Jim Totten's Reach

John Grant McLoughlin

Shane Rollans opened the conference Sharing Mathematics: A Tribute to Jim Totten with these words: "This conference is a tribute to our long-time colleague, Jim Totten ... Jim had at least five passions. Foremost was his family. His wife, Lynne, shared his passion for the outdoors. His son, Dean, shared his passion for golf. His other passions were playing hockey and sharing his love of mathematics, which brings us here."

Jim is known for his work with the British Columbia Secondary School Mathematics Contest (see Clint Lee's article on pages 307-309 for details) and over fourteen years of service to ***Crux***, including nine years as a Problems Editor prior to becoming Editor-in-Chief of ***CRUX with Mayhem*** in 2003. This profile of Jim offers a broader picture of Jim's contributions in mathematics and spirit, mainly as seen through the eyes of his colleagues.

When Jim arrived at Cariboo College in 1979 he promptly organized a Putnam team that he led until 2005. He also started the "Problem of the Week" tradition, something he had done previously at the University of Saskatchewan and St. Mary's University. Each week he would collect solutions, grade them, and post the results complete with a solution. For the first 27 years no problem was repeated, although Jim did allow himself to repost a few of his favourite problems in his final year. Jim compiled 80 of these problems and solutions into a book, *Problems of the Week, Volume VII* in the ATOM (A Taste of Mathematics) Series published by the Canadian Mathematical Society (CMS) in 2007.

Cariboo College became the University College of the Cariboo (UCC) and in 1989 offered degrees with majors in mathematics in association with the University of British Columbia (UBC). Jim then began teaching upper level courses ranging from Linear Programming to Complex Analysis to Graph Theory and Geometry. He also chaired the UCC Dept. of Mathematics and Statistics (1994-1998). UCC later became Thompson Rivers University (TRU), offering an independent degree in 2005.

Rick Brewster shares an unusual perspective on Jim's contributions in Kamloops, ranging from his time as a local high school student, to an undergraduate at UCC, and finally as a colleague of Jim's. Rick writes:

"It is clear that Jim was well on track to a career as a research mathematician with 14 papers from 1974 to 1980, many solo (e.g., Basic properties of restricted linear spaces, *Discrete Math.* **13** (1975), No. 1, 67-74) and others collaborative (e.g., On a class of linear spaces with two consecutive line degrees, *Ars Combin.* **10** (1980), 107-114, co-authored with Lynn Batten). He made a decision to suspend his research programme when he moved to Cariboo in 1979. He was obviously happy (and at peace) with his decision as he found other outlets for sharing his love of mathematics."

[At `http://www.ams.org/mathscinet/search/author.html?mrauthid=298276` are links to a list of Jim's research publications and related information.]

"My overwhelming memory of Jim is of his enthusiasm. I certainly noticed it as the high school kid visiting Cariboo College, but I thought all teachers were keen. As his student in 2nd year though, it was clear Jim was cut from a different cloth. He had very high expectations of us. He pushed us hard on assignments, but his enthusiasm balanced out this work. In other words, he acted as though we would be thrilled to work on tough problems (math and computing science), because problem solving is so much fun. That sort of keenness never disappeared."

"I particularly remember second year Discrete Math (Math 222), the first time it was taught at Cariboo College. Jim was so excited to teach in his area. Late in the course he gave us a talk about finite geometry and the hunt for the projective plane of order **10**. I can say I really didn't understand much of what he said that day, but I was struck by his excitement in being able to take us to the 'frontier of mathematics' (his words). This seemed very important to him: namely, that we were part of the mathematical community, and we had the opportunity to contribute. I was in graduate school when the nonexistence of the projective plane of order **10** was established. Upon hearing that result, I remembered Jim's lecture 7 years earlier. Two thoughts: 'Ah! That's what Jim was talking about,' and 'Wow, he had a lot of faith in a group of second year students to share that with us.' "

"While I was teaching Number Theory in my first semester at UCC, Jim showed up in my office one day with a collection of notes (about 30 years old) from a course he taught in graduate school. He was so keen to show me a construction of a certain ring of functions based on number theoretic ideas that he had presented in the (grad) course. It was nice mathematics, but a bit advanced for third years without abstract algebra. Still Jim's enthusiasm was so typical. An opportunity to share should not be wasted."

