

C₃ NEWS

Newsletter of College Chemistry Canada / La Chimie Collégiale au Canada

In the News

The days are getting longer, the frigid temperatures will soon be a memory, and the end of the spring semester is in sight. It's time to think about Calgary in June. You'll find the latest details about the program and an application form inside. You will also find details of the first official C₃ Conference airline. Hmm, I wonder if they would consider painting our logo on a few aircraft.

Congratulations to Natasha Hollbach for winning this year's Polysar Award. Natasha has been a hard-working member of C₃ and will be stepping down as secretary in June. There are details of her new career, and some reminiscences by Alan Davis inside.

Speaking of the Polysar Awards, the 1988 winner, Penny Le Couteur, has written an article on a course she has given for the past two years as part of the Elderhostel program. It sounds interesting.

At the moment I am in the middle of the usual round of mid-term exams and going through the annual ritual of wondering why I chose this crazy profession we all share. That will explain the article on teacher burnout which I asked Toby Snelgrove to write. Toby is a former college instructor-turned-clinical psychologist, who regularly is heard on radio and TV in this area talking about stress. So now you know his solution to the burnout problem; he quit.

And finally, I have found a new resource for help with computer/newsletter problems: my students. I have the former editor of the student newspaper and a number of computer wizards in my chemistry classes. And they all have one thing in common: they never miss a chance to instruct the instructor. Now, I wonder if I told them I was having chemistry problems...

Bob Browne, Editor

1989 Conference Update

16th Conference Highlights Chemistry and the Environment

By Phyllis Lake
Conference Coordinator

Plans for the Sixteenth Annual Conference of College Chemistry Canada are on schedule. The Conference will be held at Mount Royal College in Calgary, Alberta, on June 1-3, 1989.

Mel Lungle, who is in charge of speakers and papers, has booked a number of speakers for the two days. Government, industry, and the general public are all represented and will be discussing specific aspects of hazardous waste management on Friday. Included will be presentations from the Alberta Special Waste Treatment Centre and the Calgary Fire Department Emergency Response Team. In addition there will be information on the Workplace Hazardous Materials Information System. Saturday's presentations range in subject from stereochemistry to excellence in teaching. Mr. Grant Trump, an international consultant and educator in hazardous waste management is the keynote speaker and will be presenting his views

about waste management; the problem and possible solutions.

The Conference schedule will include a three-hour safety workshop presented on Saturday morning by Jim Kaufman from Curry College, Massachusetts. It will include information regarding accidents, legal aspects of handling chemicals, electrical safety, emergency planning, effective safety programs and a question and answer period.

At this time we have several chemical companies that will be exhibiting during the conference. There should also be several book displays (eight have booked to date) including our own MRC Bookstore. As well, we are anticipating the possible demonstration of laboratory equipment by some of the better known manufacturers.



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1989 Polysar Awards Announced

The winners of the 1989 Polysar Awards for chemistry teaching in community and technical colleges are Natasha Hollbach from Algonquin College and A. Fournier, Cégep de Lévis Lauzon. These annual awards carry with them an honorarium of \$500, a commemorative scroll, and assistance toward travelling expenses to attend the CIC conference for the presentations.

For Natasha the timing of this award couldn't be better. This past year she decided on a career change which will take her away from her college teaching, and exploit her long-time interest in laboratory safety. She has set up a consulting company, N. Hollbach Consultants Ltd, which provides advice to companies on compliance with the new WHMIS regulations. She reports that thanks to a challenging assignment with an Ottawa hospital as WHMIS Coordinator, her company has turned a profit in the past year.

A native of Halifax, Natasha received her B.Sc. in chemistry from Dalhousie University and her Ph.D. in radiochemistry from McGill. Although most of her professional life has been in teaching, she did work as a

research chemist for CIL and as a technical editor of the Canadian Journal of Chemistry at the National Research Council. Prior to joining the college system, Natasha held staff positions at George Washington University in Washington, D.C. and at Carleton University in Ottawa. For the past twenty-one years she has been a member of the Chemistry Department at Algonquin College in Ottawa, where she has taught courses in a variety of areas including radioactivity, industrial safety, and toxicology, courses for which she also developed the curriculum. Added to her list of credits is the Occupational Health and Safety Certificate Program at Algonquin which she created and has coordinated since its inception.

Natasha has been a tireless worker for C₃, serving first as Regional Director for Ontario, and then as Secretary. Although her term as Secretary is over in June, we can only hope that Natasha will continue her association with C₃, and we wish her the best of luck with her new career.

Teaching Tips

By Bob Perkins

Universal Indicator

I use a good deal of this wonderful solution during the course of a semester to illustrate a variety of topics at various levels.

1. Keep a rack of test tubes containing buffer solutions (pH 3-10) and universal indicator on hand when discussing acid/base chemistry. Any solution tested can be matched to the correct pH. I find this especially useful when I am presenting the concept of salt hydrolysis. Predictions can be made by the students and quickly verified.

2. Le Chatelier's Principle can be illustrated by taking a solution of NH₃(aq) and


adding solid NH₄Cl. The colour will change to indicate a more acidic solution.

3. Is SO₄²⁻ a neutral anion? Use distilled water and add Na₂SO₄(s). The colour of the solution will shift to the basic side of 7. Sulfate is not very basic, but enough to get a colour change.

4. Have a student blow through a straw into a test tube of distilled water, and voilà, an illustration of acid rain.

5. Add universal indicator to a small beaker of 7-Up and warm it up. Not only can this be used as another illustration of Le Chatelier's Principle, but as a demonstration of Henry's Law as well. A similar result may be obtained by placing the 7-Up in a filtering flask and hooking it up to a water aspirator.

