

PROCEEDINGS OF THE FOURTY-EIGHTH ANNUAL MEETING OF THE MINERALOGICAL ASSOCIATION OF CANADA, 2003

The 48th annual meeting of the Mineralogical Association of Canada was held May 26–28 at the Sheraton Wall Centre Hotel, in stunning downtown Vancouver, British Columbia. The meeting had over 930 registrants and included ten field trips.

The scientific program consisted of five symposia, 24 special sessions (including the MAC-sponsored SS 19, “Truth and Beauty in Metamorphism: a Tribute to Dugald Carmichael”) and six general sessions, along with ten field trips. The MAC sponsored two well-attended short courses at the Joint Annual Meeting: Fluid Inclusions: Analysis and Interpretation (coordinated by I. Samson, A. Anderson & D. Marshall, Short-Course Volume 32) and Environmental Aspects of Mine Wastes (coordinated by J.L. Jambor, D.W. Blowes & A.I.M. Ritchie, Short-Course Volume 31). Your Association has also continued to support the Leonard G. Berry Summer School Series. The second one, on Silicate Melts, Glasses and Magmas, was convened by Prof. J.K. Russell and held at the University of British Columbia, September 1–5, 2003. It was taught by Prof. Don Dingwell (Ludwig Maximilians University, Munich, Germany), with supplementary lectures from Prof. K. Cashman and Ms. A. Rust (University of Oregon). It attracted 42 participants from universities, industry and government labs. Prof. Kelly expressed his sincere thanks to MAC for helping to support this endeavor and summarized his impressions as follows. “The workshop provided a unique forum for meaningful networking between Canadian-based scientists and their international counterparts”.

The annual MAC luncheon and award presentations were held May 27 in Ballroom D of the Sheraton Wall Centre. The Hawley Award, for the best paper in Volume 40 of *The Canadian Mineralogist*, was awarded by Association President Norman Halden to Daniel J. Kontak, Jaroslav Dostal, T. Kurtis Kyser and Douglas A. Archibald for their paper, “A petrological, geochemical, isotopic and fluid-inclusion study of 370 Ma pegmatite–aplite sheets, Peggys Cove, Nova Scotia, Canada” (Vol. 40, p. 1249-1288). The Past Presidents’ medal was awarded to Edward D. Ghent (University of Calgary). The Berry medal was awarded to Gina Lecheminant (Geological Survey of Canada) for her contributions and service to the MAC both as Secretary (for 13 years) and as part of the driving force behind development of a new business model for MAC. The Young Scientist’s medal was awarded to Al Meldrum

(University of Alberta), who is conducting research into materials useful in nanotechnological applications.

The Annual Business meeting took place on May 27 in the Parksville Room, with 19 members in attendance. President Halden began the meeting with an open discussion of the future of MAC and the impact that electronic aggregation could have on the association. In general, it was concluded that while electronic aggregation could be viewed as a potential threat to the MAC, it could just as well open doors to new opportunities. Scientific organizations in similar or aligned fields have already decided to join these aggregates, and your council will continue to keep you apprised of the situation. The cost of ordinary and corporate–institutional memberships will remain unchanged for the coming year, which is welcome news. In addition to the two new short-course volumes listed above, the MAC will be publishing *The Atlas of Minerals in Thin Section* (SP7, a joint publication with the University of Barcelona, scheduled to be released in the fall of 2003 or early 2004), with several others being planned for in the near future. The MAC has also augmented MACF funds with the transfer of \$105,000. The money will be used to finance new research and travel grants, as well as the possibility of introducing additional scholarships. The Newsletter, which is becoming very popular thanks to the wonderful stories and editorial efforts of Pierrette Tremblay, is now being published three times a year. If you are interested in finding out more regarding the plans and efforts of the MAC, you are invited to visit our website (www.mineralogicalassociation.ca).

