

Epidemiology PhD Student Handbook

I. INTRODUCTION

- A. Philosophy of the Program
- B. Basic requirements
- C. Residency requirement
- D. PhD Advisors
- E. Full time status requirements
- F. General chronology for progress and expectations
- G. Yearly status review

II. COURSEWORK FOR THE PHD AND RECOMMENDED COURSE OF STUDY

- A. Public health core
- B. Required epidemiology and biostatistics core courses
- C. Epidemiology electives
- D. Research seminar
- E. Coursework for the biostatistics minor
- F. Coursework for the second minor area of concentration
- G. Other electives
- H. Dissertation research credits
- I. Course waivers
- J. Grading

III. STUDENT RESOURCES

- A. Financial Aid
- B. Travel Funding
- C. Research Funding
- D. Teaching Experience

IV. THE COMPREHENSIVE QUALIFYING EXAMINATION

- A. Overview
- B. Eligibility for taking the exam
- C. Timing and structure of the exam
- D. Preparation for the exam Examination
- E. Grading

V. THE MINOR EXAM CHAPTER

VI. DISSERTATION OVERVIEW

- A. Purpose
- B. Timing
- C. Process

VII. APPENDICES

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Every student should become familiar with this manual and all of the above materials. It is the responsibility of each student to make sure that all academic requirements and deadlines are met. Whenever in doubt, contact the School of Public Health Graduate Program Office for further information.

I. INTRODUCTION

A. Philosophy of the Program

The PhD program is a degree given within an academic concentration in Public Health. While each student chooses a major (Epidemiology) and two minor concentrations (Biostatistics and other), the PhD degree is granted in Public Health and not in an individual concentration. The course of study is focused on (1) the development of an advanced research-oriented competence in a major area in Public Health, (2) an understanding of the approaches and issues in a minor area, and (3) a familiarity with the principles and practices of Public Health in general.

B. Basic Requirements

Doctoral students have their major area of concentration in epidemiology, a minor concentration in biostatistics, and a second minor concentration of their choice. Minimal expectations are 24-credit hours of course work in the major concentration, 12 credit hours in biostatistics, 12 credit hours in a second minor area, and completion of three 1-credit doctoral seminars. Each student takes a comprehensive written examination. Upon the successful completion of the qualifying examination the student undertakes an 18-credit dissertation. A proposal outlining the dissertation must be presented orally to the dissertation committee prior to the commencement of significant work on the dissertation.

C. Residency Requirement

A doctoral candidate must spend the equivalent of at least one continuous academic year of full-time graduate work (nine credits per semester) in residence at the University. The residency year must be either in a Fall/Spring or Spring/Fall sequence. During this year, the student must spend some part of each week physically on campus. Doctoral students enrolled in recognized off-campus programs may satisfy this regulation at their off-campus site.

D. PhD Advisor

After acceptance into the PhD program and prior to starting the program in September, students will be assigned an academic advisor. Once an advisor is assigned, it is important for the student to work closely with the advisor and other relevant faculty to develop a study plan which clearly documents how the academic program will be focused. The academic advisor assigned at the beginning of study may or may not be selected as the student's dissertation chair, who will then serve as the student's primary advisor. Students are encouraged to meet with all members of the Epidemiology faculty during their first year(s) in the program to identify faculty with common research interests and active research projects to which the student may contribute.

E. Full-time status requirements

Information regarding academic status can be found at the website for the Graduate School in the **Frequently Asked Questions** section (<http://www.umass.edu/gradschool/current-students/faq>), in the **Graduate Student Handbook**: <http://www.umass.edu/gradschool/policies-forms/graduate-student-handbook>, and the **Graduate School Bulletin**: <http://www.umass.edu/gradschool/policies-forms/graduate-school-bulletins>

In brief, students enrolled in ≥ 9 credits/semester are considered full-time. In addition, doctoral students are considered full time if they: 1) are preparing for the comprehensive exams; or 3) have passed their comprehensive exams, are paying program fees, and are working on their dissertation; in these instances, the student's faculty advisor needs to certify in writing to the Graduate Program Director that the work is equivalent to the effort of a full time student for each applicable semester.

F. General Chronology of Progress and Expectations

The following lists the major requirements for the PhD degree in Epidemiology and a general order in which they can and should be completed. Some deviation from this order of events is acceptable, but should students should work with their advisor and/or dissertation chair ahead of time to get approval where required.