6. Gradually add NaOH(aq) to a solution of acetic acid, and compare this to adding NaOH(aq) to pure water. Adding HCl(aq) to



C₃ News
Volume 14, No.1, March 1989
Published quarterly by
College Chemistry Canada Inc.
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Articles of any length will be gladly accepted. Please send typewritten copy to the Editor at the above address or send by fax. Copy can also be sent on a 5 1/4" floppy disk, IBM format, using WordPerfect, WordStar, Microsoft Word or any wordprocessor producing ASCII output. Deadline for the next issue is June 3, 1989
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ISSN 0843-4956

a solution of sodium acetate will illustrate that a buffer may be prepared from either direction. Also of interest to the students is the realization that a buffer will be destroyed if sufficient strong acid or base is added.

7. My personal favorite. Add dry ice to a graduated cylinder containing sufficient NaOH to give a purple colour. As H₂CO₃(aq) is formed, a neutralization occurs with a rapid colour change through blue, green, yellow, orange. If compared to the situation without the NaOH, the formation and operation of a buffer can again be shown.

Chemistry at the Elderhostel

By Penny Le Couteur
Capilano College

For the last two summers, I have been involved in teaching in an Elderhostel program. In June 1987, a colleague from Capilano College, Alan Gilchrist, and I presented a course entitled "The Knowledgeable Consumer". In 1988, I joined with Cynthia Nichols from the Chemistry Department at Vancouver Community College to teach this same course. The Elderhostel movement started in the United States about ten years ago and quickly spread to Canada and numerous other countries around the world. It is a program for people over 60 years of age who stay in hostel or dormitory-type accommodation on college and university campuses and take short courses. This inter-

national movement now enrolls over 200,000 students annually.

Capilano College's Elderhostel program was unique in that students were not housed in college dormitories but billeted with local families in Sechelt, a small community on the Sunshine Coast, a 50 minute ferry ride and a 25 minute drive north of Vancouver. Other colleges are now billeting their Elderhostel students within their communities. Since 1986, Capilano College has hosted two one-week sessions of the Elderhostel program, offering such diverse courses as "Critical Thinking", "Highlights from English Literature", "Seashore Invertebrate Organisms of the Sunshine Coast", and "The Economic and Social Geography of the Sunshine Coast". As well as the courses, Capilano College runs various social events such as

pot luck dinners, salmon barbecues, and graduation evenings.

"The Knowledgeable Consumer" was a seven and a half hour course, organized into five, one and a half hour sessions, morning and afternoon on Monday and Wednesday, and a Friday morning session. We were grateful for the day off between sessions as this gave us time to load the car with experiments and demonstrations in preparation for the next part of the course. The first day was devoted to drugs and cosmetics. We started with a general discussion on definitions of drugs, information on naming (chemical names, generic names and trade names) and on packaging and marketing. We had chosen one drug, aspirin. We were very fortunate in being able to bring our chemistry department lab technician, Bernice Moir, with us to Sechelt each day to prepare demonstrations during the class. The demonstration on aspirin involved the precipitation of a copper-aspirin complex, tying into the possible relationship between copper, arthritis, and aspirin. The afternoon session on cosmetics included a discussion on the chemistry of soaps, shampoos, conditioners, hair dyes and wrinkle, or rather anti-wrinkle, creams, but our main example was sunscreen products. The experiment we performed involved a photochemical precipitation reaction. We coated test tubes with sunscreens of different SPF (sun protection factor). These would be exposed to sunlight over the next day and the amount of precipitation compared to the uncoated standard. Despite the name "Sunshine Coast", we had rainy weather both years and had to use a UV lamp for the experiment. The weather may have been uncooperative but our students weren't. They produced their own sunscreen products for testing and we ended up with numerous greasy test tubes developing different amounts of precipitate.

On Wednesday the theme was food; preservation in the morning and preparation in the afternoon. Few Elderhostel students hesitate to express their opinion, so after a general introduction with again, a little chemistry, the class discussion on food additives and food irradiation was fast and furious. During this class, our technician was setting up the jelly-bean chromatography ex-

President's Notebook

The recent news that Natasha Hollbach has won the 1989 Polysar Award raised several bright feelings in my cabin-fevered mind.

Firstly, and most obviously, was the feeling that probably there is no-one in college chemistry in Canada more deserving than Natasha. She has been a member of C3 since its early days, and has served on the Board of Directors and Executive in various capacities.

Her work as Secretary of C3 has given us much better organization, with frequently-updated membership lists, and a well-organized collection of fees.

All this is incidental, of course, to Natasha's finest contribution as an outstanding teacher and a leader in improving laboratory safety.

Our conference in Sudbury a few years ago might never have occurred had it not been for Natasha setting off in her car across Northern Ontario to recruit colleagues and colleges. At that conference I remember Natasha's colorful story of how she stopped the polishing of her lab floors for safety reasons. I went straight back to Chilliwack with the courage I needed to face the formidable authority of our janitors and their superiors. I insisted (with Natasha's words sounding in my head) that the annual ritual of high-polishing be stopped. Their disgust and dismay at my preference for safety over splendour still exists.

Natasha also introduced me at that meeting to the idea of extendable, flexible eye wash hoses. They are now a fixture in our labs, and each student is only an arm's length away from help in the event of an accident.

So, thanks Natasha! Not only is your contribution to chemistry recognized by the Polysar Award, it is also evident in many teaching and research labs across Canada.

The other thought I had related to a "C3 Award". It's about time we had one. Any ideas?

Alan Davis,
President

Please see "Elderhostel", page 4

Teacher Burnout: Creative Avoidance

By Toby Snelgrove

Sooner or later it happens to most of us: teacher burnout! You know the signs: over-cycled lecture notes, skipping meetings (they never accomplish anything anyway), the feeling that administration is responsible for everything wrong, irritation with students demanding your time.

