

Date: Tue, 7 Dec 2010 13:20
From: Robert Hilts
To: Physical Sciences Department
Subject: Agenda for tomorrow's meeting

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AGENDA

Short Presentation by Logan Boyce, President of SOPEC
Online Student Evaluations of Physical Sciences Faculty
Promoting higher-level Physical Science courses in introductory courses
Retaining students beyond year 2
IYC 2011 (International Year of Chemistry) (emphasis added)
Results from the Online Student Questionnaire which elicits student educational goals and their impressions of the Physical Sciences degree
Textbook Adoption Criteria
Office Hours Just prior to Final Examinations

██████████ and I presented our plans at the 08 December 2010 departmental meeting to the Physical Sciences department. We received strong support from the physics, earth science, and chemistry faculty and staff. **Dr. Hilts chaired this departmental meeting**, was present during this discussion, and was fully aware of the upcoming MacEwan IYC2011 initiatives.

Point 2 of Dr. Higgins 01 April letter is incorrect: the IYC2011 activities are a departmental initiative.

The inference of point 3 of Dr. Higgins 01 April letter is incorrect: the MacEwan Physical Sciences department, including the department Chair, were aware of the IYC2011 activities we were planning and were supportive of these activities.

This evidence negates some of the supporting information of Dr. Higgins Page 2, Point 4.

Collection of student emails

Email is a common means of communicating with students. Faculty commonly communicate with their students via email and the laboratory coordinator regularly uses email to communicate with all the students taking laboratory courses. It would be reasonable to infer that email would be used to communicate IYC2011 activities to students.

Dr. Ross Witherell, the CHEM 10x laboratory coordinator, was present at the 08 December 2010 meeting and aware of the support ██████████ and I received for our coordination of IYC2011 activities. On 13 January 2011, I requested the email list from Dr. Witherell. My email clearly states that the intended use is IYC2011.

Date: Thu, 13 Jan 2011 16:45
From: ██████████
To: Ross Witherell
Subject: Agenda for tomorrow's meeting

Ross

Would you please send me the email addresses of the students in CHEM 10x. (I can extract them from a DataTel dump.) I need them for IYC stuff.

Dr. Witherell complied because he knew that the IYC2011 activities were supported by the department and that email was commonly used to communicate with students regarding departmental activities.

Point 2 of Dr. Higgins 01 April letter is incorrect: the Chair was fully aware of the intended IYC2011 activities and aware that we planned to communicate these to students.

In Dr. Higgins 01 April letter, he draws the conclusion that [REDACTED] obtained the student e-mail list in an improper manner. This conclusion is not supported by the evidence.

Contrary to Page 2, Point 1, [REDACTED] was forthright in his request. Given that the request was legitimate and approved by the department, Dr. Witherell did nothing wrong. There is no reason for Dr. Witherell to feel upset and misled by [REDACTED], nor should he be open to censure or is he complicit in violating students' rights.

The 27 January 2011 presentation at the Telus World of Science

This presentation by Dr. Joe Schwarcz was the Edmonton kick-off of IYC2011. The Telus World of Science (TWOs) was chosen to host this event because of their location and facilities. The TWOs coordinated seating for this event and allocated 150 tickets to the Chemical Society of Canada (CSC) to distribute to its members. These members include over 500 chemistry professionals in the greater Edmonton area. The tickets went first to CSC members and the remaining tickets to MacEwan, UofA, NAIT, and Kings University students.

This presentation would have been ideal for students. However, [REDACTED] and I believed that student interest would far overwhelm the limited number of tickets remaining. Consequently, we chose not to inform MacEwan, UofA, NAIT, and Kings University students of this presentation.

Point 5 of Dr. Higgins 01 April letter is incorrect: [REDACTED] has always contended the event would have been ideal for students. Correcting Point 5 negates Point 8.

Destruction of distribution list

At a meeting on 01 February 2011, I was ordered to destroy the list. Because the list was ordered destroyed, it obviously could not be used to communicate future IYC2011 activities to students. However, *email was used* to inform students of upcoming IYC2011 activities.

In the supporting information of Page 2, Point 4, Dr. Higgins stated that the email list was never used to contact students for IYC2011 activities. This is not relevant since the list was destroyed weeks before the next IYC2011 activity. Email *was* used to communicate this activity to students.

