Third-Year Graduate Degree Program Review

Program: **Biotechnology (MSB-MSB)**
Year Approved: **2007**

The Office of Graduate Studies and the USF Tampa Graduate Council would like to ask you to complete this brief survey of your Graduate Program. This one-time survey, given to all recently approved graduate programs, will provide information about the program's standing and offers opportunities to showcase program's accomplishments in the first few years. Currently, no other mechanism is available to collect this type of information. The Graduate Council will prepare a brief report based on the survey, which will be circulated back to you and kept on file in the Office of Graduate Studies. Thank you in advance for your assistance with this important project!

PART I: Program Metrics (pre-populated by the Office of Graduate Studies)

(Optional comments regarding these numbers may be separately attached.)

Enrollment Statistics	Current Year (2013/2014)*	2012/2013	2011/2012	2010/2011
Applied (SIF)	40	39	51	53
Admitted (SIF)	25	15	26	26
Enrolled (SIF)	13	9	16	21
Degrees Awarded (SIF)*	8	22	16	11
Time to Degree (if applicable) (info center mean)	1.19	1.49	1.90	1.30
Total program enrollment (SIF)	26	31	45	40
Number of graduate faculty (PROFESSOR, ASSOCIATE PROFESSOR, ASSISTANT PROFESSOR)**	Prof: 10 Assoc. Prof: 8 Asst. Prof. 7			
Student: Faculty Ratio (students per faculty)*	26:25			

* Degrees not yet awarded for spring 2014
**Information not available on Info-center. Please provide a total number and then please attach a list of names, level (Full, Assoc., etc.), and research areas of these faculty
***Information not available on Info-center. Please provide.

Part II: Annual Student Success Metrics (populated by the Program)

(Optional comments regarding these numbers may be separately attached.)

	Current Year (2013/2014)	**2012/2013**	**2011/2012**	**2010/2011**
Professional Presentations by Students	**8**	**22**	**16**	**11**
Student Publications/Creative Works	**8**	**22**	**16**	**11**
Student Funding and Scholarships (including internal awards)	**0**	**0**	**0**	**0**
Other				

Part III: Program Narrative

In a few sentences:

1. Note any programmatic changes since original approval or last review and why the changes were made (*i.e. changes to degree requirements, courses, qualifying exams, theses etc).*

The Professional Science Master's Program in Biotechnology has made a few changes since the last review. My goals are to a) increase the yearly enrollment to 30 students and to b) provide a sound foundation for the students both with the scientific theory and with experience at the bench so that the student will have all the essentials before embarking on their internship. First, we have restructured the curriculum so that core courses can be attended during the Fall and Spring semesters. This involved making BSC6135 "Methods in Molecular Biology" a required course and moving it from the Summer to the Fall semester and moving GMS 7930 Section 17 "Python Programing" from the Summer to the Spring semester. We also added another core course, GMS 7930 Sections 17/18 – "Principles in Molecular Medicine", to the Fall curriculum. This restructuring has also affected the total enrollment numbers. Two years ago, students averaged almost 2 years (6 semesters) to complete the 36 credits needed for the degree. Currently, students are averaging between 3 and 4 semesters to finish the 36 credits. We see this as a major program selling point improvement because a) our competitors require 18-24 months to complete their programs, b) our competitors programs are more expensive for the students on a yearly basis and c) students want to begin their careers as soon as they can. Being able to finish in a year is key to being able to recruit more students to the program.

2. Discuss diversity in your program and you are actively involved in promoting this initiative.

The Professional Science Master's Program in Biotechnology has always supported diversity by admitting students from different social, financial and racial backgrounds.

Break down of Ethnic Diversity of Enrolled Students by Semester (Table 1; page 6)
Break down of Faculty Diversity (Table 2; page 6)

3. Discuss student "creative works" (publications per student, etc.) captured in Part II above.

In lieu of a Master's Thesis Dissertation, students of the Professional Science Master's Program in Biotechnology are required to write a dissertation detailing their project during their Industrial Internship, which is usually completed during their last semester. Although these manuscripts are not published, the manuscripts undergo review by the Internship mentors and the course director. The dissertations are usually around 30-40 pages in length, include figures and tables and are assemble much like a manuscript for publication.

