

14/1st
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Joint C3/2YC3 (Eastern) Conference

Sir Wilfred Grenfell College

Corner Brook, Newfoundland, Canada

12-15 June 1997

PROGRAM

Sponsors

**Diagnostic Chemicals Ltd., Charlottetown, PEI
Environmental Science (Chemistry), SWGC
John Riley Starchem Inc., Dartmouth, NS
MDS Environmental Services Ltd., Mississauga, ON
Sir Wilfred Grenfell College**

www.

Schedule

THURSDAY

- 3.00 p.m. C3 Executive meeting (seminar rm. FA223, Fine Arts Bldg.)
- 3.00 p.m. 2YC3 Executive meeting (seminar rm. AS379, Arts & Science Bldg.)
- 5.00 p.m. Registration opens (centre of Arts & Science Bldg.)
- 7.00 p.m. Registration ends.
- 7.00 p.m. Wine & Cheese Reception (Fine Arts Atrium).

FRIDAY (all sessions are in rm. LC301, Library Complex).

- 8.30 a.m. Pickup from Glynmill Inn.
- 8.40 a.m. Registration opens (centre of Arts & Science Bldg).
- Morning Session** (Chair: Sudhir Abhyankar)
- 9.00 a.m. Opening remarks.
- 9.20 a.m. **Phases of Matter Revisited: The Role of Materials Science in the Chemistry Curriculum.** Mary Anne White, Dalhousie University, Halifax, NS
- 10.20 a.m. **Cosmic Chemistry.** Doug Forbes, Sir Wilfred Grenfell College, Corner Brook, NF.
- 10.40 a.m. Break.
- 11.00 a.m. **A Life in Chemical Education: Reminiscences and Regflections.** Reg Friesen, University of Waterloo, Waterloo, ON.
- 11.40 a.m. **One Program, Two Streams; 'Fishing' in the Chemistry Stream of the Sir Wilfred Grenfell College Environmental Science Degree.** Julian M. Dust, Sudhir B. Abhyankar, Don-Roger Parkinson and Geoffrey W. Rayner-Canham, Sir Wilfred Grenfell College, Corner Brook, NF.
- 12.00 p.m. Lunch.

Afternoon Session (Chair: Julian Dust)

- 1.30 p.m. **Eye-Catching Introduction to Chemistry Lessons.** Myra Hauben, College of Staten Island, Staten Island, NY.
- 2.00 p.m. **Teaching Non-Traditional Students: The Prep Course.** Jeanne Robinson, Seminole Community College, Sanford, FL.
- 2.20 p.m. **Canadian National Standards for Chemical Technologists - Implications for College Programs, Program Accreditation and Graduate Opportunities.** Peter Fisher, Marine Institute of Memorial University, St. John's, NF.
- 2.40 p.m. Break.
- 3.00 p.m. **Open House and On the Road Education at Cabot College.** Dawne Smith, Cabot College, St. John's, NF
- 3.20 p.m. **Chemistry at the University College of Cape Breton.** Dale Keefe, University College of Cape Breton, Sydney, NS.
- 3.40 p.m. **Organic Chemistry - To Succeed or not to Succeed? Some Possible Answers to the Question.** Bob Perkins, Kwantlen University College, Surrey, BC.
- 4.00 p.m. **A Chemistry Show that is Not "Magic."** Geoff Rayner-Canham, Wanda Ellsworth, Wade Goulding, and Maureen Haines, Sir Wilfred Grenfell College, Corner Brook, NF.
- 4.20 p.m. **C3 Annual General Meeting.**
- 7.00 p.m. **Banquet (Blomidon Golf & C.C.)**
followed by the presentation, **A History of Western Newfoundland**
and concluding with **Local Entertainment.**
Bus 6:30 Hypermall Inn.

