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ICIAM 1987 – 2007

The organizers of ICIAM 2007 asked if I could write a few words on the history of the ICIAM meetings to commemorate the fact that the ICIAM 2007 meeting in Zürich will be on the twentieth anniversary of the first ICIAM meeting held in Paris in 1987. It seems my main credential for writing this article is that I have attended all the meetings, a certainly far from unique feat I am sure, and that I have been on the ICIAM Board, representing the IMA, since shortly after the 1991 meeting in Washington. More importantly, my main credential is that I agreed to write this.

The raw data for the quadrennial meetings is given in **Table 1** below but for the beginning of this series, we must go back a few more years to 1984 when Gene Golub organized and chaired a meeting in Paris with representatives of the four societies (GAMM, IMA, SIAM, and SMAI) who later became the founding members of ICIAM and who organized the first four ICIAM meetings. We are very indebted to the vision of Gene in persuading what were previously fairly disparate organizations to combine their efforts and support a truly international meeting in Applied Mathematics. The feeling at the time was that it was important for the Applied Mathematics commu-

nity to have something comparable to the International Congress of Mathematicians which was oriented towards pure mathematics.

The first meeting was held at the then new Congress Centre at Paris – La Villette from 29 June to 3 July 1987. I show a copy of the main poster for this meeting in **Figure 1**. Retrospectively, it was a perfect launch to what was to become the main international activity in Applied Mathematics. The calibre of the Honorary Presidents: Peter Henrici (who sadly died in the March before the meeting), James Lighthill, Joseph Keller, and Jacques-Louis Lions testifies to the importance of the event for our community. If I recollect, in addition to the outstanding technical level (that has been maintained since), the meeting was held with typical French flair even if some of the entertainment might nowadays be considered politically incorrect although very appealing to the mainly male audience. A great challenge for the organizers of this first meeting was to reconcile the different requirements and traditions of the four societies for organizing meetings. In many ways the fact that SMAI was a new society organizing its first major meeting helped greatly in this respect. The

				Chairman		
				Congress	(C)ICIAM	IPC
1987	29 June – 3 July	Paris	Lascaux	Temam	McKenna	
1991	8 – 12 July	Washington DC	Gear	Temam	O'Malley	
1995	3 – 7 July	Hamburg	Mahrenholtz	Gear	Kirchgässner	
1999	5 – 9 July	Edinburgh	Atiyah	Mennicken	Hunt	
2003	7 – 11 July	Sydney	Barton	Nevanlinna	Sloan	
2007	16 – 20 July	Zürich	Jeltsch	Sloan	Wanner	
2011	18 – 22 July	Vancouver	Gupta	Jeltsch	Ekeland/Marsden	

Table 1 ICIAM Congresses

Conference proved to be a further challenge for the organizers because, contrary to the normal fear of having too few attendees, the numbers increased rapidly just before and during the meeting. Although they coped admirably with this, the extra staff needed gave a negative gearing to the per capita costs and the meeting struggled to break even ... a warning to future organizers.

In Paris, the parallel sessions were all housed within one complex but the participants were scattered throughout the city, not much of a problem because of the excellent public transportation. At the second meeting, organized by SIAM in Washington, the venue was a large hotel and many participants were housed there or in nearby hotel accommodation. This made for a more cosy meeting but perhaps less extra-curricular excitement. I recollect the keynote talk from the Presidential Science Adviser, D. Allan Bromley. Although somewhat overly US-centric he was very encouraging for the mathematical community to be involved in the major priorities of the US Federal Government, viz. High-performance computing and communication, global change, science and mathematics education, materials science and technology, and biotechnology; amazingly topical given this was 1991! As always, there were innovations from the earlier meetings. In particular, I recollect the several sessions on educational aspects some hosted by Gil Strang. Although it was not until 1999 that the formal ICIAM Prizes were first awarded, an award was made to Gene Golub for his "outstanding contributions to the international industrial and applied mathematics community" in recognition of his pivotal role in bringing about the first ICIAM.

The third meeting in Hamburg was hosted by GAMM after a switch from Berlin because of possible spiralling costs, and was held in a convention centre with accommodation distributed throughout the city. A new feature of this meeting were the Speaker lunches where participants were invited (at a fee) to join distinguished invited Speakers in a lunchtime discussion. The number of invited talks was increased from 20 in Washington to 31 in Hamburg partly reflecting the growing diversity of applied mathematics. The Hamburg meeting had the largest attendance of any ICIAM to date although the approximately 2,700 participants were boosted by a large number of Eastern Europeans funded by the German Government.

ICIAM 99 was held in Edinburgh hosted by the IMA with the support of the locally based ICMS.