Students are also required to organize a seminar where they present slides and interpretations concerning their Internships. These seminars are open to the public and are attended by the company colleagues of the Interning student, the program director and an "outside" faculty member. The presentations are assessed based on a rubric and the Internship grade calculated from the presentation score and a separate term paper writing score (graded by the course director). The Internship presentation rubric and grade rubric can be found in the Internship Syllabus, attached at the end of this document.

4. Discuss placement of your recent graduates (e.g., types of employment, admittance to other degree programs).

The major goal of the vast majority of the PSM Biotechnology students is to increase their marketability. As of 2012, we have graduated 35 students, at least 60% of which have found employment. Although we have been trying to follow as many graduated students as we can, this number is skewed toward a lower percentage because 9 students did not answer our survey and, hence, were included in the unknown category. The major predictor or metric for these outcomes is the performance given by the student for their internship. Approximately 80% of our students get hire following graduation by the company in which they interned.

Please see Table 3; page 7 for a break down of the numbers.

The best metric, however, is the response of the Internship mentors. The quote below is from Patricia Lawman, PhD, President, Morphogenesis, Inc.

"Morphogenesis, Inc., a cell and gene therapy company based in Tampa, FL, has committed to working with the University of South Florida's (USF) Department of Molecular Medicine Professional Science Masters (PSM) students for both the Biotechnology and Bioinformatics programs to expose their graduate students to cutting edge science through "hands-on" research. These students, from all over the world, spend a significant amount of time at Morphogenesis on projects ranging from cancer vaccine development to taking basic research into the clinical trial arena.

Each student is introduced to Morphogenesis' projects and then assigned to a specific area based on their interests. These assigned tasks help to develop not only scientific and technical research skills but also expose the students to essential administrative, management and regulatory experiences that are key in today's biotechnology industry and job market. This has ultimately set the USF PSM programs apart from other similar degrees.
To date, Morphogenesis has mentored 22 USF PSM students through their internship program, an accomplishment that the entire Morphogenesis Team is proud of. The Company is constantly searching for ways to give back to the community, and helping shape the scientific minds of tomorrow is one of the most satisfying."

Currently, four of our graduates are employed by Morphogenesis in positions ranging from Project Manager, to Lab Manager, to Chief Clinical Officer.

5. Identify qualities/metrics of applicants who prove to be successful in your program (e.g,, REU experience, experience specific to your discipline, GRE performance).

We based our admissions on undergraduate GPA (3.0), GRE scores (297), letters of recommendation (2) and a personal statement. Although we have seen a rise in the average GRE score from 2010 to the present, the number of students that enroll are about 60% of those that apply, independent of the GRE scores.

Comment succinctly on the following (e.g., 200 words max).
Based on the data in Part I, discuss current enrollment trends, graduation rates, time to graduation, and retention. Provide details on how the program is addressing each of these areas and will correct any deficiencies (i.e. low number of applicants, loss of students etc.)

Recruitment Strategies:
With the curriculum in place, we are now focused on increasing recruitment numbers. Below are the actions we are currently taking:

I) *Development of Online Website.* The most efficient way to connect with a potential student is via a website dedicated to the Biotechnology Program. Students can be asked to fill out a questionnaire and then courted based on their qualifications. It is also the fastest strategy to initiate and one of the least expensive. The Biotechnology Website is currently up and running, however, it continues to evolve.

II) *Scientific Journal Ads.* We will place ads in some of the high tier journals, e.g., Cell, Science, Nature, etc, and solicit responses to our email address (Biotech@health.usf.edu) or our website. This will most likely be the most expensive route.

III) *Direct contact with potential students*. We will do a personalized mass mailing of a letter containing an explanation of our program and its strengths. Included in this email is a direct link to the Biotechnology application webpage. Students are screened for receiving an email based on their GRE scores.