Lets face it, your enthusiasm couldn't last forever. It was nice to be young and idealistic but the passage of time has forced you to face reality; now it's time to make some decisions.

In marriage they call it "The Seven Year Itch". There, the romantic bliss becomes replaced with dirty underwear, garbage detail and meddling in-laws. For some the solution is serial monogamy; replace a

"pained" marriage with a new model. This option keeps the lawyers fat but doesn't really solve the problem. For instructors that can, a new work environment does revitalize the spirits. For most, unfortunately, non-transferable pension plans and limited job opportunities make exercising the serial option unrealistic.

So, lets assume that you're stuck where you are. Unfortunately, if you're burned-out and stay that way, you'll soon become burned-up, and you run the risk of ending up like that grumpy old teacher you remember from high school. Perhaps a little stress management is what you need.

Managing stress is simple. You've got three options: altering your stressor, avoiding it completely, or accepting it with a new attitude. That's it.

If getting that new job is not an option, then avoiding your stressor may be impossible. You can, however, alter your environment by taking on a new project, or part-time job. Make your teaching as efficient as you

can. Do a good job but don't make it your "reason for being". Instead, view it as a security base that permits you to do what you really want.

Here are some suggestions: write a book, article or newsletter, do summer research at a university, volunteer to assist a professor whose research interests you, or expand a hobby into a small business. Do anything that gives you pleasure and you'll probably find you enjoy teaching even more.

While at school, take on a new attitude. Plan lunch with people who interest you: a colleague from a high school, a keen student, a member from an association that is related to your interests or academic field. And get off campus occasionally. Bag lunches in the office or even cafeteria food don't qualify as a break. Too much time on campus can be suffocating.

While teaching, don't let those apathetic students populating the back rows of the

Please see "Burnout", page 9

Elderhostel

(continued from page 3)

periment. The food colouring is extracted from various jelly beans and chromatographed on paper strips. The students were intrigued with the process and very interested to discover that gourmet jelly beans with exotic flavours, like huckleberry-quince and mango-pina colada, contained more food colouring agents than standard supermarket jellybeans. For food preparation, we used the egg as our main example and discussed how egg chemistry determines the way eggs should be cooked, why grade B eggs are fine if you want to scramble or make omelettes, but that fresh grade A eggs give the best results for soufflés. The demonstrations included beating egg whites to see how, and discuss why, a higher drier foam is formed using a copper bowl.

Our last session was entitled "Fats and Oils" and proved to be a subject dear to the hearts (!) of the seniors. they were interested in the chemistry necessary to understand the terms saturated and unsaturated, and in the recent discoveries on the omega-3 fatty acids from certain fish. We then undid all the good

we had done discussing healthy oils by ending our course with a "Cheese and Wine" testing. This was not a "Wine and Cheese" tasting. We did not try a variety of wines and clear the palate with bland pieces of cheddar. We were trying cheese and clearing the palate with the occasional sip of wine. The cheeses were somewhat unusual and we described the process of cheese making and the variations that caused the different flavors and textures as we went. The elderhostellers really enjoyed this lesson in applied chemistry of dairy fats and ate every sample including the Port Salud whose butyric acid content is responsible for a concentrated odor of unwashed feet.

"The Knowledgeable Consumer" was evaluated very positively by the Elderhostel students and these students were highly rated by the instructors. To us, the most enjoyable thing about teaching such a course was the response from the class. These Elderhostellers came from all over Canada and the U.S. and had had numerous careers and much experience in life. As they were prepared to share their expertise, were eager to learn, and were never reluctant to ask questions, the class sessions were lively and usually ran

considerably overtime. We had originally introduced ourselves by saying that although we were chemists, we were not experts in many areas of consumerism and that if we could not answer a question we would try to find a source for an answer. We had over the months previous to the program, kept a large file with clippings from newspapers and magazines that we thought could be useful. We also brought with us to class some standard chemistry and biochemistry reference books, and a number of the consumer chemistry books that we had consulted. Especially useful were "Chemistry in the Market Place" B. Selinger, 1986, "Drugs and the Human Body" K. Liska, 1981, "Additive Alert" L.R. Pim and "On Food and Chemistry; The Science and Lore of the Kitchen" Harold McGee.

I would be happy to send to others contemplating a similar course, more details on what we covered, the experiments and demonstrations, and a further list of reference materials. Contact Penny Le Couteur, Chemistry Dept., Capilano College, 2055 Purcell Way, North Vancouver, B.C. V7J 3H5.

College Profile

1989 Conference Host: Mount Royal College

Mount Royal College first opened its doors in downtown Calgary on September 8, 1911, under the sponsorship of the Methodist Church. Situated on the corner of 7th Avenue and 11th Street S.W., Calgarians grew familiar with the unique building and participated actively in the many cultural community events hosted by the College's Conservatory of Music and Speech Arts. Following the establishment of the United Church of Canada, Mount Royal College became an affiliated Secondary School.