The Adrien Pouliot Award is a CMS award honouring "significant and sustained contributions to mathematics education in Canada." Members of the TRU department nominated Jim in 2007. In a supporting letter, John Ciriani echoed Rick's sentiment: "He was particularly pleased to develop and teach a course in geometry. Even students who found the course difficult recognized Jim's love of the subject and were able to relate to his enthusiasm for it." John added, "I must mention that Jim derives great pleasure in making presentations in science fairs and schools. He is particularly pleased when he encounters talented students who share his enthusiasm for mathematics. I believe he plans to continue this activity after he retires." In fact, Parkcrest Elementary School in Kamloops made Jim an honourary teaching staff member in 2007 to recognize his long term volunteer service.

Don DesBrisay expresses his respect: "With the math contests, Problem of the Week, mathemagic shows, Putnam, ***Crux***, his boxes of puzzles (many he crafted himself), his journal/book collections, and his vast knowledge, intellect, and wit (excluding some awful puns), Jim kept us all aware of the joy and excitement found in mathematics and in life. All this as well as family, outdoor club activities, golf and hockey!!" Quoting Kirk Evenrude: "Jim went at golf with the same determination and dedication as he did everything.

When I first met him in 1982 his handicap was about 13. In 2007 it was 6. One day he shot 69 at the Kamloops club. ... He had boundless energy when it came to golf. ... It was easy to spot Jim on the course; all you had to do was look for a big white Tilley hat. He loved playing in tournaments and was very competitive, but I think he liked the social part as much as the golf."

Indeed Jim's outreach had many branches. His participation at a 1999 CMS Education Session (organized by Bruce Shawyer and Ed Williams) in St. John's raised the profile of the BC contest. While there Jim visited my class at Memorial University of Newfoundland sharing his wooden puzzles and love of recreational mathematics with an enamored class of future high school math teachers. An entirely different form of mathematical outreach began in 1969 when Jim initiated the weekly pickup hockey games through the Faculty of Mathematics at the University of Waterloo.

Grace and gratitude are the words that come to mind as I reflect upon my collaborations with Jim Totten. Jim combined intellect and heart in a manner that placed the greater good ahead of his own. Jim was one of those exemplary people in the academic community who consciously expressed appreciation for the work of others – a gift in itself. This form of outreach is less visible but equally important. It is not unlike the teacher who, though challenging, manages to create a safe space for making errors and genuinely fumbling with mathematical ideas. Jim was a great teacher. He was honoured with separate awards for teaching and merit, and shortly after his retirement in 2007 with a Professor Emeritus designation. Those present at the March 2008 celebration of Jim's life at the Grand Hall in TRU witnessed the love and outpouring of appreciation for Jim and his family. Students, hockey players, golfers, colleagues, hikers, and family spoke to the breadth of Jim's passions and activities, a taste of which has been offered here.

These closing words are from Fae DeBeck and then, Dennis Acreman:

"Jim's top priority has always been his students, but his enthusiasm for mathematics and his efforts to promote mathematical ideas extend far beyond his own classroom. He has been an inspiration and a model for all in our department to follow. In the past two years I have acted as the local coordinator for the Math Contest and have begun to appreciate at a deeper level Jim's phenomenal contribution in this particular regard. His influence throughout the college/university system in the province cannot be overstated."

"Jim was a wonderful colleague and a good friend. He loved everything about Mathematics and assumed everyone else would too if it was just shared with them. His outreach activities showed true dedication to that goal from ***Crux*** to years of school visits and Problems of the Week. He was a generous person who loved his family and all aspects of his life and we all mourn his loss but are inspired by his example."

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