THE BRITISH COLUMBIA COMMITTEE ON THE UNDERGRADUATE PROGRAMME IN MATHEMATICS

MINUTES OF THE 82nd MEETING, JUNE 3-5, 2004

THURSDAY, JUNE 3, 2004

1. **WELCOME BY THE VICE PRESIDENT (ACADEMIC) OF UCFV** - Dr. Wayne Welsh
   Dr. Welsh opened his remarks by outlining some of the problems facing the Fraser Valley. He then commended the work of articulation and the important role it plays in making transfer easier for students.

2. **ADOPTION OF THE AGENDA FOR THE 82ND MEETING OF THE BCCUPM**
   The Agenda for the 82nd Meeting was adopted with the following change: 3.2 – David Feldman will present the report.

3. **ADOPTION OF THE MINUTES OF THE 81st MEETING, HELD AT SELKIRK COLLEGE**
   The Minutes of the 81st Meeting were adopted as circulated.

4. **CORRESPONDENCE**
   1) There was a response from the Ministry of Education thanking us for our feedback on the current high school math curriculum.
   2) We received a letter from the College of Teachers acknowledging receipt of our letter regarding elementary mathematics education.
   3) We received a response from SFU regarding the change in their admission requirements.

5. **ANNOUNCEMENTS**
   5.1 **Notice of Elections:** At this Meeting, an election for Chair of the BCCUPM. Susan Milner was acclaimed as chair for another two-year term.
   5.2 **Conferences:** Slava announced the AMATYC in Orlando in November. David Lidstone announced the Canadian Math Society forum in Toronto in May next year (by invitation only) – Program chairs are Florence Glanfield and Frederic Gourdeau. Malaspina is hosting two conferences this July. OUC is hosting the Canadian Cueing Theory conference in September this year. A conference called *Beyond the Formula* (introductory Statistics) will be held in Rochester. The BCAMT fall conference is October 22 in Langley.
   5.3 **Attendance Lists:** Susan M. circulated the attendance lists.
   5.4 **Announcements from the host:** Susan M. made some announcements regarding Internet access, photocopying, etc.

6. **ADDRESS: T^3: Trials, Tribulations and Triumphs – A Perspective on Elementary Mathematics Education** – Pamela Hagen, elementary educator
   Pamela introduced herself and spoke about what it's like to be an elementary teacher. She then handed out some Duplo and organized the committee into four groups. The groups were instructed to build a copy of a model she had hidden behind a screen from descriptions (words only) of individuals who were allowed to view the model for a few seconds. The activity pointed out the challenges of communicating effectively.

   Following the activity Pam gave an address on the trials, tribulations and triumphs of elementary math teachers.

   Trials: Lack of training and support to teacher, both in prerequisite and teacher training programme courses. What afterwards? Pam outlined the many things that distract teachers or interrupt their teaching day.

   Tribulations: What comes before this (the classroom)? Lack of awareness and understanding about context in which the teaching and learning of elementary math takes place. Cannot look at elementary math in isolation. Why do we have a top down approach, the largest amount of resources into the smallest area of people? Do we not need a strong foundation? Would a building be built with a think foundation and strong roof? Yet we do this in education! There is a lack of awareness and knowledge between levels in hierarchy of learning. As we go further up the hierarchy of learning we lose more and more students away from meaningful mathematics. How elementary mathematics is therefore perceived? Unimportant, a small necessity in the scheme of learning and therefore a lack of value by society, of which education is a part.

   Triumphs: What is being done? Ontario Ministry of Education has put megabucks into professional development for elementary teachers through the Early Math Strategy. Manitoba Ministry of Education: Early Numeracy work in Manitoba –

CMS, SMESG, PIMS, CMS all including elementary education issues at their conferences. WNCP report has been released. BCAMT is developing a Vision Statement.

What can be done? Need by society to value mathematics. Need by educators to value elementary mathematics. Need to have all elementary teacher trained in elementary mathematics education. No one should squeak around the system. Need to acknowledge and celebrate triumphs and successes. "Ask not what elementary mathematics can do for you, ask what YOU can do for elementary mathematics.

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

MATHEMATICS SESSION

Math1. **Mathematics in elementary education and for elementary educators**

There was a good discussion about how we could be more involved in our local elementary schools. Suggestions included using contests, existing PDP programs, or visits. Going into the schools can be a very enriching experience, but usually works better if you've been invited ... the challenge is to be in the position to be invited. What has worked in Surrey to get elementary teachers out to workshops is to offer resources to the teachers that they can take with them at the end. The recommendations from this group are heard and can add weight to recommendations made at the elementary/secondary levels.

As of this year, prospective elementary teachers at SFU will have to have Math 190 (Math for Elementary Teachers). As of 2006, In order to graduate from SFU in any discipline, students will have to have 6 credits of "Quantitative Intensive" courses (Q courses). As a result, they proposed two courses that would be more experiential and would hopefully improve student's attitudes towards mathematics. The courses have been approved and will be offered in the fall and spring. The prerequisite will be Math 11 – students who have Math 11 with 60% - 70% will have to have a foundations course first, which the university is developing. Camosun offeres three courses that are very popular

The recent PIMS conference had a session on elementary mathematics courses. There were a number of issues that were discussed, and the report is on the PIMS web-site. Foundation courses should be developed that are not necessarily a repeat of Math 11, but are more problem solving based.

Math2. **Linear algebra – towards a core curriculum?**

The suggestion was made that it may be necessary to have core curriculum for two different courses: one for mathematics students and one for engineering students. UNBC does two sequential courses, the first of which meets the needs of specialized departments and the second, which builds on the first, that is for math majors. One of the difficulties with having a list of core topics is that is doesn't indicate the focus of the course (calculation vs. proof). Jack (bradshaw@cariboo.bc.ca) volunteered to collect course outlines and exams to make a summary of topics covered and level of coverage.

