported on recent progress and a discussion of next steps. It was confirmed the activity be showcased at the quadrennial assembly in Spain with a handout and a combined FWDM and EWDM demonstration for the GA. See http://projects.cs.dal.ca/ddrive/fwdm/index.shtml.

2.3. **EWDM.** MG reported inter alia that the IMU on the Web article had led to a 20% increase in registrations; these now totaled 1190 names. It was suggested that computers be available at Madrid specifically to allow registration, noted that e-mail addresses as presented on the EWDM pages should appear hidden from robots (for example as alfATmaths.usyd.edu.au) given that they actually are; and noted that pages need to migrate from ZIB to CMS.

In the context it was also agreed that the CEIC needs to find a new home for the IMU web-server.

2.4. **WDML.** JE and DM reported on the Berkeley meeting last April and its aftermath. In brief: no 'business plan' was found feasible and no testing of differing digitization strategies was done. Nonetheless it is not yet clear that the Moore Foundation will not eventually support the project.

The AMS has created a registry of retrodigitized journals (making significant use of Ulf Rehmann's work); a suitable report will be ready for the GA. One notes that many of the retrodigitized journals are in JSTOR or SpringerLink.

2.5. **Best Practice Recommendations.** It was agreed that statements be prepared on the following matters:

- Versioning, to be dealt with by JE, JMB, and AvdP ultimately by way of a definitive statement in IMU on the Web since the matter seems inappropriate for adoption by the EC .
- How is a small academic journal to survive? Here JE has prepared a preliminary statement; he and JMB will ultimately turn that into an IMU on the Web article.
- Authors, referees, editors, and publishers. This is an item discussed by a subcommittee at Grenoble which was to be activated by AvdP first preparing an informal IMU on the Web statement. That activation is yet to occur.

3. The Next Cycle

3.1. **Membership 2007–2010.** The Chairman took the opportunity provided by the discussion formally to thank retiring members for their contribution to the

Committee. The Committee endorsed the decisions it adopted in Grenoble concerning retirements and the procedures followed to find potential new members for recommendation to the EC.

3.2. **Terms of Reference 2007–2010.** The Committee noted the revisions made in Grenoble for recommendation to the EC.

3.3. **Roles of CEIC members 2007–2010.** The Committee tentatively discussed the roles that might be played by continuing and recommended new members noting in particular that the three proposed new members have distinct skills to contribute to the work of the Committee.

3.4. **Future of CEIC$^+$.** The Committee resolved to endeavour to form a new group of advisers and potential new members.

3.5. **CEIC Budget.** In this context the Committee returned to the matter of its budget recommendation to the EC noting that the expected smaller membership of the Committee would allow for an annual budget reduced from $20K to $15K.

3.6. **Math-Net and Math-Net Services.** Given the power of Google, Yahoo, . . . , the Committee acknowledged that the Math-Net experiment had largely played out its roles and should not further be pursued actively.

4. Current Issues

4.1. **IMU Web Watch/MAA Gateway.** In 2004 the National Science Foundation awarded the Mathematical Association of America a Pathways Grant as part of the National STEM (STEM is NSF-speak for Science, Technology, Engineering, and Mathematics) Digital Library (NSDL) Program. This four-year grant is supporting the creation of a portal, The Math Gateway, for undergraduate mathematics materials within NSDL. This project is bringing together collections with significant mathematical content and services of particular importance to the delivery and use of mathematics on the Web; see http://www.maa.org/news/020706mathgateway.html.

It had been agreed in Grenoble that in the first instance JMB and MG will recommend activities shared between the IMU and the MAA, but independently of the CEIC. In returning to the matter, the Committee discussed the practicability of a Web Watch column or at least a 'Math Site of the Month' commentary.

4.2. **Content Management for IMU Server.** Implementing content management is essential for a large, complicated website. Without it, one cannot sustain upkeep, for it becomes a laborious and expensive operation. In brief, the IMU website needs to be rebuilt on top of a modern database; the Committee so resolved.

4.3. **Bibserver.** Jim Pitman's BibServer (http://bibserver.berkeley.edu/) is a Python program which creates a network of displays of bibliographic data maintained in BibTeX format by contributing authors and editors. The displays link whenever possible to full text in open archives such as arXiv and PubMed, in electronic journals, and on author's homepages. Links to related articles and citations are provided by Google Scholar. For articles in mathematics, links are provided if possible to abstracts and reviews in MathSciNet and Zentralblatt MATH. It was agreed that JMB would proceed to explore BibServer's integration with the FWDM.

5. Emerging and Perennial Issues

- IP Rights.
- Security.
- Versioning.
- Advice on Copyright of video/audio as regards:
  - Organizers of events;
  - Authors of books or multimedia.
- Mathematical search engines. Do we need them?
- Indexing of mathematical web pages; copying such pages, ...
- Best practice on stewardship of small society publications and for publishers of individual journals.