In the past, a "press-the-flesh" approach was taken with less than satisfactory results. If we intend to elevate our program's status, we will need to increase the number of enrolling students.

Identify three programs that are considered to be peers.

1. Barry University (18 Month Program)

2. North Carolina State University (24 Month Program)

3. Texas Tech (18 Month Program)

Describe how the Program aligns with the strategic goals of USF.

To sum up the USF Strategic Goals, the university demands that students are provided with a high quality education and realistic preparation tempered to real world situations. The PSM Biotechnology Program does this by a) providing theory related to biotechnology, b) focusing on skills valued by employers, i.e., writing, presentation and c) allowing students to acquire actual real world experiences before graduation. The program's record concerning our outcomes, I believe, speaks for itself.

What are three program goals to be accomplished in the next 5 years?

1. Increase enrollment to 30 students.

2. Increase National status of Program by a) advertising in Scientific Journals and b) having our faculty members write editorial pieces for Biotechnology journals.

3. Begin an Online edition of the biotechnology Program.

Anything else you'd like to share?
Not at the present time.

Table 1 Student Ethnic Diversity (PSM Biotechnology)

	2007	2008			2009			2010			2011			2012	2012	2012	2013	2013	2013	2014	2014	2014
	FA	SP	SU	FA	SP	SU	FA	SP	SU	FA	SP	SU	FA	SP	SU	FA	SP	SU	FA	SP	SU	FA
African Am.							4	3	1	4	2		3	3	2	3	3	1	2	4	4	4
Hispanic				1	1		2	2	2	6	6	7	9	8	5	4	2	2	4	3	3	1
Asian					1	1	1	1		2	4	2	5	5	4	4	3	1	2	2	1	1
Caucasian	1	1		5	8	4	13	12	6	13	14	7	12	13	7	12	6	4	8	4	2	4
Non-Resident Aliens	1	2	2	3	4		1	3		6	7	1	8	7	4	3	4	2	5	6	5	4
Not Reported								1					1	1	1	1	1	1	1	1		1
Male	0	0	0	5	8	3	14	15	8	20	20	10	21	21	14	16	10	7	14	11	9	9
Female	2	3	2	4	6	2	7	7	1	11	13	7	17	16	9	11	9	4	8	9	6	6

Table 2 Faculty Ethnic Diversity (PSM Biotechnology)

	Fall 2007	Fall 2008	Fall 2009	Fall 2010	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Hispanic	0	0	0	1	1	1	1	1
Caucasian	23	25	27	27	28	28	28	28
Asian	3	3	7	8	8	8	8	8
African American	0	0	1	1	1	1	1	1
Male	18	18	23	24	23	23	23	23
Female	8	10	12	13	13	13	13	13