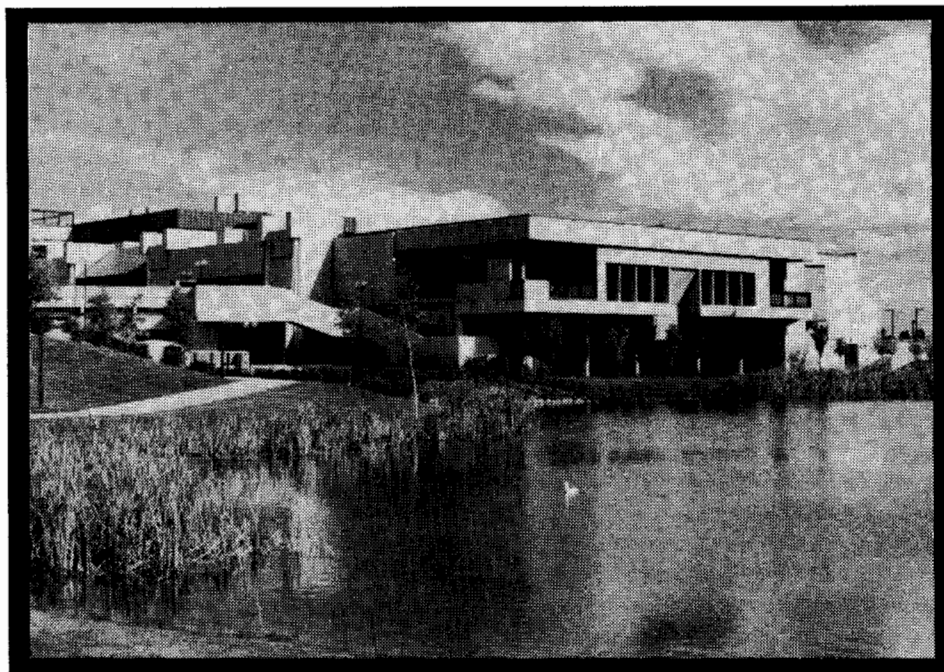
In 1931, the College began offering first year university courses in affiliation with the University of Alberta, an arrangement which would continue for 20 years, until the University of Calgary was established.

The war years marked changes in the College's educational scope. Engineering courses were initiated in the University Department, and graduates of Petroleum Engineering courses were accepted for transfer to the University of Oklahoma, the College's first link with a U.S. institution.

A new era began on September 1, 1966, when Mount Royal College became a public institution operating under The Colleges Act and The Department of Advanced Education Act of the Province of Alberta. By now, enrollment stood at more than 1,400 students, and space and parking at the downtown location were problems. The decision was made to build a new \$15 million campus located away from the downtown core.

In 1972, the Lincoln Park Campus in southwest Calgary opened. Approximately 3,400 students enrolled in courses that year, ranging from Aviation to Interior Design to University Transfer. The boom years which followed saw changes in student needs which have been reflected in continual and significant developments in program offerings. In 1981, the College returned to the downtown core with the opening of the Downtown Centre, and also reached out to rural constituents through the Big Country Educational Consortium.

Recent endeavors include the establishment of the Academy of Music for gifted



Mount Royal College viewed from "The Pond".

music students, and the Mount Royal College School of Dance, the official school of the Alberta Ballet Company in Calgary. In addition, co-op programs have been made available in Business Administration and Computer Science.

Mount Royal College is currently involved in a major facility expansion. Approved in 1982, the \$66 million project includes construction of approximately 29,000

square metres of new space and renovation of the existing facility. Scheduled for completion in 1989, the expansion will allow the College to almost double its current student population.

C3 Conference organizers are hoping that the dust has cleared by June 1, 1989, and that people attending the conference will be able to enjoy the new facilities.

16th Conference: Call For Papers

The theme of the 16th annual conference of College Chemistry Canada is "Chemicals and the Environment". Papers are sought in the following areas:

Safety in the College Laboratory: modifications to laboratory procedures which eliminate the use of hazardous chemicals; handling of hazardous chemicals in the college laboratory and related topics.

Disposal of Hazardous Chemicals: effects of chemicals on the environment; what can we do to protect the environment; regulations and legal aspects (with respect to damage, and also with respect to safety), and related topics.

Please submit abstracts (one page or less) by March 1, 1989, to Mel Lungle, Department of Chemistry and Biology, Mount Royal College, 4825 Richard Road S.W., Calgary, Alberta, T2E 6K6, Telephone (403) 240-6163.

COLLEGE CHEMISTRY CANADA

C O N F E R E N C E

June 1st is getting closer every minute and while some things are falling nicely into place, there still seems to be a mountain of things to do!

Our "Official Airline" is firmly in place. A folder with the toll-free number is attached. Please call 1-800-268-4704, or have your travel agent call for you, but be sure to quote the Conference registration number 1594. That way we will get credit for the bonuses we get for appointing Canadian our official airline. In addition to the reduced rate you'll receive (if you miss the seat sales), they are offering the Conference a number of free tickets based on the number of bookings. We're hoping to provide some of our guest speakers with free tickets this way, which will reduce our costs, so don't forget to quote 1594 when you make your reservation.

Don't forget to book your room at the Delta Bow Valley hotel early too. Phone 403/298-5008 and ask for Eda. There will be more information about hotel facilities, transportation, etc. when we acknowledge your registration.

Food has been quite a large item in our plans. The campus is quite a way from downtown and there are very few students at the College at that time of year. As a result, we could not count on normal facilities being able to cope with providing meals for all of us. We have therefore arranged for breakfasts and lunches in much the same matter as the '88 Conference. We hope that most people will take

advantage of the meal ticket arrangement (see registration form). Regular food facilities will be open as well, and can cope with a few additional people if you prefer not to be "locked in." We haven't set the lunch menus yet, but the food service people have offered us a "Rocky Mountain Breakfast"; one item of which is flapjacks (what else?!).

Plans for the social events are coming along. The highlights include:

Symon's Valley Barbecue — Friday night, June 2

Symon's Valley Barbecue Ranch really knows how to throw a "barn-burner" of a party: figuratively and literally! On February 7th, the ranch suffered extensive fire damage, but they'll be ready for us in June and will supply lots of Western hospitality, including famous Alberta beef and fine country music. The barbecue will cost \$26 per person and includes transportation to the ranch.

Special Charter Tours

These tours will run on Sunday, and will cost \$20 per person for each tour. Please register ahead. If there is insufficient interest to run these tours, we'll refund your fee.