The audited financial statements to year end December 31, 2002, prepared by Joanne L. Dorman, Chartered Accountant (Burnaby, British Columbia) lists the equity for MAC at \$723,269 in the bank, (\$62,000 as cash on hand) and \$349,731 for MACF. For 2002, MAC’s net income was approximately \$77,000. Overall, things are quite healthy from a financial standpoint, and the MAC is in an excellent position to stave off any short-term, potential problems. The audited financial statements are published in Newsletter 70 (p. 6-7).

The Association, through the MAC Foundation, awarded its \$10,000 graduate scholarship to Daniel Layton-Matthews (University of Toronto), who is conducting a Ph.D. research project on the volcanogenic massive sulfide deposits of the Finlayson Lake area, Yukon Territory, Canada. Your financial support of this very deserving scholarship fund is greatly appreciated.

Please direct any inquires regarding donations to the MAC Foundation to R.H. Mitchell, Chairman of the Board, MAC Foundation, Lakehead University, Thunder Bay, Ontario, P7B 5E1 [rmitchel@lakeheadu.ca].

The next Joint Annual Meeting of GAC and MAC will take place at Brock University in St. Catharines, Ontario, May 12–14, 2004. The theme for the meeting

is “Lake to Lake” (<http://www.stcatharines2004.ca>). The MAC will continue to show a strong presence at the Joint Annual Meeting by sponsorship of special sessions and short courses. Hope to see you there!

Andrew M. McDonald,
Secretary

**THE HAWLEY MEDAL FOR 2003
TO
DANIEL J. KONTAK, JAROSLAV DOSTAL, T. KURTIS KYSER
AND DOUGLAS A. ARCHIBALD**



DANIEL J. KONTAK AND JARDA DOSTAL



T. KURTIS KYSER AND DOUGLAS A. ARCHIBALD

The Hawley Medal, for the best paper published in Volume 40 (2002) of *The Canadian Mineralogist*, is awarded for the contribution entitled "A petrological, geochemical, isotopic and fluid-inclusion study of 370 Ma pegmatite–aplite sheets, Peggys Cove, Nova Scotia, Canada". The authors are Daniel J. Kontak, Nova Scotia Department of Natural Resources, Jaroslav Dostal, Department of Geology, St. Mary's University and T. Kurt Kyser and Douglas A. Archibald, Department of Geological Sciences and Geological Engineering, Queen's University.

The Hawley medal committee noted that "when the conventional magmatic origin for the fluids associated with the genesis of pegmatites and aplites in the South Mountain Batholith was discounted on the basis of oxygen stable isotope data, the authors proposed a novel alternative model on the basis of a multi-method analytical approach that involved meticulous field work, petrography, isotope geochemistry, mineral chemistry, Ar/Ar geochronology and fluid-inclusion work. The authors demonstrate that the fluids involved in the petrogenesis of the pegmatites and aplites were derived by the dehydration of metasedimentary enclaves present in the granites. The importance of this finding, along with the strength resulting from the integration of the multiple methods taken by the authors, make this manuscript a most remarkable contribution." In short, this paper is a superb example of the scientific method in action!

The manuscript is also superbly illustrated with numerous diagrams, excellent color field photographs, photomicrographs and, of course, is clearly written and logically presented.

Norman M. Halden,
president

Ladies and gentlemen, members of MAC Executive and Council, friends and colleagues,

It is always an honor to be recognized by one's peers, thus for myself and my coauthors it is indeed an honor and privilege to be here as the recipients of the Hawley Medal of the Mineralogical Association of Canada. It is an honor because of the stature of this journal and a privilege because of the high caliber of the papers published in it each year. We sincerely thank the review committee for considering our contribution worthy of the Hawley Medal. However, for me, this award carries with it some special gratification because of my affiliation with MAC and the special place that Peggys Cove is to me. Thus, if you permit me to indulge for a few minutes, I would like to share with you why this honor is so meaningful to me.