SATURDAY

- 6.30 a.m. Fun run/walk.
- 8.30 a.m. Pickup from Glynmill Inn.
- 8.40 a.m. Registration opens (centre of Arts & Science Bldg).
- Morning Session** (Chair: Diana Messervy) *41 people*
- 9.00 a.m. **A Chemical Overview of the Smelting and Refining of Nickel.** Les Hewlett, Voiseys Bay Nickel Company, St. John's, NF.
- 10.00 a.m. **The Chemistry of the Pulp & Paper Industry.** Sudhir Abhyankar, Sir Wilfred Grenfell College, Corner Brook, NF.
- 10.20 a.m. **The Energy Grid and Nuclear Waste: Close to Home and Clearly Chemical.** R. Max Ferguson, Eastern Connecticut State University, Willimantic, CT.
- 10.40 a.m. Break.
- 11.00 a.m. **Integrating Computers into Laboratory Instruction: Involving Students in the Process of Science.** John R. Amend, Montana State University, Bozeman, MT.
- 11.20 a.m. **A Student-Friendly Approach to Teaching Chemistry: Using Computers as Resource Tools in Self-Paced Instruction.** Alice J. Monroe, St. Petersburg Junior College, St. Petersburg, FL.
- 11.40 a.m. **The Search for Chemical Information - An Introduction to Using Reference Sources.** Suzanne Gardner and Bob Perkins, Kwantlen University College, Surrey, BC.
- 12.00 a.m. **Homework: Electronic or Paper?** Edith Bartley, Tarrant County Junior College, Fort Worth, TX 76119.
- 12.20 p.m. Lunch.

Afternoon Session (Chair: Don-Roger Parkinson)

2.00 p.m. **Revised ACS Guidelines for Chemistry Transfer Programs in Two-Year Colleges: Do We Need Them?** Tamar Y. (Uni) Susskind, Oakland Community College, Auburn Hills, MI.

2.20 p.m. Two-hour "Hands-on" Workshop on Applications of the LabWorks Computer Interface (limited registration). John R. Amend, Montana State University, Bozeman, MT. (Room AS356).
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2.20 p.m. **CMA, ACS, NSF — How Can They Help?** Vera Zdravkovich, PGCC, Largo, MD.

2.40 p.m. **A History of Women in Chemistry.** Geoff Rayner-Canham and Marelene Rayner-Canham, Sir Wilfred Grenfell College, Corner Brook, NF.

3.00 p.m. **Break.**

3.20 p.m. **Concerns of Potentially High Levels of Disinfection By-Products (DBP'S) in Chlorinated Drinking Water in Western Newfoundland, and Possible Link With High Incidence of Chron's Disease.** Diana Messervy, Westviking College, Corner Brook, NF

3.40 p.m. **A Newfoundland Natural Products Experiment: Isolation of Carvacrol/Thymol from Summer Savory.** Julian M. Dust and Mary D. Secord, Sir Wilfred Grenfell College, Corner Brook, NF.

4.00 p.m. **A Geochemistry Perspective on Western Newfoundland.** Bill Iams, Sir Wilfred Grenfell College, Corner Brook, NF.

4.20 p.m. **Session ends.**

7.00 p.m. **Buffet dinner.**

SUNDAY

7.45 a.m. **Tour departs Grenfell College.**

8.00 a.m. **Tour departs Glynmill Inn.**

10.00 a.m. **Boat tour, Trout River Pond.**

12.00 p.m. **Lunch, Seaside Restaurant.**

1.30 p.m. **Hike up Lookout Point or bus tour of Park (options are numbers dependent).**

7.00 p.m. **Arrive Glynmill Inn.**

7.15 p.m. **Arrive Grenfell College.**

Conference Abstracts

PHASES OF MATTER REVISITED: THE ROLE OF MATERIALS SCIENCE IN THE CHEMISTRY CURRICULUM. Mary Anne White, Dalhousie University, Halifax, NS.
(mawhite@chem1.chem.dal.ca)

We commonly teach three phases of matter - solid, liquid and gas - but this excludes interesting materials such as liquid crystals, films on surfaces, supercritical fluids, orientationally disordered solids and glasses. In this lecture demonstration, the roles of these "other" phases of matter in modern materials will be described. The aim is to provide information that can be incorporated in the chemistry curriculum to make links with applications of materials science.