Head-Smashed-in-Buffalo Jump and the Fort Macleod R.C.M.P. Museum

The bus will leave Calgary at 9:00 am and take you south to the Head-Smashed-in-Buffalo Jump Interpretive Centre. This is

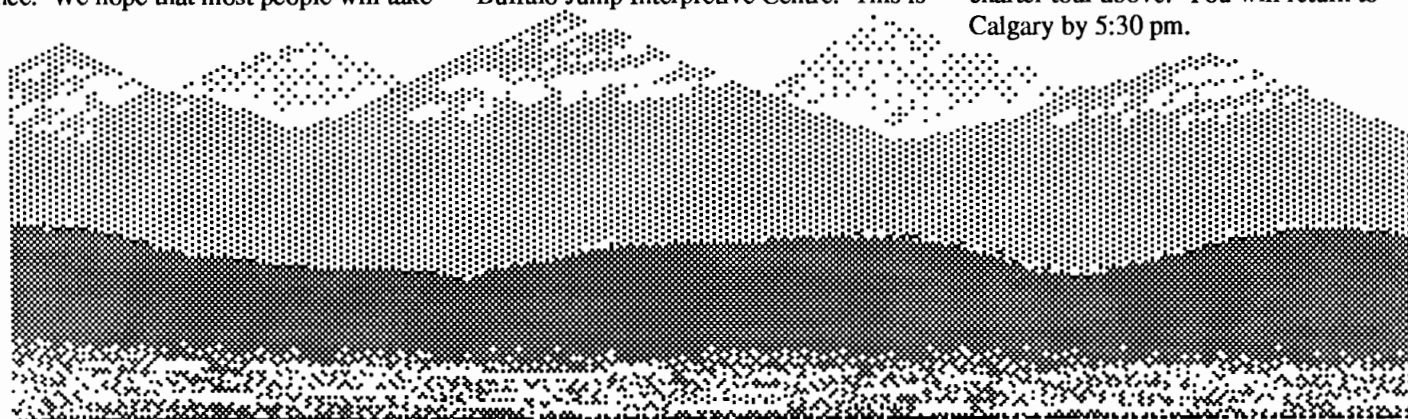
one of newest, most modern interpretive centres in Alberta, and features native culture, archaeological artifacts and historical aspects relating to the buffalo jump. A visit to the R.C.M.P. Museum in Fort Macleod is also included. The bus will arrive back in Calgary before 6:00 pm.

Dinosaur Museum Tour This excursion leaves the hotel at 9:00 am and takes you east to the rugged Alberta Badlands. Here you will tour the unique landscape of the Red Deer River valley, and the visit the renown Tyrrell Museum of Paleontology. This museum displays Alberta's rich fossil heritage. Featured attractions are full-size dinosaur skeletal fossils and replicas, hands-on exhibits, interactive computers and mini-theatres. You will return to Calgary by 5:30 pm.

If there are not enough people interested to offer our own special charters, Brewster- Gray Line Transportation offers great tour packages to scenic locations in the Calgary area. These can be booked at the desk in the Delta hotel lobby when you arrive. Of special interest are:

Banff Tour (\$35) You'll be picked up at the hotel at 9:00 am, and taken to some of the most breath-taking scenery in the Banff area. You will tour the major sites around Banff as well as surrounding areas, including Nakiska at Mount Allen, the site of the 1988 Olympic Winter Games alpine skiing events. The bus will return to the hotel by approximately 6:30 pm.

Dinosaur Country Tour (\$30) This excursion leaves the hotel at 8:55 am and has a similar itinerary to our special charter tour above. You will return to Calgary by 5:30 pm.



MOUNT ROYAL COLLEGE • CALGARY, ALBERTA • JUNE 1, 2 AND 3, 1989

Conference Registration

To register, please fill in the form at the side, check off the appropriate boxes and calculate the total fee.

Please make a copy of this form for each person in your organization who would like to attend.

Don't forget to check off any meals or social events for your spouse.

If you plan on attending the Laboratory Safety Workshop on June 3, there will be an additional \$7 fee to cover the cost of the handout materials.

1. To make airline reservations, please call Canadian Airlines International, which is our "Official Airline" (see enclosed brochure). Call 1-800-268-4704 (toll free) or in Toronto, call 675-8246 and quote the conference registration number 1594. That way, you get 15% or more off regular fare, and the conference earns credits for bonus tickets. Please book as soon as possible - C₃ needs those bonuses! Don't forget to quote the conference registration number 1594.

2. To book hotel accommodations at the Delta Bow Valley Inn, call 403/298-5008. This is a direct line to the Reservations Office. Ask for Eda and tell her you're with the College Chemistry Canada Conference. If you have trouble getting through, the main hotel number is 403/266-1980. The conference rate is \$240 for the three nights (Thursday, Friday and Saturday) for a single or double. A third person sharing is \$15/night extra. Find yourself a room-mate and book as early as possible. We have 50 rooms reserved and can extend that to more rooms at the same rate with enough advance notice, but if you book at the last minute, you may be stuck with the regular rate.

**Registration deadline is
May 3, 1989**

REGISTRATION FORM

COLLEGE CHEMISTRY CANADA CONFERENCE

JUNE 1—3, 1989 Mount Royal College, Calgary, Alberta

Name: W. BLANN

College/Organization: KEYANO COLLEGE

Address: 8115 FRANKLIN AVE.