Firstly, I was most fortunate several years ago to be invited by my esteemed colleague Bob Martin, editor extraordinaire of *The Canadian Mineralogist*, to join the board of associate editors of the journal. This associa-

tion is one that I have both relished and, I might add, benefitted from immensely. In the capacity of an associate editor, one really learns first-hand the tremendous effort put in by Bob and his staff to maintain the impeccable standard established by the journal. However, I might also say for those that are curious, that when an associate editor wears the author's hat, as in the case of the Peggys Cove paper, there is no favoritism extended from Bob the Editor, even if the topic like pegmatites is close to his heart – this is of course in no way implying that Bob is without heart!

Secondly, I sat as a councillor for MAC for a number of years and now have the honor to fill the role of Vice President, which if you are not aware carries a six-year sentence, since the roles of the VP, President and Past President run consecutively, each with their own two-year term. However, on a more serious note, it is really an exciting time to be associated with this organization, as the Earth sciences are in a state of constant flux and change, but MAC is addressing these issues head on. The council and executive are doing great things, people have lots of innovative ideas and are full of energy, and it is truly a privilege to be part of this premier mineralogical organization.

And thirdly, Peggys Cove occupies a special place in my heart. For many years, my family and friends have been visiting this Maritime hamlet as if it were our own special retreat and refuge. I have spent countless hours hiking the glaciated outcrops under both bright blue skies or the foulest of Maritime weather while gazing in wonder at what Mother Nature has bequeathed to granite aficionados like myself. On display are the most amazing swarms of sheeted aplite and pegmatite. The pegmatites are commonly zoned with cores of beauti-

ful, coarse tourmaline, whereas the aplitic layers have the most intricately laminated line-rock that defies explanation. Note that in the paper, we did not offer an explanation for this texture. To be recognized here today for conveying some of this geological mystery to the Earth-science community is indeed both gratifying and humbling.

Before concluding, I would like to acknowledge a debt of gratitude to some special people involved in this and other projects that I have had the privilege to work on. Firstly, my coauthors, Jarda, Doug and Kurt, a sincere thank you for your collaborative support over the years. I operate on a modest budget, and it is because of the exceptional generosity of colleagues such as you that I am able to supplement my field observations with only the best-quality data, that come with unsolicited and volunteered expert interpretation and moral support. Next, I have a management in my department that endorses my work, recognizes its relevance, and permits me the latitude to pursue a variety of fascinating projects, thanks to Bob, Mike and Scot. I also have the pleasure of working and interacting with a fascinating group of talented geologists, each with a great sense of humor and commitment to their profession. I sincerely acknowledge your friendship and support over the years. In addition, I have benefitted from the association with some remarkably talented student assistants during the summers. To Dree, Jerry, Michelle and the many others, thank you for your efforts and camaraderie. Finally, to my family that has always supported my endeavors and time away from home with understanding and love, thanks to Jason, Julia and Lynn.

Daniel J. Kontak

**THE BERRY MEDAL FOR 2003
TO
GINA LECHEMINANT**



Ladies and gentlemen, MAC executive and Council Members,

It is my pleasure today to introduce to you the 2003 MAC Berry Medalist, Ms. Gina LeCheminant. Gina actually graduated from the University of British Columbia a few short years ago, thus it is only fitting that she be honored here today, back at her *alma mater*. After graduating from UBC, Gina worked in the private sector, and then moved onto the Geological Survey of Canada in 1981, where she occupied various roles from mineralogist to uranium deposit geologist, before becoming the research manager of the GSC mineralogical and geochemical laboratories.

