

**Graduate School of Public Health
Department of Human Genetics**

**HUGEN 2075
Genome Bioinformatics Thesis and Writing**

Spring 2022

Wednesdays and Fridays · 1:00 PM–2:50 PM

Wed Jan 12–Fri Mar 4, 2022

Location: Public Health 3128

2 Credits

COURSE DESCRIPTION

The thesis writing course provides students in the Master of Science in Genome Bioinformatics with skills requisite for writing documentation covering project and analysis relevance, scientific gaps, describing research opportunities to address those gaps, and summarizing and contextualizing research project results. It will improve their general scientific writing skills. Coming into the course, the students will have completed their research project analysis. At the end of the course the students will have completed their thesis document describing that analysis for review by the MSGB thesis committee.

COURSE GOALS

Upon completion of this course, the student will be able to:

- Perform an audience analysis in preparation for writing their thesis document
- Describe scientific project relevance, the gaps that exist in scientific knowledge related to the project, and how the project will attempt to address those gaps
- Describe the thesis project research methods and results
- Summarize research results and place those results in the context of what is already known in the field related to the project
- Describe the limitations of the project approach and the implications of those limitations
- Appropriately cite scientific literature in the project thesis document
- Critique their fellow students' thesis documents as peer reviewers

COURSE PREREQUISITES

Completion of or concurrent enrollment in HUGEN 2074 as a student in the Master of Science in Genome Bioinformatics program.

FACULTY

Course Director

Ryan L. Minster, Ph.D., M.S.I.S.

3118 Public Health

412-624-6928

rminster@pitt.edu

Office hours available upon request

CLASS ACTIVITIES

The course will be in two two-hour sessions per week for the first half of the term. Each session will be divided into a 50 min lecture, a 5 min break, and a 50 min activity. The lectures will be didactic but interactive reviews of topics relevant to scientific writing. The activities will include group discussions and peer critiques.

CANVAS INSTRUCTION

This course will use the University's Canvas site (canvas.pitt.edu). Each lecture will be accompanied by supporting material and further reading, all of which will be made available around the time of the lecture. It is the student's responsibility to check for, and read, this material. The instructors will use Canvas as the primary means of communicating with the students, who are expected to check the site on a regular basis throughout the semester.

Accessibility

Ensuring an accessible and pleasant experience to all users, regardless of disability, is a key focus of Canvas. The Canvas platform was built using the most modern HTML and CSS technologies and is committed to W3C's Web Accessibility Initiative and §508 (www.section508.gov) guidelines.

ASSESSMENTS

Evaluation will be based on the following assessments:

Syllabus Review (1)

There will be one online syllabus review. It will consist of 15 questions posed online through Canvas about the syllabus. The online syllabus review is passed by correctly answering 80% of its questions. *The initial deadline for this assignment Thu Jan 13. The syllabus review can be retaken until it is passed until Wed Jan 19 at 11:59 PM EST.*

Audience Analysis Assignment (1)

The audience analysis assignment consists of completing a form describing characteristics of the document's intended audience—their demographics, heterogeneity, similarity to the author, and motivation for reading.

Citations Assignment (1)

The citations assignment will consist of identifying six papers that a student thinks they will cite in their thesis document. They'll submit a Word document with each papers' citation, abstract, and a brief sentence or two of how the citation will be used in the thesis document—for example, supporting a claim or describing a method.

Writing Assignments (6)

There will be four writing assignments: (1) narrative outline of main elements and points of the thesis document, (2) first draft of the tables and figures that will be used in the thesis document, (3) first draft of the methods and results, (4) first draft of discussion, (5) first draft of the background, and (6) second draft of all completed components of the thesis document.

Peer Review Assignments (4)

There will be four peer review assignments: (1 and 2) peer reviews of each other's writing assignments for writing assignments 3 and 4 and (3 and 4) responses to those peer reviews.

Writing Behavior Self-Reflection Assignments (2)

There will be two writing behavior self-reflection assignments. After week 2, each student will choose two writing behavior exercises that they will use throughout their writing process. Once after week 5 and once after week 7, they will submit a paragraph reflecting on what they observe about their writing behavior, based on their two chosen exercises.

Case Study Engagement (7)

There will be seven case studies examined during the course. For each case study, students will submit two engagement questions or comments on the case study to facilitate discussion.

GRADING

Grading will be based on specifications grading, a competency-based grading model wherein all assignments are graded as pass/fail based specific criteria that align with the course learning objectives. The focus is on demonstrating mastery of the course objectives rather than earning a particular letter grade.

Each assignment is graded as pass/fail and may be resubmitted (after receiving feedback) as many as two times within one week of receiving feedback from the instructor to achieve a pass.

