

# Writing the Interim Progress Report

Scholar's Elective 303E, 300E

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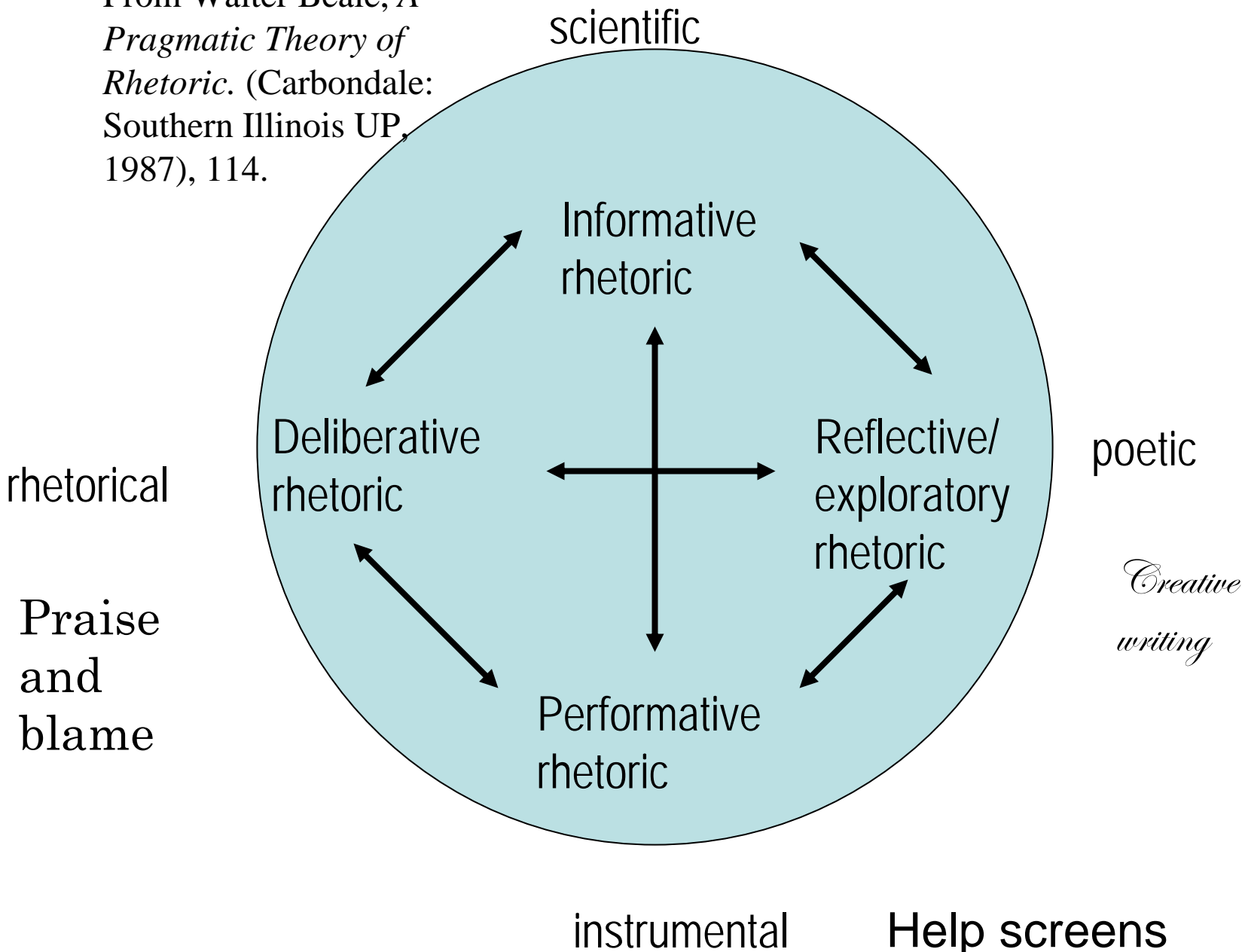
# Specifications for this assignment

- 5-10 pages double-spaced
- Outline the research topic
- Identify the hypothesis to be tested
- Describe the experimental design
- Present preliminary data (if available)

# Genre: status reports

- This assignment is a version of what are called “status reports” in business and professional writing
- Project managers, sales reps, middle managers (like me) write these, too
- They are both informative and persuasive

From Walter Beale, *A Pragmatic Theory of Rhetoric*. (Carbondale: Southern Illinois UP, 1987), 114.



# Other Names for Status Reports

- Progress report
- Activity report
- APE (annual performance evaluations) for faculty members
- Marie Smibert Stewardship report for Alumni Affairs

# Purpose of Status Report

- To keep team members and professors aware of the progress and status of projects within an organization/class
- To show individual's competence in pursuing and completing a task—your project
- To help you assess your work and plan future work

# A kind of draft of the final report?

- Outline the research topic
  - Identify the hypothesis to be tested
  - Describe the experimental design
  - Present preliminary data (if available)
- 
- Project description
  - Results
  - Conclusions
  - Consequences
- Don't have these yet

# What topics should your interim report contain?

- Outline of the research project
- Hypothesis: Outline of intended activities (including research) for manual
- Preliminary data: Description of activities that you have completed
- Experimental design

# Style and Tone

- Purpose: both informative and persuasive
- Present information in clear, accurate manner
- Demonstrate competence of writer
- Support generalizations with detailed factual accomplishments

# Outline of the project

- These experiments were done to gain experience with the techniques of double immunodiffusion and lysozyme assays and especially in reading their results accurately.