Subsequent emails to students

The next IYC2011 activity was a presentation at MacEwan by Dr. Geoff Rayner-Canham on 18 February 2011. Because the IYC2011 list was destroyed, Dr. Raynor-Canham and future IYC2011 events were promoted to students via an alternate email list, plus posters around campus.

Date: Thu, 17 Feb 2011 14:26
From: Science Advisors
To: Science Students
Subject: Weekly Update #24 - Thursday February 17, 2011

* Chemistry is Everywhere! Friday, February 18, 2011 2:00 p.m. MacEwan University, room 5-142 (CN Theatre)

The message by our visiting speaker, Dr. Geoff Rayner-Canham, from Grenfell Campus, Memorial University, Corner Brook, Newfoundland, is that Chemistry is Everywhere and for Everyone. In this presentation, Dr. Rayner-Canham will describe his exciting chemistry outreach to schools in very remote communities, which has included a week-long journey to schools across Nunavut and he will show some of the video-demos he uses as part of the Chemistry is Everywhere! Outreach. He will then provide examples of societal relevance and video-demos that he uses in the very successful university course in Beginning Chemistry.

In addition, it *is* common practice to use email to promote MacEwan faculty.

Date: Wed, 09 Feb 2011 19:57
From: Chemistry Laboratory Coordinator
To: Chemistry Students
Subject: MacEwan Chemistry Speaker Series

Hello - if you are receiving this message it is because you are currently listed as registered in Chem 10x, Chem 26x, and/or Chme 10x. As part of our ongoing series of talks from local and visiting scientists, **our very own Dr. Jonathan Withey** will be delivering the following presentation. Please feel free to stop by and hear about his work. (emphasis added)

*** **

MacEwan Chemistry Speaker Series

How I fell in love: it's all in the (stereo)chemistry
Monday, February 14th 2011
3-4pm
Rm 5-142

refreshments will be provided

Jonathan Withey will present a talk on his research at MacEwan in the field of asymmetric synthesis and organocatalysis. This talk will be accessible to all, including those with limited background in organic chemistry. And, as suggested on the posters, it will also feature Maverick and Goose, a man with enormous sideburns, Socrates and plagiarism.

Date: Mon, 17 Jan 2011 09:12
From: Science Advisors
To: Science Students
Subject: Mathematics and Statistics Undergraduate Talk: "Intuition Sucks"

Hello,

I would like to invite you to our next Mathematics and Statistics Undergraduate Talk: "Intuition Sucks". On Wednesday (January 19) from 12 to 1 in room 5-301 **Dr. David McLaughlin** will present some spectacularly non-intuitive mathematical results. Please come- we are going to have lot of fun doing Math in a very informal way!. (emphasis added)

As always we will provide free tori (the mathematical version of Tim Hortons doughnuts) and coffee, in addition to offering you the chance of winning a "super-doughnut". This time the challenging question is about... tennis.

Thank you,

Cristina Anton,
Instructor,
Mathematics and Statistics

The above emails to students promoted and benefited the faculty members by promoting their presentation. This action appears to violate Page 2, Point 5 of Dr. Higgins 01 April letter. If this type of promotion is acceptable, then Page 2, Point 6 is negated.

Email re [REDACTED]

I received the formal support of Dr. Higgins and Dr. Sullivan in 2007/08 and 2008/09 with workload adjustments for his continued development of [REDACTED] (Details of this correspondence are in Appendix A.) Additionally, Dr. Hilts, as the incoming Chair, met with me to formalize continued support for the development of [REDACTED] in CHEM 10x classes that I and other instructors were teaching (Appendix B). In Fall 2010, I had had formal departmental permission to use [REDACTED] with MacEwan students for two years.

This support led me to reasonably believe that the development and use of [REDACTED] was departmentally and institutionally sanctioned. As such, it is also reasonable to conclude that the common means of communicating with students — email — would be available to me.

It is an acceptable and common practice for faculty to communicate with their students via email, including informing them of additional educational resources. I simply informed all the students taking CHEM 10x (I taught approximately 40 % of the CHEM 102 students) of a free educational resource that may aid them in learning first-year chemistry. The process of soliciting feedback during the development cycle and expanding the body from which feedback is collected is consistent with common textbook development practices.