- Complete course work in Epidemiology and Biostatistics required for Comprehensive Exam
- Meet with advisor to plan area for second minor concentration and relevant course work for minor
- Take Written Comprehensive Exam
- Identify dissertation chair
- Meet with dissertation chair to determine dissertation topic
- Meet with dissertation chair to determine area of focus for minor exam chapter
- Complete any outstanding minor coursework
- Meet with dissertation chair to determine dissertation committee
- Meet with dissertation chair to plan 3 dissertation papers
- Prepare 1-page dissertation prospectus summarizing 3 papers
- Prepare outline for minor exam chapter within one year of completion of minor course work
- Meet with dissertation committee for approval of 3 paper topics
- Meet with dissertation committee for approval of minor exam chapter outline (after approval, submit completed chapter within in year)
- Submit minor exam chapter to dissertation committee for grading
- Complete dissertation proposal
- Oral dissertation proposal defense
- Conduct dissertation research
- Schedule committee meetings as needed
- Final dissertation defense
- Submission of required paperwork to the Graduate School for graduation

G. Yearly status review

By May 1 of each academic year, the student will complete the student Progress Report detailing course work completed in the previous year and/or progress made towards completing the dissertation. The Progress Report should be submitted to the student's advisor. Progress reports from all PhD students will be reviewed by the Epidemiology faculty in May, and feedback will be provided as appropriate. Students who are considered as not having made sufficient progress over the past year will be notified of the concerns of the faculty in writing. Students will then work with their advisor to address concerns in the coming year. Students who demonstrate insufficient progress repeatedly will be brought to the attention of the Graduate Program Director and Department Chair. An extended period of insufficient progress may adversely impact funding and/or the student's ability to remain in the PhD program.

H. Statute of Limitations

The Statute of Limitations (SOL) is the period within which all degree requirements must be completed. It is determined during the acceptance process using the following guidelines: Doctoral degrees for new doctoral students starting in or after Summer 2009, the SOL is set at six (6) years prior to achieving candidacy and five (5) years once candidacy is achieved.

II. REQUIREMENTS FOR THE PHD AND RECOMMENDED COURSE OF STUDY

A. Public Health Core (9 credits)

Students must demonstrate mastery of introductory concepts in epidemiology, biostatistics and at least one of the other core disciplines of public health (environmental health sciences, community health education and health policy and management).

- a) BIOSTATS 540: Introductory Biostatistics (or equivalent)
- b) EPI 630: Principles of Epidemiology
- c) One of the following:
 1. EHS 565: Environmental Health Practices
 2. HPP 601: Application of Social and Behavioral Theories in Public Health Interventions
 3. HPP 620: Introduction to the US Healthcare System

B. Epidemiology and Biostatistics Core (18 credits)

These courses provide students with a foundation in epidemiology and biostatistics. Students are required to complete these courses prior to taking the Comprehensive Exam, with the exception of EPI 631, which should be taken after completing the Comprehensive Exam.

- a) EPI 631: Scientific Writing to Thesis, Dissertation and Grant Proposals
- b) EPI 632: Applied Epidemiology
- c) BIOSTATS 640: Intermediate Biostatistics (or equivalent)
- d) BIOSTATS 691F: Data Management
- e) EPI 700: Analysis of Epidemiology Data
- f) EPI 737: Intermediate Methods in Epidemiology

C. Epidemiology Electives (12 credits)

At least 12 credits of elective courses in epidemiology must be completed. Independent Studies supervised by Epidemiology faculty may be counted as epidemiology electives. However, no more than 6 credits of independent study are allowed. Students must complete 12 credits of epidemiology electives prior to taking the Comprehensive Exam. As discussed below, up to 6 credits may be waived due to prior equivalent coursework. Examples of courses considered Epidemiology Electives are as follows:

- EHS 600: Molecular Epidemiology
- EPI 633: Infectious Disease Epidemiology
- EPI 634: Nutritional Epidemiology
- EPI 635: Psychosocial Epidemiology
- EPI 636: Epidemiological Assessment
- EPI 639: Cancer Epidemiology
- EPI 640: Reproductive Epidemiology
- EPI 690ew: Epidemiology of Women's Health

D. Research Seminar (3 credits)

At least 3 credits of doctoral seminar must be completed (EPI 892 or EPI 892bw; 1 credit per semester). This upper level seminar explores advanced research methods and current research issues in public health. Given that (a) public health professionals often work in interdisciplinary teams and (b) that knowledge of a broad range of methodological approaches is necessary to address evolving and changing research priorities, the doctoral seminar offers a unique opportunity for the advanced study of research issues and methods. At least one (1) credits of doctoral seminar must be completed prior to taking the Comprehensive Exam.