Gina is being honored here today for her unselfish service to the MAC as a member of Council and Executive over an extended time-period; in fact, she served as Councilor and Secretary for 13 years. In these roles, Gina brought to MAC council meetings an important continuity and historical legacy of the organization that proved on many occasions to be a tremendous asset, the modern vernacular for this is corporate memory, as our current president Norm Halden likes to remind us! Of particular note, however, is that Gina, perhaps unknowingly, performed a role during the mid-1990s that deserves special recognition, and it is for this that she has been singled out as the Berry Medalist. From discussions with several of her contemporaries who shared the

round table with Gina at MAC meetings, the unanimous consensus was that Gina is blessed with an unwavering spirit, and was known to provide gentle prods on issues that she took to heart. In many cases, these issues were somewhat contentious for the reason that they involved change, a term that some on council evidently preferred to have fossilized rather than embrace, or so I have been told. However, Gina realized that the 1990s were a time of change and that MAC, unlike the dinosaurs, did have a choice of how to embrace some of this change. Of particular relevance were the changes in how business was being done, which was something pretty foreign to the mineralogists and academics of the time. As it turns out, this foresight was to a large extent responsible for making MAC the financially healthy organization that it is today. Thus, some might say, in hindsight, that Gina was a visionary.

Part of Gina's vision was that MAC required a business plan to address operations of the organization in order to not only ensure, but to guarantee a healthy and secure financial future, which is where we find MAC today. In fact, Gina continues to sit as Executive Secretary to the MAC Foundation, which she was so instrumental in establishing. It is perhaps fitting, therefore, that today, sitting with Gina and enjoying this luncheon is living testament to Gina's vision, as we have with us two of the brightest young scientists around, who are

also being honored by MAC and, who, we expect will represent the future of this organization. It is because of the healthy finances of the association, of which Gina contributed so much to, that the organization is now able to provide financial support to such deserving, young and promising individuals.

Whereas bigger and wealthier organizations provide such visionaries with stock options, big bonuses, use of their private jets and lavish retreats, we hope that the Berry Medal for 2003 will be accepted by Gina as a suitable proxy for her worthy services. It carries with it our deepest gratitude for her efforts in guaranteeing a bright future for the Mineralogical Association of Canada and those that are part of it. Please join me in congratulating Gina and showing our appreciation for her efforts to the society.

Daniel J. Kontak,
Vice-President

Vice President Kontak, Council, members,

Thank you. It is truly an honor to be awarded the Berry Medal for service to the Mineralogical Association of Canada. When I received the letter from Norman, my skeptical side said that if one stays long enough in an organization, they'll give you a medal just to get rid of you! From experience, I appreciate that this is not true of the Berry Medal, and I am proud to be considered amongst the ranks of previous medalists who were both long-serving and contributed to the development of our association.

During my tenure of some thirteen years on Executive Council, four things stand out for me, changes that I supported, promoted, or even instigated. I want to remind you of those changes today, because I believe they have transformed the Mineralogical Association of Canada into what it is today.

Firstly, Council balanced the budget in a time of declining reserves. This was controversial, as it required increased dues for both personal and corporate or library membership, lowered costs in an environment of increased expectations of quality and color in a journal, and risked the core membership of the association. The outcome proved the risk to be worth taking.

Secondly, Council took the conscious decision not to anticipate surplus from its support of Canada's premier geoscience meeting, GAC-MAC. This permitted budget forecasting that includes the risk of loss, but permits the Association to invest any meeting surplus in support of its charitable purpose.

Thirdly, and perhaps the one I am most proud of, was the establishment of a separate charitable entity, the Mineralogical Association of Canada Foundation, to provide scholarship awards and other financial support to graduate students pursuing geoscience research in all the areas promoted in *The Canadian Mineralogist*. This Foundation now stands at some three hundred and fifty thousand dollars, and supports one major scholarship grant per year as well as travel grants for students to GAC-MAC and other meetings, such as the IMA. In the fall, the Foundation will mount a matching-dollar campaign to increase its holdings, with a short-term target of a half-million dollars and a longer-term target of a million-dollar scholarship fund. I remain on the Board of Directors of the MAC Foundation, and I am making a personal request to you today to support, personally and in your place of work, this appeal campaign when it is launched later this year.

Lastly, Council transformed the business model of the association into what it is today. This was an important philosophical shift that recognized MAC was not a dues club that provided its members with *The Canadian Mineralogist*. It is, instead, an entity with a dual purpose: to provide member services, and to efficiently run a small international publishing house. Recognizing this duality permits Council to commit fully to its charitable charter, and at the same time plan its publishing future along sound business principles.

