THE BRITISH COLUMBIA COMMITTEE ON THE UNDERGRADUATE PROGRAMME IN MATHEMATICS

MINUTES OF THE 80TH MEETING, MAY 23-25, 2002

THURSDAY, MAY 23, 2002

1. WELCOME BY THE PRESIDENT OF DOUGLAS COLLEGE - Dr. Susan Witter

Susan Witter welcomed the BCCUPM to Douglas College. She talked briefly about the challenges facing public post-secondary institutions in general and Douglas College specifically.

2. ADOPTION OF THE AGENDA FOR THE 80th MEETING OF THE BCCUPM

The Agenda for the 80th Meeting was adopted with the following changes: Stat 2a) Garry Phillips will represent the high school teachers and page 3 #2) Clint Lee will report on the BC Colleges High School Mathematics Contest.

3. ADOPTION OF THE MINUTES OF THE 79th MEETING, HELD AT THE COLLEGE OF THE ROCKIES

The Minutes of the 79th Meeting were adopted as posted on our website.

4. CORRESPONDENCE

An e-mail from Mohammed Chabi at Northern Lights College was received passing along his sincere regrets in being unable to attend this Meeting and wanting to know how many hours of lecture/lab/tutorial are spent for a number of different courses. This could be addressed during Institutional Reports.

5. ANNOUNCEMENTS

5.1 **Notice of Elections:** At this Meeting, an election for Chair of the BCCUPM and for Chair of the Statistics Subcommittee will be held. Alan Cooper agreed to coordinate nominations for these positions and Roger Coroas and Dan Henschell agreed to assist.

5.2 Colin Lawrence from BCIT invited everyone to a meeting with High School teachers around the new high school Grade 11 and 12 curricula. The meeting will be held on June 3 at BCIT.

6. TALK: POST-SECONDARY: KEEPING IT VITAL – Dr. John Dennison, Professor Emeritus, UBC

John Dennison began by giving a brief history of the articulation process and transfer credit. He commented that the Math group has always been a leader in these processes. What continues to be a sore point is that when the Universities make changes the Colleges eventually have to conform. A particular anomaly occurred when a student was accepted at U.Vic. directly from high school, but chose to go to a College instead. After two years she re-applied to UVic and was not accepted because her high school GPA was insufficient for the current admission standards. Transfer is in good shape, but is not perfect.

There have been dramatic changes in the system in the past few years. The University Colleges are still struggling with identity. The Associate Degree is now widely recognized, but earning it is a challenge. Students are worried that, because of its demanding criteria, completing it will lower their GPA. The University Colleges want their courses recognized and

are trying to establish their legitimacy, but it's a difficult process. Colleges can offer "applied" undergraduate degrees and University Colleges can offer "applied" graduate degrees, but there is some disagreement on what an "applied" degree is. The University Colleges are investigating whether they should be called Universities. In 1972 the Vocational Schools and Colleges merged and became more-comprehensive, institutions. As the emphasis moves to the academic programs at the Colleges, the trades programs are feeling more marginalized.

The private sector is another problem on the horizon. Legislation now allows for private universities. In Ontario degrees are carefully controlled and almost exclusively controlled by universities. Colleges and private universities can now apply to offer a limited number of applied degrees.

Second year programs in BC have always proven a special challenge at the colleges. Colleges often are unable to provide students embarking on programs such as Commerce or Engineering with the full range of courses they need for transfer to third year. The Associate Degree has been successful in making second year courses at colleges more attractive to students. Evidence suggests that students who complete two years at a college have a much greater advantage at university over those who only complete one year. The retention rates at the universities are much higher now because the entrance requirements are higher than in the past. This poses a potential problem for transferring students in that more second year university students are also moving on to third year.

The colleges and universities meet differing needs. The colleges focus on teaching, which serves students who want instructor interaction, the universities also focus on research, which serves students who don't necessarily need a lot of contact with a professor, and the Open University serves students who prefer a more independent, self-paced style.

7. SECOND-YEAR MATHEMATICS AND STATISTICS SUBCOMMITTEE SESSIONS: (held concurrently)

Math1. Issues and Challenges in Second-year Calculus Courses – John Fournier

Math2. Discussion of transfer, articulation and delivery issues re Second-year Calculus

The biggest issue for second-year Calculus is the topics covered in the prerequisite courses. It results in students having to work harder because they haven't all covered the same topics in their first year courses. For example, most first year courses no longer cover polar coordinates, so second year instructors need to take that into account. There was also some discussion about series, where they should be covered, and to what depth. Students arrive in second-year courses not only from different institutions, but also from different programs (science, engineering, commerce, etc.) within an institution.

The match of the second year courses overall seems to be quite good. There was a discussion about the topics covered in Calculus III and Calculus IV. Some institutions cover much more that others in these courses (some offer only a Calculus III). There are two distinct, delivery models in second-year calculus: two courses or one extensive course. Math 217 at UBC combines Calculus III with Vector Calculus. Some discussion around the table ensued about transfer issues related to this course, especially given that UBC's Vector Calculus is a third-year course. At UBC the Computer Engineers were asking for a course that offered generating function and series. Some institutions cover those topics in Discrete Math.

Another issue identified was the use of technology. UBC is unable to grant transfer credit for the Lab components of transferable courses. Only a few colleges **require** a technology component in their calculus courses. Maple is a wonderful visualization tool in Calculus III; however, there is an ever-present concern that technology not replace concept-development. Calculus III at most institutions is offered as a four-hour course with only a few offering it as a three-hour course. Considerable interest was shown in the motivation behind using technology, particularly Maple. Are students using the technology as a replacement for doing problems by hand?

Math3. Issues and Challenges in Linear Algebra Courses – Greg Schlitt

Greg gave a brief summary of the variations he's observed in Linear Algebra courses and identified some issues. Some institutions offer a first year course for engineering students and a second year course, which is the "typical" course (vector spaces, proofs, etc.)

Math4. Discussion of transfer, articulation and delivery issues in Linear Algebra

Discussion concerned the content of Linear Algebra courses. For example, when should abstract vector spaces first be introduced. Complex numbers are required in later courses, but don't seem to be taught anywhere (including high school). Some institutions are requiring coverage of the derivation for Cramer's Rule. Linear Algebra serves several purposes, so finding content appropriate to meet the various demands always presents a dilemma. Some courses are tailored specifically for a program (engineering, etc.) and can be designed for those students, but the general, second-year course is offered to a variety of students, including math majors, and needs to have integrity. That being said, it is inappropriate to ignore the needs of students in specific programs.

Some institutions incorporate technology in their Linear Algebra courses. At Langara, the computer is an integral tool of the course--used for the mid-term and the final. However, the students also have to do proofs, for which the computer is clearly inappropriate.