City: FORT McMURRAY Prov: AB Postal Code: T9H 2H7

Home ☎: 743 8556 Work ☎: 791 4994

(best number in off hours, as well as on hours)

REGISTRATION PAYMENT

Conference Fees

| | | |
|-------------------------------|------|-------------------------------------|
| Full Conference — Member | \$40 | <input checked="" type="checkbox"/> |
| Full Conference — Non-Member | \$60 | <input type="checkbox"/> |
| 1-Day (Friday) — Member | \$20 | <input type="checkbox"/> |
| 1-Day (Friday) — Non-Member | \$30 | <input type="checkbox"/> |
| 1-Day (Saturday) — Member | \$20 | <input type="checkbox"/> |
| 1-Day (Saturday) — Non-Member | \$30 | <input type="checkbox"/> |
| Lab Safety Workshop materials | \$7 | <input checked="" type="checkbox"/> |

Subtotal \$ 47

Social Events

| | | | | | |
|---------------------------------|------|-------------------------------------|--------------|---|---------------|
| Thursday Evening Wine & Cheese | N/C | <input checked="" type="checkbox"/> | x <u> </u> | = | N/C |
| Friday Evening BBQ (per person) | \$27 | <input checked="" type="checkbox"/> | x <u>1</u> | = | \$27 |
| Sunday Special Charter Tours* | | | | | |
| Dinosaur Museum | \$20 | <input type="checkbox"/> | x <u> </u> | = | \$ <u> </u> |
| Buffalo Jump | \$20 | <input type="checkbox"/> | x <u> </u> | = | \$ <u> </u> |

*These fees will be refunded if there is insufficient interest

Subtotal \$ 27

Meal Vouchers

| | | | | | |
|--------------------|-----|-------------------------------------|------------|---|-------------|
| Friday Breakfast | \$5 | <input checked="" type="checkbox"/> | x <u>1</u> | = | \$ <u>5</u> |
| Friday Lunch | \$6 | <input checked="" type="checkbox"/> | x <u>1</u> | = | \$ <u>6</u> |
| Saturday Breakfast | \$5 | <input checked="" type="checkbox"/> | x <u>1</u> | = | \$ <u>5</u> |
| Saturday Lunch | \$6 | <input checked="" type="checkbox"/> | x <u>1</u> | = | \$ <u>6</u> |

Subtotal \$ 22

Total amount enclosed \$ 96

Fees should be sent in full with this registration form. Please indicate form of payment. Cheques and money orders should be made payable to **Mount Royal College Continuing Education**.

Mail to: Mount Royal College, Credit-Free Registration Office
4825 Richard Rd. S.W., Calgary, Alberta T3E 6K6



Visa

Cheque



MasterCard

Money Order

Credit Card Number _____ Expiry Date _____

Signature of Card Holder _____

College Chemistry Canada 1988-1989 Membership

| | | | |
|----------------------|-------------------------------|------------------------|---------------------------------|
| Sudhir Abhyankar | Sir Wilfred Grenfell College | Peter Knoess | Okanagan College |
| Ernie A. Allan | Vancouver Community College | Dick Kroeger | Algonquin College |
| Anne Alper | CIC | Anne-Marie Kubanek | John Abbott College |
| Carlyle Barker | St. Clair College | Phyllis Lake | Mount Royal College |
| Edith Bartley | Tarrant Community Jr. College | Maryclare Lambden | Centennial College |
| Perry Bedard | West Island College | Penny LeCouteur | Capilano College |
| Barrie Benton | Vanier College | Earl M. Levi | Seneca College |
| Krystyna Bienkiewicz | Noropharm Ltd. | Rira Loutfy | The Toronto French School |
| Dinesh Bhatnagar | Algonquin College | Mel Lungle | Mount Royal College |
| William Blann | Keyano College | Rex Martin | Algonquin College |
| Robert J. Browne | Douglas College | Joel F. McCutcheon | Red Deer College |
| Gerald Brydon | Dawson College | Paula Michalik | Univ. College of C.B. |
| Bonny Bukwa | East Kootenay College | Mervyn Mitchell | North Island College |
| Don Burke | Mount Royal College | Patrick Monaghan | Sir Wilfred Grenfell College |
| Don Byers | N.A.I.T. | Barry Moncrieff | Fanshawe College |
| Romeo Calosing | Mount Royal College | Joan Moon | CIC |
| Dean Campagna | St. Clair College | Susan Morante | Mount Royal College |
| Errol Carruthers | Medicine Hat College | Murray Morello | Seneca College |
| David Cash | Mohawk College | Dan Morrison | Algonquin College |
| Patrick Chan | Centennial College | Cynthia Mutch | Medicine Hat College |
| Bob Chlebek | Algonquin College | Gary Nathan | Scarborough B.Ed. |
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| Dundappa Kerur | Lambton College | Eileen Woytowich | Mount Royal College |
| Brian Kipling | University of Calgary | Agnes Yim | Vanier College |

Burnout

(continued from page 4)

classroom bug you. If you are doing your best, accept that they may be beyond help and focus on the students who are trying.

If it is long boring meetings that bug you, consider the following: make sure you have an agenda with discussion time limits attached to each item. Encourage the person who is chairing the meeting to stick to these time limits, and when the time allocated for the meeting is over, leave. If the meeting is not chaired well, take a course in meeting management and facilitate it yourself. A few effective interventions can move a meeting along quickly.

How about your office? Hate florescent? Buy your own incandescent lights. Filament lighting creates a great mood and warms you up at the same time. How about posters, mobiles or anything that personalizes your working space.

There are numerous other examples of ridding yourself of unnecessary annoyances in your working environment. You just have to be a little imaginative and your life can be different in a year.

So far we have done our best to change the things we can, and avoid the others. Some things, however, we just have to accept. Perhaps its an irritating chairman, a grumpy librarian, or an uncooperative lab technician. In these situations our option is one of either building our resistance to stress or changing our attitude toward the problem.

