

## Report for Local Mathematics IMPAC Conference

at

San Francisco State University, April 1, 2006†

Submitted by Martin Flashman

IMPAC Lead Faculty for Mathematics

---

†Based in part on notes by Yoly Woo-Hoogenstyn, Articulation Officer, UCSD

---

A list of those attending is at the end of this report.

---

Preface: Based in part on the recommendations from the 2004-2005 Mathematics IMPAC Report, most of the 2005-2006 Mathematics IMPAC Conferences were held at local regional sites hosted by university mathematics departments at their campuses. Participants came from colleges and universities with relative proximity to each other within a local region. The agendas for the meetings were distributed and posted on line at the Math IMPAC web site: <http://www.humboldt.edu/~mef2/IMPAC/MATHIMPAC.html>.

---

This report covers the conference held on April 1, 2006 at San Francisco State University

---

The meetings began by reviewing basic IMPAC Project information along with some of the recommendations from the 2005-2005 IMPAC Annual Report for the Mathematics discipline. Discussions covered the following developments (not necessarily in this order):

---

### **Lower Division Transfer Pattern (LDTP) Project.**

An agreement adopted by the CSU Mathematics departments now provides a transfer pattern for community college students planning to major in mathematics at one of the CSU campuses. The LDTP (now available on the web) for Mathematics specifies that transferring math majors will have completed three semesters or four quarters of calculus plus all areas of general education except for Physical Science. In addition, individual campuses have determined local requirements related to the major including specifically how to complete the Physical Science general education for that campus.

A student making an agreement with a single CSU campus and completing this pattern before transfer will be given a priority for admission to the CSU (unless the campus is impacted). These students will have satisfied most of the lower division GE and major requirements, allowing completion of work for a degree in mathematics to proceed with less difficulty within two years.

San Francisco State and Humboldt State discussed particular aspects of their programs and recommendations for transferring students.

---

### **The replacement of CAN at the CSU.**

The CSU is in the process of replacing the CAN numbers used to identify courses statewide as generally comparable for articulation agreements with its own numbering system.

CAN numbers used to describe Mathematics courses still exist and will continue to be used by the CSU until they are replaced with a CSU Common Number. Descriptors are being written for the LDTP courses to go with these new numbers. All current articulation agreements will remain in place until replaced in some way by agreements based on this new numbering system.

**The Current CSU Course Number Plan:** Five mathematics department chairs of the CSUs and one CC faculty member met in fall, 2005 to determine new course descriptors and course objectives. Seven course descriptors for math were sent to each campus with the instructions to send them to departments that would teach these classes or articulate them for discussion and approval. .

They were: Calc-SV I, Calc SV II, Calc MV, ODE, Linear Algebra, ODE + LA, Prob & Stat.

As of 2-6-06: The approval of these descriptors is still in process.

When there is 70% agreement on the descriptors, they will be adopted. This spring, 2006, a CC can then submit its course via OSCAR to a panel of CSU faculty who will decide to approve or not the course as an LDTP course. If approved the CC can then use the new CSU number. Initially there will be about 500 courses to review.

The 2004-2005 Mathematics IMPAC recommendations suggested that the CSU try to preserve as much as possible from the prior CAN system and consult with the Community Colleges on the new numbering system. One community college faculty member has been appointed to the CSU panel developing the new numbering system. There is currently no mechanism for the CSU to use the IMPAC project to facilitate communications related to the new numbering system.

---

In light of the termination of the CAN system, the CCC system will also be developing a common numbering system for its own internal use.

---

Transfer **major preparation at the University of California** campuses depends on articulation agreements at each of the UC campuses and has not been consolidated statewide at this time. There is a proposal to implement a more streamlined process for developing articulation agreements between CCC's and UC campuses, but at this time it will have no substantial effect since the UC campuses have agreements with all CCC's on articulation of mathematics courses.

---

Several suggestions from last year's recommendations for increasing communication between colleges were discussed. **The discussion considered the UCSD Math meetings and the benefits of the university hubs and inter-university cooperation. In particular- the cultivation of math clubs, shared events and cross registration were mentioned as suggestions on how to improve connections.**

---

### **ASSIST:**

The May, 2004 IMPAC Mathematics Report recommended that ASSIST provide easy access by major to departmental web sites. The response by ASSIST has now been implemented for all UC and CSU campuses with a section called "Exploring Majors." The new web pages are managed by the articulation officers but the organization could be improved.

The display of the majors for Mathematics is organized by the title of the degree offered. This principle is confusing because a slight difference in the formal name of a degree results in separate listing. The majors are listed in alphabetical order, not by content. As a result the list is longer and more fragmented than is necessary or helpful.

After looking at the mathematics page all agreed it would benefit from a reorganization making information and connections to the campus Mathematics departments more direct and clear.

One procedural suggestion was for ASSIST to have a discipline consultant or consulting panel of mathematicians to work with the articulation officers and/or the ASSIST designers for each major page.

Participants were encouraged to e-mail Eric Taggart at ASSIST with specific suggestions on how to reorganize the math major section ([eric@assist.org](mailto:eric@assist.org)).

---

**Contact Information:** The IMPAC Math Web page now includes a "transfer assistance" page for college faculty, counselors, and potential mathematics majors. The page is maintained by Martin Flashman but is not completely current. It includes links to and/or contact information for each of the UC and CSU campuses including

1. the person(s) to contact for information regarding transfer, in particular, transfer with a mathematics major, and
2. The mathematics department homepage.