COSMIC CHEMISTRY. Doug Forbes, Sir Wilfred Grenfell College, Corner Brook, NF.
(dforbes@beothuk.swgc.mun.ca)

Chemistry plays a significant role in an astronomer's struggles to understand the universe. Curiously enough, it is especially important in two very different and very extreme regimes. The chemical elements themselves had their origins in conditions of incredible violence, early on in the Big Bang and much later in the lives and deaths of massive stars. Yet the most interesting chemistry seen in space today goes on within very diffuse, cold, low-density molecular clouds, where over 60 molecular species have been detected. This talk will focus on the interstellar medium - the stuff between the stars - and the complex interplay between gas, dust, and stars.

A LIFE IN CHEMICAL EDUCATION: REMINISCENCES AND REFLECTIONS. Reg Friesen, University of Waterloo, Waterloo, ON. (friesen@~~u~~borg.uwaterloo.ca)

For me, watching chemical education expand and become more sophisticated over the last three decades has been a fascinating experience. I would like to comment on aspects of teaching and learning, curriculum, evaluation, communications and human relations. I expect my audience to participate in a discussion of "progress," or lack thereof. Together we will also try to identify a few directions for the next decade.

ONE PROGRAM, TWO STREAMS; 'FISHING' IN THE CHEMISTRY STREAM OF THE SIR WILFRED GRENFELL COLLEGE ENVIRONMENTAL SCIENCE DEGREE.

Julian M. Dust, Sudhir B. Abhyankar, Don-Roger Parkinson and Geoffrey W. Rayner-Canham, Sir Wilfred Grenfell College, Corner Brook, NF. (jdust@beothuk.swgc.mun.ca)

Sir Wilfred Grenfell College (SWGC) initiated its first Bachelor of Science program in 1995 when it enrolled students into the Environmental Science degree. This degree program has two Streams (Biology and Chemistry) that provide depth to the studies, while a common Environmental Science Core that draws upon courses devised by geophysicists, earth scientists, biologists and chemists provides breadth to the program. The program further meets requirements that are common to all Grenfell degrees and which are meant to expose students to a variety of science, social science and humanities courses. Discussion will focus on the unique features and courses that are part of the program and include some observations on the strengths and difficulties inherent in offering a multidisciplinary program in the Liberal Arts and Science tradition during a period of fiscal restraint.

Survey Course
Env. Studies 3000
Env. Sci
Env. Economics course

PolSci 3731
Environmental Policy
Env 3260
Industrial Chemistry -6-

ENVS 3261
Atmos. Chem
ENVS 3230
Acoustic Chem

Honors Chem Courses
ENVS 4249
Env. Org. Chem
4239
Quat Chem II
4479
4069

EYE-CATCHING INTRODUCTION TO CHEMISTRY LESSONS. Myra Hauben,
Chemistry Department, College of Staten Island, Staten Island, NY.
(hauben@postbox.csi.cuny.edu)

A series of quick demonstrations will be presented. These demonstrations should be especially helpful for beginning teachers. The presentation will be particularly useful for schools without a technician and schools with low budgets. (All will require low or no cost and less than 5 minutes prep. time.) The demonstrations mostly will involve use of materials found around the house or in local stores. These demonstrations are especially suited for a chemistry course for non-science majors because of the use of familiar materials. A bibliography of demonstration sources will be provided along with the directions for the illustrated demonstrations.

TEACHING NONTRADITIONAL STUDENTS: THE PREP COURSE. Jeanne
Robinson, Seminole Community College, Sanford, FL. (jrobinson@ipo.seminole.cc.fl.us)

3/20/98
Seminole Community College's prep course serves as the first semester of a GOB sequence; however, it is designed primarily for students who must take our General Chemistry sequence but whose background is inadequate. We help them learn test-taking skills, lab techniques, calculator use, and student responsibilities. Many of our students are first-time college enrollees with full-time jobs, and they often find that they cannot juggle their outside responsibilities with the course load that they chose to carry. Up to 30% withdraw when they discover the amount of out-of-class work required for college success, but the "survivors" usually earn A's in General Chemistry. I find that imparting specific knowledge is less important than developing reasoning skills; my text covers fewer topics than many, but forces students in each chapter to apply much of what they've learned in preceding chapters. The accompanying lab manual stresses experiments that are simple in concept so that the student leaves the lab understanding exactly what he/she has accomplished. Nationwide, the prep course is low on the list of favorite teaching assignments. It is my top choice, because I see the results. *Science Merit Diploma provides scholarship to 4-year schools*

