

**Meeting to discuss the Pipeline Project (of ICMI/IMU)
at the AMS in Providence, 13 April, 2007**
(Notes from Frederick Leung and Hyman Bass)

Participants

Frederick Leung (Member, ICMI EC, Chair, Pipeline Oversight Committee)
Hyman Bass (Past Pres. Of ICMI, Member, Pipeline Oversight Committee)
John Ewing (Executive Director, AMS)
Jim Maxwell (AMS Staff, in charge of AMS Surveys)

After earlier informal conversations, we (FL and HB) arranged to meet directly with JE and JM to discuss possible participation of the AMS in the Pipeline Project. We are grateful to the AMS for its hospitality in hosting this meeting. We used the word-document entitled "ICMI-IMU Pipeline Project_0706.doc" as representing our most current conception of what the Pipeline Project might comprehensively become. It was recognized by all that this was, in its current form, too ambitious a project to attempt to undertake from the start, and that the project, in whatever form, would require diverse national and organizational partners.

The AMS was approached because it has regularly generated, in a systematic way, substantial data related to the aims of the Pipeline Project, and it commands the resources and professional expertise to carry out such work. The general idea, and hoped for outcome of our discussions, was that the AMS might become the organizational center of a US national piloting of an initial stage of the Pipeline Project, and that this US effort might both provide a general framework, and serve in part as a model for parallel efforts in a small number of other countries.

We are happy to report that we came to general agreement to proceed along these lines. In the notes that follow, we summarize in draft form the agreed upon plan of action.

1. The AMS, under the administrative authorization of John Ewing, agrees to establish an informal Task Group to explore feasibility of, and design, a preliminary phase of the Pipeline Project, resting primarily on existing AMS and other data bases, This Task Group would consist of Fredrerick Leung, Hyman Bass, Jim Maxwell, Bernie Madison, and Jim Lewis¹. It would report to both John Ewing and the ICMI/IMU Pipeline Committee.
2. As a first step, Jim Maxwell is preparing a "map of the existing data terrain," both in the AMS (and CBMS) data, and in other (federal, National Research Council, ...) sources, together with web-links to access the documents, and some annotations about their nature. In addition, he is providing correspondences between these data sources and the draft list of

¹ Bernie Madison and Jim Lewis have yet to be approached about this. They both have valuable experience and expertise in this area, so we are hopeful that they will agree to participate.

questions/data types sought in our draft of the Pipeline Project. Starting with the latter, he will indicate for each whether it is readily available from existing sources, whether it can be acquired from existing sources plus some modest and low-cost additional work, or whether it would require substantial new investment to obtain.

3. A rough preliminary sketch of the above document, together with the draft of the Pipeline Project, will soon be sent to Bernie Madison and Jim Lewis, to enlist their participation in the Task Group and to solicit early feedback.
4. Work of the Task Group will be conducted by email, and through a dedicated web site that will be created by Jim Maxwell.
5. Once Jim Maxwell's "map of the existing data terrain" is completed, we shall share it with a few other countries and organizations as a draft template for how they might undertake parallel efforts. The countries we have in mind include Hong Kong, New Zealand (where Bill Barton has expressed strong interest), and France (through the Société Mathématique de France), plus perhaps NCTM to cover the teacher pipeline strand in the US.
6. The AMS data are mostly quantitative and demographic, and not about affective variables, like motivations for entering and/or leaving mathematics programs. Efforts to gather such qualitative data, through surveys, interviews, and/or case studies, will be delayed till a somewhat later stage, for the sake of initial expediency. On the other hand, such qualitative data might be gathered sooner in some countries, and those efforts might well guide what is attempted in the US.
7. The Pipeline Project is about a supply problem. Of course treating this as a problem tacitly assumes that there is unmet demand. To fully rationalize the Pipeline Project, there should be a complementary study to document and articulate the nature of this presumed unmet demand. While recognizing the need for this, we will not let its absence deter initial work on the Pipeline Project as presently conceived. At a future point when we seek outside funding to support this work, this matter would have to be addressed.
8. At some stage, in order to carry out the Pipeline Project at significant scale, it will be necessary to obtain outside support funding. Initially we have a commitment of \$10,000 from the IMU, plus a significant commitment of staff time and resources from the AMS. We felt that, before a credible application for funding could be made, we would need at least some initial proof of concept, and this is in part the aim of the initial pilots discussed above.

There is also the question of who might fund such a project. Most funding agencies are national in character, and their willingness to fund such an international multi-country project cannot be presumed. There are models for

such funding mechanisms, for example with TIMSS. These are things that would have to be explored soon by the Pipeline Committee, and the partner countries/organizations.