Math3. **Effects of the changes to PM 11 & 12 on students in first-year math courses – two years on.**

The general consensus among the universities seemed to be that the students aren't any worse now than they were three years ago, but the admission standard is very high in these institutions. UNBC has not seen a change in their math majors, but have seen the difference in their service courses. UCFV is offering a "mini course" that starts seven weeks into the term to try to fill some "holes" in student's knowledge. Many students put too much emphasis on procedure – learning a skill and then repeating it. The difficulty is not necessarily specific skills, but a study approach and problem solving skills. One institution in another province has a two week orientation for new students in August that includes a review of grade 12 math skills. If the purpose of Principles of Math 12 is to prepare students for post secondary math, then the current breadth of the course is not meeting that need. One way some high schools are addressing the problem is to offer both Math 12 and Precalculus 12. There was a lively discussion around the advantages and disadvantages of having taken Calculus 12. One of the major problems seems to be with the algebra skills from grade 11 – many students continue to make mistakes with cancelling, simplifying complex fractions, working with radicals, etc. Tom O'Shea reported on a course called "Introduction to Mathematical Thinking" that is now a required course for math majors at Concordia. The course has proved itself in improving mathematical reasoning among students. Queen's University is completely redesigning the Calculus I course so that it will be centred around 5 or 6 rich problems that require Calculus to solve. The course will be problem/activity based. Marc reported that some schools have managed to get 1.5 blocks assigned to Math 12, so that more time can be spent on each topic. This is, of course, a budget issue, so it will be a very hard sell in some districts. He also reported that the 2005 Principles of Math 12 exam will have two sections – one that requires a graphing calculator and one where a

calculator cannot be used. Bruce made a case for more geometry in the school curriculum, but not necessarily all the circle geometry proofs. The general consensus was that there should be more geometry in high school.

STATISTICS SESSION

Stat1. Recommendation of change of name of the committee to include Statistics

Recognizing that 1) Statistics is a discipline in its own right that currently does not have its own articulation committee, 2) that Statistics courses are taught in departments other than in Mathematics and Statistics Departments, and 3) that the articulation of Statistics courses in the system is vital for students and the growth of the discipline, the Statistics Subcommittee recommends that the BCcupm include Statistics in its name. Carried unanimously.

Stat2. Articulation of Stat courses

Ted prepared a spreadsheet of the Statistics courses in the system and their transfer to UBC and SFU using the information from BCCAT (BC Council on Admission and Transfer). Concerns expressed were how are we to advise our students and how to attract them into the discipline.

Larry will email us a flowchart of the SFU courses. SFU Stat 100 has no prerequisites and it takes a simple approach to difficult topics. Stat 100 qualifies as a QB course.

There are transfer issues with UBC Stat courses. There is at present no transfer for college Intro Stats with a Math11 prerequisite. Also the enrolment for the follow-on course is soft because of lack of transfer. The following recommendation was carried unanimously:

a) Given that the Intro Stat courses with a Math 11 prerequisite is a possible entry point for students into the discipline, the Stats subcommittee recommends that students presenting a college Stat course that transfers to UBC Stat 203 and also presenting a course that is transferable to Calculus I be given at least 3 unassigned UBC Faculty of Science credits for the Stat course, and
b) that students presenting an Intro non-Science Stat course with the follow-on Stat course plus a course transferable to Calculus 1 be given UBC Stat 200 credit.

Concerns noted:
1) No clear entry point for the non-science student into the discipline
2) The subject has changed - has our teaching changed as well?
3) Problem for colleges with courses with 300 designation

Stat3. Impact of the new PM 12 curriculum on our courses.

Ted pointed out that there is no longer any Statistics in the exam (confidence intervals are gone) and the 28% consists of probability and combinatorics. The impact on our courses is minimal.

Stat4. Statistics service courses in departments other than in Mathematics and Statistics.

We face competing courses in students' home departments such as Economics, Psychology, Business, Commerce, Geography, Nursing, and Engineering. Also Statistics is required by professional associations such as the CGA. It was noted that Statistics is often taught by people who have no more Statistics than what is given in an MBA, that there is little communication between teachers of Statistics in different departments even in the same institution, and that the discipline would be well served if we were to mount courses and workshops in teaching Statistics for those with little background in the subject.

8. REPORTS FROM MATHEMATICS AND STATISTICS SESSIONS

Mathematics Session

Susan summarized the discussion from that session.

Motion: that the BCCUPM encourage all schools and districts to include numeracy and early numeracy as goals in their education plans.
Wayne Matthews/Marc Garneau **Carried (1 abstention)**

Motion: that the BCCUPM recommends that school districts identify two mathematics resource people in each elementary school and one district mathematics specialist.
Wayne Matthews/Marc Garneau **Carried (1 abstention)**

Statistics Subcommittee Session
Veda summarized the discussion from that session. There was some discussion about including "Statistics" in the name of our committee. This will be revisited tomorrow.

The Thursday Session of the BCCUPM adjourned at 3:55 p.m.

BCCUPM and Secondary School Teachers Session

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

2. Reports

2.1 Ministry of Education – Pierre Gilbert

Curriculum Revision – the K-12 curriculum is under revision. The WNCP curriculum is being revised – the process will start at the end of June. The process will take two years for K-9 and then 10-12. The K-9 should be ready September 2006 and the 10–12 should be ready September 2007. The first draft should be ready this October so that each jurisdiction can provide feedback. The committee will meet again next year and then in September 2005 a third draft will come out. After that a writing team will meet to look at resources. December 2005 to June 2006 the final work will be done. A similar process will begin in December for the 10-12 curriculums.

Survey of post secondary institutions – the results from a survey of post secondary institutions have been compiled and the report will be available on the Ministry web-site. One of the recommendations was that the Applications pathway needed significant revision to meet the needs of non-calculus bound students.

New Graduation Requirements – There are five exams: Math 10, Language Arts 10, Social Studies 11, Language Arts 11, and Language Arts 12. The exams are optional, but some universities are still requiring that the students write them. This was a decision from the Ministry of Education after consultation. The exam specifications are available on the web-site – they will still include both multiple choice and long answer questions. The grade 10 exams will be marked in-school and the grade 12 exams will be marked centrally.

2.2 BCAMT – Marc Garneau

Marc gave a summary of the activities of the BCAMT during the past year. These include sponsoring conferences, workshops and other Professional Development activities. There are also some curriculum initiatives being sponsored by the BCAMT, one of which is the Early Numeracy Project. They are in the process of developing a vision of K-12 mathematics, which included a survey of mathematics teachers. There will be an all day forum in October to discuss the results of the survey and the final results will be presented at the fall 2005 conference.

The focus for the coming year will be on the development of a vision and the revision of the WNCP curriculum.

2.3. BC Colleges High School Mathematics Contest – Clint Lee

See attached report (page 17)

2.4 BC Universities Calculus Challenge Exam – Wayne Nagata

Wayne outlined the exam: who writes it, how credit is assigned, etc. This year 230 students wrote and the marks were scaled. After scaling the median score was 63%. The questions and solutions are available on the UBC web-site. The site also has a break-down of each question. www.math.ubc.ca/~loew/m100exam/summary03.htm

2.5 PIMS – Changing the Culture 2004 – Natasha Davidson

Natasha gave a brief report on the PIMS conference this year. The title was *Mathematics: Could Less be More*? The keynote speaker said that there were problems that were common across the country: too much content with not enough time to cover it. Natasha strongly encouraged everyone from all levels of mathematics education to come to the conference next year, so that more people could be involved in dialogue.