Note that Dr. Higgins email of 24 January 2011 was the first time institutional support of [REDACTED] was ever questioned and Dr. Higgins statement shocked me.

As I note in my 04 February correspondence, other equivalent email lists were available. The IYC2001 list was readily available.

Because Dr. Jensen was under the impression that [REDACTED] had departmental and institutional support, it is logical for [REDACTED] to believe there to be nothing wrong with sending an email to students informing them about a free resource (Point 6 of Dr. Higgins 01 April letter). It is also logical for [REDACTED] to be defensive of his scholarly activity and administrative interference thereon (Point 7 of Dr. Higgins 01 April letter and policy C5054 (Academic Freedom)).

Since emails to students that promote and benefit a faculty member is an established practice within Science and [REDACTED] actions are consistent with this practice, Page 2, Point 5 of Dr. Higgins 01 April letter doesn't apply and Page 2, Point 6 is negated.

In Dr. Higgins 01 April letter, he draws the conclusion that [REDACTED] made improper use of the student email addresses. This conclusion is not supported by the evidence.

Summary

The student email list was obtain in an appropriate manner and with the intent to be used in a manner consistent with established practices within the Physical Sciences department. Had the list not been ordered destroyed, it would have been used to communicate IYC2011 events to students.

It is an acceptable and common practice for faculty to communicate with their students via email, including informing them of additional educational resources. Informing all the students taking the same course of an educational resource is a logical and reasonable extension.

In Dr. Higgins 01 April letter, he draws the conclusion that I obtained the student e-mail list in an improper manner and made improper use of the student email addresses. These conclusions do not appear to be supported by the evidence.

Thank-you,

[REDACTED]

Enclosure

Appendix A: support for [REDACTED] from Dr. Sullivan and Dr. Higgins

Application for workload adjustment

History

Over the course of my employment at MacEwan, my lecture notes have become increasingly detailed and comprehensive. In September 2005, I introduced chapters & topics not taught at MacEwan and ordered the material differently than taught at MacEwan. I.e., the lecture notes evolved beyond my instructional requirements.

Proposal

My intention is to develop my lecture notes into a new general chemistry textbook entitled [REDACTED], coordinate the preparation of supplemental resources, and market the package.

A workload adjustment is requested to facilitate the development of the text.

The [REDACTED] text will be unique in many aspects:

- it will be approximately 600 pages in length (most chemistry textbooks are well over 1000 pages);
- the content is not reduced, rather, the material is presented in clear, concise language;
- the data & images, wherever possible, will be true to scientific data (no artistic license);
- the cost will be significantly less than current chemistry texts; and
- the text is written with a definite emphasis on international syntax standards. (see note 1)

This project is a multiyear project. A tentative timeline is given below

Spring 2007:	development of material not taught at MacEwan chapter questions for all chapters
Fall 2007:	development of material not taught at MacEwan chapter questions for all chapters
Winter 2008:	development of material not taught at MacEwan chapter questions for all chapters contract preparation of auxillary resources (see note 2)
Spring 2008:	special lecture series for material not taught at Macewan limited external scientific and pedagogical review editorial review
Fall 2008:	general external review
Winter 2009:	final revisions

Attached is the current Table of Contents illustrating the current development of the text. A copy of the text was provided to the Faculty of Science Research Committee in October 2006 and is available in the Dean's office. This term, I have focused on developing the thermodynamics and equilibria sections. The latest copy is available upon request.

Research Record

Funding was provided by the Faculty of Science Research Committee to purchase REFPROP 7.0, software that provides research-level data on the state of gases as a function of temperature and pressure. Free software was also obtained from the International Association for the Properties of Water and Steam (IAPWS) that provided thermodynamic properties of liquid and gaseous water as a function of temperature and pressure. These software packages are being used to produce figures for the text. Additionally, interesting meta-results were obtained that are likely publishable in chemical education journals but a more thorough literature search is required before a decision is made.

I am encouraging faculty to visit other instructor's classes. This will expand an instructors' instruction strategies repertoire and build an educational community focused on improving pedagogy. I have attended Dr. Jonathan Withey's organic chemistry class for several weeks now to help me develop the organic chemistry chapters in the text.