Throughout my tenure with MAC, I thoroughly enjoyed working with colleagues on Council. Investing time in what might be called community service, through Council or Executive appointments, is a wonderful opportunity to get to know and work with people from federal and provincial governments, universities, the private sector and the consulting community. It was an immensely enriching experience, and I unreservedly recommend that if you are asked to consider such "community service", say yes. In doing so, you will contribute to the next ten years of change and growth of our very own Mineralogical Association of Canada.

Gina LeCheminant

**THE PAST-PRESIDENTS' MEDAL FOR 2003
FOR
EDWARD D. GHENT**



Ed Ghent is one of the rarities in metamorphic petrology. In his career, he has contributed to theory, completed experimental studies of metamorphic processes, has been a recognized leader in the analysis of metamorphic rocks and minerals, and conducted field studies in metamorphic terranes. He has integrated all these types of studies into a research program in which he has deciphered metamorphic processes in terranes from around the world and in metamorphic rocks that range in grade from zeolite facies to granulite facies. Very few metamorphic petrologists have expertise in as many fields of metamorphic petrology and have studied metamorphic processes over such a large range of metamorphic grade.

Perhaps his most significant theoretical contribution was his development of the plagioclase – garnet – Al_2SiO_5 – quartz geobarometer in the early 1970s. The development of the geobarometer, in conjunction with the biotite geothermometer, provided metamorphic petrologists for the first time with a practical, widely applicable, and relatively reliable method for determining metamorphic conditions in amphibolite terranes. Metamorphic petrologists have constructed P–T–time paths for metamorphic terranes based on geobarometric and geothermometric studies that depended on the early work done by Ed.

Although the experimental studies Ed has done are not as extensive as his theoretical, analytical, and field studies, the experiments he did in collaboration with D.

Kerrick at Penn State helped calibrate the thermodynamic properties needed to calculate mixed-volatile equilibria. These studies complemented his work with M. Stout on fluid-inclusion studies in metamorphic rocks. Ghent and Stout have made significant contributions to our knowledge of metamorphic fluids.

Ed has been instrumental in developing the electron-microprobe laboratory at the University of Calgary. He has also collaborated in isotope and trace-element studies with Kyser and Erdmer in Canada and numerous other workers in the U.S.A., New Zealand, and Europe. The analytical studies he has undertaken made significant contributions to our understanding of the chemical composition and mineralogy of metamorphic rocks.

Many metamorphic petrologists confine themselves to studies of a particular grade of metamorphic rocks. Ed Ghent, on the other hand, is equally proficient in studies of all metamorphic rocks and processes. In addition to his scientific work, Ed has made significant contributions to our science by serving on NSERC and Lithoprobe Committees. He has also served on the council of MAC and has helped organize and deliver short courses for both MAC and GAC. He has made significant contributions to the training of highly trained personnel. Rob Raeside, for example, was one of Ed's students.

Brian J. Fryer,
Past-President

I thank the Mineralogical Association of Canada for honoring me with the Past-President's Medal. When I compare my accomplishments with those of other recipients of the Past-President's Medal, I realize how little I have done. To paraphrase Tom Lehrer, "It is a sobering thought, for example, that when Mozart was my age he had been dead for 30 years."

I feel fortunate to have had a career that has been made more interesting and enjoyable by my having worked with a number of outstanding scientists.

I first want to acknowledge my late parents, who encouraged me to hop on a plane and travel 1500 miles from home to attend Yale University. The academic environment there encouraged me to consider graduate study in geology. I was in the same class as Dick Armstrong (late of UBC). Needless to say, Dick was in a class by himself, even as an undergraduate.

