

C3 Newsletter

Volume 34, Number 2

April 29th, 2009



College Chemistry Canada

President's Message

In just a few weeks, C₃'s annual conference will be held at Centennial College in Scarborough. Have you sent in your registration yet? If not, there's still time. A C₃ conference is a great thing to do for professional development this time of year.

This is an opportunity for me to announce that our friend and colleague Bob Perkins has been given a lifetime membership in C₃. Bob has been a fixture of C₃ for many, many years. At one time or another, he has held every position on the C₃ executive. He has written numerous articles in C₃ News, given presentations at just about every C₃ conference he attended, and he was awarded the C₃ Award in Chemical Education in 1997. Those of us who have served C₃ alongside Bob know and appreciate his commitment to C₃. The positive attitude and organizational savvy that he always brings to meetings is of great value. We decided that this year was a good

time to honour Bob with a lifetime membership, as he retired from Kwantlen University College last year. He is currently building a house on Sproat Lake on Vancouver Island, where he and his wife will get to live near their grandchildren. Congratulations, Bob!

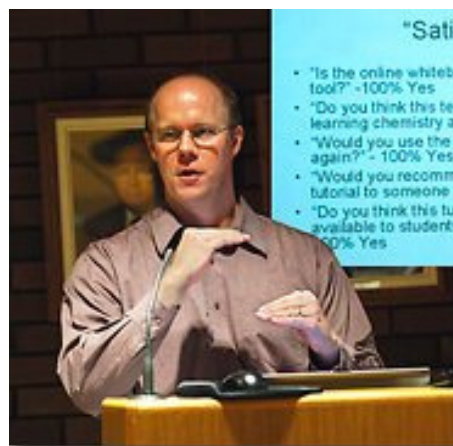
We recently awarded the 2009 C₃ Award in Chemical Education to Brad Pavelich, from Medicine Hat College. Brad is another long-term C₃ member who has served our organization in major ways. Brad has served as a regional director, he was co-organizer of the Medicine Hat College conference, and he is currently our Secretary. Brad has also made contributions to C₃ News over the years. Of particular note was his pioneering use of Nice Net, which

is a free courseware application that predated Blackboard. Congratulations, Brad!

Also this year, we received excellent nominations for the C₃ General Student Scholarship. The C₃ executive ultimately decided to award this scholarship to Nikeel Raval, who is a science student at College universitaire de Saint-Boniface. We expect that Lamine Diop, our Prairies regional director, will make the scholarship presentation soon. Congratulations, Nikeel! Hope to see all of you at Centennial College!

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Avocados

The word "avocado" comes from one of the Aztec languages and means "testicle" - supposedly from the shape of the fruit!



More Avocados

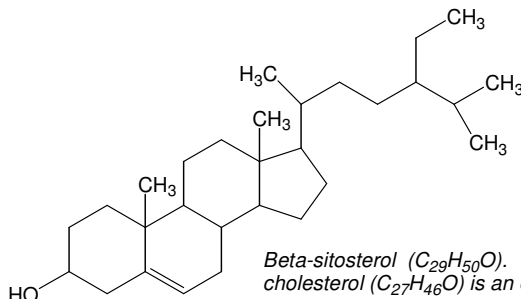
Avocados by Penny Le Couteur

One advantage of retirement is being able to travel outside of the normal holiday periods and so in February of this year I found myself in Santiago, Chile (34° and sunny – a nice change from Vancouver's winter) visiting a friend from graduate school days way back in the sixties. Teresa was a radiochemist when we were both at UC Santa Barbara but then spent the major part of her chemistry career running her own successful hormone-assay laboratory in Chile. The entrepreneurial spirit didn't retire when she retired from this business and she is now involved with a new enterprise – avocado oil. Avocado oil, extracted by chemical means, has been used for many years as a lubricant and in cosmetics but extra-virgin cold pressed avocado oil as a gourmet edible oil has been available for less than a decade. It was originally introduced in New Zealand where it has become very popular. Chile, with its hectares of recently planted avocado orchards in the valleys and hills for hundreds of kilometres around Santiago, is now starting to produce this beautiful green-hued gastronomic treat. We visited the plant located in an avocado orchard in the Maipo Valley, one Chile's most productive agricultural regions. Unfortunately the production season was over so we didn't get to see the cold-press process in action but it was interesting to have Teresa show us around and explain how and why the Hass variety are used for extra-virgin oil production. Everything was spotlessly clean – absolutely essential to ensure no trace of off odors contaminate the oil.

Free fatty acid determinations are carried out periodically in the adjacent laboratory room.

The avocado, *Persea americana*, a member of the Lauraceae family is native to

saturated and 63% saturated). Avocado oil has similar amounts of vitamin E to olive oil however also contains two to four times the amount of beta-sitosterol, a phytosterol (plant sterol)



Beta-sitosterol ($C_{29}H_{50}O$). The difference from cholesterol ($C_{27}H_{46}O$) is an extra ethyl group on the side chain of this plant sterol.