The department will further benefit from the knowledge and insight gained as I work to understand and explain the underlying phenomena involved in everyday activities. The college will gain the profile of employing a science author.

References

The following have received a copy of the text and can comment on the potential it has as a general chemistry text.

[REDACTED]
Dr. Robert Hiltz, Chemistry, Grant MacEwan College
[REDACTED]

Note 1. Upon my employment at MacEwan, I recommended and carried out numerous changes to the general chemistry instructional material. One change was to adopt international standards for style and syntax. I also convinced the chemistry division of Alberta Education to adopt these standards in the new curriculum and continue to consult and advised them on these topics.

Note 2. For example, the textbook figures will be included on a resource CD. I am preparing video clips of orbital formation and molecular bond formation and plan to prepare clips showing concentration profiles as a function of time for kinetic systems. Other instructors will be contracted to prepare additional resources (PowerPoint lectures, answer key, test banks, etc.) and I have begun obtaining permission to include software written by others with the auxillary resources.

Date: Tue, 20 Mar 2007 16:40
From: Pat Sullivan
To: [REDACTED]
Cc: [REDACTED]
Subject: Research for Scholarly Activity

[REDACTED]

I am pleased to inform you that you have been granted one course release for the 2007/08 academic year to conduct scholarly activity.

Please discuss this release with your chair so that he may consider this factor when assigning your work load for next year.

Pat

REPORT: workload adjustment to develop of [REDACTED]

Overview

In 2007, the Faculty of Arts and Science provided a workload adjustment to assist in the development of a new general chemistry text, [REDACTED]. I used that time plus considerable personal time during the past year on this project.

Accomplishments

Prior to Fall 2007, I converted my lecture notes to electronic format and evolved those notes into a stand-alone document that went beyond my instructional needs at MacEwan. Below details the development of [REDACTED] from Fall 2007 to present.

Fall 2007: 584 pages (cover to cover): 504 pages of material, 26 pages of appendices.

Present: 769 pages (cover to cover): 670 pages of material, 53 pages of appendices.

Attached is a current snapshot of [REDACTED]

With one goal being to be true to scientific data, numerous research-level resources are used in the development of [REDACTED]

- NIST Chemistry Webbook (online repository of general scientific information on molecular entities)
- NIST Chemical Kinetics database (online repository of kinetic rates for gaseous reactions)
- NIST Thermodynamics database (online repository specifically containing thermodynamic properties of molecular entities)
- NIST REFPROP 7.0 software (software that provides physical and thermodynamic properties of gases)
- IAPWS software (software that provides physical and thermodynamic properties of liquid and gaseous water)

In the quest for scientific accuracy, numerous observations were made of areas warranting further investigation.

- Many textbooks present the Lewis bonding method as it was originally developed in the 1920s and then teach corrections to that method. This is poor pedagogically and there is growing body of knowledge that indicates the Lewis method is based on a false premise. I am finalizing an alternate instructional method that incorporates today's understanding of chemical bonds to the instruction of bonding.
- There is an inconsistency in scientific data pertaining to atomic and ionic radii. Experimental results show an inconsistency in radii progressing from cation → neutral → anion that theoretically can't exist. The reason for the inconsistency is different experimental methods, and I am proposing to computationally determine the atomic radii to provide a consistent trend in atomic radii and other atomic parameters.
- There is disagreement as to the dimensionality of some thermodynamic values, equilibrium constants and reaction energies being two examples. This leads to confusion amongst students and instructors and to hand-waving arguments on both sides. I am investigating the origins of these differences.

- While the non-ideal nature of gases is well understood and the van der Waals equation is commonly presented in first year texts to 'correct' the ideal gas equation, some texts fail to realize that the non-ideality is temperature dependent. Preliminary work has found a linear correction to the van der Waals coefficients that gives good agreement with experimental data.

These areas have been analyzed to varying degrees, but are secondary to the development and field test of [REDACTED]. These projects would make interesting projects for summer students. The preliminary analysis does indicate that new knowledge and/or better pedagogical strategies can be developed and published.

Organic chemistry is not taught in CHEM 101/102. I attended many of [REDACTED] organic classes for a term to observe the material he taught and how he presented it. My notes will form the basis for the sections on organic chemistry.