I was a graduate student at the University of California, Berkeley, at a particularly good time to study metamorphism. My supervisor was Bill Fyfe, an inspirational mentor who emphasized a critical approach to research. For metamorphic petrology, Frank Turner, and for metamorphic structure, Lionel Weiss, were extremely valuable teachers. I was blessed by being at Berkeley at the same time as a number of outstanding graduate students and post-doctoral fellows. These included: Dan Weill, Win Means, Greg Davis, Mike Holdaway, Ned Brown, Weecha Crawford, Roger Burns, Bernard Evans, and Eric Essene. I even overlapped with Dugald Carmichael for one semester.

I was lucky to have obtained an Assistant Professorship at Calgary in 1967. The Department then had nine faculty, and I was "the petrologist." We now number over 30 faculty and have become an outstanding research-oriented institution. My colleagues at Calgary

have been great. I particularly want to acknowledge Phil Simony, with whom I have collaborated on research for over 35 years. My work on metamorphism in southeastern British Columbia would have not succeeded without his contributions, both as researcher and as a friend. In addition, I have worked with a number of other colleagues. I have learned a lot about thermodynamics and phase equilibria from Jim Nicholls and Terry Gordon. They have been incredibly patient answering my simple-minded questions. I would not have had much to write about without Mavis Stout's careful laboratory work. I particularly want to mention some of my graduate students, Chris Devries, Rob Raeside, James Sevigny, Mitch Mihalynuk, Len Gal, and Kelly Russell. Kelly saw the light and switched to volcanic rocks. I have had some outstanding post-doctoral fellows: Donna Whitney, Cambria Denison, Jim Crowley, and Doug Tinkham.

Canada has been a great environment to study metamorphism. Aside from having the most isograd-miles on Earth (to quote J.B. Thompson), it has had a disproportionately large number of outstanding metamorphic petrologists and geochemists: Hugh Greenwood, Terry Gordon, Jim Nicholls, George Skippen, Greg Anderson, Dugald Carmichael, Ralph Kretz, Edgar Froese, Tom Brown, Rob Berman, Greg Dipple and Dave Pattison. I should acknowledge the contributions of many other people, but I recognize that I have limited time and space.

Finally I want to thank my wife, Gretchen, for putting up with my absences and my oftentimes misplaced devotion to my career. She has always been there to support me.

Ed Ghent

THE YOUNG SCIENTIST MEDAL FOR 2003
TO
ALKIVIATHES MELDRUM



In the first moment, it may seem unusual to nominate a person who is a faculty member in a Department of Physics for the Young Scientist Award of MAC; however, Al Meldrum is a mineralogist, with a broad interest in solid-state research, who has certainly made important contributions to both the mineralogical and materials sciences. All of Al's degrees are from geology departments. Since his graduation from University of New Mexico, he has had a steady record of important publications in geoscience journals: *Precambrian Research* (1997); *American Mineralogist* (1997), *Geochimica et Cosmochimica Acta* (1998), *The Canadian Mineralogist* (1999), *Mineralogical Magazine* (2000) and *Reviews in Mineralogy and Geochemistry* (2000). Al's nomination not only recognizes a talented young scientist, but also emphasizes the broad applicability of an education in mineral sciences.

Al is a very gifted, careful, and dedicated scientist. He is an expert on many aspects of mineralogy and mineral characterization, including but not limited to transmission electron microscopy, X-ray diffraction, and chemical analytical techniques. His M.S. degree concerning the petrology of the Cartier Batholith was done at McGill University under the supervision of Bob Martin. Al then moved to the University of New Mexico, where he did his Ph.D. with Rod Ewing. Much of his Ph.D. research was focused on the effects of radiation on crystalline structures, with applications to the disposal of nuclear waste. He conducted novel experiments on ion-beam-induced amorphization of minerals such as monazite, apatite, zircon, hafnon, thorite, and titanite. His research has also included numerous non-mineral ceramics, which permitted the establishment of

relations between crystal-chemical parameters and critical doses of radiation for amorphization. His discoveries include a transient liquid-like state that occurs in the displacement cascades of zircon, hafnon, and thorite, as published in *Nature*. In short, Al's research into the crystalline-to-amorphous transition in minerals has significantly advanced our understanding of this geologically important process. His research is also key to the development of ceramics for the containment of nuclear waste in a geological repository.