CANADIAN NATIONAL STANDARDS FOR CHEMICAL TECHNOLOGISTS - IMPLICATIONS FOR COLLEGE PROGRAMS, PROGRAM ACCREDITATION AND GRADUATE OPPORTUNITIES. Peter Fisher, Marine Institute of Memorial University, St. John's, NF. (pfisher/academic@gill.ifmt.nf.ca)

A project is now underway, sponsored by the Canadian Technology Human Resource Board and funded by HRD Canada, that will result in a database of the competencies that are expected of chemical technologists entering the Canadian workforce. The presentation will review the background to national standards development and describe the project methodology and expected outcomes. Database applications by colleges, professional associations and accreditation agencies will be discussed. Copies of the draft competency database, which will be available for evaluation during the Fall of 1997, will be available. The relationship between the standards and the national accreditation of college technology diploma programs will be discussed, together with the eligibility of graduates to enter Memorial University's new Bachelor of Technology program.

new College of the North Atlantic - 18 Districts www.cona.nf.ca

OPEN HOUSE AND ON THE ROAD EDUCATION AT CABOT COLLEGE: A DIFFERENT METHOD OF LEARNING ABOUT OUR FACILITIES. Dawne Smith, Cabot College, St. John's, NF. (dsmith@admin.cabot.nf.ca).

Cabot College's Open House, which was held in October 1996 and recruitment efforts, which occurred in Spring 1997, were collaborative efforts to make students and the general public aware of the importance of science and technology in today's world. During Open House, there were tours of our Engineering Technology Centre, exhibits to view, experiments to complete, and demonstrations with which to interact. Many different laboratories enticed the students, from general Chemistry to Petroleum Chemistry to Electronics to Architectural Technology to the Internet, and all areas in between this spectrum. While "on the road", pupils from different schools obtain first hand experience as to the numerous Cabot offerings. Electronic/technology apparatus, medical equipment, chemical demonstrations, admissions information, and promotional materials all spark students' interest in our facilities. Many positive comments, helpful feedback, and encouraging statistics have energized us as to the worthwhile nature of our efforts. All spoke highly of the importance of a technological, scientific education.

CHEMISTRY AT THE UNIVERSITY COLLEGE OF CAPE BRETON. C. Dale Keefe, University College of Cape Breton, Sydney, NS. (dkeefe@sparc.uccb.ns.ca)

Syllabus Industrial Chem, Industrial Microbiology

The University College of Cape Breton embodies a fresh vision of higher education: a combination of university liberal arts and science traditions with technological and vocational programs more commonly offered at a community college. The result is Canada's first university college, an institution with an innovative blend of degree and diploma programs which provide unique opportunities for students. The transition between classroom and workplace is aided through Cooperative Education Work Placements and internships designed to integrate academic study with practical work experience and career-oriented learning opportunities. The chemistry program at UCCB includes both a chemical technology diploma and a 3 year general B.Sc. A new 4 year applied chemistry degree is currently being developed. The use of computer networks, both Internet and local Novell networks, is extensively implemented into these programs. This presentation will discuss the unique aspects of the chemistry programs at UCCB and how the use of computer networks and tutorials are used to enhance both the lecture and laboratory component of the program.

http://dkeefe.uccb.ns.ca/pas

ORGANIC CHEMISTRY - TO SUCCEED OR NOT TO SUCCEED? SOME POSSIBLE ANSWERS TO THE QUESTION. Bob Perkins, Kwantlen University College, Surrey, BC. (bobp@kwantlen.bc.ca)

Every Fall across North America, thousands of students sign up for an introductory organic chemistry course. Their comments about the course (usually found to be in direct correlation with the grade they achieved) will likely span the range from "impossible" through "wonderful." This presentation will deal with some of my observations of teaching these students at several post-secondary institutions across the country using several different delivery modes. There are "seven deadly sins" which I believe can lead to potential problems for students embarking on a journey through the "wonderful world of carbon."