Members shared information about the textbooks for first-year Linear Algebra used at their institutions.

Math5. Issues and Challenges in Differential Equations Courses – Roger Coroas

Math6. Discussion of transfer, articulation and delivery issues for D.E. courses.

Roger described what traditionally comprises Differential Equations courses. One issue identified in the DE area was the use of technology and another was the drop in enrollment in the past several years. At some universities the course is a second year course and at others it's a third year course. Articulation seems to have been worked out, but this can also be an issue. Another issue was the course prerequisite: most institutions require one or both of Linear Algebra and Calculus III (in some cases, one or both are corequisites).

The content seems to be quite consistent among the various institutions. A few places don't cover series solutions to DE's. There also seems to be a shift in emphasis from quantitative to qualitative.

Most institutions have experienced a drop in enrollment, especially since some UBC engineering departments no longer have the course as a prerequisite. There are also more choices now for second year courses, so students either don't take the DE course or defer it to third or fourth year.

Some institutions allow the students to have a formula sheet during DE exams. There was a lively discussion on their use and usefulness. Another serious concern was the observation that students have difficulty with basic integration.

Discrete Math: The Discrete Math course is a Computer Science course at UBC. At other institutions it's required for both Computer Science and Mathematics. Most of the receiving institutions give transfer credit for the appropriate course (a Math course at one institution may get Computer Science credit at another institution).

Stat1. Business Arising from the Stats Session at the 79th meeting:

a) Use of Statistics Software in the Introductory Course.

For this item, no comments were noted.

b) Probability/Statistics Workshops for Math Teachers – Ted Bentley

Ted presented an overview of the curriculum and resource material developed for the Principles of Math 12 course. He also provided details of the minor revisions to the PM12 course that will be implemented in its second year of offering (2002/03). In-service workshops (prepared by Ted and Linda Rajotte and presented by them in various locations of the province) designed to assist teachers with the new probability and statistics content were also discussed. Ted encouraged statisticians at other post-secondary institutions to offer content support to teachers in their region.

Stat2. Discussion Items:

a) Impact of the Probability/Statistics Content in PM12 on Stats Courses and their Prerequisites.

Members did not feel any immediate concerns or express any interest in modifying the course content of Probability/Stats courses in light of the introduction of these topics in PM12. However, interest was shown in the question as to whether we should be trying to attract 1st year science students into a stats course (like STAT 200 at UBC).

b) Emphasis on Activities (Projects, Simulations, etc.) to Enhance Concept Development in Stats Courses.

It was noted that Langara College has a mandatory group project that emphasizes comprehensive reporting.

c) Teaching Statistics On-Line.

David Chen outlined the details of a WebCT-based course that he developed at UCFV. The course began with 15 registrants and 10 students completed the course.

d) Statistics Resources on the Web.

For this item, no comments were noted.

e) Additional Comments

Garry Phillips expressed concerns about the texts for PM12 and on the fact that teachers outside the Lower Mainland may be at a disadvantage in getting support with the new content.

Richard DeMerchant reported that the Western Canadian Protocol (WCP) will be looking at revisions and he expected that post-secondary representatives would be involved from the outset. He also indicated that the Ministry of Education no longer has a Curriculum Branch and that there is no funding for Ministry supported in-service.

8. REPORTS FROM SECOND-YEAR MATHEMATICS AND STATISTICS SESSIONS

Second-Year Courses Session
Roger, Greg and John summarized the discussion from this session.

Statistics Subcommittee Session
Veda summarized the discussion from the Statistics session.

Many teachers in the secondary system have either limited exposure to Statistics or have not looked at Statistics in a very long time, and are therefore finding the increased data analysis content in PM12 somewhat challenging. Ted Bentley at Capilano College is providing Professional Development workshops for secondary Math teachers throughout the province. The funding for these workshops came from the Ministry of Education, but that funding is no longer available. Pearson Publishing, through the Pearson Institute, is providing funding for workshops in northern BC, so the private sector is

picking up some of what the Ministry has dropped. He recommended that every college be in contact and have open communication with their area school districts on the matter of professional development.

Motion: moved by Veda Abu-Bakare and seconded by Ted Bentley
that the BCCUPM recommend that each post-secondary institution make overtures to teacher associations in the school districts within its catchment area to provide in-service professional development opportunities in the Probability and Statistics strand at all levels, with a focus on the Principles of Mathematics 12.

Motion carried

Questions about whether Pre-Calculus and ABE courses would also be including Probability and Statistics in their courses were raised.

2.5 ABE – Gordon Danskin

Our annual meeting took place on March 7 and 8 at VCC City Centre, and as the ABE representative from the College hosting this year's BCCUPM meeting, I was asked to attend your meeting.

In case any of you are new to BCCUPM, I thought a brief history of ABE Mathematics articulation might be useful. In 1983, an ABE Articulation Development Committee produced a provincial framework and common terminology as a first step in the articulation of our courses. In 1986, the then Ministry of Advanced Education and Job Training validated the articulation process by sanctioning the ABE Provincial Diploma as a College-based Adult graduation. In 1999, the Ministry of Education and the Ministry of Advanced Education, Training and Technology announced a common credential known as the British Columbia Adult Graduation Diploma (BCAGD) for use in both school district adult programs and college ABE programs. In May 2000, amendments were made to the *College and Institute Act*, the *Institute of Technology Act*, the *Open Learning Agency Act*, the *School Act* and the *Independent School Act* to recognize this credential. Currently our ABE Advanced Algebraic Mathematics and ABE Provincial Mathematics are authorized as *Equivalent to Ministry of Education Courses*, and consequently may be used for meeting the requirements of either the BCAGD or the regular Dogwood Diploma.

At this year's meeting, in addition to conducting our normal business where we agreed to merge our current Advanced Mathematics–Business & Consumer and Advanced Mathematics–Technical into a single course (Advanced Mathematics–Business/Technical), we discussed the wisdom of modifying our Learning Outcomes for ABE Advanced Algebraic Mathematics and ABE Provincial Mathematics in light of changes in the high school curriculum–Principles of Mathematics 11 and 12. Waiting until we knew better how our post-secondary counterparts view the new curriculum and the preparedness of its graduates, we decided on a more modest course of action–namely, minor revisions of the Advanced Algebraic outcomes which effectively make functions and transformations more central to the course–core topics rather than options. (This essentially represents the instructional *status quo*.) This process is currently underway using e-mail, and the proposed revisions will be voted on by the end of the month.