Unlike most mineralogists, Al has found ways to apply techniques he has learned in his mineralogical research to diverse fields of science. Al worked with a group of physicists and material scientists for his postdoc at Oak Ridge National Laboratory, where he continued to develop his ideas concerning nanoparticles and the crystalline-to-amorphous transition. He has made very significant contributions to our understanding of nanoparticles, which of course are of considerable significance to aspects of environmental geosciences. He has even used his techniques to study chemical banding in fish otoliths!

In summary, Al is an extremely talented and productive young mineralogist who will continue to make important contributions to science (geology, mineralogy, materials science or any other discipline that he turns his hand to). He is certainly viewed as a top "prospect" in the mineral physics community, and he brings great distinction to Canadian science.

Norman M. Halden,
president

On returning from a recent trip to San Francisco, nearly buried in a massive list of e-mails and telephone messages, were two from Brian Fryer and Pierrette Tremblay. The subject line "MAC Award" was certainly promising, and opening the letter led to no disappointment! What a pleasant and unexpected surprise!

First, let me say what a great honor this is. It is one that I never expected, and looking at the people who have won this award in the past, I hardly feel deserving of such recognition. When you think of all the things you want to do and compare these to how little you have actually done, it's hard to know whether to be happy or depressed, and it is certainly hard to feel deserving! The Lebanese poet Kahlil Gibran once said that as the island of knowledge grows, so does the shore of ignorance. In this sense, mineralogy represents a fertile and diverse ocean, maybe more so than one sometimes thinks.

This response provides a great platform from which to further (humbly) expound certain views on the subject of mineralogy. These can probably be best summed up in an article I recently wrote for the MAC Newsletter. In it, I claimed that a good training in crystal chemistry, as provided by mineralogists, is equally invaluable in materials science and engineering. For example, mineralogists and crystal chemists are generally the only ones courageous enough to take on bizarre and complicated crystal structures as a matter of course, learning how to visualize in 3D and in reciprocal space. Materials that occur naturally in mineral form can also be prepared synthetically, and such materials have all sorts of interesting physical and chemical properties. Mineralogists indeed have much to teach and learn from adjacent fields.

Winning this award is especially gratifying because, despite my geological background, I work in a physics department. This has been a rewarding and interesting experience that has helped me to establish the many

links between the two sciences. In fact, I do not believe that the traditional boundaries really apply at all any more. Last year's award winner, James Scoates, mentioned that the MAC has a progressive, positive view of science not limited by borders. I can now add to that statement – it is also not limited by specific disciplines. I believe that the progressive, open-minded character of the MAC will ensure its importance and value to the scientific community as a whole.

There are principally three people that I should thank for this award – people that have been role models throughout my scientific career. I would like to thank Bob Martin, who supervised my Masters project at McGill. From personal experience, I can say that Bob's great care, attention to detail, and logical style are invaluable in the development of new scientists. I am now in the midst of editing my first proceedings volume, and it is a tough slog! This experience has taught me how much work Bob must put into *The Canadian Mineralogist* every single issue, to ensure the quality of the papers and of the journal as a whole. I also want to thank Rod Ewing, my Ph.D. supervisor, for providing the type of environment that is ideal for any graduate student – a large, interacting group full of good people who you can really learn from. Going to New Mexico was one of the best decisions I ever made. Last but not least, I would like to thank Peter Burns. Peter joined our group in New Mexico as a postdoc, while I was still a graduate student back in 1996. The things he had accomplished at such a young age really opened one's eyes as to what can be done with determination, effort, and smarts.

So once again, let me conclude by thanking the Mineralogical Association of Canada and all of you here today. I'm sorry I couldn't be here to enjoy it in person, but rest assured that this award is a great honor for me – one that I will always remember. Thank you.

Alkiviathes Meldrum