3. General Discussion

a. How changes to Principles of Math 11 and 12 are affecting the transition from high school to post-secondary mathematics and statistics courses.

Many students are having a very difficult time with Calculus I. The change to the new Provincial Exam with a non-calculator section will force students to know how to do some of the algebra without a calculator. The high school teachers thought the Provincial Exam was reflective of what the students know, but did not think it was necessarily what they **should** know for Calculus. Because the exams will be optional in a few years, the post secondary institutions have the opportunity to decide whether or not they will require that the Provincial Exam will be a prerequisite for entry. Right now students are spending time practicing writing multiple choice exams, which could be better, spent on critical thinking and reasoning skills. Many speakers were of the opinion that we trusted teachers to prepare students and a Provincial Exam was not necessary. Tom suggested that the money that is currently spent on Provincial exams should instead be used for activities on assessment for teachers.

b. Graphing calculators: who uses them and how?

c. The role of the applications stream for admission to post secondary.

There was no time to discuss items b and c

5. Adjourn to Reception. The session adjourned at 5:40 p.m.

FRIDAY, JUNE 4, 2004

1. OPENING REMARKS

1.1 Introduction of representatives
Members introduced themselves.

1.2 Announcements from the host
Additions to the agenda: 5.5 Statistics and 5.6 Transitions from high school to post secondary

1.3 Attendance lists
Attendance lists were circulated.

2. REPORTS

2.1 B.C. Council on Admissions and Transfers
BCCAT is developing a "transfer friendly" course outline. Copies with a description are available from Susan. There are also Articulation Handbooks and Newsletters available

2.2 ABE – Jean Atkinson
Jean summarized the report from the ABE Math Working Group.

The transfer guide, which has contact information and learning outcomes for each level, is now available on-line at www.aved.gov.bc.ca.

Jean reviewed the different levels of ABE Mathematics: Fundamental, Intermediate, Advanced, and Provincial. At the Advanced level there are three different courses: Developmental, Algebraic, and Business/Technical. The learning outcomes for the Fundamental, Provincial, and Advanced Business/Technical courses have recently been revised. A new Provincial Calculus course has been articulated – Yukon College and VCC have offered it to date.

A motion was passed at the last meeting that the ABE Steering Committee "urge the Ministry and all colleges and university colleges to ensure that ABE continues as an integral part of all public and private colleges and to ensure that ABE continue to be tuition free." At present the fee structure varies widely among institutions.

3. BUSINESS ARISING FROM THE MINUTES OF THE 81st MEETING

3.1 Changes to SFU's undergraduate curriculum – Casey Bell
Courses that currently transfer to an SFU "Q" course will also be given "Q" status. Courses that do not have transfer credit will have to be articulated for their Q, W, or B status. SFU has committees that came up with the definitions for each of these categories and they will articulate courses from other institutions. The reasons for this initiative come from complaints/comments they've had from faculties about students who can't write or who can't handle the basic mathematics required for an Introductory Statistics class.

3.2 Associate Degrees – David Feldman (reporting for Neil Coburn)
Should there be a core curriculum for an Associate Degree that would satisfy all the universities? The difficulty could be that a course that would be considered core might be difficult for some colleges to offer. A solution to this may be to offer at online through BC Campus or to have a rotation where different colleges take turns offering a course. The point was raised that the universities have a very high entrance requirement – students are reluctant to take more difficult courses because it could affect their GPA and therefore their changes of transferring to a university. Because courses are different among different institutions it may be necessary to not just have a list of core courses, but also a list of core topics for each of those courses. BCCAT may have funding to explore this issue more. There doesn't seem to be a particular advantage to having an Associate Degree – at best it seems that students are only given a ¼ point advantage on their GPA for entrance to the universities. A suggestion was made that an Associate Degree in Mathematics might me made a requirement for teaching senior level mathematics courses in high schools. Leo pointed out that the original intention of Associate Degrees was not to aid transfer to universities, but rather as an exit credential. It would also serve to bolster low enrollments in second year courses. Decisions about transfer credit and admissions are made by registrars' offices – math departments rarely have any say in how these policies are made. Bruce K, Peter D, Alan C, Ian (Cap.), Alex have indicated interest in pursuing this further.

Motion: that the BCCUPMS form a committee to create an Associate Degree in Mathematics core curriculum proposal to be presented at the 2005 meeting.
David F./Peter D. **Carried**

4. INSTITUTIONAL/ARTICULATION BUSINESS

4.1 Reports from Institutions

BCIT – Colin Lawrence

BCIT is developing and changing into a polytechnic institution. With this change has come a change of emphasis from the traditional programs leading to a Diploma of Technology to a much broader range of offerings and pathways for the student. Some of these paths will still lead to a Diploma of Technology with the emphasis on registration by program but others already lead to degrees in technology (B.Tech.) in which the student registers course by course.

To accommodate these changing requirements the Academic Studies group at BCIT is well into the development of a new program called "Science Pathways". Among other offerings this program includes mainstream science programs such as Physics, Chemistry, Mathematics. This program is intended to have a dual purpose. The principal thrust is to prepare students for a BCIT degree program but a secondary possibility is to enable students to transfer to other institutes if they decide that BCIT does not fulfill their needs.

With this second purpose in mind the Mathematics Department at BCIT has prepared two courses MATH 1100, a Calculus 1 course, and MATH 1200, a Calculus 2 course. Both these courses followed the guidelines set out in the First-Year Core Calculus report. As a trial attempt at articulation, with which the Mathematics Department at BCIT has no prior experience, the relevant material was submitted to SFU for articulation with Math 151 and Math 152. Unfortunately we hit a roadblock. At SFU there is a long standing policy that "SFU does not articulate with BCIT on a course by course basis". Whether or not this can be removed is currently being investigated.

As far as we know there is no such policy at any of the other institutes. This should lead to BCIT taking a much more broad brush approach and proposing articulation of MATH 1100 and MATH 1200 with the relevant courses at many of the post-secondary institutes in B.C.