Also available at the IMPAC Math Web Page is a link to the CSU Math department chairs web site with current information for contacting each CSU Math department chair. [No comparable web page for the UC Math departments is known to exist.]

---

### **Math Department Web Pages:**

A previous Math IMPAC recommendation suggested that university mathematics departments provide needed information for transfer students on a specific transfer web page with the name of the faculty member(s) in charge of transfer advising for the department and that transfer web pages contain more uniform content information.

At the statewide IMPAC meeting in May Professor Flashman will try to present some possibilities. Bob Hasson, College of San Mateo, volunteered to help develop a composite transfer web page for discussion in May.

---

### **Discussions related to Course Information:**

---

#### **Bridge Courses:**

Once again the meetings discussed the possibility of Bridge Courses for transfer students. There are still some alternatives for college students to take these courses prior to transfer. Humboldt, SFSU and some UCs offer a bridge course in the summer. It was recommended to take this proof course at the university during the summer or through cross enrollment during the academic year. College students can “cross register” at nearby UC/CSU’s for these courses and pay community college fees. A list of available university bridge is available at the IMPAC Math web page. Humboldt State and Sacramento State are starting to work on a proposal for an NSF grant to develop this type of course into a summer program.

#### **Integrated Math Secondary Credential Programs**

Some CSU campuses now have integrated mathematics credential programs that provide a secondary teaching credential at the completion of four year’s of study along with the Bachelor’s Degree. For a college student to take advantage of these programs interest must be recognized early and communication should be initiated with the CSU campus offering the program.

---

#### **Math Education Courses:**

Most math education (math for elementary school teachers) courses are a multi-semester sequence. At some CSUs the first semester is a lower division course (transferable) and a second and third semester are upper division courses that will not transfer. This is an area where further discussion might be merited as there is now very little uniformity across the CSU on how these courses are articulated.

---

#### **Linear Algebra Courses:**

There was a discussion of the linear algebra offerings at the universities and colleges. These covered both content coverage and level of sophistication and expectations. There was much sharing of information and a recognition of common approaches was noted.

---

#### **Math Fair Days:**

These events were one of several possibilities discussed and recommended in 2004-5 to improve connections for transferring students. Potential math majors might learn what they can do with a math major and gather information about various math bachelor degree programs. The agenda for these events could include other topics such as “star” lectures regarding current research and developments in mathematics, specific topics from upper division courses, and/or careers that use mathematics. Representatives from the CSU’s and UC’s mathematics departments could talk to students about transfer, differences between upper division and lower division, careers available for math majors, mathematics research, etc. The students themselves could give talks or presentations, have panel discussions, etc. Students who have already transferred could be available to give advice on the transition to four-year institutions.

Following the 2005 IMPAC Math recommendations, Professor Flashman met with the boards of CMC<sup>3</sup> and CMC<sup>3</sup>-South over the summer. Subsequently both groups have passed resolutions to support the principle of Math Days. Fran Manion for CMC<sup>3</sup>-South and John Jacob for CMC<sup>3</sup> have volunteered to work with Professor Flashman for IMPAC on these projects. Professor Flashman also organized a related panel presentation at the CMC<sup>3</sup> Conference in Monterey in December.

This year the event is being piggybacked onto the regional undergraduate math conference funded by the NSF through the MAA scheduled at Sonoma State. This conference requires no registration fees from students and provide lunch, allowing all lower division Math majors to experience research at the 4-year level. The Sonoma State organizers are incorporating some aspects of community college Math Day in their conference. John Jacob is working on spreading the word to the community college population.

---

#### **Future Intersegmental Efforts:**

Here are some of the issues under consideration.

Should IMPAC have a steering or coordinating committee? Currently there is no way to diversify its leadership. How can e-mail be used to improve communications? Should IMPAC have yearly local regional conferences of CCs and CSUs to keep each other abreast of curriculum changes in mathematics?

The CSU department chairs meet twice annually to discuss issues of common concern. The community colleges often do not have a formal mathematics department chairperson. The UC math departments have no ongoing interconnection or communication.

It was suggested that the MAA might supply a workable venue in the future for intersegmental communications since it already organizes a session for department chairs at its section meetings.

A statewide IMPAC Math coordinating committee would provide more communication across regions.

David Meredith, SFSU, proposed an intersegmental regional meeting next year at SFSU and will invite UCB, UCSC, CSUMB AND SJSU as well as others.

One idea is to hold a half-day meeting with lunch and an activity in the afternoon

---

#### **Next Statewide IMPAC Meeting:**

The IMPAC statewide meeting is scheduled for May 1, 2006, at the Radisson at LAX. At that meeting proposals and recommendations based on this and other local meetings will be reviewed and final recommendations will be adopted.

---

## Attendance

Anthony Monteith	Chair	College of Marin	anthony.monteith@marin.cc.ca.us
John Jacob		College of Marin	John Jacob <jacob@marin.cc.ca.us>
Bob Hasson	faculty	College of San Mateo	hasson@smccd.net
Tae Soon Park	chair	Merritt College	tpark@peralta.edu
David Meredith	Chair	San Francisco State University	meredith@sfsu.edu
Kevin Yokoyama	Chair	College of the Redwoods	kevin-yokoyama@redwoods.edu
Marcia Kolb	Math Coordinator	Chabot College	mkolb@chabotcollege.edu
Diane Johnson	Chair	Humboldt State University	dlj1@humboldt.edu
Yoly Woo-Hoogenstyn	Articulation	UCSD	ywoohoogenstyn@ucsd.edu
Martin Flashman	IMPAC Lead	Humboldt State University	flashman@humboldt.edu