

Departmental Excellence Committee Meeting
February 25, 2005
12:00-2:30

Present: Baker, Chauvin, Dou, Lamberty, Lo, Newchurch, Smith, Wessel

Minutes

Dou's ACS-PRF "G" proposal.

Faculty made editorial suggestions for improving the presentation of the proposal. Special attention was given to the project summary because of the all-important first impression that it makes on prospective reviewers.

Analysis of Exit Exam scores of CHEM graduates from last ten years

Lo presented simple regression analyses (see Appendix) of test results from 1999-2004. Highlights of analysis and discussion:

- The small number of students precludes a year-by-year analysis. We only produced 38 graduates in five years, and there could be significant fluctuations in abilities between very small groups of students. A five-year running average might be a more accurate way of using the test results for assessing the chemistry curriculum. A comparison of data for Fall vs. Spring graduates was suggested. Clustering of points was suggested to improve presentation of the data.
- Student GPAs correlate well with ACT scores. Students with ACT>25 tend to earn GPA>3.5. The average graduate (ACT 21) tends to earn a GPA of 3.0. The correlation suggests that either GPA or ACT could be used as a measure of student's "ability".
- Correlations were done for percentile rank on exit exam (ETS Major Field Test) vs. GPA. Data suggest that the program is able to help "less capable" students (GPA≤3.0) reach the same (higher) levels of achievement in Chemistry as the "more capable" students (GPA>3.5). For example, two students with a GPA<3 were able to score in the 70 %ile and 85%ile.
- Organic Chemistry subscores were significantly lower than subscores for Inorganic, Analytical, and Physical. This problem has been recognized earlier and the weakness of the Organic curriculum was noted when the program was being evaluated by the American Chemical Society for accreditation three years ago. In response, CHEM 227 (Advanced Organic Laboratory) and 421 (Advanced Organic) have been added to the requirements. The impact of these changes may not be evident for at least another year. The Spring 2005 graduating seniors will be first group to have taken CHEM 227 and 421.

- Individual student data prior to 1998 are unavailable for the exit exam. But the average percentile rank prior to Spring 1999 was 36; 80 in Spring 1999 (with an unusual group of graduates), and 36 again after Spring 1999. This average percentile rank, while apparently low, is not necessarily a negative reflection on the program. The average ACT score of 21 places these graduates in the 57thile (compared to all ACT test takers, including those who did not go to college nor complete college) when they entered as freshmen. The exit exam compares them against a group of graduating Chemistry seniors. Our best students are able to score above the 90thile.
- Using a minimum ACT score as an entry requirement (into the major from University College) was suggested; the department decided in Fall 2004 to not impose any entry requirements (other than the University College's exit requirements) at this time. At the very least, ACT scores need to be examined when advising freshmen intending to be chemistry majors.
- The committee felt that it would be realistic to aim for a 5-point improvement in percentile rank in five years. With the improvement, the trend line (in the plot of Percentile Rank vs. GPA) would be expected to shift vertically compared to the current data. At the very least, the trend line should extrapolate to a percentile rank of at least 30 for a GPA of 2.5. A minimum of 2 points improvement across all abilities is anticipated as a result of the additional Organic requirement (Chem 227 and 421).