CAPILANO – Ted Bentley

1. Courses/Program

- In addition to our strong Engineering Transfer Program (220 applicants this spring for the 40 seats in Fall 04) we have introduced a new Engineering Transition Program. This new Engineering Transition Program was designed for mature students returning to school with aspirations of obtaining an engineering degree (although applications from students directly from high school are also considered). Typically students in this program take a mix of preparatory, first-year and some second-year courses over a two-year period. On graduation with a cumulative GPA of at least 2.7 they are admitted into second year engineering at UBC with some second year courses already completed. The two engineering programs have obvious beneficial spin-off in mathematics and statistics enrolment. For example, this year for the first time we will be offering Calculus III (Math 230) in both the fall and spring semesters.
- As a result of implementing the on-line registration program Banner, we have been forced to drop the "within one-year" stale dating provision that we previously applied to prerequisite courses for entry into precalculus and calculus.
- With the exception of the discrete math course sequence, we have experienced strong and steady enrollment demand for math and statistics courses.
- We have introduced a Mathematics concentration as an option for the Associate of Science degree.

2. Contests/Enrichment

- One of our faculty members, Lisa Lajeunesse, has encouraged and coached some of our stronger students to write the Putnam math contest. For each of the past two years we have had a student place in the top 500 of all contestants – a credit to the students and Lisa as their coach, since our second year students are competing against university undergraduates across North America.
- Another faculty member, Ian Affleck, has spearheaded our high school enrichment program where on a monthly basis students in grades 10 – 12 are invited in to the college to explore fun mathematical topics.

3. Faculty

- No retirements this year! We did hire three part-time non-regulars to replace two regulars (Lily Yen and Deanna Baxter) who took maternity leave. Lily is returning part-time in Fall 04.

CARIBOO – Jack Bradshaw

- New Chair: Shane Rollans
- New discrete math sequence (Math 138/139). The courses will be taken by computing diploma students (CSOM) and bachelor of technology in applied computer science students (BTAC).
- UCC mandate is changing. We have been designated as a special university and will be melded with B.C. Open University. UCC will be renamed.

COLLEGE OF THE ROCKIES

- Enrolment has been down at the College of the Rockies for the last couple years, so we have lost a couple courses, gained a couple, and had to retool a couple others.
- MATH 100, Precalculus, is a new course that will be taught by Richard Hewko.
- MATH 113/114, Calculus 1 and 2 for Commerce and Life Sciences will be offered in the place of MATH 109/110 (Calculus 1 and 2 for Commerce). Jim Bailey will teach them.
- MATH 205, Calculus 3 and 4 in one semester, is a change that our engineering students have requested. Rather than MATH 201/202 (Calculus 3 and 4) we will be offering MATH 205 followed by MATH 203 (Differential Equations), both taught by Jim Bailey.
- MATH 108, Statistics 2, is under development by Leslie Molnar. It will have a non-calculus statistics prerequisite and will include design of experiments, chi-squared tests, multiple regression, ANOVA, and non-parametric statistics. It is intended for Arts, Biology, Commerce and Environmental Studies students.

COLUMBIA COLLEGE

- During the summer semester of 2004 Columbia College is offering:
  Math 11 (10 students)
  Math 12 (28 students)
  Math 100 (Pre-Calculus) (2 sections; total of 45 students, Textbook Swokowski and Cole)
  Math 111 (Calculus I for Business/Arts students) (4 sections, total of 130 students, Textbook: Himonas and Howard)
  Math 112 (Calculus II for Business/Arts students) (2 sections, total of 52 students, Textbook: Himonas and Howard)
  Math 113 (Calculus I for Science/Engineering students) (1 section of 42 students, Textbook: Anton, Bivens and Davis)
  Math 114 (Calculus II for Science/Engineering students) (1 section of 35 students, Textbook: Anton, Bivens and Davis)
  Math 252 (Linear Algebra) (1 section of 19 students, Textbook: Anton)
- In the Fall semester we intend to offer Math 120 (Discrete Math)
- The curricula for the Calculus courses covers the Core topics and some of the Additional topics as outlined in the Core Calculus Curriculum Report.
- Subject to fulfilling a few minor requirements, Columbia College is on the verge of becoming the first private college to have associate-degree granting status.

COQUITLAM – Bruce Kadonoff

- The College continues to grow although slower than in the past few years.
- There are two new faculty: Elena Halmaghi (Math) and Viorica Cojocan (Stats and Math)
- There are newly articulated courses: STAT 290/291 to COMM 290/291 (UBC) and new BUEC 232 (SFU)
- We are working on the realignment of Discrete Math (MACM101) to reflect the changes at UBC CPSC 121/221

DOUGLAS – Susan Oesterle

The biggest change at Douglas this year affecting articulation is a change in our course numbering system. Because some areas are starting to offer four-year programmes, the Registrar's Office is adding a digit to the beginning of each of our course numbers to reflect the "year" of the course. For example, our Math 120 Calc I course will now be 1120.

For the last year we have been charging most of our students an additional $75 lab/tutorial fee. We have added tutorials to a number of our math courses and dramatically increased our open Math Lab support services. Generally students seem to feel that the tutorials are useful and we will be continuing this system over the next year.

There was a notable drop in students for the Winter semester, not just in Math but also in the open enrollment programmes generally. This was especially noticeable at our Coquitlam campus. We are uncertain if this is just a blip, or if it will continue.

On a more positive note, we expect to be hiring a part-time regular faculty member this January to teach 2.5 sections in the Winter semester and 4.0 sections in the Summer.

FRASER VALLEY – Susan Milner

1. We have generally maintained **student numbers** this year:
   - Second-year math courses show a slight improvement, with enrolments in the low thirties for some and a healthy 52 in calculus III.
   - Courses in linear algebra and in probability and statistics, both of which are required for math majors, enrolled 30 students each. This is a record in each case.
   - The number of upper level courses increased by one and the number of enrolments in upper level courses increased by ten.

- The online course in introductory statistics is becoming increasingly popular, with enrolments over 30.
- There is still strong demand for first-year courses in introductory statistics, in discrete math and in mathematics for elementary ed.
- Several students enrolled for upper-level statistics courses as Directed Independent Study.

2. New courses

- A new course in the history of mathematics has been developed and approved, and it will be offered in winter 2005.
- New courses in regression, in differential equations and in special topics in mathematics have been developed and are in the process of being approved by various committees.
- A new on-credit half-semester course has been approved and will be offered in the fall term. This is a just-in-time course designed to support students who are having difficulty in their first calculus course. The support course runs alongside the differential calculus course.

3. Other news

- The math major program has been changed in order to encourage students to take more discrete math. Math majors now have to take a second year discrete math course or a second year course in ODE's.
- An assessment test for students who do not have BC Math 12 and who wish to take calculus has been approved after a one-year trial period.
- The Math Centre has moved to a larger and more congenial room. The popularity of the Math center always increases. The most recent sharp increase is due to an influx of students taking introductory statistics courses.