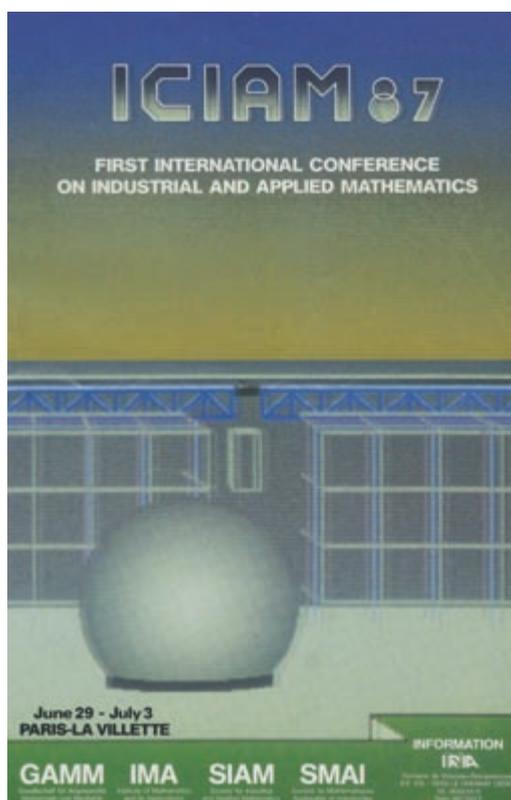


Figure 1: Poster of the ICIAM in Paris, 1987

It was the first to be held in a university and the first where the sessions were held in a range of different buildings. Fortunately (and especially fortunately for Edinburgh) the weather was unseasonably good and the exchanges between sessions were relatively pleasurable although the bottleneck of slow elevators to lecture rooms in high rise buildings was not ideal. It had been hoped that Prince Philip whose wife was at that time opening the Scottish Parliament would give the opening address but that was not possible due to the death of King Hussein of Jordan. The Prince, however, returned in time to attend the VIP dinner. Participants were kept abreast of programme developments through a Daily News that was prepared under the guidance of the tireless programme chairman, Jack Carr. A nice innovation was the summaries given in an expanded closing session which certainly made us realize the breadth and depth of our subject and were also a boon to those making trip reports!

Sydney in 2003 partly followed the university pattern although more than half the sessions were held in the Conference centre in Darling Harbour, a really breathtaking location particularly for those of us who had hotel rooms overlooking it. The weather was, less unexpectedly than Edinburgh but still unusual for winter in Sydney, again kind and the commute between university and Conference centre was an opportunity for socializing with other delegates. This was, of course, the first meeting outside of Europe and North America and so it brought quite a different

ambience to the meeting and a different flavour to the extra-curricular activities. The efforts of a very energetic congress chairman and committee ensured that the “difference” was positive. I at least was conscious in Sydney of a significant involvement of industry and a wide international participation.

We now await with eager anticipation ICIAM 2007 in Zürich and can already plan for the subsequent ICIAM 2011 in Vancouver.

The possibility of ICIAM Prizes was discussed from the very early days of ICIAM but it was not until 1999 that the first ICIAM Prizes were awarded (**Table 2**). Until Zürich, the prizes were not announced until the opening day of the meeting but the Council and Conference organizers for ICIAM 2007 decided that there were benefits in pre-announcing the prize winners. Thus **Table 2** lists prizewinners up to and including ICIAM 2007. Many famous names appear there confirming the high status of these awards in our community. Details of the scope of each prize is given on the website: <http://www.iciam.org/prizes2007.html>

Of course the quadrennial meetings are only part of the story of ICIAM. Since the first meeting in 1984, the congresses have been overseen by a Board or Council (originally called CICIAM but, since 2001, ICIAM) who decide on the venue and who increasingly are initiating and being involved in other activities of importance and interest to applied mathematics.

From the early days, Gene Golub was keen for ICIAM to be more engaged with the community outside of the quadrennial congresses but it is only relatively recently that significant steps have been taken in this regard. The early days of the Council were characterized by a rapid growth in membership and the adoption of more formal procedures to replace the original ad hoc approach, which was appropriate when there were only four

societies. Although I was briefly appointed treasurer in 1995, the formation of an executive committee in 2000 heralded a much more coherent, focused, and more active era for ICIAM. The Council meets annually and the Executive committee at least biannually although much business is of course conducted by email. It has only been since 2004 that the Council has expanded its activities significantly, enabled through additional funding being obtained from a tax on the congresses. Among the more recent new initiatives of ICIAM are an ICIAM Fund that has supported applied mathematics Conferences in the developing world, an ICIAM travel fund for developing countries, involvement with the Developing Strategies Group of the IMU, and the “Water in the Developing World” project of UNESCO.

The twenty years of ICIAM spans much of the modern electronic age. The Hamburg Congress in 1995 was the first to have web pages but it is only recently that the Council and Congresses have had a fully web based System for which we are eternally grateful to Ross Moore from Macquarie University. The home page is <http://www.iciam.org>.

Each Congress has chosen a slightly different way of presenting an account of the meeting and I list the main “Proceedings” for each below.

References

- [1] James McKenna and Roger Temam, editors. ICIAM 87: Proceedings of the First International Conference on Industrial and Applied Mathematics. SIAM, 1988.
- [2] Robert E. O'Malley, editor. ICIAM 91: Proceedings of the Second International Conference on Industrial and Applied Mathematics. SIAM, 1992.
- [3] Klaus Kirchgässner, Oskar Mahrenhoitz, and Reinhard Mennicken, editors. ICIAM 95. Proceedings of the Third International Congress on Industrial and Applied Mathematics, held in Hamburg, Germany, July 3–7, 1995. Akademie Verlag, 1996.
- [4] J.M. Ball and J.C.R. Hunt, editors. ICIAM 99. Proceedings of the Fourth International Congress on Industrial and Applied Mathematics, Edinburgh, 5–9 July, 1999. Oxford University Press, 2000.
- [5] James M. Hill and Ross Moore, editors. Applied Mathematics Entering the 21st Century: Invited Talks from the ICIAM 2003 Congress. SIAM, 2004.



Figure 2: Participants of the first ICIAM in Paris, 1987 (from left: Iain Duff, David Anderson, Gérard Meurant and Jack Dongarra), Courtesy of SIAM News

Prize	1999	2003	2007
Collatz	Stefan Müller	Weinan E	Felix Otto
Lagrange	Jacques-Louis Lions	Enrico Magenes	Joseph Keller
Maxwell	Grigory Isaakovic Barenblatt	Martin Kruskal	Peter Deuffhard
Pioneer	Ronald R Coifman and Helmut Neunzert	Stanley Osher	Ingrid Daubechies and Heinz Engl
Su Buchin	Not started	Not started	Gilbert Strang

Table 2 (C)ICIAM Prizes.