Future plans

[REDACTED] has been developed to a stage that I have requested to field test it with the MacEwan engineering student in 2008/09. This summer, [REDACTED] will be reviewed by an external editor and the field test edition printed.

I am soliciting external professionals to develop and/or review specialty chapters (Chapters 20 and beyond).

Complementing this report is an application for an additional workload adjustment to continue development of [REDACTED].

APPLICATION: workload adjustment to continue development of

History

Over the course of my employment at MacEwan, my lecture notes have become increasingly detailed and comprehensive. In September 2005, I introduced chapters & topics not taught at MacEwan and ordered the material differently than taught at MacEwan. I.e., the lecture notes evolved beyond my instructional requirements. For the 2007/08 academic year, MacEwan provided a workload adjustment to facilitate the development of a general chemistry text. I used that time plus considerable personal time to develop This application seeks further workload adjustment to continue that development.

Proposal

My intention is to continue the development of a general chemistry text, coordinate the preparation of supplemental resources, and field test in 2008/09.

A workload adjustment is requested to facilitate the development of the text.

The text will be unique in many aspects:

- it will contain significantly fewer pages than most general chemistry texts (most textbooks are over 1000 pages);
- the content is not reduced, rather, the material is presented in clear, concise language;
- the data & images, wherever possible, will be true to scientific data;
- the cost will be significantly less than current chemistry texts; and
- the text is written with a definite emphasis on international syntax standards. (see note 1)

This project is a multiyear project. A tentative timeline is given below

Spring 2008:	editorial review preparation and printing of field test edition contract preparation of auxiliary resources (see note 2)
Fall 2008:	field test with MacEwan engineering students development of material not taught at MacEwan
Winter 2009:	field test with MacEwan engineering students development of material not taught at MacEwan
beyond:	development of material not taught at MacEwan limited external scientific and pedagogical review general external review general release

Attached is the current Table of Contents illustrating the current development of the text. A copy of the current text was provided to the Faculty of Science Research Committee in as part of the report for the 2007/08 workload adjustment and is available in the Dean's office.

Research Record

With one goal being to be true to scientific data, numerous research-level resources are used in the development of [REDACTED]

- NIST Chemistry Webbook (online repository of general scientific information on molecular entities)
- NIST Chemical Kinetics database (online repository of kinetic rates for gaseous reactions)
- NIST Thermodynamics database (online repository specifically containing thermodynamic properties of molecular entities)
- NIST REFPROP 7.0 software (software that provides physical and thermodynamic properties of gases)
- IAPWS software (software that provides physical and thermodynamic properties of liquid and gaseous water)

During the development of [REDACTED] and in the quest for scientific accuracy, numerous observations were made of areas warranting further investigation.

- Many textbooks present the Lewis bonding method as it was originally developed in the 1920s and then teach corrections to that method. This is poor pedagogically and there is growing body of knowledge that indicates the Lewis method is based on a false premise. I am finalizing an alternate instructional method that incorporates today's understanding of chemical bonds to the instruction of bonding.
- There is an inconsistency in scientific data pertaining to atomic and ionic radii. Experimental results show an inconsistency in radii progressing from cation → neutral → anion that theoretically can't exist. The reason for the inconsistency is different experimental methods, and I am proposing to computationally determine the atomic radii to provide a consistent trend in atomic radii and other atomic parameters.
- There is disagreement as to the dimensionality of some thermodynamic values, equilibrium constants and reaction energies being two examples. This leads to confusion amongst students and instructors and to hand-waving arguments on both sides. I am investigating the origins of these differences.
- While the non-ideal nature of gases is well understood and the van der Waals equation is commonly presented in first year texts to 'correct' the ideal gas equation, some texts fail to realize that the non-ideality is temperature dependent. Preliminary work has found a linear correction to the van der Waals coefficients that gives good agreement with experimental data.

These areas have been analyzed to varying degrees, but are secondary to the development and field test of [REDACTED]. These projects would make interesting projects for summer students. The preliminary analysis does indicate that new knowledge and/or better pedagogical strategies can be developed and published.

The department will further benefit from the knowledge and insight gained as I work to understand and explain the underlying phenomena involved in everyday activities. The college will gain the profile of employing a science author.

