This assignment will increase your understanding of the manner in which a reaction should be presented. It is a two part assignment, the first part will count as 25% of your mid-term exam grade and the second part will count as 75% of your final exam grade.

PART I: Rough Draft of Report and Presentation

Written report due at time of Oral presentation

Oral presentation (5 min) to Professor only

Oral presentation and one-page written report regarding one of the following reactions:

Friedel-Crafts alkylation

Friedel-Crafts acylation

Nitration via Electrophilic Ar Substitution

Substitution via “Addition-Elimination”

Substitution via “Elim-Addition” (Benzyne)

Grignard reaction with an aldehyde/ketone

Stille Cross-Coupling

Negishi Cross-Coupling

Suzuki Cross-Coupling

Heck Cross-Coupling

Acid-catalyzed dehydration

Fischer esterification

Oxidation of an alcohol

Pinacol rearrangement

Epoxidation of an alkene

Williamson Ether Synthesis

Ring opening of epoxide

Imine formation from aldehyde

Enamine formation from aldehyde

Wittig Reaction

Reaction: Sign-up for a reaction type on the sign-up sheet outside of the instructor’s office.

Choose any reactant molecule(s) for which you can obtain NMR and IR data.

Written Report: Your 1-page report should include the general reaction type and general reaction requirements (solvent, catalyst, temperature, etc.). The specific reaction you choose should be drawn (using a drawing program) at the top of the page and explained in words as though you had performed the experiment in lab. You should include literature references as well. Pictorial representations of the NMR and IR spectra should not be included in the written report; however, NMR and IR data (s, 1.21 ppm, 2H) should be used to support the identity of your product. You need at least one peer-review journal article pertaining to your general reaction type. You should also include a paragraph describing the applicability of the general reaction. This information should be organized in a logical but brief manner.

Oral Presentation: The 5-minute (max) PowerPoint presentation should present the reaction as though you accomplished it in lab. You will need to present the overall reaction, the structure of at least one starting material (supported by NMR and IR data) followed by the reaction conditions and product structure. You should present the product as though you have obtained it, find NMR and IR data for the product and present it appropriately. I will expect both the reactant and product structure to be shown and explained by correlating the NMR and IR spectral (spectra must be shown) data to the structure.

The rough drafts presented during April will be corrected and returned.

PART II: Presentation and Report

Oral presentation (5 min) during final laboratory.

Written report due at the beginning of the class period.

It is expected that the oral presentation and written report will be significantly improved from the original rough draft.

Your grade on the final draft will be calculated based on quality of the report, presentation and largely on your participation in the oral presentations. It is expected that students ask each presenter questions regarding their reaction.