# Outline of the project

- The purpose of this experiment was to learn how to separate the cations in group two. This separation allows for the identification of different ions in an unknown solution. This experiment also shows the positive test results for the tests run.
- The purpose of this experiment was to see the positive tests for different anions and then to do them on different unknowns to determine what anions were present.

# Hypothesis

# Data

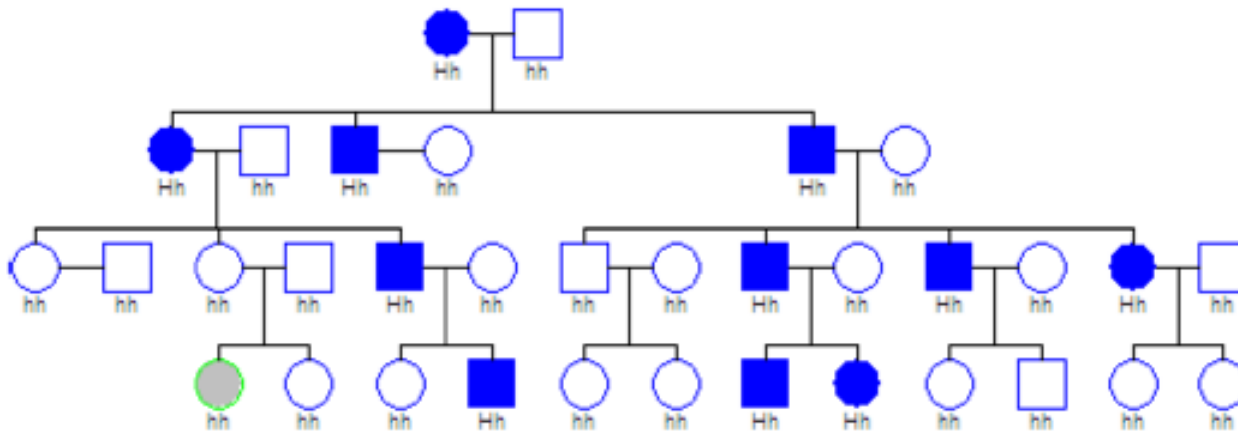
Table 1. Direct Microscopic Count of Microorganisms in Milk

Raw Milk	Fresh Pasteurized Milk	Past-date Pasteurized Milk
$9.43 \times 10^7$ cells/ ml	$<3.93 \times 10^5$ cells/ ml	$2.94 \times 10^8$ cells/ ml

Table 3. Class Results of the Direct Microscopic Count of Microorganisms in Milk

Raw milk (cells/ml)	Fresh pasteurized milk (cells/ml)	Past-date pasteurized milk (cells/ml)
$1.25 \times 10^7$	$2.47 \times 10^6$	$1.37 \times 10^7$
$9.45 \times 10^7$	$7.39 \times 10^6$	$2.94 \times 10^8$
$4.63 \times 10^7$	$2.59 \times 10^6$	$1.28 \times 10^7$
$1.79 \times 10^7$	$7.70 \times 10^6$	$2.96 \times 10^7$
$4.90 \times 10^7$	$9.79 \times 10^6$	$3.24 \times 10^7$
$9.67 \times 10^7$	$6.84 \times 10^6$	$7.28 \times 10^7$
$2.40 \times 10^7$	$1.40 \times 10^7$	$>1.29 \times 10^7$

# More Data



Mutation: Huntington's Disease; Pedigree Number: 6

# Final Report: IMRAD

- Introduction
- Methods
- Results and
- Discussion/consequences

# Introduction

This experiment was done to gain experience with using a gas chromatography column and with interpreting the chromatogram that is produced. The samples that were injected into the column were first volatilized into the gas phase. The sample was mixed with the carrier gas, Helium, and then put through the column. The interactions between the polydiphenyldimethylsiloxane solid phase in the column allowed the alkanes or alkenes to interact and adsorb. The degree of adsorbing and desorbing interaction between the column and the alkanes or alkenes allowed the different components in the sample to be separated. By doing runs under different pressures and then a temperature gradient, the chromatograms produced could be compared and the differences that the conditions make in the data can be seen.

Because of the nature of chromatography, it is also possible to use one run of standards to produce a calibration curve for the machine, and then use this to determine the retention index and from that the molecular weight of unknown compounds.