Personal highlights for me at our meeting were the presentation of a report on results of the Math Proficiencies Survey by Leo Neufeld, and a demonstration of *The Algebra Coach*–intelligent and interactive software authored by Eric Hiob from BCIT, available free of charge at MathOnWeb.com.

The Thursday Session of the BCCUPM adjourned at 4:20 p.m.

BCCUPM and Secondary School Teachers Session

1. Introduction and Opening Remarks
Leo welcomed the secondary school visitors and gave a brief summary of the work of this committee.

2. BC Colleges High School Mathematics Contest Report – Clint Lee (see attached report, page 19)

3. BC Universities Calculus Challenge Examination – John Fournier
The Calculus Challenge Exam last year was sponsored by UBC. The concepts emphasized on the exam annually are slightly modified each year, but are essentially consistent with Calculus 12. The difficulty of the items can best be judged by reviewing past exams. This year the Challenge Exam will be hosted by SFU. At UBC, students can have a grade recorded on their transcript for Math 100 with a CH (challenge) notation. Successful Calculus Challenge students can also get credit at some of the colleges. Some students have also succeeded in obtaining such recognition outside of BC.

4. General Discussion

4.1. Entrance Examinations/Placement Tests.
Several representatives from post-secondary institutions outlined their placement test procedures. The primary purpose of these tests is to promote student success. Through writing them, students are also alerted to prepare themselves prior to entering a course if their skills are weak. In summary, there appeared to be considerable variation among post-secondary institutions as to student placement and as to whether placement tests are required.

4.2 Post-Secondary Calculus Courses (Science/Non-Science)
A question about the differences among the first-year Calculus streams was asked. Such information would assist secondary teachers in advising students about course choices. The BCCUPM has a subcommittee that has been looking at core topics for these courses and will be reporting on this tomorrow. One major difference among the streams appears to be in the applications. At UBC, successful students in any stream may enroll in Calculus III.

4.3 Pre-Calculus Courses in Post-Secondary
Most colleges and universities offer a pre-calculus course. UBC has one, but it is non-credit and not offered through the Math Department. North Island doesn't have one, but does have an ABE Provincial level course that serves the same purpose.

4.4 Use of Graphing Calculators.
The subject of graphing calculators has been raised frequently at the BCCUPM. Some colleges have posted calculator use policies. Since the post-secondary institutions are autonomous, such policy and practice may vary widely among and within institutions. The secondary teachers observed that students' basic skills now seemed weaker than they were ten years ago. A lively discussion about the uses of graphing calculators and other technology in Mathematics courses ensued.

5. Adjourn to Reception The session adjourned at 5:45 p.m.

FRIDAY, MAY 24, 2002

1. Introduction of Representatives and Opening Remarks

2. REPORTS

2.1 B.C. Council on Admissions and Transfer

a) The BC Post-Secondary Transfer System – David Leeming

David gave a summary of the BCCAT meeting he attending in February. Everything with the transfer system is working, in fact, BC is a leader in this area. The admissions side needs some improvement and the Council will be looking at this in the next year. There have been requests from institutions in Alberta who would like to have recognition in the transfer guide. This is a big issue – where do you draw the line? One of the important components of the system is the Open Learning Agency.

Motion: moved by David Leeming and seconded by Bruce Kadonoff
that the BCCUPM recognize the significant rôle that the OLA plays in the BC public post-secondary system and that we send a message of support to the Minister, Shirley Bond.

Carried

b) A Common Grading Scale for BC Institutions? - Susan Milner

The Alberta universities and colleges have agreed on a common grading system, where A and A+ are both a 4.0 grade point. The BC registrars are looking at doing something similar in BC, but they don't like the Alberta system. A group from BCCAT will be pursuing this in the fall.

c) Private Post-Secondary Education in BC – Leo Neufeld

Robin Fisher, Dean of Arts/Social and Health Sciences at UNBC led the discussion on private, post-secondary education at the Articulation Chairs' meeting. BC now has 1100 private post-secondary institutions registered. Of which, 243 are accredited. With such a number of private institutions, BCCAT feels that it is appropriate to examine what implications these institutions have for the public system with regard to course and program transfer.

It is felt that in the next three years, there will be a significant increase in such transfer credits, in a wide variety of post-secondary institutions, in enhanced degree granting opportunities and with these will come new organizations (in the Ministry, boards, accreditation bodies, etc.) enabling institutions to offer degrees.

As far as the Ministry is concerned, there are both public and private post-secondary institutions in the education sector. However, articulation is presently divided and distinct (at least this is the general perception).

Four questions were asked:

1. Are there things that the private sector can do better than the public? Is there a legitimate rôle for the private sector in post-secondary education?
   Response: At present, yes. They have more flexibility and can tailor programs to specific needs. Cost, choice and accountability are key issues.
2. Should we collaborate, cooperate, compete with, or ignore the private sector?
   Response: There are many examples of such cooperation already: tourism, flight training, etc. There may be a wish to ignore them, but a greater reality says they are here and we are already working extensively with them.
3. Should students from private institutions in BC be able to transfer **appropriate** credit to public institutions?
   Response: Again, they already do. However, the question of who bears the cost for such transfer was raised. Also, the matters of frequent turnover of faculty at private institutions and of having assurances of long-term accountability were mentioned.
4. Should the criteria or processes for articulation with private institutions be different from those between public institutions? Response: Yes and No. Some previous issues were repeated, but there seemed to be comfort with the present articulation system and a hope that it could be extended to include private institutions.

The full report is on the BCCAT website http://www.bccat.bc.ca/

2.2 PIMS – Changing the Culture 2002 - Wayne Matthews

This was the 5th annual PIMS Conference and it was very successful. The theme this year was *Intuition and Rigour*. Wayne gave a summary of the keynote address, workshops, and closing lecture. People attending came from the post-secondary, secondary, and elementary schools. The two main addresses may be available on the PIMS web-site.

2.3 Ministry of Education – Richard DeMerchant

There is no longer a Curriculum Branch – it is now called the Standards Department, which includes a group called the Standards Group – this group is responsible for the Integrated Resource Packages for secondary mathematics. Several years ago BC set up a Mathematics Task Force to look at curriculum across the system. There is now a single grade 9 course that leads to three pathways at the 10/11/12 levels: Principles, Applied, and Essentials. The Essentials stream was developed based on materials from Manitoba with some modification. Manitoba has had this course in existence for about five years. In Manitoba, this course qualifies for acceptance into trades programs. Richard has sent copies of the IRP's to each institution to see where it would be appropriate as a prerequisite. He would like our representatives to be familiar with the course in the event they are consulted. If the course is found acceptable for a program, Richard should be contacted.

There is a committee looking at graduation requirements. At the moment, Principles 11, Applications 11 and Essentials 11 are the only three acceptable Math courses for high school graduation.