Upon completion of the course, letter grades for the course will be assigned based on the table below:

	Syllabus Review	Assignments	Case Study Engagements
A	pass	≤ 4 revisions overall and ≤ 2 per	≥ 6 case studies
B	pass	≤ 6 revisions overall and ≤ 2 per	≥ 5 case studies
C	pass	≤ 8 revisions overall and ≤ 2 per	≥ 4 case studies
D	pass	≤ 10 revisions overall and ≤ 2 per	≥ 4 case studies

For example, to receive an **A**, a student must
pass the syllabus review **and**
must pass all assignments with two or fewer revisions per assignment **and**
must pass all assignments with four or fewer revisions over all assignments **and**
must submitted engagement questions or comments for six or seven of the case studies.

Any student who
does not pass the syllabus review **or**
who requires more than ten revisions across all assignments **or**
who requires more than two revisions for any individual assignment **or**
who submits engagement questions or comments for fewer than four of the case studies
will be assigned an **F**.

COURSE MATERIALS

Required Software (*All available free online through the University*)

Microsoft Word or similar word processing program

Mendeley, EndNote, or similar citation program

iThenticate · students will register for iThenticate at the Office of Sponsored Programs (www.osp.pitt.edu/ithenticate-form) and will use it before submission of final documents for the class.

Required Textbook

The Scientist's Guide to Writing: How to Write More Easily and Effectively throughout Your Scientific Career
by Stephen B. Heard

Required Readings

Duke Graduate School Scientific Writing Resource
<https://sites.duke.edu/scientificwriting>

Optional Textbooks and Readings

Writing Science in Plain English
by Anne E. Greene

How to Write and Publish a Scientific Paper, 8th edition
by Barbara Gastel and Robert A. Day
Online free through Pitt Libraries

Cite Right: A Quick Guide to Citation Styles—MLA, APA, Chicago, the Sciences, Professions, and More, 3rd edition
by Charles Lipson

The Chicago Guide to Communicating Science, 2nd edition
by Scott L. Montgomery

Writing Science: How to Write Papers that Get Cited and Proposals that Get Funded

by Joshua Schimel
Online free through Pitt Libraries

Science Research Writing for Non-Native Speakers of English

by Hilary Glasman-Deal
Online free through Pitt Libraries

Houston, We Have a Narrative: Why Science Needs Story

by Randy Olson
Online free through Pitt Libraries

Eats, Shoots & Leaves: The Zero Tolerance Approach to Punctuation

by Lynne Truss

SCHEDULE

Date	Activity or Deadline
Wed Jan 12	Due: Case Study 1 Engagement Questions & Comments Read: <i>The Scientist's Guide to Writing</i> Preface; Part I, Chapters 1–2 pp. vii–ix, 1–14 Lecture: Introduction; Course Design Activity: Case Study 1
Thu Jan 13	Due: Syllabus Review
Fri Jan 14	Lecture: Audience Analysis Activity: Walk thru Audience Analysis Example
Mon Jan 17	Due: Download Pitt Thesis Template
Wed Jan 19	Due: Case Study 2 Engagement Questions & Comments Read: <i>The Scientist's Guide to Writing</i> Part III, Chapters 7–8, 16 pp. 55–78, 138–145 Lecture: Scientific Narrative Activity: Case Study 2
Thu Jan 20	Due: Audience Analysis Assignment
Fri Jan 21	Read: Read <i>The Scientist's Guide to Writing</i> Part II, Chapters 3–6; Part V, Chapter 21 pp. 15–54, 193–203 <i>Be sure to read exercises for Chapters 4–6</i> Read "Shitty First Drafts" from <i>Bird by Bird</i> by Anne Lamott https://wrd.as.uky.edu/sites/default/files/1-Shitty%20First%20Drafts.pdf Lecture: Writing Behavior Activity: Discuss Writing Behavior Exercises
Mon Jan 24	Due: Narrative Outline Writing Assignment Due: Submit Which Two Writing Behavior Exercises You Will Work With
Wed Jan 26	Read: <i>The Scientist's Guide to Writing</i> Part III, Chapter 12 pp. 99–119 Lecture: Tables & Figures Activity: Walk thru Example of Table & Figure Design
Fri Jan 28	Due: Case Study 3 Engagement Questions & Comments Read: <i>The Scientist's Guide to Writing</i> Part IV, Chapters 17–20; Part VI, Chapters 25, 27; Part VII, Chapter 28 pp. 147–190, 231–246, 260–269, 271–286 Lecture: Writing Style 1 Activity: Case Study 3