# Methods

- Experimental Design
- For this experiment, we took a 1ml aliquot of overnight yeast culture and washed the yeast cells twice with water, centrifuging in between each wash to remove the liquid, but keep the cells. We then suspended the cells in 1ml of buffered saline solution, diluted 1ul of cells into 90ul of water, and estimated the number of cells present per ml.
- The cells were then mutagenized with 30ul EMS by Prof. Silliker, and incubated at 30 degrees for one hour. The mutagen was then neutralized with 5% sodium thiosulfate. We then diluted the cell sample farther by adding .1ml to 9.9ml of water and mixing it up. We took .1ml of this dilution and added it to 9.9ml of water. After mixing this solution we pipetted 1.0ml of this dilution with 9.0ml of water. Finally, we pipetted this mixture onto 3 YPD agar plates in a concentration of .1ml, .2ml and .4ml.
- A week later, we observed the growth of the yeast in the different concentrations on each plate, and compared it to the control. We then replica plated the plate with the most colonies that were still separated from each other. We then replicated our selected plate onto 5 agar plates: an SD minimal media to be incubated at 30 degrees, an SD minimal media to be incubated at 37 degrees, a YPD complex media to be incubated at 30 degrees, a YPD complex media to be incubated at room temperature, and a YPD complex media to be incubated at 37 degrees.
- During lab on the third week, we compared these plates and determined which of our original colonies were auxotrophic mutants, temperature sensitive mutants, and temperature sensitive-auxotrophic mutants. The mutants were marked on the plates and turned back in.

# Results

## Results

*For Sample Calculations, please see Appendix 1*

### Part 1: Isothermal GC

**Run 1** (Pressure = 7.1 psi)

Dead time = 3.914 min

	W baseline peak width	Number of Plates	Plate Height	Actual Linear Flow Rate
<b>C14</b>	0.2782 min	4.94 x 10 <sup>4</sup>	0.608 mm	12.77 cm/sec

**Run 2** (Pressure = 12.1 psi)

⊕ Dead time = 2.314 min

	W baseline peak width	Number of Plates	Plate Height	Actual Linear Flow Rate
<b>C14</b>	0.226 min	2.68 x 10 <sup>4</sup>	1.12 mm	21.61 cm/sec

**Run 3** (Pressure = 18.5 psi)

Dead time = 1.570 min

	W baseline peak width	Number of Plates	Plate Height	Actual Linear Flow Rate
<b>C14</b>	0.0877 min	7.92 x 10 <sup>4</sup>	0.379 mm	31.85 cm/sec

**Run 4** (Pressure = 32.0 psi)

Dead time = 0.9463 min

	W baseline peak width	Number of Plates	Plate Height	Actual Linear Flow Rate
<b>C14</b>	0.0593 min	6.38 x 10 <sup>4</sup>	0.470 mm	52.69 cm/sec

# Results and Observations

- When final solution was evaporated in the rotary evaporator, the final product was an oil in the round bottom flask. After being on ice for ten minutes, the product crystallized into a snowflake-like patterned crystal in the round bottom flask. Final product was a white granular crystal.

<i>Compound</i>	<i>Actual Yield</i>	<i>% Yield</i>	<i>Published Melting Point</i>	<i>Observed Melting Point</i>
4-tert-butylcyclohexanol	0.0947g	93.5%	62-70°C	49-52°C

# Discussion

- Discussion
- As soon as the sample is injected into the column, the computer begins recording the signal from the detector of compounds coming off the column. The column dead time, also called the air peak time is the amount of time it takes for something that does not interact with the column to go through it. This can be calculated using the Peterson and Hirsch method using this equation:
  - $T_m = [t_{C13} t_{C15} - t_{C14}^2] / [t_{C13} + t_{C15} - 2t_{C14}]$
  - By subtracting this dead time from the amount of time that it took for each peak to elute, the adjusted retention time can be calculated. The adjusted retention time is useful because it represents the amount of time that the specific solute spent interacting with the column.
  - Using the retention times for a peak and the width at the baseline, the number of theoretical plates in the column can be calculated using this formula (Harris, 566):
    - $N = (16 t_r) / (W^2)$
    - This is useful because the greater the number of theoretical plates a column has, the better it is at separating components of a mixture.

# Discussion 2

- Conclusions
- The complement fixation test works in two steps. When complement is added to the unknown serum and incubated with the corresponding antigen, the complement proteins are bound to the reaction between the antigen and antibody. In this situation, when the indicator system is added to the tube, no complement is available to lyse red blood cells, and the tubes are opaque. If there is no antibody in the sample, then no antigen antibody binding will take place, and the complement proteins will be free in the solution. When the indicator system is added in this situation, complement proteins lyse the red blood cells and the samples become translucent.
- For this experiment, both Patient A's serum (170) and Patient B's serum (189) contained antibody. The positive control also contained antibody, and both the negative control and the complement control did not contain complement.

# Sources

Houp, Kenneth, T. Pearsall, E. Tebeaux, and S. Dragga. *Reporting Technical Information*. 10<sup>th</sup> Ed. New York: Oxford UP, 2002.

Locker, Kitty O. *Business and Administrative Communication*. 5<sup>th</sup> ed. Boston: Irwin/McGraw-Hill, 2000.

Alred, Gerald, C. Brusaw, and W. Oliu. *The Technical Writer's Companion*. 2<sup>nd</sup> Ed. Boston: Bedford/St. Martin's, 1999.