

The British Columbia Secondary School Mathematics Contest

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In 1973 John Ciriani of Cariboo College (which became Thompson Rivers University, TRU) initiated the Cariboo College High School Mathematics Contest with the help of colleagues in the Cariboo College Mathematics and Statistics Department. The intent of the contest was to enable high school students in the Cariboo College region with an interest in mathematics to get local support and recognition for their interest and abilities in mathematics. In 1979 Jim Totten joined the department and quickly became an enthusiastic contributor to and supporter of the contest. In 1992 he compiled a book containing all of the problems from the contest papers over this period. He also co-edited (with Leonard Janke) a separate book of solutions.

Meanwhile, two other institutions in British Columbia developed high school mathematics contests. In 1977, at the suggestion of Robin Insley, the Mathematics Department at the College of New Caledonia (CNC), consisting of Phil Beckman, Robin Insley, Peter Trushell, and myself, developed a high school mathematics contest for students in the Central Interior region served by CNC, inspired by the successful contest being run at Cariboo College. It ran successfully and independently from its inception until 1994. In 1990, shortly after I joined the Mathematics Department at Okanagan College (OC) a third high school mathematics contest was initiated for students in the OC region which ran independently from 1991 until 1994.

The 1993 meeting of the British Columbia Committee in Undergraduate Programs in Mathematics (BCCUPM, now BCCUPMs) was held at Selkirk College in Castlegar. There Jim Totten approached members of the OC and CNC mathematics departments with a suggestion that the three institutions pool their resources to offer a single mathematics contest. The contest would serve the three colleges as well as any others in BC interested in such a contest, with the name, as suggested by Jim, the British Columbia Colleges High School Mathematics Contest. This title was intended to make explicit that the contest was intended for colleges, who interacted directly with their regions, rather than universities. Both OC and CNC enthusiastically agreed. Jim then approached other institutions and found further support for the idea. Over the years Colleges evolved into University Colleges and then into Universities, so the original name became inappropriate and was changed to the British Columbia Secondary School Mathematics Contest (BCSSMC).

It took a year to organize the combined contest with the first being held in 1995. Jim's idea was that Cariboo College would prepare the contest papers, with contributions from the other institutions, and all participating institutions would use these for their local contests. The 1995 and

1996 contests were handled this way. The combined contest, following the Cariboo model, consists of Preliminary and Final Rounds. Each round has a Junior level for grades 8 to 10 and a Senior level for grades 11 and 12. The Preliminary Round consisting of twelve multiple choice questions is written and marked at the individual schools in early March. Based on these results, each school typically chooses two to four students to participate in the Final Round at the sponsoring post-secondary institution in early May. The Final Round consists of ten multiple choice questions and five questions requiring written answers, all of which are marked by a panel of faculty from the sponsoring institution. In addition to the morning contest writing, Final Round activities usually include a morning session for teachers, lunch for all participants, an afternoon activity for the students during marking, and an award ceremony. Examples of afternoon student activities are lectures by local/invited speakers, sports activities involving mathematics, or scavenger hunts. The prizes awarded to winners range from scholarship prizes to cash or book prizes, depending on the sponsoring institution. Note that copies of the contest papers from 1999 to the present, with solutions, are available at the BCSSMC website at <http://people.okanagan.bc.ca/lee/BCSSMC>.

Following the success of the 1995 and 1996 contests, it was suggested that the only improvement would be to have members of more institutions be directly involved in the contest preparation process. For the 1997 contest Don DesBrisay, Kirk Evenrude, and Jack Bradshaw from Cariboo College; Nicholas Buck and Edward Dobrowolski from CNC; Dave Murray, John Grant McLoughlin, and Clint Lee from OC; Jim Bailey from College of the Rockies (formerly East Kootenay Community College) and Wayne Matthews from Camosun College; met at Cariboo College in Kamloops in August 1996 for the inaugural Math Contest Brainstorming Session. Jim Totten had made most of the local arrangements, including billets and a party at the end of the first day for all of the participants. However, he was absent due to winning an opportunity to play in a pro-am golf event at the Greater Vancouver Open. A year later people came together in Kamloops again, before shifting to the Kalamalka Campus of Okanagan College in Vernon where the session was hosted by myself in 1998. Since 1999, the Brainstorming Sessions have been held in conjunction with the BCCUPMs articulation meetings in mid-May, either before or after the main meeting. The Brainstorming Sessions include about 8 to 16 representatives from a cross-section of institutions across the province. Participants usually bring some problems that they have prepared ahead of time and materials for generating additional problems as needed. The session is divided into Junior and Senior groups, each of which prepares rough drafts of Preliminary and Final round papers. Drafts are later typeset into tentative versions of the contest papers. These are reviewed and revised over several months by as many as twenty reviewers. Finished forms are then produced including solutions to all of the problems that ultimately appear on the contest papers.

From the beginning, until he took the position of Editor-in-Chief of *CRUX with Mayhem*, Jim participated actively in these sessions sharing his

infectious enthusiasm for mathematics and its manifestations in all areas. Jim's humour contributed to the success and the enjoyment experienced by all participants. He contributed problems and solutions for the contest, typeset either the contest papers or the solutions, and participated in the review of the contest papers as they evolved into their finished form. His abilities as a proofreader, his attention to detail, and his skills with wording problems clearly were invaluable to all of those involved in the process.

Also during this period, Jim was active in recruiting institutions to participate in the contest. He made himself available to any institution, especially smaller institutions just getting started with the contest, to help during the final round in any capacity, especially as a speaker. In 2004 it was suggested that The Pacific Institute for the Mathematical Sciences (PIMS) might be willing to support some of these activities. Rick Brewster approached PIMS for such support and as a result PIMS provides support for a range of the province-wide activities associated with the contest. Jim's recruiting activities brought the number of participating institutions up to a maximum of twelve in one year, with a core of at least ten institutions. The institutions that have participated in the contest over the years are: TRU in Kamloops, CNC in Prince George, OC in Kelowna, Langara College in Vancouver, Capilano University in North Vancouver, Camosun College in Victoria, University of the Fraser Valley in Abbotsford, North Island College in Campbell River, Malaspina University in Nanaimo, College of the Rockies in Cranbrook, Selkirk College in Castlegar, Northwest Community College in Prince Rupert, UBC Okanagan in Kelowna, and Douglas College in New Westminster. Approximately 2500 grade 8 to 12 students participate in the Preliminary Round of the Contest each year and 500 participate again in the Final Round.

While Jim was Editor-in-Chief of *CRUX with Mayhem*, he scaled back his involvement with the contest. During this period I took over many of the responsibilities that Jim had undertaken. I typeset the drafts of the contest papers, managed the evolution of the contest papers, saw to the distribution of the papers to the participating institutions, and oversaw and typeset solutions. Jim continually remained available to provide advice and contribute his reviewing skills in doing a final run through of the contest papers. Shortly before his death, he contacted me and indicated that now that he was winding down his Editor-in-Chief duties and had retired from TRU, he was looking forward to increasing his involvement with the contest.

It is clear that without the inspiration and efforts of Jim Totten, the British Columbia Secondary School Mathematics Contest would not exist today. His enthusiasm for and contributions to the contest were key in developing the feelings of involvement and ownership of all of the participating institutions.

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