Date	Activity or Deadline
Mon Jan 31	Due: Register for iThenticate Due: Draft of Tables & Figures Writing Assignment
Wed Feb 2	Due: Case Study 4 Engagement Questions & Comments Read: <i>The Scientist's Guide to Writing</i> Part III, Chapter 11 pp. 89–98 Read: Read <i>Duke Graduate School Scientific Writing Resource</i> Introduction, Lessons 1–3 Lecture: Methods & Results Structure; Writing Style 3 Activity: Case Study 4
Fri Feb 4	Read: <i>The Scientist's Guide to Writing</i> Part III, Chapter 15 pp. 132–137 Lecture: Citing & Quoting Literature Activity: Walk thru Integration of Word & Mendeley
Mon Feb 7	Due: Methods & Results Draft 1 Writing Assignment
Wed Feb 9	Due: Case Study 5 Engagement Questions & Comments Read: <i>The Scientist's Guide to Writing</i> Part III, Chapter 13 pp. 120–125 Read: Read <i>Duke Graduate School Scientific Writing Resource</i> "Smart Revising," "Revising Your Manuscript in 7 Steps" Lecture: Discussion Structure; Revising Activity: Case Study 5
Thu Feb 10	Due: Citations Assignment
Fri Feb 11	Due: Case Study 6 Engagement Questions & Comments Read: Read <i>The Scientist's Guide to Writing</i> Part V, Chapters 22–23 pp. 204–221 Lecture: Peer Reviewing Activity: Case Study 6
Mon Feb 14	Due: Discussion Draft 1 Writing Assignment Due: Submit Methods, Results, Discussion for Peer Review 1
Tue Feb 15	Due: Self-Reflection 1 on Writing Behavior Exercises
Wed Feb 16	Read: <i>The Scientist's Guide to Writing</i> Part III, Chapter 10 pp. 84–88 Lecture: Introduction Structure Activity: Discuss Progress with Writing Behavior Exercises
Thu Feb 17	Due: Peer Review 1

Date	Activity or Deadline
Fri Feb 18	<p>Read: <i>The Scientist's Guide to Writing</i> Part V, Chapter 24 pp. 222–230</p> <p>Activity: Peer Review Discussion</p> <p>Lecture: Responding to Peer Review</p>
Mon Feb 21	<p>Due: Peer Review 1 Response</p> <p>Due: Introduction Draft 1 Writing Assignment</p> <p>Due: Submit Introduction, Methods, Results, Discussion for Peer Review 2</p>
Wed Feb 23	<p>Due: Case Study 7 Engagement Questions & Comments</p> <p>Read: <i>The Scientist's Guide to Writing</i> Part III, Chapter 14 pp. 126–131</p> <p>Lecture: Documenting Data & Code</p> <p>Activity: Case Study 7</p>
Thu Feb 24	<p>Due: Peer Review 2</p>
Fri Feb 25	<p>Read: <i>The Scientist's Guide to Writing</i> Part III, Chapter 9 pp. 79–83</p> <p>Lecture: Titles & Abstracts</p> <p>Activity: Build Abstract</p>
Mon Feb 28	<p>Due: Peer Review 2 Response</p>
Tue Mar 1	<p>Due: Self-Reflection 2 on Writing Behavior Exercises</p>
Wed Mar 2	<p>Read: <i>The Scientist's Guide to Writing</i> Part VI, Chapter 26 pp. 247–259</p> <p>Read: Instructions for Authors at <i>Science, Nature, Am J Hum Genet, Diabetologia, bioRxiv</i></p> <p>Lecture: Journal Instructions for Authors</p> <p>Activity: Discuss Writing Behavior Exercises, How Did They Go?</p>
Fri Mar 4	<p>Due: Thesis Document Draft 2 Writing Assignment</p> <p>Lecture: No Class</p> <p>Activity: No Class</p>

ACADEMIC POLICIES

Academic Integrity

All students are expected to adhere to the school's standards of academic honesty. Cheating/plagiarism will not be tolerated. The Graduate School of Public Health's policy on academic integrity, which is based on the University policy, is available online in the Pitt Public Health Academic Handbook. The policy includes obligations for faculty and students, procedures for adjudicating violations, and other critical information. Please take the time to read this policy.

Plagiarism

University policy:

<https://bc.pitt.edu/policies/policy/02/02-03-02.html>

Integrity of the academic process requires that credit be given where credit is due. Accordingly, it is unethical to present as one's own work the ideas, representations, words of another, or to permit another to present one's own work without customary and proper acknowledgement of sources.