- 1. Falling Behind*
- 2. Study Habits*
- 3. Notational Problems*
- 4. Storage Problems*
- 5. Vocabulary Problems*
- 6. 3-D Problems*
- 7. Reaction Problems*

A CHEMISTRY SHOW THAT IS NOT "MAGIC." Geoff Rayner-Canham, Wanda Ellsworth, Wade Goulding, and Maureen Haines, Sir Wilfred Grenfell College, Corner Brook, NF. (grcanham@beothuk swgc.mun.ca)

In the public consciousness, the terms "chemistry" and "magic shows" are almost synonymous. Such shows usually provide demonstrations — colours, flames, explosions — that dazzle the audience and reinforce the image of chemistry as an arcane pursuit, baffling in its content, a safe haven for slightly deranged nerds, and useful only for entertainment. Over the years, I have developed a presentation that is designed instead for high school enrichment. In this performance, I endeavour to show that chemistry is very relevant to the student's lives and that its importance is readily comprehensible in terms of simple chemical principles. The show, which consists of live demonstrations and slides, has become an annual event, requiring four performances in the College Theatre. The participation of many small rural schools is particularly gratifying, in fact, one of the school groups comes from a distance of over 400 km just for the event.

A CHEMICAL OVERVIEW OF THE SMELTING AND REFINING OF NICKEL. Les Hewlett, Voisey's Bay Nickel Company, St. John's, NF. (lhulett@vbn.incoltd.com)

Surprise! Many of those complex sounding processes in industry are based on good old fundamental chemistry. Only the beakers are larger. This talk will provide an overview of the proposed nickel smelter/refinery being sited at Argentia, Newfoundland. The discussion will cover the pyro-metallurgical and hydro-metallurgical processes and give an outline of the chemistry involved in associated environmental technologies.

THE CHEMISTRY OF THE PULP & PAPER INDUSTRY. Sudhir Abhyankar, Sir Wilfred Grenfell College, Corner Brook, NF. (sudhir@beothuk.swgc.mun.ca)

The chemistry involved in making pulp and paper is interesting as well as complex. The properties of the finished product, paper and paperboard, depends upon the properties of the pulp used. This, in turn, depends upon the species of wood used and the pulping process employed. It has been known for some time that chemical extractives present in wood and pulp have a significant impact on certain properties, such as the brightness and strength of the paper. A brief overview of some of the chemical compounds which affect these properties will be discussed in the presentation.

THE ENERGY GRID AND NUCLEAR WASTE: CLOSE TO HOME AND CLEARLY CHEMICAL. R. Max Ferguson, Eastern Connecticut State University, Willimantic, CT. (fergusonm@ecsuctateu.edu)

The full cost of energy is difficult to measure but the price is surely increasing. Coal, oil, gas, and solar power may cast a shadow on environmental health with long term impacts still undetermined. "Global warming", pollution, and handling problems may ultimately dampen enthusiasm for non-nuclear energy alternatives while diminished fossil fuel supplies create an economically crippling energy rationing system. High level nuclear waste management is clearly a chemical (and physical) problem whose time has come. Societal displeasure with nuclear power costs and past misuse and mismanagement of nuclear resources should be addressed as priority problems in every service course in chemistry. The continued operations of over 100 nuclear power plants on the North America continent demands one or more permanent storage facilities in the near future. This paper will discuss US progress in the study and development of Yucca Mountain as a permanent nuclear waste repository in the USA. In the future, Rutherford's nuclear atom might prove to be the nucleus of a more inclusive chemistry program for general education.

INTEGRATING COMPUTERS INTO LABORATORY INSTRUCTION: INVOLVING STUDENTS IN THE PROCESS OF SCIENCE. John R. Amend, Montana State University, Bozeman, MT. (jamend@chemistry.montana.edu)

The tools and strategies of research can be effective tools for learning, and can help us deal with problems of cost, time safety, and student learning. This presentation will show how computer technology can be integrated into current laboratory instruction, to involve students in experiment design as well as data collection and analysis. The presentation will be illustrated with products of the CCLI Initiative, a NSF-funded consortium of colleges and universities involved in the development of computer-integrated laboratory curricula.

