



TEACHING THANATOCHEMISTRY IN A FUNERAL SERVICE PROGRAM

Dr. Wheeler Conover
Provost/Chief Academic Officer
July 31, 2013

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“WHEELER, IT’S ALL OVER...”

2:15 AM, March 8, 2013

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QUESTION: WHAT DO YOU USUALLY ASSOCIATE WITH A FUNERAL?

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LET'S THINK ABOUT IT!

- Contacting the funeral home/retrieval of the body
- What type of funeral? (Ceremonies)
- Preparation of the body (if at all)

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LET'S THINK ABOUT IT!

- Date(s) and time(s)
- Arrangements
- Funeral celebrants
- Special rites (Military, Fraternal, Religious)

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LET'S THINK ABOUT IT!

- Burial preparations
- Who in the family has the say-so?
- Death certificates
- Finances (even if pre-paid)

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APPALACHIAN FUNERAL SERVICE DICTIONARY

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BARIUM

What happens when CPR fails

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FACTS ABOUT SKCTC

- One of 16 two-year colleges in KCTCS
- Five campuses spread across 150 km
- University transfer, allied health, and industrial education programs
- Science-related programs are extremely strong

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RATIONALE FOR FNS

- We thought about this program for nearly 20 years
- The funeral industry, while necessary, is always one generation away from extinction
- Moving away from a “trade” to a “profession”—that includes the education, too

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WE HAVE A PLACE-BOUND SOCIETY

- The closest programs to us are no less than 400 km away
- Students just can’t up and move for a year, if they can even move
- 90% of our students receive financial aid

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FEATURES OF OUR PROGRAM

- Most courses are offered two consecutive days a week in a block (we even arrange lodging)
- Thanatochemistry is online
- Now planning a state-of-the-art embalming lab
- 18 students from eastern 1/3 of Kentucky
- We even bought an old hearse!

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MORBID

A higher offer

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AIMS AND OBJECTIVES

- Uphold responsibility for public health, safety, and welfare in caring for human remains
- Educate students through a funeral service curriculum that is appropriate to the post-secondary level of instruction
- Encourage students and faculty research in the field of funeral service

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CURRENT ACCREDITATION STATUS

- The program is a candidate for initial accreditation to the American Board of Funeral Service Education, 3414 Ashland Avenue, Suite G, St. Joseph, MO 64506 (816) 233-3747 (abfse.org)
- **Caution:** Students applying for admissions to the Funeral Service Program should contact their respective state boards of funeral service regarding that state board's approval of this particular program of instruction



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TERMINAL ILLNESS

To get sick at Pearson Airport



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TOTAL CURRICULUM

- "Tetrahedral"
 - Science (A & P, micro, and thanatochemistry)
 - Business (accounting, small-business management, FNS Regulations and Statutes)
 - Restorative arts and sciences
 - Ethics, Psychology, and Sociology of FNS
- There is obviously more to it than embalming someone!



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WHAT IS THANATOCHEMISTRY?

- Study of the chemistry of death and decomposition
- “*thanatos*”—Greek for death
- Especially stressed are the chemical principles and precautions involved in sanitation, disinfection, public health, and embalming practice. The government regulation of chemicals currently used in funeral service is reviewed. (ABFSE Outline)


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WHAT IT IS NOT

- It is not a prep course for general chemistry
- Stoichiometry? Balancing equations? Writing formulas? Forget that, man
- It is mostly akin to a 1-semester GOB survey course
- If you do it right, it can be taught as both a service course and general education course


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MAJOR TOPICS FOR EMPHASIS

- Solution chemistry (% conc, osmosis, acid/base behavior)
- Functional group identification (not necessarily reactions)
- Basic biochemistry
- Embalming and sanitation action


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HERE'S A QUESTION...

Why do embalmers use a concentrated base solution on a burned body?

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HERE'S A QUESTION...

Why do embalmers use a concentrated base solution on a burned body?