A competitive squash game may be all you need to deal with the librarian, deep breathing techniques may help with the lab tech, and a six mile run can vent your frustrations about your chairman.

On the other hand, perhaps your problem is one of expecting too much of yourself or others. Perfectionists are never satisfied, with themselves or others. Sometimes life isn't fair and we just have to let go.

Now these may seem to be simple solutions to a complex problem. You're right. Stress that leads to burnout usually has simple answers. If you're willing to take a few risks, be a little imaginative, accept a few failures and let go of a few unchangeables, you may find that the second half of your career may be just as enjoyable as the first.

College Chemistry Canada Inc.

**Extends grateful thanks to the following
Institute and College Members
who, by subscribing \$50 each, have helped to fund our conference in June 1988**

*Algonquin College, Ottawa, Ontario
Capilano College, North Vancouver B.C.
Memorial University, St. John's Nfld.*

**And for its significant contribution to the publication of
C3 News**

Douglas College, New Westminster, B.C.

C3 Meeting Schedule

C3 Executive Meeting

Date: Thursday, June 1, 1989

Time: 2:00 pm

Place: Science Faculty Lounge, Mount Royal College

C3 Board of Directors

Date: Thursday, June 1, 1989

Time: 4:00 pm

Place: Science Faculty Lounge, Mount Royal College

C3 Annual General Meeting

Date: Saturday, June 3, 1989

Time: Afternoon, exact time TBA

Place: Mount Royal College

Nomination Form

I nominate _____ as Secretary of College Chemistry Canada.

I nominate _____ as Regional Director of the _____ region.

Signature of nominator: _____

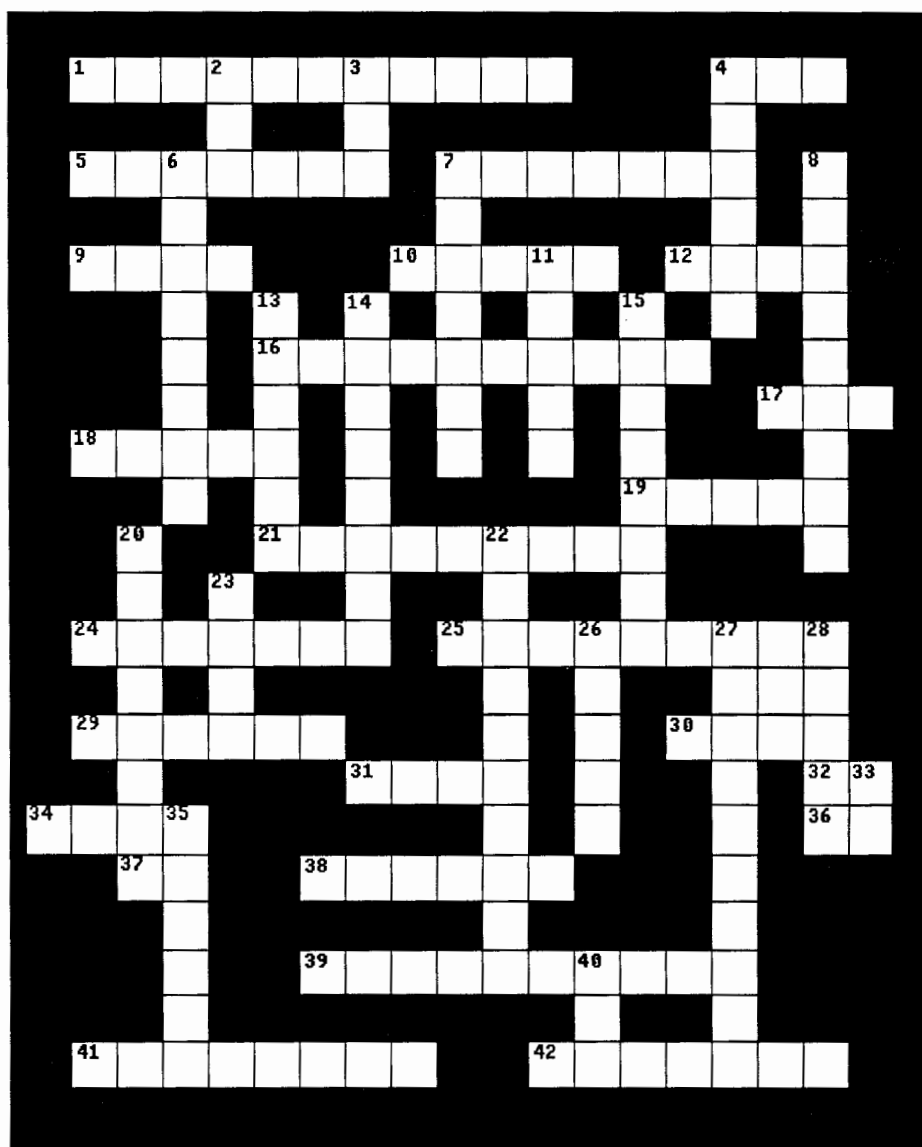
Crossword Chemistry

*Margaret McKinnon
Kwantlen College*

Approximately 20% of the students taking a chemistry course at the Richmond campus of Kwantlen College either have never taken chemistry in school, or have been out of school for 5-20 years. For many, the realization that laboratory work makes up a substantial portion of the course comes as a shock. That locker of unfamiliar equipment on the first day can be a little overwhelming. To try to alleviate that apprehension, the students are presented with a handout containing the pictures of the various types of glassware found in the laboratory, and descriptions of their usage. As part of their first laboratory session, the students have to complete the following crossword puzzle. We have found this to be an effective way of starting the semester in the laboratory. The students have found that the exercise enables them to become familiar quickly with the glassware which they will be using for the next three months. Feel free to use it for your own foundation students.