E. Biostatistics Minor Courses (6 credits)

A Minor concentration in Biostatistics is required for the PhD in Epidemiology. The courses taken as part of the Epidemiology and Biostatistics Core (BIOSTATS 640 and EPI 700) must be completed prior to taking the Comprehensive Exam. In addition to BIOSTATS 640 and EPI 700, 6 additional credits in biostatistics must be taken. These credits do not need to be completed prior to taking the Comprehensive Exam. Examples of courses considered appropriate for the Biostatistics minor are as follows:

- BIOSTATS 690C Introduction to Causal Inference
- BIOSTATS 690R Advanced R for Data Science (2 credits)
- BIOSTATS 697G: Bayesian Computation in Biostatistics
- BIOSTATS 740: Analysis of Mixed Models and Longitudinal Data
- BIOSTATS 743 Analysis of Categorical Data in Public Health
- BIOSTATS 748 Applied Survival Analysis

Courses offered outside SPHHS may meet this requirement. Examples of such classes have included (check SPIRE for updated information):

- EDUC 637 Nonparametric Statistical Analysis in Ed and Psych
- EDUC 652 Mixed Methods Research
- EDUC 731 Structural Equation Modeling
- EDUC 771 Applied Multivariate Statistics 1
- STAT 525 Regression and ANOVA
- STAT 535 Statistical Computing
- PSYCH 640/1 Statistical Inference in Psychology I/II
- PSYCH 891W Intro to Structural Equation Models
- PSYCH 891 Hierarchical linear modeling

The student's mastery of the material in the biostatistics minor is evaluated as a component of the comprehensive exam, integrated within the 4 sections of the exam but primarily in the Data Analysis Section.

F. Second Minor Concentration (12 credits)

A second minor in an area relevant to the student's area of research must be completed. These courses should fit within a unifying theme, and be relevant to the dissertation topic. No more than 6 credits of the coursework for the second minor may be from Independent Studies. The courses should be graduate level courses (see the grad school handbook for exceptions) in a focused area to constitute their second minor, and should be chosen in consultation with the student's advisor. These credits do not need to be completed prior to taking the Comprehensive Exam. Examples of minor concentrations completed by recent students include: Human reproduction; Nutrition; Genetics; and Physical activity and women's health, as shown below:

Minor area: *Human reproduction*

VASCI 521, Physiology of Reproduction
HPP 582, Family Planning and Women's Health
EPI 591L, Reproductive Epidemiology
BIOL 568, Endocrinology

Minor area: *Genetics*

MICROBIOL 330, Microbial genetics
MICROBIOL 590s, Parasitology
MICROBIOL 585, Concepts Molecular Genetics
MICROBIOL 690T, Statistical Genetics

Minor area: *Nutrition*

NUTR 640, Pub Health Nutrition
NUTR 577, Nutrition Problems in US
NUTR 741, Methods in Nutrition Research
EPI 634, Nutritional Epidemiology

Minor area: *Physical activity & women's health*

EPI 690EW, Epidemiology of Women's Health
HPP 582, Family Planning and Women's Health
KIN 470, Exercise physiology
KIN 571, PA and Women's Health

G. Other elective (3 credits)

An additional 3 credits of graduate coursework must be completed prior to completion of the degree. These credits may be taken in any field relevant to the student's research interests and do not need to be completed prior to the Comprehensive Exam.

As of fall 2018, EPI 690 R, Research Methods for Epidemiology may be required for matriculating PhD students as a prerequisite for BIOSTATS 690F, Data Management and is counted toward the 'other elective' requirement (Current as of Aug 17, 2018). Students are advised to speak with their advisor regarding this class.

H. Dissertation Research (18 credits)

Students are required to register for 18 credits of dissertation research before graduating, and may start registering for dissertation credits upon successful completion of the Comprehensive Exam.

I. Waiver of Courses Due to Previous Training in Epidemiology

Students with a previous Master's degree in Epidemiology may petition the faculty to waive required courses and their accompanying credits, given the requirement will have already been met. Courses that may be waived (e.g., due to previous equivalent course completion) include the Public Health Core, Epidemiology and Biostatistics Core, up to 6 credits of Epidemiology Electives and up to 6 credits in the second minor concentration. To be considered for waiver, previous coursework must have been completed within 10 years of the student's request and must not have been already applied to towards completing another requirement for the PhD in Epidemiology.