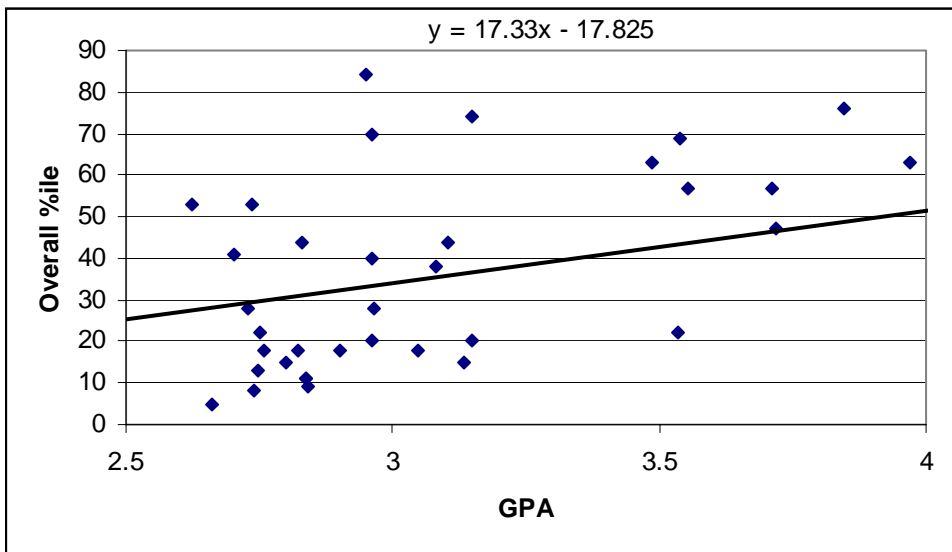
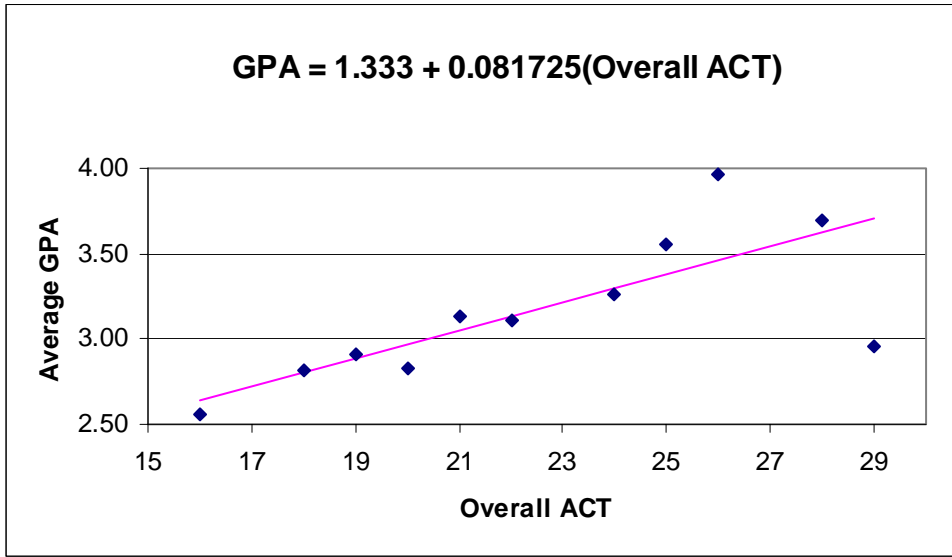
Reexamination of the CHDM curriculum