Table 3: PSM Outcomes

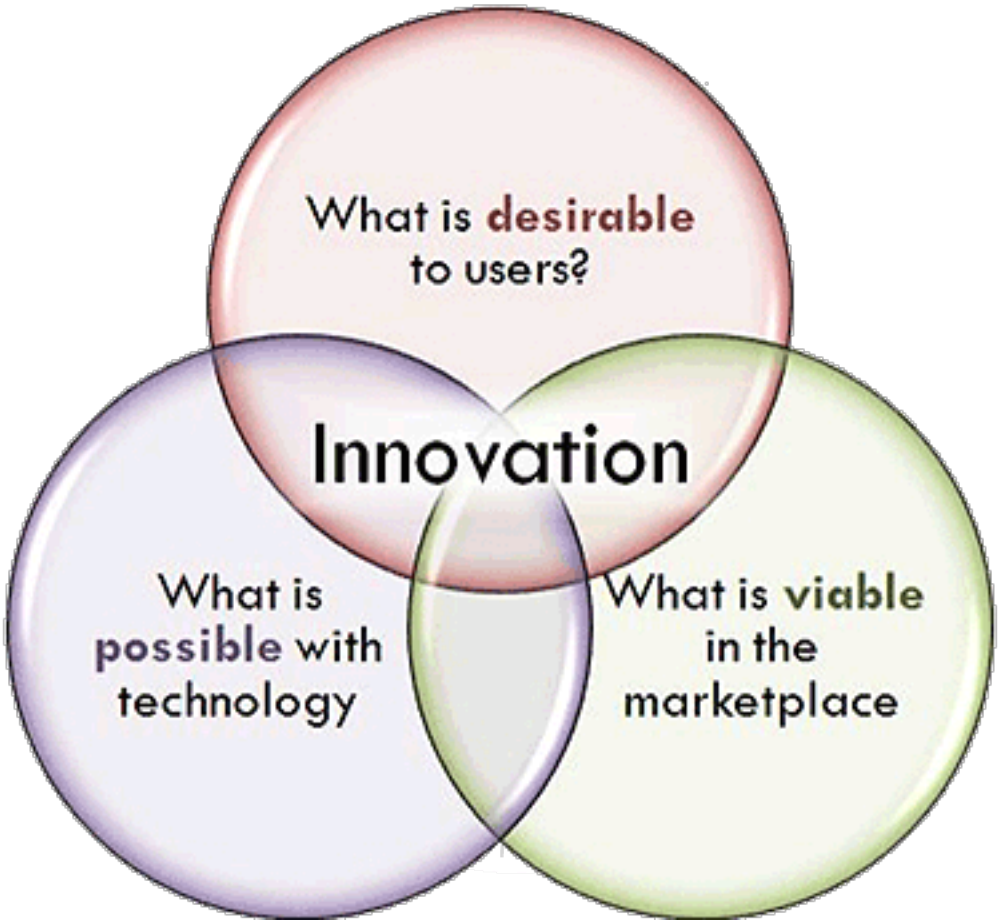
Professional Science Master's Program-Biotechnology
SUM 2012-Summer2014

		Outcome		Outcome				
Semester	**Graduates**	**Acad**	**Acad-Intern**	**Industry**	**Industry-Intern**	**Professional School**	**Unknown**	**Other**
SUM 2012	**3**	**0**	**1**	**1**	**0**	**1**	**0**	**0**
FALL 2012	**13**	**3**	**1**	**2**	**3**	**1**	**3**	**0**
Spr 2013	**6**	**1**	**1**	**0**	**1**	**3**	**0**	**0**
SUM 2013	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**
FALL 2013	**4**	**0**	**1**	**0**	**2**	**0**	**1**	**0**
SPR 2014	**3**	**0**	**0**	**1**	**0**	**1**	**1**	**1**
SUM 2014	**5**	**0**	**0**	**2**	**2**	**3**	**0**	**0**

Total	**35**	**4**	**4**	**6**	**8**	**10**	**14**	**1**
%		**0.11**	**0.11**	**0.17**	**0.23**	**0.29**	**0.40**	**0.03**
	Graduates	**Acad**	**Acad-Int**	**Industry**	**Industry-Int**	**Professional School**	**Unknown**	**Other**

University of South Florida
College of Medicine

Department of Molecular Medicine



GMS 6943: BIOTECHNOLOGY INTERNSHIP (3cr):

Time:	Fall, Spring and Summer
Course Director:	David Mitchell, PhD
Office Hours:	By appointment, MDC 3518
Phone:	(813) 974-2946
Fax:	(813) 974-7357
Email:	dmitchel@health.usf.edu

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Course Director:

David Mitchell, PhD

Director, Professional Science Master's Program in Biotechnology and Certificate Programs in Biotechnology and Intellectual Property

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Course Description:

One of the requirements for graduation from the USF Professional Science Master's Program in Biotechnology is a successful internship experience in an institution that provides insight into one or several aspects of biotechnology, such as, but not limited to: a scientific laboratory, a pharmaceutical or device manufacturing company, an office for technology and licensing or a department related to biotech business administration. The internship uses hands-on instruction from members of the Biotechnology community to demonstrate the practical translation of scientific results from biological, biomedical and bioengineering research studies into the development of drugs, devices, diagnostics, therapies, services or patents and licenses. The internship introduces students to the "real world" settings of biotechnology and provides valuable work experience and networking opportunities and thereby, a competitive advantage to all students who are aiming for a career in biotechnology.