There have been some changes to the Principles of Math exam specifications. The main change is that there is a closer match between the curriculum and the exam.

The web-site for many institutions indicates that for acceptance purposes, Principles of Math 11 and Applications of Math 12 are equivalent. However, students are finding that this is not always the case.

The Western Canadian Protocol has been in place for several years. The purpose was to make transfer between provinces easier for students. The other purpose was to make it more attractive for publishers to produce a book that is in line with the curriculum. The Protocol has some problems with it, but this is likely to always be the case. The initial Curriculum was produced without consultation with the post-secondary system. As the curriculum is revised, starting in September 2003, this will be corrected. Post-secondary institutions will be consulted to make sure doors are kept open for students, while doing the stream of Math that is appropriate for them. Currently, the WCP only has two streams; Pure Mathematics and Applied Mathematics. BC has asked to add two more: Calculus 12 and a third stream (Essentials or something else).

2.4 BCAMT – Tony May (tmay@croftonhouse.bc.ca)

Tony announced the fall conferences for 2002 and 2003 (2002 in Surrey, October 25, and 2003 in Whistler, October 17 – 19).

The new Principles of Math 12 has had its first sitting of the Provincial Exam. The consensus seemed to be that the exam was fair and that student results were consistent with other years. There was some discussion around the report of the subcommittee that was looking at the new Principles of Math 12 curriculum. This document is available in electronic form (e-mail Tony at the above address). Richard – When a Math curriculum is changed there is quite a lengthy consultation process. The post-secondary system is invited to have a representative on the overview team, but at the moment there is no representative from post-secondary on the writing team. When the new curriculum is presented in draft form, anyone is welcome to respond.

The suggestion was made that a summary of all the post-secondary URL's that have policy statements on the acceptable entrance course (Principles of Math 11, Applications of Math 12, etc.) could be made available for Math teachers in the secondary system.

The new Mathematics 8 and 9 IRPs are to be implemented in September 2002. The BCAMT has developed an Opinion Statement as the new IRP has caused concerns amongst teachers as its implications became more fully recognized. The new IRP is not what was supported in the earlier Position Statement. The executive of the BCAMT does not support the new IRP for Mathematics 8 and 9.

THE BCAMT website has been revised and is at www.bctf.bc.ca/bcamt/. The BCAMT listserve continues to provide teachers with the means to put forward their ideas and questions on virtually any aspect of math education in BC. It is possible to join the listserve by going to the BCAMT website.

Report from nominations committee.

Motion: moved by Ken Towson and seconded by David Leeming
that Susan Milner be acclaimed as Chair of the BCCUPM.

carried

Motion: moved by Dan Henschel and seconded by Ted Bentley
that Veda Abu-Bakare and Larry Weldon be acclaimed as Co-Chairs of the Statistics Subcommittee.

carried

Veda Abu-Bakare nominated Jim Bailey for the position of Vice-Chair of the BCCUPM and he was appointed by acclamation to a one-year term (an election for Vice-Chair to a two-year term will be held at the 81st Meeting)**.**

3. BUSINESS ARISING FROM THE MINUTES OF THE 79TH MEETING

3.1 Core Calculus Curriculum (Report of the Subcommittee) - Bruce Kadonoff

Bruce presented the process and the findings of the Core Calculus subcommittee. A concern was expressed that Business or Commerce had not been formally consulted – are we still meeting their needs with the Core Curriculum? It was not appropriate to define Calculus I and Calculus II separately, but if students have completed the core, they should be able to transfer to Calculus III at a receiving institution. Most of the discussion focussed on the Social Sciences/Business Calculus courses, where the greatest differences between institutions are seen.

With its report, the subcommittee recommended the following motions:

Motion: moved by Bruce Kadonoff and seconded by Rustum Choksi
That the BCCUPM accept the Report of the First-Year Calculus Sub-committee and endorse the Core Sciences Calculus and Core Social Sciences/Business Calculus curricula as described in this report.

Carried unanimously

Motion: moved by Casey McConill and seconded by David Leeming
That receiving institutions grant full transfer credit to first-year courses from other BC post-secondary institutions whose courses are consistent with the curricula as described in this report.

Carried unanimously

Motion: moved by Bruce Kadonoff and seconded by Rustum Choksi
That, when designing or modifying first-year calculus course, all BC post-secondary mathematics departments strive to include within their courses the calculus topics as described in this report.

Carried unanimously

Motion: moved by David Leeming and seconded by Costa Karavas
That any post-secondary institution sensing that the Core Calculus curricula as described in this report require a full or partial review raise its concerns at the next regularly scheduled meeting of the BCCUPM.

Carried unanimously

Motion: moved by Rustum Choksi and seconded by Roger Coroas
That, in the absence of an earlier full review, the Core Calculus curricula be subject to a mandatory, full review after five years.

Carried unanimously

Jim Totten expressed his pleasure that the group was able to reach an agreement on a list of core topics and made the following motion:

Motion: moved by Jim Totten and seconded by Alan Cooper
That the BCCUPM thank the Core Curriculum Committee for a job well done.

Carried unanimously

The core calculus curricula are a reference for receiving institutions when deciding transfer credit. Some of the sending institutions commented that currently they've been trying to design their courses to satisfy the curricular demands of all the universities. By designing their courses within the guidelines of the first-year core calculus, they should now be assured of full transfer credit.

3.2 Mathematics Resources on the Web (Survey) – Alan Cooper
Alan gave a summary of the survey he did looking at how institutions/individuals use the web as an instructional resource in Mathematics. If you think a site merits being made available to the BC Math community, send it to Alan (acooper@langara.bc.ca) and he will include it in his list (www.langara.bc.ca/mathstats/resource/onWeb/index.htm). There are some web-sites that are a directory of other Math sites (www.joma.org).

4. INSTITUTIONAL/ARTICULATION BUSINESS

4.1 Reports from Institutions

- BCIT –
  - The department continues to develop WebCT and Maple applications.
  - Eric Hiob has been actively working on the development of an Algebra Coach. He gave a well-received presentation to the ABE working committee.
  - Louise Routledge continues as Program Head.
  - There is continuing concern over the impact of the new high school curriculum streams on BCIT's mathematics curriculum and entrance requirements. A meeting has been planned for June 3, 2002, with representatives from the high schools and the Ministry's curriculum branch to discuss this.

- CAPILANO – Ted Bentley
  Faculty – After 24 rotations around the academic year at Capilano, Bob Verner is retiring – we wish him a long and happy retirement. Rick Brewster's leave to Bishops University has been extended one more year. We will be hiring a regular full time replacement to fill Bob's position, and likely will have one or more non-regular positions available in Spring 2003 as a result of two other regular faculty on one-term leaves. Lily Yen has assumed Rick's duties as the principal contact and organizer at Capilano for the BC Colleges High School Math contest.