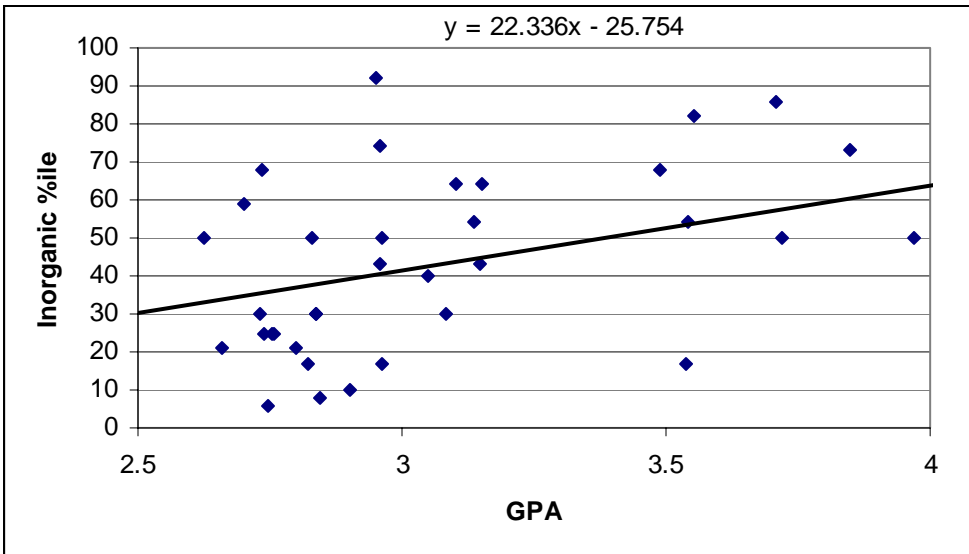
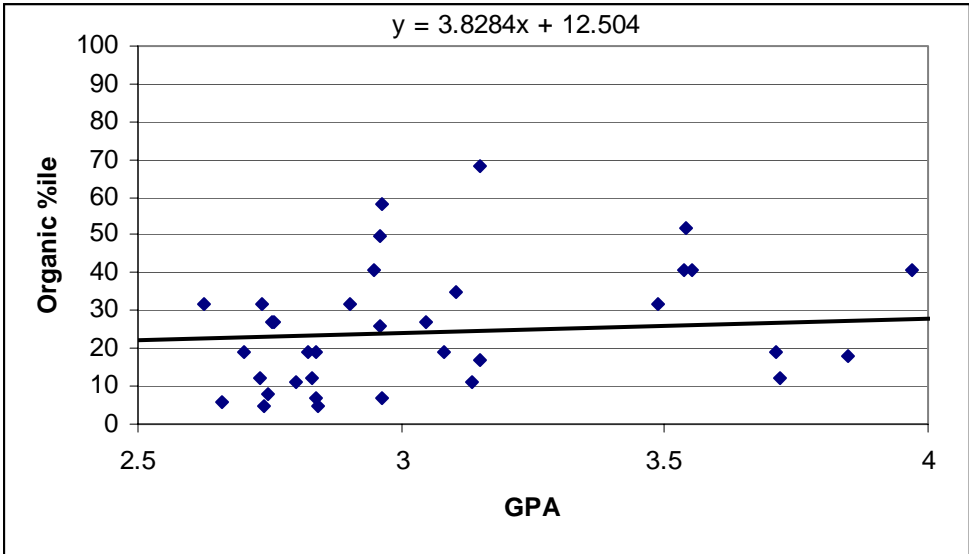
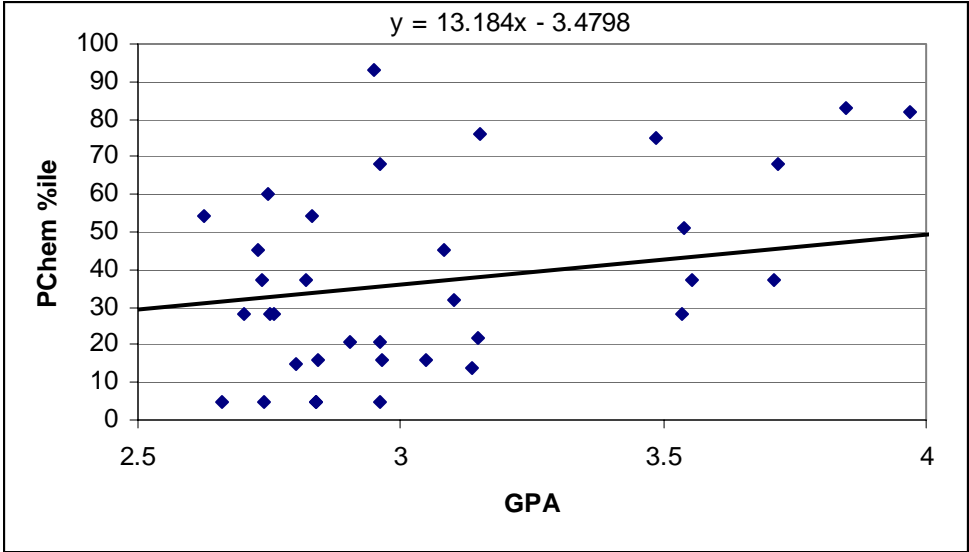
- The CHDM committee (Smith-chair; Lamberty, Newchurch, Wessel) met to examine the curriculum for chemistry majors intending to go to Medical School and other health-related professional schools (Dentistry, Pharmacy, etc.).
- Recommendations of the committee (Appendix B) were presented to the faculty. Dr. Chauvin requested that (1) the committee presented how the changes would appear in the catalog, and (2) any action on the recommendations be deferred until she's had more time to examine it.
- The committee was asked to come up with informative brochures about the various professional options to help with recruiting.