A STUDENT-FRIENDLY APPROACH TO TEACHING CHEMISTRY: USING COMPUTERS AS RESOURCE TOOLS IN SELF-PACED INSTRUCTION. Alice J. Monroe, St. Petersburg Junior College, St. Petersburg, FL. (monroea@email.spjc.cc.fl.us)

Students taking the pre-college level chemistry course have a choice between a traditional lecture-based format or a self-paced modular format. The self-paced course consists of a workbook guide with objectives and learning activities, and an annotated list of various classroom resource materials for students to use including programmed learning guides and cassette tapes. Computer-based instruction has been developed as an additional resource for each module. The computer resources have been written utilizing instructional design techniques for maximum learning effectiveness and ease of use. Stand-alone applications provide instruction, interactive problem-solving, testing with corrective feedback, and suggestions for further practice. The utilization of computers for instruction enables instructors to focus on answering questions rather than on initial instructional delivery. Computer use also allows each student to proceed with individualized guidance at his/her own pace. This presentation will include a description and demonstration of the computer-based instructional modules that have been incorporated into a pre-existing self-paced chemistry course.

THE SEARCH FOR CHEMICAL INFORMATION - AN INTRODUCTION TO USING REFERENCE SOURCES. Suzanne Gardner and Bob Perkins, Kwantlen University College, Richmond, B.C. (suzanneg@kwantlen.bc.ca)

This is a lab based activity that introduces to first semester chemistry students to using reference sources such as the CRC Handbook and the Merck Index, and to on-line searching. We found that our second semester and second year students had great difficulty finding reference information if it wasn't in their textbook. This lab allowed them to become familiar with the common reference sources and become knowledgeable about how and where to find reference values. The second part of the lab involved a library orientation and an introduction to the various on-line search methods available at the college.

HOMEWORK: ELECTRONIC OR PAPER? Edith Bartley, Tarrant County Junior College, Fort Worth, TX. (ebartley@tcjc.cc.tx.us)

Students are constantly asking for extra problems to work. This creates no difficulty for assigning problems, use the end of chapter or other sources. The problem is being able to supply answers and if the student misses the problem a corrected method of solution. Being a commuter school would force some students to wait two or three days to receive an answer. To help the student we chose to use an electronic homework floppy disk program. The program chosen was Jim Spain's Chem-Skill-Bldr. Now after a year we have some data from the students as to its usefulness.

REVISED ACS GUIDELINES FOR CHEMISTRY TRANSFER PROGRAMS IN TWO-YEAR COLLEGES: DO WE NEED THEM? Tamar Y. (Uni) Susskind, Oakland Community College, Auburn Hills, MI. (tysuski@vm.occ.cc.mi.us)

A Task Force of the American Chemical Society's Committee on Education (SOCED) has recently revised the 1987 *Guidelines for Chemistry and Chemical Technology Programs in Two-Year Colleges*. The revised guidelines focus on Chemistry transfer Programs since the Chemical Technology Programs have developed separate guidelines based on industry demands and the Chemical Technology Approval Service. Discussion will include the new guidelines; how they were updated; their importance and their uses in the Two-Year College Environment.

"HANDS-ON" WORKSHOP ON APPLICATIONS OF THE LABWORKS COMPUTER INTERFACE. John R. Amend, Montana State University, Bozeman, MT. (jamend@chemistry.montana.edu)

A "hands-on" workshop using computers and the LabWorks interface to design and conduct experiments, and to identify mathematical relationships in experimental data. No Programming experience is required.