To petition for a waiver of a specific course, the student must submit a written request to have the course and credits waived, along with the syllabus for the prior course, to the faculty for consideration. Since this coursework is an essential part of the doctoral plan of study, students waiving course requirements will still be responsible for this material on the comprehensive exam.

J. Grading

Students must take all required coursework, except for the Doctoral Seminar (EPI 892), for a letter-grade. To earn credit for a course, students must earn a B- or better.

III. STUDENT RESOURCES

A. Financial Aid

Financial aid may be available through either the University or through individual Departments. There are several possibilities for obtaining financial support, including graduate assistantships (i.e., research or teaching assistantships), the Dean's PhD Fellowship program, or other scholarships (e.g., the Corinne A. Johnson Memorial Scholarship). Information about financial aid opportunities at SPHHS can be found at the following website: <https://www.umass.edu/sphhs/graduate-programs/graduate-financial-aid>.

Below is the link to the University Financial Aid website, which has detailed information on these and other financial aid opportunities (e.g., federal loan programs): <http://www.umass.edu/umfa/>

B. Research and Teaching Assistantships

Graduate research and teaching assistantships may be available and typically entail 10-20 hours per week paid according to a union negotiated pay scale. Further, graduate assistantships that are at least 10 hours per week include a benefit of tuition and fee waivers for at least one semester. Whether the fee waiver is for one or two semesters depends upon the number of hours worked (e.g., as of 2014, students working 20 hours/week for a full semester qualify for a full year tuition waiver). Additional information about graduate assistantships in the Department can be found at

<https://www.umass.edu/sphhs/epidemiology/prospective-students/financial-aid> as well as at the SPHHS website (<https://www.umass.edu/sphhs/graduate-programs/graduate-financial-aid>) and at the Graduate School website (<http://www.umass.edu/gradschool/funding-support/graduate-assistantship-office/policies-and-procedures>).

Depending upon the student's background and skill set, they may qualify for assistantships in other departments/schools as well (e.g., nursing, nutrition, psychology); check these departmental websites for possible opportunities.

C. Travel funding

There are several potential sources of funds to defray the cost of attending professional scientific meetings

- The Department of Biostatistics and Epidemiology: Students who are presenting their research at a meeting, in either an oral or poster presentation, are eligible for up to \$500 per academic year. Students who are not presenting at the meeting are eligible for reimbursement of up to \$200 per academic year. To apply for these funds, students should submit a **BioEpi Student Travel Grant application** to the Biostatistics and Epidemiology Department Chair. A copy of this form can be found in the appendix. Students receiving the funds should keep a copy of this signed form and all travel receipts.
- UMass Graduate School: Funding of up to \$300/student also is available through the Graduate School for students who will be presenting their research at a conference. The Graduate Program Director in the Department of Biostatistics and Epidemiology administers these funds. Funds are usually awarded on a first come-first serve basis, so it is important to submit a request for these funds as soon as your abstract has been accepted for presentation.
- Travel funds also may be available through the student's research mentor; please be sure to check with your faculty mentor regarding funding for travel.

Prior to the trip, students must complete an online **pre-travel registry** using their UMass username and password (<https://travelregistry.umasscs.net/>). Students should then complete a **Travel Reimbursement Form**, which requires all original receipts, and can be found at:

https://www.umass.edu/sphhs/sites/default/files/SPHHS%20Travel%20and%20Expense%20Reimbursement%20Form%20010117_3.pdf

See Deb Osowski, the BioEpi Administrator, for any questions related to travel reimbursement.

Postdoctoral fellows are ordinarily not eligible for the Biostatistics and Epidemiology Department travel funds, as their travel funding would typically come from their mentor's research grant. However, if funding is still needed, their faculty mentor may request of the Epidemiology Program that an exception to this policy be made.

D. Research funding

Research funding is generally available through a specific faculty member's research grant. Available research assistantships are posted on the SPHHS financial-aid website noted above. Also, if you are particularly interested in the research carried out by a specific faculty member, we would encourage you to contact that faculty member directly to find out about any current or pending research funding opportunities. (Note, there may also be unfunded opportunities available that, although they do not provide financial support, may provide you with valuable research experience).