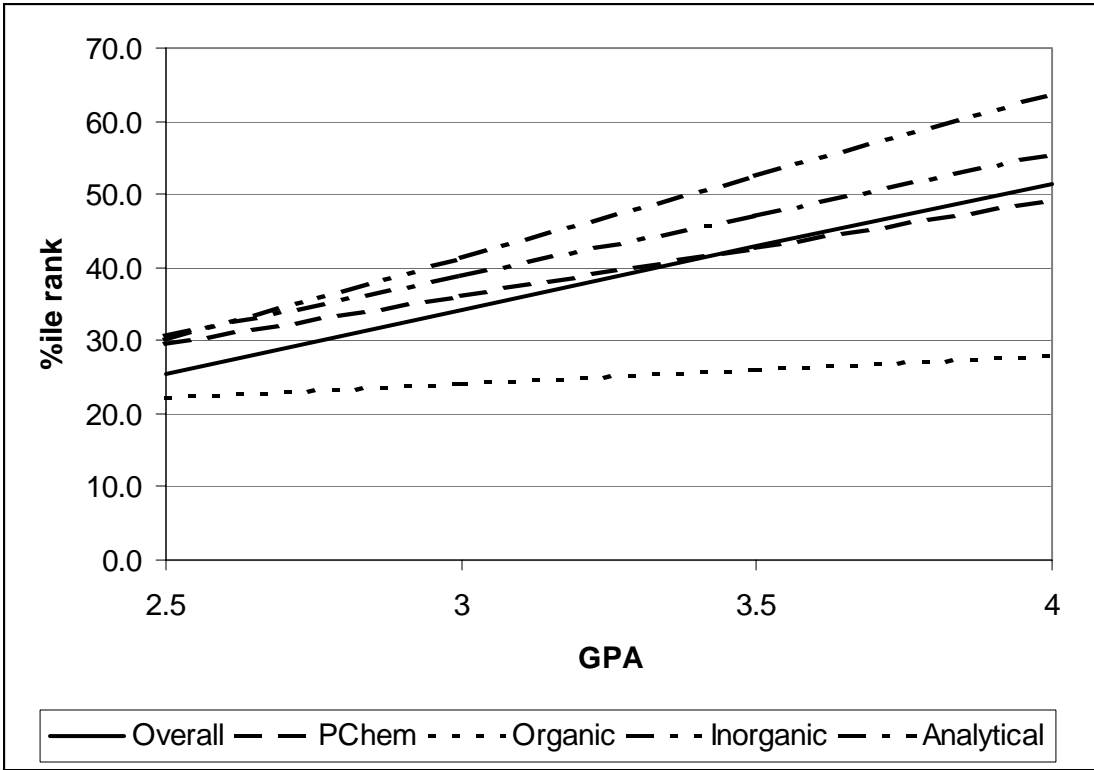
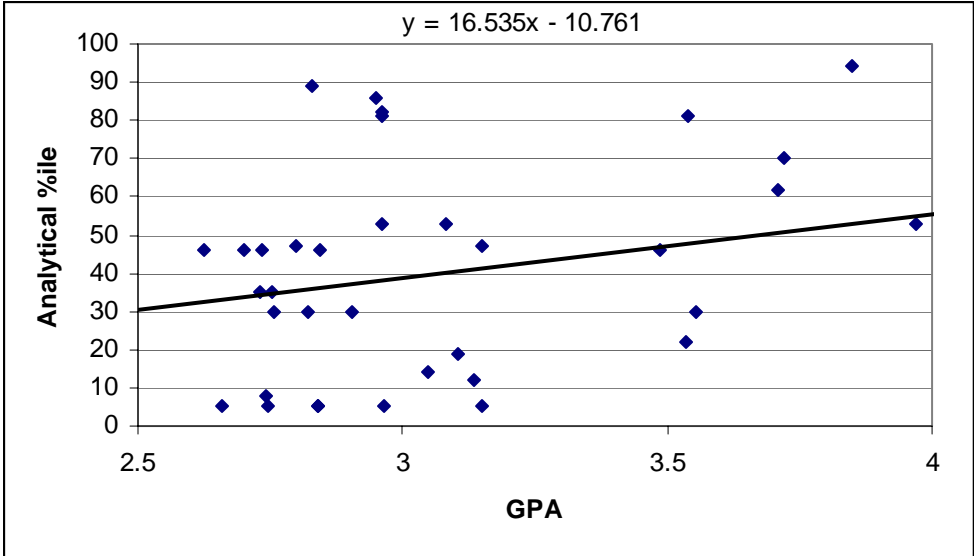
Redesign of CHEM 105