  Budgetary Challenges – Like all Public education institutions Capilano College is facing some difficult budgetary challenges in the upcoming year. To address the projected 1.3 million deficit the college proposes to eliminate a few high cost programs that were judged to be unsustainable (does not include math!), and to increase student tuition fees by about 40% to $56.50 per credit hour. To address the potentially more problematic 500 FTE deficit the college administration has chosen at this point not to use the new legislation which does give them the legal authority to impose increased class sizes. Rather, as a result of discussions with the faculty association, we are going to try to meet our increase FTE target by minimizing the number of classes that run with empty seats and to voluntarily accept student over loads wherever possible. To this end the Mathematics and Statistics Department has chosen not to offer two courses in the 2002/2003 academic year that have consistently under enrolled – the second term of introductory statistics (Math 102) and calculus IV (Math 231) – and have reassigned these sections to classes that are likely to fill. As a department we will continue to support other under enrolled second year courses by accepting voluntary overloads in our first year and preparatory classes. As a result of these changes we fully expect our seat utilization to exceed 100% with improved FTE generation.

- CARIBOO
  1. Jim Totten/Bruce Crofoot have been provisionally appointed Editor/Assoc. Editor of Crux Mathematicorum with Mathematical Mayhem (5 year term - Jim to be given 50% release of teaching duties).
  2. New History of Math course developed for fall 2002 by Kirk Evenrude at 3rd year level. Both this course and Problem Solving course are (proving to be) very popular with students.

3. Two retirements in department - Jack Bradshaw, Don DesBrisay. (May be coming back to teach at 50% load if approved by Union/Administration).
   - thus, at least one new position to be advertised for department - will be a scholarly activity position with Ph.D. requirement.
4. Math & Stats Department to become part of a new School with Computing Science and various technology programs.

- COQUITLAM – Bruce Kadonoff

College-wide news

- classroom addition – 22,000 square feet, 16 classrooms
- Open House and ribbon-cutting on 1 June 2002.
- Enrolment up to about 1200 students with approximately 750 enrolled in university transfer programs

Department news

Over the past year the department staffing has increased by 1.25 FTE positions and the Math Lab Asst position has increased hours to 35 hours/week.

Pre-calculus and business calculus continue to be our biggest draws. Our current course offerings include:

- 5 x Pre-calculus sections
- 6 x Calculus I sections
- 3 x Calculus II sections
- 1 x Linear Algebra
- 1 x Discrete Mathematics
- 1 x Calculus III / Differential Equations (alternating each semester)
- 3 x Statistics sections

The pass rate in Pre-calculus remains approximately 50 – 60% but we have seen a slight increase in the pass rate in Calculus I (now about 60 – 70%). We credit the latter to strict standards in Pre-calculus.

Articulation – working on Quantitative Methods courses to align with changes to SFU's BUEC 232 and to UBC's COMM 290/291.

- DOUGLAS – Susan Oesterle

We have had a quiet year with no curriculum or faculty changes. Natasha Davidson has completed her term as Chair and is passing the hat on to Dan Henschell. Dan and Aubie Anisef have been working on a Calculus based Stats course which we hope to have approved through our Education Council this summer. Wes Snider and Susan Oesterle have made some changes to their Calculus I labs in an effort to improve success rates. The labs have become much more like tutorials, with frequent quizzes and remedial mini-lessons as needed. They had some good results but it is too early to say whether this will continue. The Faculty of Science & Technology has been asked to find a way to cut $200,000 from its budget over the next year without reducing FTE. In Math, we fear that our Math Tutor positions are at risk. We also are feeling pressure to run courses that fill (typically lower level courses) at the expense of courses that don't (like Differential Equations).

- FRASER VALLEY – Susan Milner

We continue to see growth both in our enrolments and in the number of courses we offer. This past year we

- filled about **1800 seats** in mathematics or statistics courses
- were **near capacity on most of our second year courses** (36 seat maximum)
- saw healthy upper-level numbers (enrolling 28/36 in complex variables, for example, and 22/36 in survey sampling)
- introduced **new upper-level courses in number theory** and directed studies in statistics for 2002/2003

There continues to be a great deal of pressure on our **introductory statistics courses**, and on our **mathematics for elementary ed. course**. Various special funds have allowed us to timetable extra sections of these, and we seem to be able to fill as many as we can offer. We anticipate a similar situation with our first-year **discrete math** course as of next year.

We are in the process of hiring faculty in statistics and mathematics (one a replacement, one a new position) and have hired 2 half-time people for our math centres, which continue to be very busy and popular.

We are experimenting again this year with offering our first-year calculus course to high school students who have already met the prerequisite, in a special section. Last year's enrolments were poor, but we are trying again in a different time slot.

The aging of our computer lab facilities is becoming more of a problem, with the computers not properly supporting some of the software used in math and statistics courses.

We offered introductory statistics on-line as part of the BC-wide Associate of Arts degree.

- KWANTLEN – Casey McConill
  Due to budgetary considerations, the Newton Campus will be closed. This campus houses many of our trades and technology programs, most of which will be moved to the Surrey and Langley campuses. Kwantlen's Early Childhood Education program has been cancelled, and the Adult and Career Preparation program has seen cuts. However, due to their cost-effectiveness, areas such as English and Mathematics will grow. In particular, over the coming academic year, ten new sections of mathematics courses will be added, mainly at the pre-calculus and calculus levels. Consequently, Sergei Novocelskii, who had been half-time at Kwantlen and half-time at UBC, will now be full-time, regular at Kwantlen. We will be seeking additional people to fill contract positions.

- NORTH ISLAND – Slava Simice
  Brigid Walters is the new dean of University Transfer Programs. Enrollments in Math 12 increased and were about the same in Calculus. The level of students coming from high schools was lower than in previous years and therefore the pass rate of students in the first year calculus decreased.

- NORTHERN LIGHTS – Mohammed Chabi
  Northern Lights College continues to offer a variety of first-year courses in mathematics and statistics to students in our Academic Program, and in programs that the Academic Program serves, including the Alaska Highway Consortium on Teacher Education (AHCOTE) and the Business Management Diploma Program.

  Although subject to variations from year to year, in general the trend in enrolment at the Fort St. John campus of NLC is up; enrolments in math courses are on the rise.