The National Institutes of Health also fund pre-doctoral training for doctoral students, e.g., through F31 Fellowships. See the link below to explore these potential, though very competitive, grant opportunities. Also, interested students should be sure to discuss this potential option with their advisor. http://grants.nih.gov/training/F_files_nrsa.htm

E. Teaching experience

Obtaining teaching experience is very important for doctoral students. There are a number of opportunities to become a teaching assistant either for courses taught by the Biostatistics and Epidemiology Department, or as part of the undergraduate program in public health. Further, there are occasional opportunities to either TA or serve as an instructor for courses offered online through the University/SPHHS continuing education program.

When teaching assistants are needed for any Biostatistics or Epidemiology course, their availability is posted on the following website for one week: <https://www.umass.edu/sphhs/career-opportunities>

We recommend you bookmark this website and check it weekly. Application instructions are provided on the website. Most teaching assistantships are for 10 hours per week for a semester. If you are interested in serving as a teaching assistant for a specific course, you might email the instructor directly to let them know and to find out if any opportunities are upcoming.

IV. THE COMPREHENSIVE QUALIFYING EXAMINATIONS

A. Overview

All PhD students must pass the written Comprehensive Exam prior to beginning serious work on their dissertation. The PhD Comprehensive Qualifying Exam in Epidemiology is intended to be primarily integrative rather than a retesting of specific material already covered in course examinations.

B. Eligibility to take the Exam

Students are eligible to take the Exam after they have completed the following:

1. Public Health core classes: BIOSTATS 540 (or equivalent)
 EPI 630
 + one of the following: EHS 565, HPP 601, HPP 620
2. Epidemiology and Biostatistics core: EPI 632
 BIOSTATS 640 (or equivalent)
 BIOSTATS 691F
 EPI 700
 EPI 737
3. 12 credits of elective courses in epidemiology
4. At least 1 semester of doctoral seminar (EPI 892a or EPI892BW)
5. At least 2 semesters of residency in the doctoral program

Under extreme circumstances, students may request minor deviations from the eligibility requirements above. Any deviation from the requirements describe above must be approved by the entire Epidemiology faculty.

C. Timing and Structure of the Exam

The Comprehensive Exam tested student's knowledge, understanding and ability to apply fundamental concepts in Epidemiology and Biostatistics. All material covered in course work required for the exam may be included on the Exam.

Timing and Structure of Exam

The PhD Comprehensive exam is given once per year, generally at the end of August, held over consecutive days. The exam consists of four sections, each of which is weighted equally. These sections are Study Design, Study Critique, Short Answer, and Data Analysis. The logistics/timing of the sections may vary from year to year. Generally, it has lasted two days with 2 sections taken each day. However, in 2018, the exam was held over four days – one day per section – starting at 9am each day, with students given approximately 3 hours each day. While course material from any of the required courses may be included in any question, in general each section focuses largely on materials from one of the epidemiology methods courses, as follows:

- Study design: EPI 630
- Study critique: EPI 632
- Short answer: EPI 737
- Data analysis: EPI 700, BIOSTATS 540, BIOSTATS 640

Students will be made aware of which questions are scheduled for which days ahead of time. The faculty members who developed the questions on a given day will be available from approximately 9:00am-10:00am to clarify any questions that arise.

For the Study Critique section, students are asked to read a specific published paper prior to the examination. One week prior to the exam, students will receive the paper for the study critique. This paper will be available in hard-copy through Deb Osowski's office and will also be sent to students electronically via their university email address. Students may not discuss or consult with anyone regarding the study and related issues. It is neither expected nor appropriate to look up any other material on the subjects of the papers or any reviews or critiques of the papers. The marked up copy of the paper may not be brought to the exam. However, a fresh copy of the critique paper will be provided at the time of the exam.

For the Data Analysis students may bring an 8.5"x11" sheet of paper (both sides) with formulas/text relevant to the Data Analysis exam. Any needed reference tables (e.g. normal distribution) will be provided as part of the exam.

Allowable materials

The Exam is closed book. Students are asked not to bring books or papers or other class-related materials, aside from a purse/small bag and a calculator, into the exam room. Students may use a laptop to complete the exam instead of hand-writing their answers. A USB drive will be provided to each student to write and submit answers to the department faculty. Students may have cell phones in case of emergencies but phones should be muted and not used during the exam.