- The adoption of Thinkwell CDs in lieu of a traditional textbook was discussed in Fall 2004. The pros and cons were discussed again. A decision whether to adopt in Fall 2005 had to be made due to the impending deadline from the bookstore for textbook adoptions. It was decided the Thinkwell CDs be piloted for Chem 105 in Spring 2006. Adoption for Chem 105 and 106 in Fall 2006 will depend on the outcome of the pilot. Students in Chem 105 in Fall 2005 will be warned that if they failed or dropped, the textbook will be different in the Spring. Brady and Senese's textbook will continue to be used in Chem 105 in Fall 2005, and in Chem 106 through Spring 2006.

Appendix A: Analysis of Exit Exam Data (1999-2004)







Appendix B. CHMD Committee Recommendations

Monday, February 21, 2005

Re: Committee meeting to examine the Bachelor of Science degree in Chemistry with a Pre-Medical/Pre-Dental Concentration (CHDM)

Present: Duane Smith (Chair), members: Jeremy Wessel, Cynthia Lamberty, Martha Newchurch

Time: 12:30 pm

Place: Department of Physical Sciences faculty lounge

Objective: Meeting to examine the curriculum requirements for Bachelor of Science degree in Chemistry with a Pre-Medical/Pre-Dental Concentration (CHDM).

Findings: It was found that the CHDM degree requirements of the Department are in line with the requirements for **Tulane University School of Medicine** with the following requirements of:

English	6 hours	ENGL 101,102,368,
Literature(elective)		
General (Inorganic) Chemistry with Lab	6 hours	CHEM 105,106,110
Organic Chemistry* with lab	6 hours	CHEM 221,222,226,227
General Physics with Lab	6 hours	PHYS 201,202,203,204
General Biology with Lab concentrations	6 hours	BIOL 155 + CHDM
		BIOL 156
		BIOL 203
		BIOL 204

* *Three hours of Biochemistry may be substituted for organic chemistry.*

In addition, CHDM degree requirements are sufficient for specific required courses for the **LSU School of Dentistry**:

English	9 hours
Biology/Zoology	12 hours
General Chemistry	8 hours
Organic Chemistry	8 hours
Physics	8 hours.

Besides these required courses, the course concentration electives for the CHDM concentration require an additional 18 hours. This includes BIOL 156 (Gen Biol II – 4 hours), BIOL 203 (Microbiology- 3 hours), and BIOL 204 (Microbiology lab – 1 hour).

The remaining 10 hours of electives can be selected from various courses: BIOL 320 (Genetics), BIOL 326 (Comparative Phys), BIOL 332 (Developmental Biol), BIOL 370 (Evolution and Ecology), BIOL 440 (Molecular Biol), and CHEM 437 (Biochemistry lab I).

The committee has made the following recommendations:

- (1) It was *suggested* that a mathematical statistic course, such as MATH 301 (Statistical Methods I – 3 hours), which is required in biology core curriculum, to be also required with the required electives of BIOL 156, 203, and 204. This would then leave 7 hours of electives to be chosen among biology and chemistry.
- (2) It has also been *suggested* that in addition to the CHEM 437 (Biochemistry Lab I), that the courses CHEM 436 (Biochemistry lecture II), and CHEM 438 (Biochemistry lab II) be offered as electives. This would allow students more flexibility in taking more chemistry electives.

The committee will pursue the following actions:

- 1) The above-mentioned recommendations will be brought before the Department of Physical Sciences, as a whole, for discussion of the merits of the recommendations or other suggestions.
- 2) If indeed, the above-mentioned recommendations have been approved by the Department, the recommendations may be brought before the Courses and Curriculum Committee for approval and implementation.

Respectfully submitted,

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