  We are revising our math courses. We would like to know the number of hours of lecture/Lab/tutorial you spend per course for the following courses:

  1. Calculus
  2. Calculus, Series and Approximations
  3. Introduction to Statistics
  4. Calculus for Social Sciences
  5. Finite Mathematics
  6. Matrix Algebra
  7. Principles of Mathematics for Teachers

- NORTHWEST – Mona Izumi
  We will continue to offer Calculus I and II in both Terrace and Prince Rupert. We are working on an Associate Degree in Environmental Studies that will ladder into UNBC's degree program. This could be a source of more students.

  Introductory Statistics will continue to be offered in all three centres, Terrace, Prince Rupert, and Smithers.

  The big change is with Math for Elementary Teachers. The course will continue to be offered live in Terrace and Prince Rupert but we are currently working on an online version of the course. This would allow those in remote communities access to the course.

- OKANAGAN – Clint Lee
  1. In the 2001/02 academic year, the Mathematics & Statistics Department introduced two new courses:

MATH 323
Applied Abstract Algebra
This course covers lattices and applications, Boolean algebra, finite fields and polynomials, an introduction to coding theory, an introduction to cryptography, and applications to group theory (3,0,0). Prerequisite: MATH 211
MATH 425
Introduction to Algebraic Topology
This course covers a review of general topology, homotopic maps, fundamental group, Seifert-van Kampen theorem, classification of 2-manifolds, simplicial homology, singular homology, homology, homotopy invariance, long exact sequence, excision, Mayer-Vietoris sequence, applications including homology of spheres and projective spaces, Brouwer fixed-point theorem, maps of spheres, Euler characteristic, and Euler-Poincare formula (3,0,0). Prerequisites: MATH 211 and 220. MATH 420 is recommended.

In addition, several courses that have not been taught for several years were deleted, in particular, the Calculus I and II for business have been removed from our offerings.

2. A new technology diploma program was introduced at OUC this year, Network and Telecommunications Engineering Technology. Part of this diploma program is 2 first year semesters of mathematics [MATH 119/129 in 2001/02 but changing to MATH 137/147 in 2002-03]

3. The newly ratified contract lead to changes to all departments at OUC this year.
- All Department members now hold the rank of Associate Professor.
- A "Mode C" teaching option is available to department members.
- In mode C a faculty member has a maximum load of three courses per semester, but there are no student number limits.
- Teaching Assistants must be provided for large classes.

4. As of the 2002/03 academic year the Mathematics & Statistics Department will modify its degree program. The Mathematical Sciences degree may be dropped, mainly because OUC now has two Computer Science Degrees, a B.Sc. in Computer Science and a BCIS degree. Concentrations in Pure Mathematics, Applied Mathematics, and Statistics will be introduced. Specific course requirements will be added for the B.Sc. in Mathematics.

5. OUC has increased the entrance requirements for the B.Sc. (and B.A.) programmes. Entrance to the B.Sc. program now requires a 70% in Math 12 (Principles) and English 12. Students who do not meet these requirements can enroll in a Qualifying Year program, in which they can make up any deficiencies. One course that should be available for the Qualifying Year is a Precalculus Course.

6. Two new faculty members were hired in 2001/2002: Xianfu Wang to tenure track position and Rebecca Tyson in a temporary position replacing Phil Beckmann, who is now Associate Dean of Science.

- SELKIRK – David Feldman

Enrollments
There have been increases in some math course and decreases in others (particularly in service courses) but on the whole our Math enrollments have been fairly stable. The 2002/2003 applications for University Transfer students are about the same as last year: first-year applications are down about 3% and second-year are up 7%.
Courses
We had no new courses in 2001/2002. We are considering some proposals for new math courses. One proposal is for another (2nd year) statistics course and/or combining several main stream and service Statistics courses into one course with "domain specific" lab sections. We have ongoing debates about our pre-calculus course --- splitting it into a two-course sequence or combining it with another course. A new aspect has been added with the increased emphasis on Probability and Statistics in the Principles of Math 12 course. Other options up for consideration are a Math for Elementary Educators course and a course on Problem Solving. The impetus for the latter course is for Multi-media students but it may be generic enough to benefit many of our students.
Online Courses

Selkirk College participated in the Online Associate of Arts Degree sponsored by the Centre for Curriculum, Transfer and Technology (C2T2). As part of this initiative, we may apply for PIC (Provincially Initiated Curriculum) grants to fund the development other online courses.

Faculty

John Peregrym has been on a leave-of-absence for 2001/2002. During the Fall and Winter he did some part-time teaching at OUC. We look forward to his return in August. Due to the course reductions that resulted from the College's response to budgetary constraints there were some workload reductions in Math service courses. These have not affected any permanent Math positions. However, at the moment we will not be able to offer any of the 3 math instructors on short-term contracts any courses for next year. Another potential victim of reductions has been our Math/Science Tutor position. However, at the latest count we will still have a budget for this position in 2002/03.

Recommended Calculators for Math courses

For Math 100 and 101 (Calculus I and II) and Math 110 (pre-calculus) we are using the Sharp EL-9600C. We are still considering revising Math 130 and Math 131 (Finite Math) to be calculator-based courses; probably using the Sharp EL-9600C. As mentioned last year, the Renewable Resources department has also adopted the Sharp EL-9600C for all its courses. We have been informed that Sharp will be replacing the EL-9600C with a new model late in the Fall 2002. The information we have received indicated that the new model would look different, would not include a touch pen but would have no other changes in functionality.

Calculator Policy for Math courses

After last year's meeting the Selkirk Math instructors met to discuss a standard calculator policy. Because of the differences in instructional methods, in student interest and abilities and in our courses (e.g. service courses versus main stream courses) we decided that our calculator policy would be *to have no policy.*

BC Colleges High School Math Contest

We had a strong indication of interest in the Contest when we met with High School Math teachers from our region last October. In addition, over the Fall term we were able to raise $1400 in support from the Selkirk College Foundation, the Student Association and KAST (Kootenay Association for Science and Technology). Unfortunately, by February we only received 2 positive responses to our invitation to the schools to participate. This was probably due to the turmoil, disputes and frustrations in the school sector at that time. Consequently, we cancelled the event. On the bright side, we still have been able to keep most of our funding in place and look forward to holding a successful Contest in 2003.

BCcupm 2003

We would like to present our offer to host next year's meeting at Selkirk College. I understand that it has been quite a few years since BCcupm has been in the West Kootenay's and we would love to have you visit with us next year.

- UBC – John Fournier

  The biggest change has been to add an hour (from three to four) to the combined, one term Calculus III/Calculus IV course.

- UVIC – David Leeming

  Beginning in September 2002, students wanting to register in Math 100 (Calculus I) at UVic will require an A or B in Principles of Math. 12. A student can appeal and write an Assessment Test to enter the course. Admission will depend on achieving a certain minimum score.