Across

1. These types of marks are etched on volumetric glassware.
4. A _____ plate is used to heat containers of liquid.
5. This is a calibrated tube which usually has a centre bulb and is used to transfer accurate volumes of liquids from one container to another.
7. A type of porcelain funnel used in suction filtration.
9. A combustion reaction which is not desirable in the lab.
10. A material from which much chemical apparatus is made.
12. A corrosive chemical which turns litmus paper red.
16. Type of flask used in titrations.
17. Name of the element with atomic number 50.
18. There are three different types of this glass apparatus in your drawer.
19. Binary chemical compound in which oxygen is combined with another element.
21. This object could be called a burette-stand or a clamp-stand but when it holds a ring it is called a _____.
24. Piece of T.D. apparatus used in titrations which has a tap.
25. A metal ring with a clamp on the end.
29. _____ paper and _____ funnels.
30. What you will feel if you are not wearing your safety goggles and an accident occurs involving your eye.
31. This type of chemical will neutralize 12 across. It also turns litmus paper blue.
32. Chemical symbol for the element with atomic weight of 132.9.
34. The pipette normally has one of these in its centre.



36. Symbol for helium.

37. Chemical symbol for europium.

38. This type of apparatus is generally made from glass, plastic or porcelain and is used in filtration techniques.

39. A type of T.C. flask which can contain a specific volume of liquid accurately to the second decimal place when measured in millilitres.
41. The free surface of a liquid, contained in a narrow tube, which is curved because of surface tension.
42. Safety gear worn in the chemistry lab.

Down

2. Suffix used in the naming of chemical compounds which normally indicates that only two elements are present in the compound.
3. Suffix used in the naming of chemical compounds which indicates that they contain oxygen.
4. Glass funnel used for filtration which contains a sintered glass base.
6. The change in the apparent relative positions of objects when viewed from different positions. This type of error can occur in reading burette measurements if they are not taken at eye level.
7. This apparatus is used to determine the mass of an object.
8. The initials T.D. stand for this.
11. The vapour phase of water is sometimes given this name.
13. A very common type of glass apparatus used in the lab to contain liquids.
14. The round, flat-bottomed flask in your drawer is known as a _____ flask.
15. Name of the table invented by Mendeleev, which shows the elements in order of atomic number.
20. This is a small porcelain container used when it is necessary to roast a chemical to a high temperature.
22. A type of balance which will give masses correct to no more than two decimal places in grams.
23. You may be given one of these in order for someone else to find out how much you know. In chemistry there are many different types of these and they are used to help identify specific substances.
26. A type of porcelain crucible which has many small holes in the bottom.
27. Most accurate type of balance present in the lab.
28. A type of clamp.
33. Chemical symbol for selenium.

Hot From The Presses!

By Bob Perkins

The January 1989 issue of the Journal of Chemical Education contains several articles taken from the 10th Biennial Conference on Chemical Education held at Purdue last August. The papers examine the effect of technological change on education, goals of the chemistry laboratory, and instruction for the 21st century, among other topics. Plenty of food for thought in these articles.

R. Hoffmann also provides some interesting observations on what really goes on in a scientific paper; *Angew. Chemie*, **27**, 1593-1602 (Dec. 1988). What does the non-specialist get out of a typical paper?

Fifty years of teflon are examined in an informative historical look at this useful material in an article by F. Kauffman, *Education in Chemistry*, **25**, 173-175 (Nov. 1988).

Improved zeolites are now being constructed via controlled synthetic steps, much like children building structures with Lego blocks. The aim is to develop more systematic routes to improved catalysts; *F. Stoddart, Chemistry in Britain*, **24**, 1203-1208 (Dec. 1988).

W. Guenther reports a more efficient (and inexpensive) method of preparing buffer solutions; *Anal.*, **113**, 683 (1988).

Do we really know what we are talking about? R. Gillespie examines 4 of the 13 known oxides of sulfur (SO, S₂O, SO₂, and SO₃) with a view to matching their physical properties and structures; *Chem 13 News*, **175**, 8-9 (1988).

If your students would like to understand thermodynamics better, have them read K. Laidler's article on the historical development of the science of heat and energy; *Chem 13 News*, **181**, 3-5 (Dec. 1988).

35. Type of burner used in chemistry labs, named after organic chemist Robert _____.
40. Number of protons in a helium atom.

C3 News Rejected

Canada Post Corporation has rejected the application of the C3 News for registration as second class mail. According to CP, the regulations exclude from second class mailing privileges "any newspaper or periodical published by or under the direction of a person whose principal business is other than publishing and it is published as an auxiliary to or for the purpose of advancing such person's principal business." Without inquiring as to exactly what the "principal business" of College Chemistry Canada is, they have ruled that it *isn't* publishing. Under another paragraph of the regulations, C3 could qualify as a professional association, and the newsletter would qualify as long as it is devoted primarily to "...the sciences, or is an academic or scholarly journal." CP has ruled that the content of the newsletter is too general to qualify under this provision of the regulations. Mailing the C3 News by second class mail would save about \$700 per year. The decision will be appealed.

C3 Calendar

16th College Chemistry Canada Conference

Location: Calgary, Alberta

Dates: June 1-3, 1989

Contact: Phyllis Lake, Mount Royal College, 4825 Richard Rd. S.W., Calgary, Alberta, T3E 6K6

CHEMED '89

Location: Kingston, Ontario

Dates: August 13-18, 1989

Contact: Irwin Talesnick, Chairman, Faculty of Education, Queen's University, Kingston ON, K7L 3N6

10th International Conference on Chemical Education

Location: Waterloo, Ontario

Dates: August 20-25, 1989

Contact: Chung Chieh, Department of Chemistry, University of Waterloo, Waterloo ON, N2L 3G1

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