KWANTLEN – Michael Nyenhuis

We will be offering Real Analysis next Spring if there is enough interest. We are developing a Linear Algebra for engineers course similar to UBC's Math 152. Our Math 1092 and 1093 have had material added to them so that they retain their ABE status. In particular, we have added ruler-and-compass constructions to Math 1092, and Law of Sines and Cosines to Math 1093. We will be running a pilot project in precalculus starting the fall of 2005. Certain sections of our precalculus will have an extra two hours tutorial added, to be taught by the faculty member teaching the section. The pilot project is to run for three years. Enrolment in our precalculus course has dropped substantially. We are in the process of articulating Math 2335 (stats for life science) with SFU.

Jim Gunson is retiring this year.

LANGARA – Peter Danenhower

- In the Spring (2004) we offered Math 2373, Real Analysis, for the first time in several years. We had 21 students enrolled: 19 from Langara, 1 from Douglas college, and 1 from Capilano college. We consider this to be very successful and plan to offer this course again in Spring of 2005.
- We are wondering if the advertising to other colleges is worth doing? Can we expect to attract students from other lower mainland colleges?
- Also in the Spring we offered 1170, precalculus, online. We plan to offer another section of 1170 on the Web soon, but we are still evaluating the success.
- Roger Coroas stepped down as Langara (Math) rep., Peter Danenhower is the new rep. and Veda continues as Langara (Stats) rep.

Langara Stats – Veda Abu Bakare

1) In order to maintain our transfer to SFU BUEC 232, which now includes an Excel component, we have mounted a 1-credit STAT 1182 course in Excel. This has been developed and is being taught through BCCampus using WebCT by Cheryl McKeeman.
2) Learning outcomes are now included in all Stat course outlines.

MALASPINA – Lev Idels

Teaching: Enrollment was strong; it seems to increase a little each year, especially from international students. We offered upper-level courses for the first time this year, enrollments were small except for courses of interest to computer science majors. The courses were Math 340 (3) Applications of Mathematics, Math 362 (3) Elementary Number Theory, Math 310 (3) Introduction to Graph Theory, Math 320 (3) Introduction to Probability, Math 300 (3) Geometry, Math 330 (3) Introduction to Abstract Algebra, Math 350 (3) History of Mathematics, Math 360 (3) Problem Solving.

Bachelor of Science – Minor in Mathematics: We offer a Minor in Mathematics. The curriculum in Math Minor provides the knowledge and experience needed to enter teaching profession or pursue advanced study. The Bachelor of Science, Minor in Mathematics, is designed to be taken as part of a double minor or a major/minor combination for a Bachelor of Science degree.

Mathematics Learning Centre: To staff the math learning centre we used 8 students, instead of the usual full-time faculty member. We received a lot of positive feedback about the centre. Out students have the opportunity to be hired to staff the Mathematics Learning Centre and tutor other students.

Research and Scholarly Activities:

- Applied Mathematics (Mathematical Biology & Ecology) – Dr. Lev Idels has received two research grants
- Pure Mathematics (Number Theory and Combinatorics) – Dr. David Bigelow and Dr. Julian West (NSERC grant)
- Applied Statistics – Dr. Phil Dauk

We will host in July 2004 two International Conferences at Malaspina

1. Differential Equations and Applications in Mathematical Biology – Conference Coordinator Dr. Lev Idels
2. 2nd Annual Satellite Conference on Permutation Patterns PP'04 – Conference Coordinator Dr. Julian West

NEW CALEDONIA – Judy Malcolm

1. Enrollment in second year mathematics is lower than we would like. The suggestion from the institution is to promote the associate degrees.
2. For the second time, we are offering one section each of Precalculus, Calculus I and Mathematics for Elementary School Teachers in the "summer institute". Much of the demand comes from international students.
3. The College President announced his retirement in February after 14 years. The search for a new president is well underway.

NORTH ISLAND – Slava Simice

- Student enrolments at North Island College declined in small centers, but increased at the main center in Comox Valley.
- We will be offering for a first time a precalculus course. Hopefully, it will start in January 2005.

NORTHWEST – Mona Izumi

Enrollments at our college were up this past year, but mainly in the Arts courses. Math and Science enrollments remain steady. We continue to offer Calculus I and II in both Terrace and Prince Rupert and Intro Stats in all three campuses. Math for Elementary Teachers is offered face to face in Terrace and online for the rest of the region. Due to the demand for the course, the online class has maximum enrollment of 20, with an average of 5 students from outside our college region.

This year we had two students in the Coastal Integrated Resource Managements program complete both a CIRM Diploma as well as the Associate of Science. The main stumbling block for most of these students is Calculus I. We are hopeful that more of the students will consider this option, translating into increased enrollment in Calculus.

The College and Career Prep department is developing an online Calculus 12.

OKANAGAN – Clint Lee

- The Department added a new full-time position. This is a big deal since this hasn't happened in about a decade. Department selected **Dr. Javad Tavakoli**, reflecting the Department's commitment to both teaching mathematics well and excellence in math research.
- Two new courses were offered for first time: **MATH 408 Differential Geometry** (to complement our existing MATH 308 Euclidean Geometry) and **MATH 425 Algebraic Topology** in order to complement our senior algebra and topology courses.
- Next year, 2004/05, two further courses will be offered for the first time, **MATH 423 Coding Theory** and **MATH 421 Introduction to Metric Spaces**.
- Also next year, coming back after a 7 year dormancy are **MATH 116/142 Calculus for Commerce Students.**
- The Department has purchased MapleTA and MapleNET. They should be installed sometime in June and may be used in one or more courses in the fall semester.
- The **Beowulf cluster** is up and running, located in our Penticton campus. To date, parallel algorithms (examples) have not been integrated into any of our math courses.
- **Shawn Wang** awarded $86,000 CFI grant in order to set up high performance computer cluster. Shawn is working with Yves Lucet in Computer Science on a project for the Southern Interior Cancer Clinic Radiation group, trying to optimize their radiation therapy targeting.
- Kelowna will host the **Canadian Queuing Theory Conference** in September 2004, organized by Javad Tavakoli.
- Javad Tavakoli also organized a (surprisingly successful) **Category Theory** weekly seminar series this past winter semester.
- On March 17th 2004 Premier Gordon Campbell announced that OUC will cease to exist after Sept 2005. In its place will be two separate institutions, a traditional **Community College** and **UBC-Okanagan** a research-intensive university. The

Math/Stat Department is active in the planning for how this is to be implemented. In particular, **University Transfer** needs to be re-introduced at our KLO campus, which will be part of the new college. Further, the Department is considering areas in which to offer a Master's degree. To date, it appears that there are 3 areas that exploit the Department's research expertise and that could attract strong students: **Optimization, Environmetrics, and Algebra/Number Theory.**

- Preliminary **student applications for Science** seats at the regional campuses are significantly lower than last year. This may force cancellation of some Math courses in the Penticton and Salmon Arm campuses.