  In September 2000, UVic began offering Math 202 (Intermediate Calculus for Computer Science), a second year course with a Math 101 (Calc. II) prerequisite. This is a one-semester course containing some vector calculus, multivariable calculus and differential equations. This 'designer course' may not fit well with course offerings elsewhere, but sending institutions are invited to request transfer credit for Math 202 if they are offering a similar course. The alternate route for students transferring to UVic into a Computer Science program is to take the equivalent of Math 200 (Calc. III) and Math 201 (Intro. to Diff. Eqns.).

4.2 List Updates: Mailing, Telephone, Fax and E-mail

Lists were circulated for revisions. There are currently two listserves; the original one hosted at Camosun and the second one hosted through C2T2 (bccupm@lists.c2t2.ca). It will probably move completely to C2T2 unless they experience financial cuts.

4.3 BCCUPM Web Site

Leo has volunteered to continue looking after the BCCUPM Web Site. Ron Coleborn is interested in a summary of Math courses offered around the Province with links to the individual institutions. Another summary could be policy statements at different institutions around entrance requirements (Applications of Math 12, Principles of Math 11, etc.). More specifically, what options are there for students who have gone through the Applications stream? It will be easy to gather this information for our own departments, but more difficult if we want to consult Trades and Career programs (Nursing, Electronics, etc.). Yet another one would be around calculator policy.

5. NEW BUSINESS

5.1 Theme for the 81st Meeting of the BCCUPM

One suggestion was to look at Linear Algebra in more detail. Another was to look at an Associate Degree in Math and whether we could reach any agreement about what that would look like. The executive will consider these topics when preparing the agenda for the next meeting.

6. Date and Location of the 81st meeting

The 81st meeting of the BCCUPM will be held at Selkirk College (preference was expressed for the Nelson location). The tentative dates are either May 22-24 or May 29-31 (with a day ahead for the Math Contest group).

7. Adjournment

The Friday Session of the 80th meeting of the BCCUPM adjourned at 4:45 p.m.

Many, many thanks to Susan Oesterle and Douglas College group for all their work in hosting us for this meeting.

List of Committee Members Present Plenary Session – Thursday, 2002-05-23; Second-year Courses – Thursday, 2002-05-23; Stats Sub-Committee – Thursday, 2002-05-23; Plenary Session – Friday, 2002-05-24

		THUR	CALC	STAT	FRI
Veda Abu-Bakare	BC Open University, Langara College	x		x	x
Aubie Anisef	Douglas College	x	x		x
Jim Bailey	College of the Rockies	x	x		x
Ian Bailey	Malaspina University-College	x	x		x
Ted Bentley	Capilano College	x		x	x
Dan Bergerud	Camosun College	x	x		
Nicholas Buck	College of New Caledonia	x	x		x
Rustum Choksi	Simon Fraser University	x	x		x
David Chu	University College of the Fraser Valley	x		x	
Alan Cooper	Langara College	x	x		x
Roger Coroas	Langara College	x	x		x
Bruce Crofoot	University College of the Cariboo	x	x		x
Peter Danenhower	Langara College				x
Gordon Danskin	ABE - Douglas College	x			x
Natasha Davidson	Douglas College	x	x		x
Richard DeMerchant	Ministry of Education	x		x	x
John Dennison	University of British Columbia	x			
Eric Durnberger	Coquitlam College	x	x		
Jennifer Enns-Ruttan	Formerly Technical University of BC	x			x
David Feldman	Selkirk College		x		x
John Fournier	University of British Columbia	x	x		x
Reimar Hauschildt	Capilano College	x	x		x
Dan Henshell	Douglas College	x		x	x
Denny Hewgill	University of Victoria	x	x		
Mona Izumi	Northwest Community College	x		x	x
Bruce Kadonoff	Coquitlam College	x	x		x
Costa Karavas	Vancouver Community College	x		x	x
Lisa Lajeunesse	Capilano College	x	x		x
Colin Lawrence	BC Institute of Technology	x		x	x
Alan Lawson	Douglas College	x		x	
Clint Lee	Okanagan University College	x		x	x
Richard Lee	Coquitlam College	x	x		
David Leeming	University of Victoria	x	x		x
Phillip Loewen	UBC				x
Jean MacLeod	Vancouver Community College/Secretary	x	x		x
Annie Marquise	Douglas College		x		x
Wayne Matthews	Camosun College	x		x	x
Tony May	BCAMT				x
Casey McConill	Kwantlen University College	x	x		x
Susan Milner	University College of the Fraser Valley	x	x		x
Dave Murray	Okanagan University College	x	x		x
Leo Neufeld	BCcupm - Chair	x	x		x
Susan Oesterle	Douglas College	x			x
Scott Pai	Coquitlam College	x		x	x
Garry Phillips	New Westminster Secondary			x	
Greg Schlitt	University College of the Fraser Valley	x	x		
Slava Simice	North Island College	x	x		x
Wesley Snider	Douglas College	x	x		x
Ray Sproule	Malaspina University-College	x	x		
Tim Topper	Yukon College	x	x		x
Jim Totten	University College of the Cariboo	x	x		x
Ken Towson	Capilano College	x	x	x	x
Lily Yen	Capilano College		x		

List of Participants (Meeting with Secondary School Teachers – Thursday, 2002-05-23)

Veda Abu-Bakare	BC Open University, Langara College
Jim Bailey	College of the Rockies
Ian Bailey	Malaspina University-College
Ted Bentley	Capilano College
Monica Birsaw	New Westminster Secondary School
George Bluman	University of British Columbia
Denise Bonnet	Burnaby Central Secondary School
Connie Broatch	Douglas College
Nicholas Buck	College of New Caledonia
Rustum Choksi	Simon Fraser University
David Chu	University College of the Fraser Valley
Ron Colborn	Burnaby South Secondary School
Alan Cooper	Langara College
Roger Coroas	Langara College
Bruce Crofoot	University College of the Cariboo
Gordon Danskin	ABE - Douglas College
Natasha Davidson	Douglas College
Richard DeMerchant	Ministry of Education
David Feldman	Selkirk College
John Fournier	University of British Columbia
Sue Haberger	Centennial Secondary School
Reimar Hauschildt	Capilano College
Dan Henshell	Douglas College
Jim Huesing	Burnaby Central Secondary School
Mona Izumi	Northwest Community College
Bruce Kadonoff	Coquitlam College
Costa Karavas	Vancouver Community College
George Kostin	New Westminster Secondary School
Lisa Lajeunesse	Capilano College
Colin Lawrence	BC Institute of Technology
Clint Lee	Okanagan University College
Richard Lee	Coquitlam College
David Leeming	University of Victoria
George Lin	Pinetree Secondary School
Jean MacLeod	Vancouver Community College - Secretary
Murray Martin	Port Moody Secondary School
Wayne Matthews	Camosun College
Tony May	BCAMT - Crofton House School
Casey McConill	Kwantlen University College
Susan Milner	University College of the Fraser Valley
Rob Morewood	Burnaby South Secondary School
Dave Murray	Okanagan University College
Leo Neufeld	BCcupm - Chair
Susan Oesterle	Douglas College
Scott Pai	Coquitlam College
Garry Phillips	New Westminster Secondary School
Slava Simice	North Island College
Wesley Snider	Douglas College
Tim Topper	Yukon College
Jim Totten	University College of the Cariboo
Carmel Walsh	Cariboo Hill Secondary School