Course Schedule:

As we are dealing with members of the Biotechnology community, who are donating and volunteering their time to mentor a student, it is imperative that the student spends **AT LEAST** 20 hours per week in their internships. These hours do not include the time for preparation such as researching the literature to become familiar with the assigned topic or initial onsite training before certain tasks can be mastered independently. The time for the composition of the internship report, the internship presentation and the literature review are also not included in the internship time onsite. Ar-

ranging the company or lab in which to perform the internship will be left to the student. All internship locations and labs will require the approval of the course director before proceeding.

Course Objectives:

Upon completion of this class, students will have first hand knowledge of the technical and interpersonal skills involved in a corporate culture. The students will also be able to present the data they collected and explain the project on which they worked. Finally, students will also be able to enhance their writing and intellectual skills through the Mini-review term paper.

Course Requirements And Grading:

The intern is expected to compose an internship report in which he/she: A) describes the assignment in detail; B) justifies what approach(es) have been taken and why; C) presents an update as to the state of the project and D) suggests some future directions. In the latter case, the student should describe what additional steps will have to be taken to finish the task. Such a report should easily be developed into a 30-page document.

Due to legal confidentiality issues, students will have to make special arrangements with their mentors regarding their reports (for example gaining new procedural experiences in a new case, but reporting on a case where the patent has already been issued). In all cases, the internship mentor will be the first to review the report and the PowerPoint presentation and possibly modify statements that could be in conflict with institute/company issues of confidentiality. In addition, the internship mentor will be asked to provide a short written evaluation of the student's internship performance and internship documentation, including a suggested grade (form attached).

The internship presentation may be aided using any audiovisual tools the student might find helpful, such as a PowerPoint, videos, models etc. The internship report and the oral presentation will contribute equally to the internship grade (35/35). Another 20% of the internship grade will be based on the quality of preparation, record keeping, timeliness and collegial interactions. In addition, a required literature review on an independent topic, graded by the course director (see below) will contribute 10% to the final internship grade. The evaluation forms are located at the end of this document.

Evaluation of Internship for assurance of academic and ethical standards:

The internship is expected to be most beneficial to the student if he/she has a chance to locate an internship site of his/her choice. However, the internship can only be started after the student has discussed his/her choice with the internship advisor (course director) and has received permission to enroll. If students do not succeed in finding an appropriate organization in a reasonable time period, the course director will make recommendations and/or make initial contacts according to the student's interest. In either case, the internship institution will be evaluated and approved by the course director. After the internship has been established, the student will be required to contact the course director on a regular basis to provide feedback on his/her well being and proper progress. Should these short communications not indicate a satisfying experience for the student, or should the internship institution not meet the ethical standards of a supportive work environment, the internship will be terminated and a new internship site will be identified.

Review Article

Biotechnology interns will have to write a mini review term paper related to recent advancements in a sub discipline of biotechnology of their choice. After consultation with the Program Director, students are expected to research the literature and compose an overview of at least 10 double spaced pages. The format of the review is as follows:

a) All margins (top, bottom, left and right) are to be no more than 1 inch.
b) The header is to contain only the student's name.
c) The footer is to contain only the page number.
d) The font is to be Arial and the font size is to be no larger than 12-point.
e) Citations are to be included throughout the text and referenced in a bibliography, located at the end of the body of the paper. The pages on which the bibliography is printed do not count toward the 10-page minimum paper length.

Potential topics of interest may include:

- Nature In Business - Recent Regulations On The Patenting Of Natural Processes And Compounds
- Proteomics Applications In Healthcare Nanotechnology and drug delivery
- Business Friendly Environmental Protection
- Recent Advancements In Forensic Biotechnology

Deadlines for submission of documents and presentation date:

Scheduling of the presentation date:

The date for the internship presentation has to be determined at least 2 weeks before the actual presentation date. Interns should make all efforts to select a presentation date and time when the internship mentor will able to attend the presentation as well. The date of the presentation is to be no later than the last week of classes (i.e., before finals week).