Mexico, South and Central America. The word "avocado" comes from one of the Aztec languages and means "testicle" - supposedly from the shape of the fruit! It is also known as alligator pear, butter pear, vegetable butter and Aztec butter. A tree produces around 120 avocados a year and the fruit ripens only after it has fallen or has been picked. Yields vary from 7 to 20 tonnes per acre. Avocado oil is one of only a few vegetable oils not derived from seeds, being pressed from the fleshy pulp surrounding the pit. It has a very similar fatty acid composition to olive oil - 75% monounsaturated with the remainder usually evenly split between polyunsaturated and saturated fatty acids. As with olive oil, these percentages can vary somewhat depending on the variety and growing conditions but always the numbers are a lot healthier than in animal fats like butter (26% monoun-

which a number of studies have shown can reduce blood cholesterol levels by up to 30%.

At over 500°F (260°C) avocado oil has the highest smoke point (the temperature at which it starts to burn and smoke) of any oil. Compared to butter at 350°F or extra virgin olive oil at 375°F this is a real cooking advantage when sautéing food such as fish. But the real pleasure of extra virgin avocado oil is its taste; light, delicate, buttery and wonderful in salad dressings, over pasta and with seafood and vegetables. To see some recipes visit Teresa's company (Avoandes) website at www.avoandes.com.



Message from the C3 Conference Coordinator

Centennial College is inviting all C3 members to the 36th Annual C3 Conference that is being held from Wed, May 27th to Sat, May 30th, 2009. A total of nineteen speakers from industry, government, colleges, and universities have confirmed so far. Among the impressive list of presenters, the Honorable John Gerretsen, Ontario Minister of the Environment, will be addressing conference attendees. We are sure that this conference will be informative, exciting and enjoyable. Don't miss

this great opportunity to share interesting research findings, discuss best-practices with other educators, and network with a diverse group of delegates.

If you registered before April 28th, you can take advantage of a lower registration fee. So why wait, register NOW!!

For more information about the C3 Conference and to register, please visit our website at www.centennialcollege.ca/

setas/c3. We look forward to seeing you in May.

Regards,
2009 C3 Conference Committee

To access the registration form please visit:

[http://
www.centennialcollege.ca/
setas/c3/registration.pdf](http://www.centennialcollege.ca/setas/c3/registration.pdf)

Speakers at the C3 conference

Dr. Hormoz Azizian from NIR Technologies— "...BMI is not a reliable indicator of body fat content. Magnetic Resonance Imaging (MRI) is the most accurate and scientific method of measuring fat content, however, it is expensive, takes time, and in most cases inaccessible for this purpose. "

Dr. Ray Clement from Ontario Ministry of Environment— "A Better World Through Chemistry; Essential for Health and the Environment "

Dr. Andy Dicks from the University of Toronto— "Building and Sustaining Chemistry Undergraduate Engagement Via, "Course Communities" "

Mr. Neville Hewage from Laurentian University - "Enzyme-based detection and differentiation of Escherichia coli and total coliforms in drinking water "

Dr. Firouz Jahaniaval from LipoFila Ingredients and Golden Gate Margarine - "Bad and Good Fats in Our Diet"

Dr. Marten Lettinga from Thompson Rivers University— "Effectiveness of Card-Shuffling as an Analogy for Entropy compared to other Analogies and Chemical or Physical Demonstrations

Dan McClean from Centennial College - " Applied Research & Skills Training at Centennial College"

Dr. Mohammad Mumtaz from Centennial College— "Chlorine Molecule and Its Derivatives: Chemistry, Manufacturing and the Role in Biochemical Pathways and Versatile Uses "

Dr. Myrna Simpson from the University of Toronto Scarborough — "Monitoring Earthworm Responses to Environmental Contaminants: A New 'Canary in the Coal Mine' for Contaminated Soils?"

Dr. David C. Stone from the University of Toronto — " The High School - University Transition in Chemistry"

Dr. Donald Bouchard - "Applications of NMR for the Study of Foods and Consumer Products to Create

Interest for Non-science Majors"

Dr. Robert Cumming from Centennial College - "Nutraceuticals, Functional Foods and Product Development"

Dr. Saad Y. Jasim from Walkerton Clean Water Center- "Removal of Pharmaceuticals and Personal Care Products (PPCPs) and Endocrine Disruptors Compounds (EDCs) Using Advanced Oxidation Processes"

Dr. François Gauvin from the University of Toronto - "Tools and Tricks in "Preparatory Chemistry"; A Brief Overview of the CHEM 0900 Online Course at the University of Manitoba "

For more detailed information about the speakers please visit:

[http://
www.centennialcollege.ca/
setas/c3/speakers/details](http://www.centennialcollege.ca/setas/c3/speakers/details)

"A Better World
Through Chemistry"
Learn how Health,
Food and the
Environment benefit
from advances in
chemistry. "



"Chemistry is
often referred
to as "The
Central
Science"



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Stay in touch with other members, post pictures, ask questions.....we would love to see you there!

Note from the Editor



It has been a busy semester. But, there was a fantastic trip to Cuba in the middle to make it all better. I hope that all of you enjoyed this semester and are enjoying the end of marking even more. I know that I am!

Thank you to Penny for her wonderful contribution to the newsletter. It is nice to have submissions from all of you to fill the pages of this newsletter.

The annual C3 conference is upon us. The line-up of speakers looks fantastic. I am getting excited to visit Centennial College for the very first time. The campus looks breathtaking. I am also excited to see all of you there. It is wonderful that once a year we can all get together, share stories and catch up on the year's events.

The next newsletter I am hoping to submit right before the fall semester starts. If you would like your story on the pages of the next news-

letter then please feel free to submit it anytime. My email address is arlanam@nait.ca

Hope to see you all soon.

Arlana