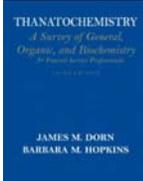
To remove scar tissue and reveal a smooth surface

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TEXTBOOK



THANATO-CHEMISTRY
*A Survey of General,
Organic, and Biochemistry*
JAMES M. DOBNI
BARBARA M. HOPKINS

Take a guess how thick this book is

Take a guess how much it costs new

Take a guess how much chemistry is covered in this book

Take a guess if I used it or not

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FALL 2012 OFFERING

- Taught only as a general education course because of some snafus with our accreditation
- I built the course on the fly (Blackboard LMS)
- Wanted to build my own videos—too long!

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FALL 2012 OFFERING

- Used Ball/Hill/Scott on Flat World Knowledge (FREE at the time)
- Labs were LateNiteLabs website (\$40)
- Wanted to build my own videos—too long!
- Supplemented the course with many videos for every chapter, PP's, and handouts

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HOW DID THAT GO?

- They hated the online textbook and wouldn't read it
- LNL report mechanism wasn't very good
- Pulled my own questions out of Dorn and Hopkins
- Chapter outlines before releasing the course material didn't work

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HOW DID THAT GO?

- Exam grades were disastrous (all exams proctored)
- Lab reports weren't much better
- One student spent so much time with the online tutors that KCTCS put a monthly limit on usage for everyone in online courses

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HERE'S ANOTHER QUESTION...

What benzene derivative was found by Joseph Lister to lessen putrefaction and post-operative infections?

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HERE'S ANOTHER QUESTION...

What benzene derivative was found by Joseph Lister to lessen putrefaction and post-operative infections?

Phenol

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SPRING 2013 OFFERING

- Taught as a general education course for liberal arts students and as Thanatochemistry for FNS students
- I tried to reorganize the course and take more time building it
- Used Janice Smith's GOB survey text (\$150—too bad)

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SPRING 2013 OFFERING

- Labs were still LateNiteLabs, but the students were to write up their own reports
- Added a simple lab project concerning uses of household chemicals and effective substitutes
- Course outlines were changed to homework "quizzes"

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ANOTHER QUESTION...

If an arterial fluid has an index of 20, what does that mean?

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ANOTHER QUESTION...

If an arterial fluid has an index of 20, what does that mean?

It is 20% formaldehyde (w/v)

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HOW DID THAT GO?

- Homework quizzes seemed to be the best
- Assigned 15-20 questions each chapter to be worked
- Randomly selected a group to be answered via MCQ (12 hours, one attempt only, everyone's questions were different)
- Most of the time, the majority of students missed at least one question

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HOW DID THAT GO?

- Lab reports were better
- LNL lab report mechanism improved before the semester
- I used their template to ask for data
- I created grid sheets that emulated lab notebook pages
- Found many lab graph applications
- For some reason, they didn't understand "third-person past tense"

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HOW DID THAT GO?

- Lab project was a decent success
 - Beer to ward off snails; sea salt as a mouthwash; cloth diapers
 - One student even compared Lysol to a “green” cleaner
 - Sustainability results for KCTCS Green+ Initiative
 - I switched to a safety razor

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HOW DID THE REVAMP GO?

- Exam grades weren't much better, but the top stayed at the top
- No reasoning or study skills developed, period
- Nothing different from other profs who have taught Thanatochemistry elsewhere

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I'M FULL OF QUESTIONS...

How can you tell if a body is embalmed using formaldehyde or glutaraldehyde (a dialdehyde)? Why?

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I'M FULL OF QUESTIONS...

How can you tell if a body is embalmed using formaldehyde or glutaraldehyde (a dialdehyde)? Why?

Bodies embalmed with formaldehyde are much stiffer; the diffusing action is quicker and more complete with formaldehyde

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CAT SCAN



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WHERE DO WE GO NOW?

- I'm passing off the course to a newly-retired BIO professor
- One college is changing its course to GOB survey and moving on-ground
- Our course may eventually move on-campus with a hands-on lab

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WHERE DO WE GO NOW?

- Will have to pick up an emphasis on sanitation and regulations
- She'll steer the course toward the biochemical properties that the course really needs
- I did learn a lot about organization for online courses

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WRAP

The type of music preferred by a mummy

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- *Pat Scopa (Retired SKCTC professor)*
- *G. C. Cat (Subject of CAT Scan)*

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