A HISTORY OF WOMEN IN CHEMISTRY. Geoff Rayner-Canham and Marelene Rayner-Canham, Sir Wilfred Grenfell College, Corner Brook, NF. (grcanham@beothuk.swgc.mun.ca)

"Women in chemistry? — well, there was Marie Curie ..." such is the typical response of chemical educators. In our study of women in chemistry from the earliest times to the mid-twentieth century, we show that there have been women chemists throughout recorded history. We have researched the lives and work of many individuals who have made significant contributions and who have led fascinating lives. But the history of science demands more than "born, lived, died," there is a need to understand the context of the period. For this reason, we have documented the barriers facing each generation of women chemists, particularly the opposition of the scientific establishment. On the positive side, we show that the role of mentors was particularly important in supporting the women pioneers. It is hoped that our book, to be published by the American Chemical Society and the Chemical Heritage Foundation, will provide a rich sourcebook for chemical educators.

Look at last year J. Chem Ed. 73 136-8 (1996)
73 203-5 (1996)

CMA, ACS, NSF — HOW CAN THEY HELP? Vera Zdravkovich, Prince George's Community College, Largo, MD. (vz1@pgstumail.pg.cc.md.us)

Our efforts to enhance what we teach and how we teach is supported and assisted by organizations such as: Chemical Manufacturer's Association, CMA, American Chemical Society, ACS, and the National Science Foundation, NSF. CMA offers minigrants for teachers, Catalyst Awards for faculty and teachers at different levels, supports national education programs, works closely with the state chemistry industry councils, CIC's and publishes a variety of education publications. American Chemical Society, ACS, offers a variety of education programs and publications known to most chemistry educators. However one of the lesser known services is the College Chemistry Consultant Services, CS3. NSF supports efforts to improve chemistry education through a number of programs some of which are new and especially designed to assist community college faculty. All of the above mentioned programs will be discussed.

CONCERNS OF POTENTIALLY HIGH LEVELS OF DISINFECTION BY-PRODUCTS (DBP'S) IN CHLORINATED DRINKING WATER IN WESTERN NEWFOUNDLAND, AND POSSIBLE LINK WITH HIGH INCIDENCE OF CHRON'S DISEASE. Diana Messervy, Westviking College, Corner Brook, NF. (dmesserv@calvin.stemnet.nf.ca)

The author will present an article which she wrote in September 95 entitled "Concerns of Potentially High Levels etc...." which sparked considerable interest and controversy throughout the province and nationally, and is still being debated. An account will be given of subsequent studies conducted by Environmental Technology students at Westviking College, and an update on the current status in the province.

DR2000 measured color THM Chloroform

A NEWFOUNDLAND NATURAL PRODUCTS EXPERIMENT: ISOLATION OF CARVACROL/THYMOL FROM SUMMER SAVORY. Julian M. Dust and Mary D. Secord, Sir Wilfred Grenfell College, Corner Brook, NF. (jdust@beothuk.swgc.mun.ca)

Most introductory Organic Chemistry laboratory courses include a natural products isolation experiment. These experiments serve both to introduce students to the organic chemistry of naturally-occurring chemicals, but also to provide experience with common laboratory techniques from trituration to extraction and distillation. In this presentation we present recent results in the isolation of carvacrol and its constitutional isomer, thymol. Both phenols are found in such common herbs as oregano and winter and summer savory. It will be argued that summer savory, as a herb grown in Newfoundland and used more commonly than the more exotic spices such as cloves, provides a more relevant example to local students and that natural products experiments should seek to use herbs either grown locally or used commonly.

Carvacrol = 2-methyl 5-isopropyl phenol Thymol = 2-isopropyl-5-methyl phenol

THE GEOLOGY OF WESTERN NEWFOUNDLAND: A GEOCHEMICAL PERSPECTIVE. Bill Iams, Sir Wilfred Grenfell College, Corner Brook, NF. (wjams@beothuk.swgc.mun.ca)

When we talk about the applications of chemistry, we rarely think of the chemical compounds that make up the surface of our planet. In many parts of the world, the geochemistry is monotonous or obscured by soil, but in western Newfoundland there is an amazing richness of mineral types which, courtesy of the last Ice Age, is exposed for all to see. This slide-based presentation will illustrate the incredible variety of geochemistry of the region from the orange-coated deep purple ultrabasic (ultramafic) rocks of Gros Morne to the dark green olivines and the grey limestone flatlands at the tip of the Northern Peninsula.

Savory taste like oregano some active ingredient 13% by mass Carvacrol 15% dried Savory