References

The following have received a copy of [REDACTED] and can comment on the potential it has as a general chemistry text.

[REDACTED]

Note 1. Upon my employment at MacEwan, I recommended and carried out numerous changes to the general chemistry instructional material. One change was to adopt international standards for style and syntax. I also convinced the chemistry division of Alberta Education to adopt these standards in the new chemistry curriculum and continue to consult and advised them on these topics. Currently, sadly, few grade schools chemistry texts outside of Alberta use these international standards. Approximately 30 % of first year chemistry texts adopt these standards. But nearly 100 % of second and higher level chemistry texts follow the international standards.

Note 2. Other instructors are being contracted to develop and/or review specialty chapters. I am continually identifying electronic resources that would compliment [REDACTED] and seeking permission to include them on a resource CD.

Date: Wed, 07 May 2008, 17:39
From: David Higgins
To: [REDACTED]
Subject: workload

Hello Lucio,

This note is to let you know that the workloads for [REDACTED] and Jonathan ought to be adjusted for research by one course.

Do let me know if you have any questions.

Thanks,
David

Appendix B: support for [REDACTED] from Dr. Hilts

Date: Wed, 11 Feb 2009, 12:30
From: Robert Hilts
To: [REDACTED]
Subject: Re: 10x text for 2009/10 academic year

Dear [REDACTED]:
You have asked for feedback re the adoption of your textbook, and here it is. It is my opinion that any decision to change the general chemistry textbook should be made by a committee composed of general chemistry lecturers, and that the committee should be struck in early 2010, just before the end of the run for the 9th edition of General Chemistry: Principles and Modern Applications, by Petrucci et al, which, of course, is the textbook presently being used by our department. In the meantime, if you want more feedback, why don't you use your textbook for any CHEM 101/102 sections that you will be teaching during the 2009-2010 academic year?
Cheers,
Rob

Date: Fri, 19 Jun 2009, 08:18
From: Robert Hilts
To: [REDACTED]
Subject: Re: Chemistry Textbook

[REDACTED]:
The answer to your predicament is clear: try the modified version of your textbook out on some CHEM 101 and 102 lecture sections.
Cheers,
Rob

The 'predicament' being that I would not be teaching the same students in CHEM 101 and CHEM 102. I was concerned that students would require different textbooks for CHEM 101 and CHEM 102. (I was not concerned about what the students were learning since I modeled my instruction after the CHEM 10x Master Course Syllabus and strived to ensure students learned the same material independent of the textbook.) I met with Dr. Hilts on 23 June 2009 to reach agreement on the use of [REDACTED] with CHEM 10x students.

Date: Thu, 02 Jul 2009, 14:47
From: [REDACTED]
To: Robert Hilts
Cc: [REDACTED]
Subject: Use of [REDACTED] at MacEwan...

Dr. Hilts

To summarize our meeting on 23 June:

- the college will change my teaching schedule to be two sections of CHEM 101 in fall 2009 and one section of CHEM 102 in winter 2010.
- the college will allow me to use [REDACTED] in the sections that I am teaching.

- [REDACTED] is at the stage where third-party instructor feedback is critical to development. Japhet Irangu is collaborating with me on the development of a solution's manual for [REDACTED]. The college will allow Japhet Irangu and other interested instructors to use [REDACTED] in the lecture sections that they are teaching.
- Between CHEM 101 and CHEM 102, students may transition from a section using [REDACTED] to a section using General Chemistry. It is the sole student responsibility that they have the correct text for their chemistry section.
- the college will endeavor to ensure that the same proportion of sections in fall and winter terms use [REDACTED]

Please advise if there are any errors or omissions in my summary.

Thank-you,
Dr. [REDACTED]

Date: Sat, 04 Jul 2009, 22:03
From: Robert Hilts
To: [REDACTED]
Subject: Re: Use of [REDACTED] at MacEwan...

Sounds right to me, [REDACTED].
Cheers,
Rob

This was the last discussion I had with Administration regarding the continued development of [REDACTED] — a very positive footing for continued development. The 2009/10 academic year proceeded smoothly: development continued, student feedback improved, and I hired students during summer 2010 to develop sections of the text and develop the solutions manual.