OPEN UNIVERSITY – Veda Abu Bakare

1) The Ministry has announced that in April 2005 the BCOU will join with UCC to form a new special-purpose university. Staff will not be required to relocate until 2007.
2) Enrollments have been soft mostly due to the tuition fee increases and the uncertainty regarding the future of the institution.
3) The Calculus 1 and 2 (Math 120 and Math 121) are being updated for the 5th edition of Stewart: Early Transcendentals.
4) The Stat 102 (Intro Stats) which was revised to be more data analysis oriented and to include software (Minitab) continues to have strong enrollment.

SFU – Justin Gray

1. New Chair: Tom Archibald from Acadia University will be our next department chair effective May 2005. Norman Reilly will continue to serve as chair until that time.

2. New Lecturer: Petra Menz will join our department as a new lecturer in September 2004.

3. Undergraduate Curriculum Implementation Task Force (UCITF): As many of you are aware, SFU is preparing for new graduation requirements which will take effect in 2006 (see http://www2.sfu.ca/ugcr/ for more details), whereby all incoming students will be required to take 6 credits of designated quantitative-intensive (Q) courses, 6 credits of writing-intensive (W) courses, and 24 credits of breadth (B) courses. The math department is seen as having a pivotal role in the implementation of these changes, and we are currently negotiating with the UCITF for funding for several initiatives in support of these changes, such as:

i) The development of tests to assess quantitative reasoning skills for those students who lack the prerequisites to take Q courses (70% or better in Principles of Mathematics 11 or equivalent).
ii) The design of new foundation mathematics courses and a student help centre to assist those students who are not prepared for Q courses.
iii) The development of W and B courses such as Math 121: Introduction to Mathematical Thinking (Malgorzata Dubiel and Justin Gray) and Math 380: History of Mathematics (Len Berggren and Justin Gray).

4. New Course Proposal: A new course, Math 254: Vector and Complex Analysis for the Applied Sciences, has just been proposed as a service course for Engineering and Physics.

5. Principles of Mathematics for Teachers: As of Fall 2004, the only math course that will be accepted by the BC College of Teachers for professional certification will be a mathematics for teachers course. We have observed an increased demand this summer for our Principles of Mathematics for Teachers (Math 190) course, where we had to turn away a number of students who wished to enroll in the course. We are also discussing whether we still wish to deny students who have already taken calculus to take Math 190 for credit.

6. Online Assignments: We are continuing to experiment with using online assignments for calculus and linear algebra. While having online assignments allows us to allocate more TA resources to helping students in our drop-in help centres, we have found that the feedback that students receive on such assignments is insufficient. For some of our courses, we are now using a combination of online assignments with traditional assignments.

7. SFU Surrey: Our department is becoming increasingly involved in the programming that is taking place at SFU Surrey. We are working towards improving dialogue between faculty at the Burnaby and Surrey campuses.
Alistair Lachlan (professor emeritus) has taken on the role of special advisor to the Dean of Surrey this year.

UBC – Wayne Nagata

1. To enter the UBC Elementary Teacher Education option, the Faculty of Education requires three UBC-equivalent credits in mathematics (not statistics or business math). The most popular courses in our department for people trying to fulfill this requirement are UBC MATH 230 (Introduction to finite mathematics) and UBC MATH 335 (Introduction to mathematics).
2. Several colleges continue to offer courses that transfer to UBC MATH 111, according to the BC Council on Admissions and Transfer, but the latter course no longer exists.

UNBC – Lee Keener

- The number of mathematics majors, double majors and joint majors is now about 75, the highest figure in our history.
- We graduated 10 majors or joint majors at spring 2004 Convocation, also a high for us.
- Julian Buck, a mathematics major was also the winner of the Governor General's Silver medal as the top undergraduate student. Mr. Buck also won the newly created Mathematics Prize. At the winter meeting of the CMS he made a presentation in the Operator Algebras sessions, the first time an undergraduate has done so. He is going to U. of Oregon to begin graduate work in the fall.
- Sam Walters continues as Chair, Iliya Bluskov is on sabbatical leave starting July1; Kevin Keen joins us from UCFV as his replacement.
- There are no major changes in prerequisite or degree requirements. A couple of new fourth year courses have been introduced. We considered changing our precalculus course, MATH 115 to a non-credit course, but so far no alteration has been made. We have also considered developing an honours degree in mathematics (UNBC has very few honours degrees) but have not proceeded on it because of Senate imposed restrictions that we do not find acceptable.
- The graduate program continues to be rather small. We currently have four Master's students in mathematics, and a fifth who is technically in CS but is doing work with a mathematics Professor on a mathematical topic.
- Out Putnam team did not perform as well as in some previous years.
- The possible merger of mathematics with another unit, which we have opposed, no longer seems very likely.

UVIC – Gary MacGillivray

- David Leeming is retiring after 41 years at UVic. He is the longest serving active faculty member on campus. David would have been at the BCCUPM meeting, as usual, except that the Dean wants him at convocation to receive the Award for Excellence in Teaching in the Faculty of Science.
- The department now offers a Minor in Mathematics, as well as Minor, General, Major and Honours programs in Statistics. (Minors are a relatively new thing at UVic.)
- Beginning in 05-06, Math 122 Logic and Foundations (Discrete Math I) will be a required course in our Math Major and Honours programs. We will be making it a prerequisite for Math 233C Introduction to Algebra.
- There has been a prerequisite change for Math 151 Finite Mathematics. Institutions with a finite math class having a Math 11 prerequisite are invited to resubmit applications for transfer credit.
- We are considering revision of our Math 100 Calculus I and Math 120 Precalculus from 4 hours per week to three. Any changes are at least a year away.
- The chair of the department from 1 July 2003 until 31 December 2008 is Gary MacGillivray (chair@math.uvic.ca).

