Grading Rubric for BCH/CHM 392 & 493 Name of BCH/CHM 392/493 Student: _____

	Final Research Report or Honors Thesis (Written Document) — Criteria for Evaluation				
Criteria	**Beginning**	**Developing**	**Proficient**	**Mastery**	**Score**
A. Content Description of the (bio)chemical problem, relevance/significance, computational methods, (bio)chemical structures/reactions, summary of prior research, results (including well annotated figures and complete figure legends & captions), discussion, conclusions, references	Research Summary Report is unfocused, missing many elements or contains multiple factual errors	Research Summary Report would benefit from more focus; Research Summary Report contains some factual errors or omissions	Research Summary Report is adequately focused and relevant; major facts are accurate and there are few omissions	Research Summary Report is tightly focused and relevant; contains accurate information and no omissions or factual errors	**/10**
B. Organization/Clarity logical ordering of ideas/sections, transitions between major points/sections	Ideas not presented in proper order; transitions are lacking between major ideas; several parts of Research Summary Report are wordy or unclear	Some ideas are not presented in proper order; transitions are needed between some ideas; some parts of the Research Summary Report are wordy or unclear	Most ideas are in logical order with adequate transitions between most major ideas; Research Summary Report is generally clear and understandable	Ideas are presented in logical order with effective transitions between major ideas; Research Summary Report is clear and concise	**/10**
C. Completeness Adequate levels of detail and depth, appropriate length, adequate background information	Research Summary Report does not provide adequate depth; key details are omitted or underdeveloped; Research Summary Report is too short or too long	Additional depth needed in places; important information omitted or not fully developed; Research Summary Report is too short or too long	Research Summary Report provides adequate depth; few needed details are omitted; major ideas are adequate	Research Summary Report provides good depth and detail; ideas are well developed; facts have adequate background; Research Summary Report is within specified length	**/10**
D. Grammar/Mechanics Correct grammar, spelling and word usage that is appropriate for readers	Research Summary Report contains several major grammar/ spelling/usage errors; sentences are long, incomplete or contain excessive jargon	Research Summary Report may contain some grammar/spelling or sentence errors; sentences may contain jargon or are too long or hard to follow	Research Summary Report has no serious grammar errors; sentences are mostly jargon-free, complete and understandable	Research Summary Report contains no grammar errors; sentences are free of jargon, complete and easy to understand	**/10**
E. Documentation Proper support and sourcing for relevance of problem, choice of methods; inclusion of results summary and discussions (graphs/figures/tables) that support conclusions	Little or no reference support for relevance of problem or choice of method; results summary is missing or inadequate; little or no references provided	Some support provided by references and results tables/figures/graphs; references may be outdated or a few tables/figures/graphs need work	Adequate support provided for key concepts by references, and results tables/graphs/figures, references are generally adequate and current	Effective support provided in the form of facts, data, references and graphs/tables/figures; references are adequate and current	**/10**
				TOTAL	**/50**

	Daily Work Quality — Criteria for Evaluation				
Criteria	**Beginning**	**Developing**	**Proficient**	**Mastery**	**Score**
A. Time Spent Working on the Project Did the student commit at least 3 hours per week in the lab (or at the computer) per registered credit hour for the course?	On average, spent 2 hours per week per credit hour working on the project	On average, spent < 2.5 hours per week per credit hour working on the project	On average, spent 3 hours per week per credit hour working on the project	On average, spent >3 hours per week per credit hour working on the project	**/10**
B. Quality of Lab/Project Notebook Well organized, routine entries. Context provided for each entry. Inclusion of all appropriate methods and thorough documentation of results in each entry. Discussion, conclusions, future plans provided as appropriate.	Sparse notebook that at a glance clearly has little to no value. Poorly organized, no indexing. Student clearly did not keep up with routine entries. Results mostly in raw/unprocessed and or scattered format. Location of raw data often unclear.	Some notebook entries that are of variable quality. Quite probable that entries for some days are missing and/or some important information is missing from some entries. Location of raw data mostly available. Results may be in graphical or tabular format but are poorly annotated and/or hard to interpret. Some entries were likely entered late. Possibly some/limited indexing.	Well organized notebook with a thorough set of entries that are properly dated and entered within a reasonable amount of time. Each entry has little if any missing information. The location of raw data is made clear and results are properly presented in graphical or tabular format as appropriate. Functionally useful indexing.	Highly organized notebook. All entries made in a timely fashion and are properly dated. Nothing seems missing. Raw data are made easily accessible. Results are presented in visually appealing, immediately contextualized and interpretable graphical and/or tabular format. Comprehensive indexing.	**/10**
C. Lab Safety and/or Computer Security Did the student routinely wear PPE as appropriate? Were other safety guidelines routinely followed? If relevant: Were proper IT security protocols routinely followed (e.g., using an encrypted computer, not sharing passwords, logging off a computer when not in use).	Hardly ever wore PPE, followed safety and/or security practices.	Sometimes wore PPE, followed safety and/or security practices, but often needed reminding.	Consistently wore PPE, followed safety and/or security practices; rarely if ever needed reminding.	Always wore PPE, followed safety and/or security practices; never needed reminding.	**/10**
D. Practical Skills Did the student have, learn or develop strong laboratory or computational or programming skills? Did they use good practices in the lab (e.g., keep a tidy bench, label all reagents, avoid cross-contamination, use instruments properly). Were students able to properly interpret their results?	Did not develop skills that facilitated collection of data that were of worthwhile quality. Little if any data or results produced were of any value. PI still does not trust student around sensitive items or expensive equipment. No real ability to interpret data by themselves.	Developed an adequate skill set for routine tasks. Was more often than not able to collect data that were useful and mostly unambiguous. Were able to interpret some but not all of their own data.	Rapidly developed a solid skill set for routine tasks. Was able to successfully execute non-routine tasks on most occasions. Almost always collected high quality, useful data. Were consistently able to interpret their own data and generally understand its implications.	Has a genuine gift for lab or computational work: Almost immediately picked up all tasks and successfully executed them. Experimental failures were rare or non-existent. Data were of high quality and almost always useful and meaningful. Almost always understood their own results and were able to interpret their meaning and implications to the point where future directions were immediately obvious to the student.	**/10**
E. Interpersonal & Routine Communication Skills How well did the student relate to and communicate with their lab-mates? What was the quality of their lab meeting presentations?	Interpersonal problems and/or conflicts caused on more than one occasion. Lab meeting presentations were of such poor quality as to be considered embarrassing.	Congenial relationships with people the student worked most closely with in the lab. 0-1 conflict incidents. Lab meeting presentations were generally sufficient to communicate what was done, but consistently required probing or clarifying questions from advisor or others.	Student knows and gets along well with everyone in the lab. No conflict incidents. Decent quality, smooth lab meeting presentations that required relatively little clarification.	Student knows and gets along well with everyone in the lab. No conflict incidents. Truly impressive lab meeting presentations.	**/10**
				TOTAL	**/50**