A student has an obligation to exhibit honesty and to respect the ethical standards of the profession in carrying out his or her academic assignments. Without limiting the application of this principle, a student may be found to have violated this obligation if he or she:

10. Presents as one's own, for academic evaluation, the ideas, representations, or words of another person or persons without customary and proper acknowledgment of sources.
11. Submits the work of another person in a manner which represents the work to be one's own.

To avoid plagiarism, you must give "customary and proper acknowledgment of sources" by appropriately and clearly identifying which thoughts are yours and which are others, and appropriately citing your sources.

Sophisticated plagiarism detection software will be used in this course. If plagiarism is detected, you will automatically receive a grade of zero for that assignment and the incident will be reported, as required, to your Dean.

Covid-19 & Public Health

In the midst of this pandemic, it is extremely important that you abide by public health regulations and University of Pittsburgh health standards and guidelines. While in class, at a minimum, this means you must wear a face covering and comply with physical distancing requirements; other requirements may be added by the University during the semester. These rules have been developed to protect the health and safety of all community members. Failure to comply with these requirements will result in you not being permitted to attend class in person and could result in a Student Conduct violation. For the most up-to-date information and guidance, please visit coronavirus.pitt.edu and check your Pitt email for updates before each class.

Course Recording

This class or portions of this class will be recorded by the instructors for educational purposes. These recordings will be shared only with students enrolled in the course via Canvas and will be deleted at the end of the course.

To ensure the free and open discussion of ideas, students may not record classroom lectures, discussion and/or activities without the advance written permission of the instructor, and any such recording properly approved in advance can be used solely for the student's own private use.

Copyright Notice

These materials may be protected by copyright. United States copyright law, 17 USC § 101, *et seq.*, in addition to University policy and procedures, prohibit unauthorized duplication or retransmission of course materials. See Library of Congress Copyright Office and the University Copyright Policy.

Websites:

www.copyright.gov
www.provost.pitt.edu/faculty-handbook/ch3_uni_copyright

Disability Resources

www.studentaffairs.pitt.edu/drs

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and Disability Resources and Services, 140 William Pitt Union, 412-648-7890 as early as possible in the term.

Sexual Misconduct, Required Reporting, & Title IX

The University is committed to combatting sexual misconduct. As a result, you should know that:

University faculty and staff members are required to report any instances of sexual misconduct, including harassment and sexual violence, to the University's Title IX office so that the victim may be provided appropriate resources and support options. What this means is that as your professor, I am required to report any incidents of sexual misconduct that are directly reported to me, or of which I am somehow made aware.

There are two important exceptions to this requirement about which you should be aware:

1. Professional, licensed counselors and pastoral counselors who provide mental-health counseling to members of the University community (and including those who act in that role under the supervision of a licensed counselor) are not required to report any information about an incident to the Title IX coordinator without a victim's permission.

Individuals who work or volunteer on-campus in the Student Health Service, including front desk staff and students, can generally talk to a victim without revealing any personally identifying information about an incident to the University. A victim can seek assistance and support from these individuals without triggering a University investigation that could reveal the victim's identity or that the victim has disclosed the incident, unless required by Pennsylvania law.

For additional information on confidentiality, please contact SHARE at the number below.

2. An important exception to the reporting requirement exists for academic work. Disclosures about sexual misconduct that are shared as part of an academic project, classroom discussion, or course assignment, are not required to be disclosed to the University's Title IX office.

If you are the victim of sexual misconduct, Pitt encourages you to reach out to these resources:

- Title IX Office: 412-648-7860
- SHARE @ the University Counseling Center: 412-648-7930 (8:30 AM–5:00 PM Mon–Fri) and 412-648-7856 (after business hours)

If you have a safety concern, please contact the University of Pittsburgh Police, 412-624-2121.

Other reporting information is available at:

www.diversity.pitt.edu

Diversity & Inclusivity

The University of Pittsburgh Graduate School of Public Health considers the diversity of its students, faculty, and staff to be a strength and critical to its educational mission. Pitt Public Health is committed to creating and fostering inclusive learning environments that value human dignity and equity and promote social justice. Every member of our community is expected to be respectful of the individual perspectives, experiences, behaviors, worldviews, and backgrounds of others. While intellectual disagreement may be constructive, no derogatory statements, or demeaning or discriminatory behavior will be permitted.

If you feel uncomfortable or would like to discuss a situation, please contact any of the following:

- the course director or course instructor
- the Pitt Public Health Associate Dean for Diversity and Inclusion, Dr Tiffany Gary-Webb, at 412-624-3131 or tgary@pitt.edu
- the University's Office of Diversity and Inclusion at 412-648-7860 or at www.diversity.pitt.edu