VCC – Costa Karavas

- The Mathematics Department continues to experience strong demand for upgrading math courses particularly at the grade 11 and grade 12 levels.
- Currently we are offering three university transfer courses: Math 1100 (Calculus I), Math 1200 (Calculus II), and Math 1111 (Introduction to Statistics). All courses are articulated with the major receiving institutions. Enrolment in the UT courses is relatively low but gradually increasing. Expected to be higher in September 2004.
- We have adopted Maple 9.0 and Minitab 14 software for Math labs.
- Ruth Behnke will be retiring this year. We have hired a new faculty member Hassan Khayambashi.

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

Susan circulated the listserve from BCcampus and asked members to make corrections and additions.

4.3 BCCUPM Web Site – Leo Neufeld

The official contact list from each institution is on the web site. Members should check this list periodically to make sure the information is correct. The site can also be used to announce faculty vacancies, conferences, etc. Leo has been

managing the site but is open to have someone else doing it. However, he will only do it for one more year, so someone will have to take it over next year. Many thanks for all the work that Leo has done for us.

5. NEW BUSINESS

5.1 Math contest provincial coverage – Clint Lee

There are now 11 or 12 institutions participating. Some smaller colleges have a difficult time hosting the contest, so a proposal was made that there be speakers list of people who might be willing to travel to small colleges to help with contest details. Some money might be available from PIMS to help with the funding.

Motion: that the BCCUPM establish a speakers list of people who would be willing to help with math contests. Clint/Slava (carried unanimously)

John Siggers suggested that Leslie from UCC might be willing to coordinate this effort. Anatoly is also willing to help out.

Motion: that the BCCUPM apply to PIMS for funding for the BC Colleges High School Math Contest. Clint/Costa (carried unanimously)

Rick Brewster and John Siggers have volunteered to spearhead this initiative.

5.2 Institutional representation at articulation meetings

Susan reiterated the need that the representative to this group must be someone who knows what's going on in your institution. This body is a forum for the sharing of information, so this is essential.

5.3 Articulation of third-year courses?

BCCAT raised the issue of articulating third year courses at their last meeting, so we should discuss this. With the increase in colleges now offering upper division courses, there is some interest in doing this. Articulation at this level is more problematic, due to the individual nature of these courses. There would be a difficulty in transferring more than sixty credits, but in cases where a student wants to take an individual course during the summer or a co-op term, there would be advantages in having courses articulated.

5.4 Theme for our 83rd Meeting

One suggestion was to discuss courses that might get the Q classification at SFU. Another suggestion was to look at History of Mathematics courses. Another idea was to look at courses that have a different mode of delivery, particularly courses that are more project/activity based. Idea for Saturday session: Technology in calculus courses.

5.5 Statistics

Veda brought information to the group from the discussion yesterday regarding Science credit at UBC for the Introductory Statistics course. They have decided not to seek a formal motion, but will instead apply for the credit as the Statistics Sub-Committee – if this is not successful, then they will come back to this body for further action.

5.6 BCCUPM Name? The decision yesterday was to include "Statistics" in the name of this group, but how that would happen was not decided on. There were several suggestions, but the one finally decided upon was BCCUPMS.

Motion: that the name of the BCCUPM be changed to the British Columbia Committee on the Undergraduate Program in Mathematics and Statistics (BCcupms) to reflect that statistics is an integral part of this committee. Justin/Veda Carried

6. Date and Location of the 83rd meeting

The 83rd meeting of the BCcupms will be held at Northwest College in Prince Rupert. The tentative date is May 26-28 (with a day ahead for the Math Contest group). The 2007 meeting will be at Yukon College in Whitehorse.

7. Adjournment

The Friday Session of the 82nd meeting of the BCCUPM adjourned at 4:05 p.m.

Judy Malcolm thanked UCFV on behalf of the BCCUPM for all the hospitality and lunch.
Many, many thanks to Susan Milner and UCFV for all their work in hosting us for this meeting.

List of Committee Members Present Plenary Session – Thursday, June 3, 2004; Math Session – Thursday, June 3, 2004; Stats Sub-Committee – Thursday, June 3, 2004; Plenary Session – Friday, June 4, 2004

Name	Institution	THURS.	MATH	STATS	FRI.
Abu-Bakare, Veda	BCOU, Langara	x		x	x
Affleck, Ian	Capilano				x
Atkinson, Jean	Fraser Valley	x	x		
Avelino, Edgar	Langara	x		x	
Bailey, Jim	CotR	x	x		x
Bentley, Ted	Capilano	x		x	x
Bradshaw, Jack	Cariboo	x	x		x
Brewster, Rick	Cariboo				x
Byl, John	Trinity Western				x
Charnell, Moshi	Camosun	x		x	
Cooper, Alan	Langara		x		x
Danenhower, Peter	Langara	x	x		x
Davidson, Natasha	Douglas	x	x		x
Demch, Anatoly	Columbia	x	x		x
Feldman, David	Selkirk	x		x	x
Garneau, Marc	BCAMT	x	x		
Gray, Justin	SFU	x	x		x
Hauschildt, Reimar	Capilano	x	x		x
Henschell, Dan	Douglas	x		x	
Idels, Lev	Malaspina	x	x		x
Izumi, Mona	NWCC	x	x		x
Johnston, Julie	Capilano	x	x		
Kadanoff, Bruce	Coquitlam	x		x	x
Karavas, Costa	VCC	x		x	x
Keen, Kevin	UCFV/UNBC	x		x	
Keener, Lee	UNBC	x	x		x
Lawrence, Colin	BCIT	x		x	x
Lee, Clint	OUC	x	x		x
Legault, Larry	Northern Lights				x
Lidstone, Dave	Langara	x	x		
Liu, Alex	Kwantlen	x		x	
MacGillivray, Gary	U.Vic.				x
MacKinnon, Ron	Douglas/UBC			x	
MacLeod, Jean	VCC	x		x	x
Malcolm, Judy	CNC	x		x	x
Matthews, Wayne	Camosun	x	x		x
Milner, Susan	UCFV	x	x		x
Mimmack, Gillian	UCFV	x		x	
Nagata, Wayne	UBC	x	x		x
Neufeld, Leo	Camosun	x	x		x
Nyenhuis, Mike	Kwantlen	x	x		x
Oesterle, Susan	Douglas	x	x		x
O'Shea, Tom	SFU	x	x		
Siggers, John	Cariboo	x	x		x
Simice, Slava	NIC	x	x		x
Snider, Wesley	Douglas	x	x		x
Topper, Tim	Yukon	x	x		x
Weldon, Larry	SFU	x		x	

List of Participants (Meeting with Secondary School Teachers – Thursday, June 3, 2004)