6. Preparation for and Meeting with the EC

The Committee carefully prepared an agenda for its meeting with the EC, nominating speakers, identifying matters to be noted, and predicting timing for the various items. The Committee takes pride in so organizing the joint meeting that it finished 20 minutes early rather than the predicted 45 minutes late. Some incidental discussion of note is reported below at the respective items; many details appear in remarks above.

This portion of the minutes should be read in conjunction with the detailed minutes taken on behalf of the EC.

The meeting with the EC commenced with a presentation by Ehrhard Behrend on a proposed "mathematical outreach" initiative (see http://www.mathematik.de) and was followed by a series of presentations and comments by members of the CEIC.

For some of the details omitted below see the Report of the CEIC, April, 2006.

6.1. **The CEIC past.** (John Ewing, Peter Michor)

6.1.1. *History.*

6.1.2. *Best practices.*

6.1.3. *Journal pricing.*

6.1.4. *Developing countries.* (Alejandro Jofre)

6.1.5. *Copyright.* During the subsequent discussion, EC members pressed the CEIC to identify and praise those publishers and/or journals that had actively embraced the 'moving wall' proposals of the IMU.

6.1.6. *The Math-Net experiment.* (Martin Grötschel) The rise and rise of Google and its ilk suggest that the Math-Net experiment has largely played out its roles and should not further be actively pursued.

6.2. **IMU-Net.** (Alf van der Poorten) IMU on the Web will continue to be used by the CEIC to promulgate best practice principles and to otherwise inform the mathematical community of issues within the Committee's range of interests.

6.3. **FWDM (Federated World Directory) and EWDM (Electronic World Directory).** (John Ewing, Martin Grötschel)

6.4. **World Digital Mathematical Library (WDML).** (Pierre Bérard, Alf van der Poorten, David Morrison, John Ewing)

6.4.1. *DML.* The Committee emphasized the value of the heritage our literature comprises.

6.4.2. *Best practices in digitization.* PB gave a fine report on/demonstration of NUMDAM by illustrating its features and policies and highlighting interlinking with the review journals.

6.4.3. *Registry for digitized journals.* A registry of retrodigitized publications, substantially based on the work of Ulf Rehmann, has now been created with the help of the AMS.

6.4.4. *Linking in the reviewing services.* The CEIC mentioned that some 250,000 items have been added to MR/ZBL, and alluded to the Zentralblatt's highly successful Jahrbuch project.

6.4.5. *Project Euclid.* The CEIC recalled the role of the original DML and its continued manifestation at Cornell.

6.5. **Open access.** The CEIC briefly summarized appropriate responses to Open Access initiatives.

6.6. **arXiv: current state.** (David Morrison)

6.7. **EMIS.** (Peter Michor)

6.8. **IMU Web presence.** (Martin Grötschel) Content management.

6.9. **ICM proceedings on the Web.** (Alf van der Poorten) The CEIC drew attention to the 'scandal' of past ICM Proceedings having ill-defined or inappropriate ownership and proposed a project to digitize and make available all past International Congress of Mathematicians proceedings.

6.10. **Erdős Project.** (Martin Grötschel)

6.10.1. *EMIS.* (Peter Michor) It was noted that EMIS has facilities, namely its *opera omnia*, to provide an appropriate home for the Erdős collected works being prepared in Hungary.

6.10.2. *Call to mathematicians.* In this context the CEIC recalled the notion of "Personal Collected Works".

6.11. **Proposed report and presentations to the GA.** The CEIC proposed to make a brief presentation of the FWDM and to provide a reminder of its other major activities; but was warned by the EC that time would be very limited at the General Assembly.

6.11.1. *Activities in Madrid.* The CEIC hopes to be visible at the ICM at least to the extent of facilities encouraging participant registration for the EWDM.

6.12. **Future of the CEIC.**

6.12.1. *CEIC terms of reference.* It was noticed that allusions to Math-Net might be removed from the terms of reference. For the rest, the advisory nature of the Committee and the necessity of expertise and willingness to work on the part of members was emphasised and acknowledged.

6.12.2. *Future CEIC membership.* The Committee had agreed there should be a near complete rollover of membership staged at two-year intervals so as to guarantee appropriate continuity. Accordingly all current members intend to retire from the Committee either in August or, in three cases, two years or so from then. Three new persons were recommended as members of the Committee to serve for at least four years from August. The Committee reminded the EC that one of its members was to be nominated to join the Committee and suggested a candidate. In summary, the Committee advised the EC that the Committee should consist of seven persons with three to retire after two more years of service.