Mini-Review Term Paper:

The Internship Mini Review Term Paper has to be submitted at least 2 weeks prior to the day scheduled date of the presentation.

Internship Reports:

Internship reports have to be submitted at least 1 week prior to the day of the presentation.

Presentations:

Internship PowerPoint presentations are to be submitted at least 3 days prior to the day of the presentation.

GUIDE TO WRITING

http://grammar.ccc.commnet.edu/grammar/textonly.htm

INTERNSHIP PRESENTATIONS

- The Internship PPT presentations should NOT take longer than 30 minutes. On average, calculate about one minute per slide.

- A PPT is a visual AID, i.e. it should show mostly graphs and pictures that support the point of the talk

- Information should be well researched and presented, i.e. important issues should be emphasized and well explained.

- The presentation should be well organized and easy to understand. There should be a sense of flow throughout the presentation. Tell a story/answer a question.

- The presentation should be pleasing to the eye. Colors, graphics and animations should support the information, not playfully distract.

- Students should carefully consider if importing a video clip that was not home-made will leave enough space and time to demonstrate his/her own effort related to the subject.

- There should be no accumulation of text slides from which the student reads.

- All important slides should be included, such as a title slide (name of project, name of student, date) and a reference slide.
  If it doesn't take up too much space or destroy the design of the slide, the picture reference should be included on the slide. Otherwise, a reference number should be provided and the full reference should be listed (with the reference number) on the reference slide.

- References should be carefully evaluated, keeping in mind that many websites are NOT peer reviewed. On the USF Campus, the following address

- The student should speak freely and look at the audience.

** Student presentations will be evaluated by no fewer than two (2) faculty members and the internship mentor.

INTERNSHIP REPORTS:

- The paper should be typed (12-point font), single-sided, one inch margins.
- A good internship report can easily fill 30 double spaced pages. (excluding title page, bibliography and figures).
- The internship report is a formal written communication and should be free of jargon.
- The internship experience should be correctly outlined and documented
- Each internship report should provide an introductory paragraph and a summary paragraph, and a list of references.
- Subtitles should be used if a new aspect of the work is addressed in a new papragraph.
- Spelling and grammar should be correct.
- References should be carefully evaluated and have to be inserted at the appropriate place in the text. Do not use classroom lectures as references!
- Insert page numbers!
- Don't plagiarize! Papers should be checked using SafeAssign (available on Canvas under the control panel of each course).

Course References:

There is an outside reading assignment for this course:

Crucial Conversations: Tools for Talking When Stakes Are High by Kerry Patterson, Joseph Grenny, Ron McMillan and Al Switzler (Jun 18, 2002)

This book addresses several interpersonal skill deficiencies that arise in the workplace and how to avoid or defuse potential problems.

Academic Dishonesty and Disruption of Academic Process

Students attending USF are awarded degrees in recognition of successful completion of coursework in their chosen fields of study. Each individual is expected to earn his/her degree on the basis of personal effort. Consequently, any form of cheating on examinations or plagiarism on assigned papers constitutes unacceptable deceit and dishonesty. Disruption of the classroom or teaching environment is also unacceptable. This cannot be tolerated in the University community and will be punishable, according to the seriousness of the offense, in conformity with this rule.

Plagiarism

Plagiarism is defined as "literary theft" and consists of the un-attributed quotation of the exact words of a published text, or the un-attributed borrowing of original ideas by paraphrase from a published text. On written papers for which the student employs information gathered from books, articles, web sites, or oral sources, each direct quotation, as well as ideas and facts that are not generally known to the public at large, or the form, structure, or style of a secondary source must be attributed to its author by means of the appropriate citation procedure. Only widely known facts and first-hand thoughts and observations original to the student do not require citations. Citations may be made in footnotes or within the body of the text. Plagiarism also consists of passing off as one's own segments or the total of another person's work.