Abu-Bakare, Veda	Langara, BC Open University
Atkinson, Jean	Fraser Valley
Bailey, Jim	College of the Rockies
Bentley, Ted	Capilano
Bradshaw, Jack	Cariboo
Danenhower, Peter	Langara
Davidson, Natasha	Douglas
Demch, Anatoly	Columbia
Ehrenreich, Frank	Rick Hansen
Feldman, David	Selkirk
Finnigan, Mic	Yale Secondary
Fournier, John	UBC Math
Garneau, Marc	BCAMT
Gilbers, Pierre	Ministry of Education
Gray, Justin	SFU
Henschell, Dan	Douglas
Hirowatari, Ruth	Rick Hansen Secondary
Hoppe, Darryl	Rick Hansen Secondary
Idels, Lev	Malaspina
Izumi, Mona	Northwest
Jatana, Rupi	Abbotsford Senior Secondary
Kadonoff, Bruce	Coquitlam
Keen, Kevin	UNBC
Keener, Lee	UNBC
Lawrence, Colin	BCIT
Lee, Clint	Okanagan
Liu, Alex	Kwantlen
MacLeod, Jean	Vancouver Community College
Malcolm, Judy	New Caledonia
Matthews, Wayne	Camosun
McMahon, Anita	Abbotsford Senior Secondary
Milner, Susan	Fraser Valley
Nagata, Wayne	UBC Math
Neufeld, Leo	Camosun
Nyenhuis, Michael	Kwantlen
O'Shea, Tom	SFU
Oesterle, Susan	Douglas
Riva, Linda	Fraser Valley
Siggers, John	Cariboo
Simice, Slava	North Island
Snider, Wesley	Douglas
Topper, Tim	Yukon
Wilson, Wendy	Mission Secondary

List of Participants (Professional Development Sessions – Saturday, June 5, 2004)

Name	Institution	Math ML (9 – 9:50	Stats. (10 – 11:50)	Math for Elem. Ed. (10 – 10:50)	Math Centres (11 – 11:50)
Abu-Bakare, Veda	BCOU, Langara	x	x		
Affleck, Ian	Capilano	x		x	x
Avelino, Edgar			x		
Bailey, Jim	CotR	x		x	x
Bentley, Ted	Capilano	x	x		
Bradshaw, Jack	Cariboo	x		x	x
Chu, David	UCFV	x	x		
Cooper, Alan	Langara	x			x
Danenhower, Peter	Langara	x		x	x
Davidson, Natasha	Douglas	x		x	x
Feldman, David	Selkirk				x
Fotouhi, Ali	UCFV	x	x		
Guidera, Carollyne	UCFV	x			
Izumi, Mona	NWCC	x		x	x
Johnston, Julie	Capilano			x	x
Keen, Kevin	UCFV/UNBC	x	x		
Kuczynska, Anna	UCFV	x		x	x
Lee, Clint	OUC	x		x	x
Liu, Alex	Kwantlen	x	x		
MacLeod, Jean	VCC	x		x	x
Malcolm, Judy	CNC	x		x	x
Matthews, Wayne	Camosun	x		x	x
Miller, Betty	U. Vic.			x	x
Milner, Susan	UCFV			x	x
Mimmack, Gillian	UCFV		x		
Neufeld, Leo	Camosun	x		x	x
Nyenhuis, Mike	Kwantlen	x		x	x
Oesterle, Susan	Douglas	x		x	x
Siggers, John	Cariboo	x	x		
Simice, Slava	NIC	x		x	x
Snider, Wesley	Douglas	x		x	x
Topper, Tim	Yukon	x	x		x
Weldon, Larry	SFU	x	x		

BC Colleges High School Mathematics Contest 2004
Report to the BCCUPM

On May 7, 2004 the Final Round of the BC Colleges High School Mathematics Contest was written at 11 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)
Langara College	(Lang)
Malaspina University College	(MUC)
North Island College	(NIC)
Northwest Community College	(NWCC)
Okanagan University College	(OUC)
Selkirk College	(Sel)
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	Final Round		Top Three Scores		Averages	
	Juniors	Seniors	Junior	Senior	Junior	Senior
Cam	14	11	90,69,63	71,65,54	47	49
Cap	18	21	99,86,72	83,73,67	56	39
CNC	23	11	44,38,37	69,66,51	24	43
Lang	29	14	88,86,85	81,69,63	54	40
MUC	30	32	81,63,60	95,84,77	33	42
NIC	N/R					
NWCC	6	3	40,25,18	51,38,19	21	36
OUC	36	31	65,48,47	90,64,63	29	41
Sel	4	3	45,36,33	85,50,43	36	59
UCC	31	30	67,60,52	76,69,65	29	39
UCFV	38	27	82,74,73	96,95,85	38	43

I have not reported Preliminary Round numbers this year, since we do not have a reliable method for gathering information on the Preliminary Round results or number of students writing. Between the nine reporting institutions 410 students participated in the Final Round this year.

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 contest was administered on the morning of May 7, with some type of activity provided for the sponsoring teachers, and, after the contest 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 institutions 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; Lisa Lajeune at Capilano College; Nicholas Buck at College of New Caledonia; Natasha Davidson at Douglas College; Roger Coroas at Langara College; Patrick Ng at Malaspina University College; Slava Simice at North Island Community College; Mona Izumi at Northwest Community College; Clint Lee at Okanagan University College; David Feldman at Selkirk 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. Special thanks should go to John Grant-McLoughlin of University of New Brunswick, 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 Selkirk College in Nelson last May to put together the initial draft of all four contest papers are: Wayne Matthews (Cam), Jim Bailey (COTR), Nicholas Buck (CNC), Clint Lee and David Murray (OUC), David Feldman (Sel), Susan Milner (UCFV), David Feldman and Neil Coburn (Sel), and John Siggers and Jim Totten (UCC).

In addition, those who proofread the contest are: Clint Lee (OUC), John Siggers (UCC), John Grant McLoughlin (UNB), Dave Murray (OUC), Susan Milner (UCFV), Nicholas Buck (CNC), and Jim Totten (UCC). The solutions were prepared and typeset by Jim Bailey (COTR), Nicholas Buck (CNC), Michael Nyenhuis (Kwantlen), and Dave Murray (OUC). The final compilation and typesetting of the solutions was done by Clint Lee. Clint Lee took on the task of typesetting all four contest papers and coordinating feedback coming from several proofreaders, 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 suggested dates for the 2005 contest are:

Preliminary Round:	Wednesday March 2 or March 9, 2005
Final Round:	Friday April 29 or May 6, 2005

Respectfully submitted to the BCCUPM on June 3, 2004 by

Clint Lee