Impact through availability

1 Preliminaries and context

In the late nineties a number of new initiatives were undertaken at Victoria University which bear relevance to the discussions that are currently being undertaken amongst the mathematical community and more broadly. These initiatives are elaborated upon below but first some background.

It is recognised that academics provide the intellectual input of the publication process and yet access to and costs of published materials are under the control of large commercial publishing houses. It is also recognised that access to the academic literature is of paramount importance to the health of academic disciplines. By access here is meant, both the extent and timely availability of materials that serve to inform and develop the community. The exchange scheme outlined below is an example addressing this issue. I argued within the AMSI and Head of Mathematical Sciences Departments forums that it did not make sense for individual universities to replicate provision of access to the literature especially since more and more of this is available electronically. This is being addressed to some degree by more collaboration across the universities. Access to information is the single most important factor to the development of knowledge.

At the recent executive meeting of ANZIAM at Napier the issue of journal subscription and impact was raised. These were also discussed, I am informed, at the editors of AustMS meeting and at the Australian Mathematics Council meeting. Some of the issues relating to the discussion have been reported by Michael Cowling (2005) in the *Gazette* and it is pleasing to read in the president's column that, "The Society is working to get our journals online"[2]. Our experience below and as arguments put forward by Lawrence (2001)[1] demonstrate, availability is of paramount importance. Availability in itself though does not ensure an impact. The case study presented below, however, demonstrates extensive impact that has been possible in part through availability. Cowling (2005) states that "Raising awareness of the importance of Mathematical Sciences is, the most important part of my brief as president". And that "our financial viability depends on two things: our membership and our journals". It is the tension between the dual impost on journals to both be an income source and a means of creating an awareness and impact of the discipline that needs to be given further consideration.

It is hoped that the above discussion and the experience at Victoria University given below will contribute to and inform this debate.

2 Initiatives @ Victoria University

The Research Group in Mathematical Inequalities and Applications (RGMIA) that originated in the School of Computer Science and Mathematics at Victoria University has made a substantial international impact. This is demonstrated by the fact that the RGMIA now has over 850 members worldwide and its development has been a major contributing factor to the escalation in research output in mathematical inequalities and related fields as well as in application areas. The initiative to provide

electronic access to the RGMIA Research Report Collection (http://rgmia.vu.edu.au) which is a preprint series and the electronic peer-reviewed, Journal of Inequalities in Pure and Applied Mathematics (JIPAM) (http://jipam.vu.edu.au) have proven to be an effective catalyst in generating interest in, and use of, mathematical inequalities. The forum created by the RGMIA has been able to breach the barriers of time, cost and access frequently raised by the large publishing houses. The reader is referred to Lawrence (2001)[1] which espouses the benefit of increased impact that electronic access brings.

RGMIA Research Report Collection

The RGMIA Research Report is a preprint collection that began in 1998 and has as its main goal the rapid dissemination of results to a broad international audience. To further this aim, papers submitted to the report, subject to access security, can be downloaded online. In addition, the Research Report is exchanged with over 70 journals worldwide and sent to various mathematics centers and departments. In order to cope with the excessive number of submissions when the Report was restricted to four issues a year, the RGMIA introduced a completely electronic version that does not appear in hard copy. The exchange scheme continues to flourish, with an on-going increase in new exchange partners.

Journal of Inequalities in Pure and Applied Mathematics

JIPAM is a fully-refereed electronic journal, with an initial editorial board of 56. The first call for papers was in September 1999 and the first issue was published in March, 2000. 2002 saw JIPAM implementing its new policy of putting papers online once they were fully processed. In some cases, this has reduced the publication waiting time to within a month of a paper being accepted. In a few instances, the time between submission of a paper and publication has been below two months. With these results, it is no wonder that submissions to JIPAM are increasing. It is now recognized as one of the quality journals in Mathematical Inequalities worldwide. To cope with the expanding number of submissions, the JIPAM editorial board, as of April 2005, has been increased to 74 international editors, and 2 managing editors. With the increasing number of submissions, the number of papers being published has also greatly increased as is indicated by the table below.

Year	No. of submissions	No. of papers published	No. of issues published	No. of Austral. papers
1999	23	NA	NA	NA
2000	52	22	2	4
2001	92	38	3	7
2002	155	84	5	13
2003	178	109	5	8
2004	252	114	4	4

Papers are accepted or rejected by individual editorial board members based on their own judgments and associated referees reports. (N.B. The above table underestimates the number of submissions since direct submission of papers to editors that are eventually rejected, may not be included.)

The journal is reviewed by both major reviewing houses, Mathematical Reviews and Zentralblatt MATH, and it is mirrored on the European Mathematical Information Service (EMIS). It is currently under review for inclusion in ISI.

Our experience certainly confirms the conclusion made by Lawrence that "There

is a clear correlation between the number of times an article is cited, and the probability that the article is online" and that "Free online availability of scientific literature offers substantial benefits to science and society".

I invite the reader to visit the RGMIA and JIPAM websites.

References

[1] S. Lawrence, *Online or Invisible*, Nature **411** (2001), 521 (Edited version), http://citeseer.ist.psu.edu/online-nature01/.

[2] M. Cowling, *President's Column*, AustMS Gazette **32** (2005), 4.

P. Cerone
Head of the School of Computer Science and Mathematics at Victoria University
Foundation Editor of JIPAM
Faculty of Science, Engineering and Technology
Victoria University, PO Box 14428, MCMC, Melbourne, VIC 8001
E-mail: pietro.cerone@vu.edu.au