Punishment Guidelines

A student who commits plagiarism in connection with a submitted subject paper, assignment report, etc., shall receive an "F" with a numerical value of zero on the item submitted, and the "F" shall be used to determine the final course grade. It is the option of the instructor to fail the student in the course.

Appendix: Evaluation Forms

Assessment of Internship Performance and Outcome

Student: _____

Semester: _____

Date: _____

Internship Mentor (IM): _____

Organization/ Department: _____

Course Director (CD): _____

Internship Evaluation IM: mentor, CD course director		**excellent**	**good**	**fair**	**poor**	**NA**
Contribution of internship to the advancement of the company's or laboratory's overall goals	IM:					
Contribution to publishable articles or other documentation	IM					
Potential for extension to dissertation project	IM:					
Support of new academic of industrial collaborations	IM:					
Involvement of underrepresented Minorities	IM:					
Training in responsible conduct of research and project management	IM:					
Comments:						

Course Director: David Mitchell, Ph.D., dmitchel@health.usf.edu, (813) 974-2946

Student Evaluation IM: mentor, CD course director	% Weight	**% Score on 100 Scale below**	**Comments**
Time: Hours spent on-site (not including project preparation, final report and project presentation) meet or exceed the agreement	5%	IM:	
Preparedness: Preparedness to understand individual assigned tasks, i.e. reading protocols, instructions, websites or papers before practical involvement; participates in discussions	5%	IM:	
Documentation of progress: Recording of progress in laboratory notebook or internship journal: Completion, accuracy, organization, clarity	5%	IM:	
Internship report: Timely completion, accuracy, organization, clarity	35%	IM: CD:	
Internship PowerPoint Presentation design, clarity, oral presentation	35%	IM: CD:	
Literature mini review Demonstrates ability to research and evaluate advancements in science or technology, Summarizes essential findings with accuracy and clarity.	15%	CD:	

A = 92-100 A- = 89-91	B+ = 87-88 B = 82-86 B- = 79-81	C+ = 77-78 C = 72-76 C- = 69-71	D+ = 67-68 D = 62-66 D- = 59-61	F = < 59

Final Score (CD):

Comment:

Signatures: Internship Mentor: date:

Course Director: date:

Course Director: David Mitchell, Ph.D., dmitchel@health.usf.edu, (813) 974-2946

USF Morsani College of Medicine
School of Biomedical Sciences
INTERNSHIP PRESENTATION RUBRIC

Date: _____ Presentation Title: _____
Student: _____
Company / Mentor: _____

GENERAL KNOWLEDGE **score __/5**

QUALITY OF THE PROPOSED RESEARCH/ PROBLEM SOLVING **score ___/5**

UNDERSTANDING OF METHODOLOGY ` **score ____/5**

ORGANIZATION/ WRITTEN & ORAL COMMUNICATION **score ____/5**

DISCIPLINE-SPECIFIC KNOWLEDGE OF THE LITERATURE **score ____/5**

Evaluator:

OVERALL _____/25

PRESENTATION SCORING RUBRIC

Please assess student consistent with their current level of training

Explanation: The student will be scored in five distinct categories using a 5 (highest) to 1 (lowest) scale. The maximal points that can be earned will be 25. Minimal passing score in each category must average 3 or higher (5 is maximum), and the total average score from five categories must be 18 or higher. If remediation is required, the committee must specify, in writing, what the student must do to complete the examination successfully.