List of Participants (Professional Development Sessions – Saturday, 2002-05-25)

Veda Abu-Bakare	BC Open University/Langara College
Ian Bailey	Malaspina University-College
Jim Bailey	College of the Rockies
Deanna Baxter	Capilano College
Karen Belfer	Simon Fraser University - Surrey
Ted Bentley	Capilano College
Nicholas Buck	College of New Caledonia
David Chu	University College of the Fraser Valley
Alan Cooper	Langara College
Roger Coroas	Langara College
Bruce Crofoot	University College of the Cariboo
Peter Danenhower	Langara College
Natasha Davidson	Douglas College
David Feldman	Selkirk College
Reimar Hauschildt	Capilano College
Dan Henschell	Douglas College
Mona Izumi	Northwest Community College
Clint Lee	Okanagan University College
Jean MacLeod	Vancouver Community College
Wayne Matthews	Camosun College
Casey McConill	Kwantlen University College
Betty Miller	University of Victoria
Susan Milner	University College of the Fraser Valley
Dave Murray	Okanagan University College
Leo Neufeld	BCcupm - Chair
Susan Oesterle	Douglas College
Scott Pai	Coquitlam College
Jody Reilhan	Coquitlam College
Tim Topper	Yukon College
Jim Totten	University College of the Cariboo
Larry Weldon	Simon Fraser University

BC Colleges High School Mathematics Contest 2002
Report to the BCCUPM

On May 3, 2002 the final round of the BC Colleges High School Mathematics Contest was written at 7 provincial colleges and university colleges. Students who had performed well on an earlier preliminary round held within their own high schools were invited (together with a teacher sponsor) to attend the final round and spend a day at the local college with several activities involved.

This year the participating colleges and university colleges were:

Camosun College	(Cam)
Capilano College	(Cap)
College of New Caledonia	(CNC)
Malaspina University College	(MUC)
Okanagan University College	(OUC)
University College of the Cariboo	(UCC)
University College of the Fraser Valley	(UCFV)

The table below gives a summary of the number of students and the top scores in the final round at each institution.

Institution	Preliminary Round		Final Round		Top Three Scores	
	Juniors	Seniors	Juniors	Seniors	Junior	Senior
Cam	140	70	23	14	84,70,61	80,74,74
Cap	295	111	44	30	99,97,89	86,85,84
CNC	200	84	25	13	76,65,63	82,72,70
MUC	423	157	32	28	79.5,67.5,64	83,71,61
OUC	460	190	51	23	75,68,67	76,63,57
UCC	72	78	21	30	72,66,63	83,79,64
UCFV	249		53		83,82,80	97,87,73

The numbers above for the preliminary round are at best approximate, as we seem not to have a reliable method for gathering this information. Nonetheless, it appears that approximately 2300 students participated in the preliminary round and 400 in the final round.

The Preliminary Round is handled in essentially the same way at all institutions. The preliminary test papers are mailed to participating schools. The tests are administered and marked at the schools and the results, including the names of the Final Round participants, are transmitted to the hosting institution. The Final Round does have variations. At all institutions the Final Round test is administered in the morning, with some type of activity provided for the sponsoring teachers, and, after the test is completed, lunch is provided for all participants. After lunch the activities vary. Some institutions have talks for the students, others combine talks with other activities, such as a math relay, while others have more strenuous activities, such as basketball math. During the time that the afternoon activities take place, the tests are marked, and later in the afternoon prizes are awarded. The prizes vary among institutions. Some institutions give book prizes to all or selected participants; some give cash prizes and/or scholarships to winners; many give T-shirts to all participants.

Thanks should go to those who have been involved in organizing their own college faculty to get on board, and have also been actively enlisting the local teachers to encourage involvement of their high schools. First there are the primary contacts at each of the Colleges: Wayne Matthews at Camosun College; Lily Yen at Capilano College; Judy Malcolm at College of New Caledonia; Patrick Ng at Malaspina University College; Clint Lee at Okanagan University College; Susan Milner at University College of the Fraser Valley; and John Siggers at The University College of the Cariboo. Although these are the primary contacts at each institution, it goes without saying that they did NOT do all the work required to make this contest a success. Indeed, they have indicated that their entire departments were involved with hosting the contest, and to be sure to thank all of them. A special thanks should go to John Grant-McLoughlin of Memorial University in Newfoundland, who, as a professor in Mathematics Education, continues his involvement with our contest even though he is on the other side of the country and brings the rest of us back to reality regarding what we can reasonably expect high school students to be able to handle.

Furthermore, the problem posers who either submitted problems or came together at the College of the Rockies in Cranbrook last May to put together the initial draft of all four contest papers are: Wayne Matthews (Cam), Jim Bailey and Richard Hewko (COTR), Nicholas Buck and Edward Dobrowolski (CNC), Clint Lee (OUC), Neil Coburn, Ross Bates, and David Feldman (Sel), Susan Milner (UCFV), and John Siggers and Jim Totten (UCC).

In addition, those who proof-read the contest papers and offered solutions for the questions are: Clint Lee (OUC), Don Desbrisay (UCC), Kirk Evenrude (UCC), John Siggers (UCC), John Grant McLoughlin (Memorial), Dave Murray (OUC), Susan Milner (UCFV), Nicholas Buck (CNC), and Jim Totten (UCC). The complete solutions were prepared and typeset by Jim Totten, with corrections supplied by John Siggers and Clint Lee. Last, but not least, the most onerous job this year went to Clint Lee who took on the task of typesetting all four contest papers and coordinating feedback coming from several proof-readers, sometimes all suggesting conflicting ways to improve questions.

Apologies to anyone whose name may have been inadvertently left out.

For those planning for next year the proposed dates for the 2003 contest are:

Preliminary Round:	Wednesday March 5, 2003
Final Round:	Friday May 2, 2003

Respectfully submitted to the BCCUPM on May 23, 2002 by

Clint Lee and Jim Totten