Academic Honesty

Students do not need to erase any computer files from laptops used for the exam but it is expected that they will not refer to them. You are expected to follow the Graduate Student Honor code found in the Graduate Student Handbook, as follows: *It is expected that all graduate students will abide by the Graduate Student Honor code which reads as follows: We, the graduate students of the University of Massachusetts at Amherst, hereby affirm that graduate students do not lie, cheat, or steal, or willingly tolerate those who do. We do not plagiarize the work of others, falsify data, or knowingly allow false data to be generated or published with our compliance. We do not harass or discriminate against others for reasons of race (phenotype), creed, sexual orientation, or political belief, or keep faith with those who do.*

Blinding

Grading of the Exam is blinded. Students will be assigned an ID name by the Department Administrator prior to starting the Exam. This ID name should be used on all Exam answers.

D. Preparation for the Exam

A meeting to discuss the examination will be scheduled for the spring semester prior to the Exam. Any student interested in taking the exam the coming fall may attend. This meeting will cover study strategies as well as review the general structure and expectations for the Exam. Students will also be provided with a complete copy of the previous year's exam at this time for reference, but not with an answer key. To prepare for the exam, students have often found it useful to form study groups with one or more of their peers also taking the exam.

E. Grading of the Exam

Faculty members will provide Exam results to students within two weeks from the end of the examination period. Students will be notified of the examination results in writing by letter in their campus mailboxes, along with an email notification indicating that results are available. At this time results will also be forwarded to the GPD. After three days, results can also be emailed to the student's university email address, upon request.

Each section is graded by the faculty member writing the question, along with one additional faculty reader. Individuals writing and grading each question are provided to students ahead of time. After faculty grade individual sections, program faculty as a whole meet to discuss exam results and determine final grades for each section.

Each section of the qualifying exam is graded separately as pass with distinction, pass, conditional pass, or fail. If a student receives a pass with distinction or pass, they are considered to have passed the exam and may move forward with their dissertation preparation. Students who receive a conditional pass will be expected to complete additional coursework and/or training, as specified in their exam results. After the conditions stated in the Exam results are met, the student is considered to have passed and no additional action is required. Examples of conditions may include completion of additional coursework, redoing or discussing question with faculty or completion of additional seminar work.

If one or more sections are failed, a single re-examination of the failed section(s) is/are allowed. The retake will occur the next time the qualifying exam is regularly scheduled, generally one year later. Failure to pass any previously failed section(s) on the second attempt results in an automatic dismissal from the Doctoral Program. Students failing one or more sections have up to 2 years to retake the exam before dismissal from the PhD program.

A student who does not pass the qualifying exam on the first or second attempt may request transfer from the PhD program to the MS program in Epidemiology (non-thesis track) prior to dismissal from the program. In this situation, the advisor will review the student's transcript to determine that all course requirements for the MS degree (non-thesis track) have been met. In addition, the faculty will re-grade the student's most recently qualifying exam to determine if the student has demonstrated sufficient mastery of the material consistent with expectations for the MS degree. If the faculty unanimously determine that the student has passed the exam at a Master's level, the student will be judged to have passed a Master's General Examination. The date of passage of the exam will then be the date the exam was re-graded. The advisor will submit a memo requesting the transfer to the MS program to the GPD. Students are then required to complete any outstanding coursework required for the MS degree prior to awarding of the MS degree.

V. THE MINOR EXAM CHAPTER

After successful completion of the Comprehensive Exam, students should identify a Dissertation Committee Chairperson and work with the Chairperson to determine a topic for the dissertation. The Committee Chair must be full-time graduate faculty in Epidemiology. For further information on the dissertation and guidance on selecting a topic, see the section below (IV. Dissertation). After the dissertation chair and topic have been selected, students should meet with their dissertation chair to determine an area of focus for the Minor Exam Chapter. This chapter should provide a comprehensive background (including etiology and prior research in the area) of the student's planned dissertation research area, may be used as the first chapter of their dissertation proposal in some form, and should be of 'publishable quality'.

Within 1 year of completing both the comprehensive exam and minor area coursework, students will submit a proposed topic and outline for the paper to be approved by the dissertation committee. The student should receive minimal input on the paper prior to submitting a final version, with specifics to be at the discretion of the dissertation chair. The acceptability of the submission will be evaluated by the dissertation committee. The student must complete the paper within a maximum of 1 year from when the proposed outline is approved. Failure to do so will result in a review of the student's status in the program by the Epidemiology Faculty. The minor paper must be completed prior to the dissertation proposal defense.