Scoring Guidelines

GENERAL KNOWLEDGE

5: shows comprehensive knowledge of general concepts
4: has good grasp of general concepts
3: shows adequate mastery of general knowledge, but missing some key ideas
2: shows poor knowledge of general concepts
1: has minimal understanding of general concepts

QUALITY OF THE PROPOSED RESEARCH/ PROBLEM SOLVING

5: clear understanding of questions; analysis is relevant, sophisticated and original. Moves easily to higher levels of detail. Shows ability to design and control experiments, and understands the limitations of each experiment. Convincingly explains the rationale, innovation, and impact of the proposed research.
4: responds well to the problem and analysis; goes beyond the obvious, can move to higher levels of detail. Experiments are designed and controlled well. Explains clearly the rationale, innovation, and impact of the proposed research is made.
3: adequate response but may contain factual, interpretive or conceptual errors. Requires additional prompts or information to proceed to higher levels of detail. Experimental design is adequate, and the rationale, innovation, and impact of the proposed research is explained adequately.
2: confuses concepts including those in the prompt; cannot process to additional levels even with additional information. Experiments are not well planned. unable to describe the rationale, innovation, and impact of the proposed research.
1: unable to proceed through prompting. Does not understand the fundamental concepts associated with the proposed research. Experiments poorly designed, and unable to describe the rationale, innovation, or impact of the proposed research.

UNDERSTANDING OF METHODOLOGY

5: detailed understanding of methodologies, rationale for use and outcomes. Can provide all detail of procedure
4: general understanding of methodologies, but may not be clear on overall outcomes. Can provide some detail of process
3: recognizes methodology, but overall application and rationale is lacking. Cannot provide detail of process
2: is aware of methodology but does not know process or application
1: does not recognize technique

ORGANIZATION/COMMUNICATION

5: shows clear organization in oral and written communication. Uses correct terminology. Speaks clearly.
4: shows organization in addressing the problem. Speaks well.
3: is not well organized in addressing the problem. Explanation tends to be verbal. Shows many instances of mis-use of terminology when discussing the concept
2: shows minimal organization and explanations are all verbal. Verbal communication is scattered
1: is unable to link ideas and concepts. Verbal communication is poor.

DISCIPLINE-SPECIFIC KNOWLEDGE OF THE LITERATURE

5: shows clear understanding of literature base. References supporting material when working through problems
4: show understanding of key papers . Occasionally references supporting material when working through problems
3: has understanding of discipline specific literature, but does not immediately recognize some key reports. Does not consistently reference other material while working through a problem
2: has poor grasp of the literature and does not recognize key individuals or studies. Does not reference supporting literature when working through the problems
1: has no knowledge of discipline specific literature base.

Evaluation of Writing Assignment

Student Name:_____
Course: GMS 6943 Mini Review **Date:**_____ **Final Score:** 0
Program Director: David Mitchell

Category	Scoring Criteria	Points
CONTENT (30%):	**The paper is clear and focused (10 points each).**	
• The review, as a whole, reflects thoughtful reasoning, consideration to detail and critical thinking.		……
• The information presented demonstrates details that go beyond common knowledge of the topic.		……
• Interpretation of the source material is accurate and supports the thesis of the review.		……
RESEARCH (30%):	**The text reflects a methodical approach to the collection of information and writing (10 points each).**	
• The writer uses source material properly without an over-reliance on one source or inappropriate paraphrasing.		……
• Paraphrased ideas include appropriate citations.		……
• Citations and references are clearly and appropriately documented in the Bibliography or as footnotes.		……
ORGANIZATION (20%):	**The organization, order, structure, and presentation of information assists the reader (5 points each).**	
• The thesis statement has a clear focus that reflects the paper's purpose and content.		……
• Thoughtful, creative, and appropriate transitions between sections clearly show a logical relationship and assembly of ideas.		……
* Paragraphs that introduce a new component of the article denoted by a short title.		……
• The conclusion/summary ties together the ideas presented within the review and poses potential questions that need to be addressed in the future.		……
CONVENTIONS (20%):	**The text adheres to standard writing conventions (e.g., spelling, punctuation, capitalization, grammar usage, etc) and applies conventions effectively to enhance readability (5 points each).**	
• Spelling is correct.		……
• Grammar and usage of abbreviations, lists and tables are appropriate.		……
• Paper includes name, title, page numbers, proper margins and appropriate use of headers and footers.		……
• Document meets 10 page length criterion.		……

Comments:

Score: 0

Late Penalty: 0

Final Score: 0