VI. DISSERTATION

A. Purpose

The dissertation represents the culmination of the PhD degree program. It is intended to be a demonstration of the student's ability to conceive, plan, execute, and analyze a substantial research project. The dissertation must contain original research. In the process the student is expected to develop both methodological and technical skills and to establish professional working relationships with the members of the dissertation committee. In addition, the student is expected to demonstrate considerable skill in communicating the results of the research at the final doctoral oral examination (dissertation defense).

B. Timing

Work on the dissertation normally begins only after successful completion of the comprehensive examinations (written). If dissertation work is begun prior to that time, the student is "at risk" for any investment of time or resources and this premature involvement constitutes neither endorsement of the project nor support for its continuation. Under no circumstances may the student register for dissertation credits prior to successfully completing the comprehensive examinations. The number of required dissertation credits in the School is eighteen (18) and is the number of dissertation credits required by the Graduate School. A student can register for a maximum of nine dissertation credits a semester.

If a student elects to begin work on a dissertation project prior to completion of the Comprehensive Exam, this work must be undertaken with the knowledge and consent of all faculty members who are likely to be included on the Dissertation Committee. The student should work closely with his/her advisor to make sure all appropriate faculty have a chance to contribute to the research and serve as coauthors prior to the submission of any work for publication.

C. Process

C1. Dissertation Committee

Planning for the dissertation research usually begins with the informal exploration of the topics that are of interest to the student and to a faculty member who is likely to be named as chair of the dissertation committee. Once a specific topic or problem has been defined, the next step is to obtain a formal commitment from a faculty member in the major area of concentration to chair the committee. In conjunction with the Committee Chair, other committee members should be recruited who can provide the expertise to help carry out the research project.

The committee must meet the following guidelines:

- a. Be composed of no less than three (3) full-time graduate faculty from UMass.
- b. The Committee Chair must be full-time graduate faculty in Epidemiology.
- c. One committee member must be faculty in Epidemiology.
- d. One member must be a graduate faculty member from another program or department. It is highly recommended that the committee include a faculty member with substantive knowledge in the specific research area most relevant to the dissertation.
- e. It is highly recommended that the committee includes a Biostatistics faculty member, but is not required.
- f. At least two members must have their primary appointment in the School.

Also, additional persons who are not UMASS graduate faculty or who are adjunct graduate faculty from outside the University may be appointed only as (non-voting) consultants. Once the Dissertation Committee Chair and other

Members are determined, students should provide this information to Diane Wolf (dwolf@schoolph.umass.edu) and/or the Department Graduate Program Director (Dr. Paula Stamps, stamps@schoolph.umass.edu) by email, and copy their Committee Chair on the email. Subsequently, the Graduate Program Director will submit the Committee Membership to be filed with the Graduate School.

C2. Dissertation Pre-proposal /one-page prospectus

After the dissertation committee chair and members have been formally named, but prior to completing the Dissertation Proposal, students are expected to complete a pre-proposal. The pre-proposal is a concise description of the planned dissertation work, and should describe the overarching theme linking the individual dissertation papers, provide the rationale for the proposed research and basic methods, and briefly outline each of the individual papers. The pre-proposal should be roughly one page in length and provide sufficient detail for the dissertation committee to assess feasibility and suitability of the dissertation topic. Approval of the pre-proposal by all committee members is required. As this document is not required by the graduate school there are no specific formatting requirements.

C3. The Dissertation Proposal

After the one-page prospectus has been approved, students are required to satisfactorily develop and defend their Dissertation Proposal. The Dissertation Proposal should be developed in collaboration with, and must be approved by, the Dissertation Committee. Once approved, it is provided by the student to the Epidemiology Program Administrative Assistant to be added to the School files. As of this date, there are no Graduate School regulations regarding the length of time between the time the proposal is filed with the Graduate School and the time of the final oral defense. Students are encouraged to work closely with their Dissertation Committee for planning of the Proposal Defense.

Developing the Dissertation Proposal

Students should work primarily with the chair in developing the proposal and in consultation with the other committee members for their input. The proposal generally includes three chapters, each presenting one of the three papers to be included in the dissertation.

The formatting requirements for the Written Dissertation Proposal do not specify section headings or an outline. However, a recommended format for each chapter of the proposal is presented below. Because multiple chapters may include the same exposure or outcome, the same study population, etc, students and chairs may decide to shorten specific sections of individual chapters in order to avoid unnecessary redundancy in text:

1) Abstract

- A short synopsis of the background, significance, aims, methods, and anticipated outcome of the research

2) Statement of the Problem

- A background statement outlines the nature of the problem to be studied and indicates the contribution the study will make.

3) Brief Review of the Literature

- A brief review of the literature should include at least several primary articles or recent review papers and should document the major issues to be addressed in the proposed project. It is expected that this section will define the conceptual background of the project.

4) Research Questions (Hypothesis)

- A statement of the questions to be addressed, the goal(s) of the project, or the hypothesis.

5) Methods

- The central feature of the proposal. This section should provide the details on how the study will be carried out. Usual sections include:
 - a) Study population
 - b) Study design
 - c) Definitions of dependent and independent variables (instruments, procedures, etc.)
 - d) Table of variables indicating which are dependent, independent, or control including level of measurement for each variable (nominal, ordinal, interval, ratio)
 - e) Data analysis plan
 - i. General strategy of analysis
 - ii. Statistical procedures to be used
 - iii. Include dummy data tables for main hypothesis
 - iv. Sample size and/or power calculations
 - f) Study Limitations: to demonstrate an understanding of the limitations of the study and any anticipated problems that may be encountered.
 - g) Significance: There should be some thoughtful comments explaining the importance of the anticipated outcome(s) such as contribution to program effectiveness, better understanding of the etiology of disease, improvement in prevention activities, etc.
 - h) Human Subject Protection: This section should indicate the procedures which will be used to insure confidentiality and protection of the privacy of the subjects. An informed consent statement should be included if original data are being collected. The section should indicate whether an outside agency Institutional Review Board (IRB) approval of the project is involved. If there is no other human subjects review, the proposal will be referred automatically by the Graduate Program Director to the School's Institutional Review Board. In this case the student is responsible to obtain an IRB form from the Graduate Program Director to be filled out and turned in at the same time as the finished dissertation proposal. Data collection from human subjects, or use of confidential records, may not proceed until an IRB approval has been obtained.
 - i) Access to study population or faculty/agency database. Include a written statement from the agency (or faculty owner) or gatekeeper of a data set or population to be studied indicating their willingness to grant you access to the information or the population.

The proposal represents a demonstrated readiness to conduct research on a specific topic, and the proposed hypotheses or procedures may need to be revised further, with the agreement of the committee, as the project proceeds. The proposal should be written using the future tense. Students may wish to review several recent dissertation proposals similar to theirs as available from any faculty member. But the up-to-date outline included in this write-up should be followed.

Format for the Proposal

It is highly recommended that the student follow the guidelines presented in the Graduate School's **Guidelines for Master's Theses and Doctoral Dissertations** even when preparing the dissertation proposal:

http://www.umass.edu/gradschool/sites/default/files/thesis_and_dissertation_guidelines.pdf

Additionally, the Office of Information Technology offers workshops on formatting that may be helpful in preparing the proposal and final version of the dissertation. General advice on formatting and information on workshop can be found on the OIT website at: <http://www.oit.umass.edu/support/workshops-training/format-a-thesis-or-dissertation-ms-word-general-advice>

Timelines for the Proposal

There are no specific timing requirements regarding the written dissertation proposal. However, it is expected that students will complete the written proposal within 1 year after approval of the one-page prospectus. Although this expectation does not represent a format deadline, students should work closely with their dissertation committee chair to ensure that the student continues to make satisfactory progress and will have successful yearly status reviews.

Students should distribute the Written Dissertation Proposal to the Committee at least two weeks prior to the Oral Presentation and Defense.

Human Subjects

Prior to beginning any involvement with human subjects or data meeting the definition of human subjects, the student must complete training in the use of human subjects for research, as mandated by the University. Information on the University's policies concerning the use of human subjects in research can be found at:

<http://www.umass.edu/research/human-research-protection-office-hrpo>

Students should complete training through the CITI system, if they have not already done so for another project and/or their training is out of date. Also, appropriate IRB approval must be obtained for the student's research. It is the responsibility of both the student and the committee chair to ensure that the student has met all University policies concerning human subjects. Information on CITI training can be found at: <http://www.umass.edu/research/training-and-education>

C4. Oral Presentation/Defense of the Proposal

Students are required to give an oral presentation of the proposed research described in the Written Dissertation Proposal. The presentation should highlight key elements of the written proposal. The formal presentation (assuming no interruptions) should take approximately 45 minutes.

As part of the Oral Defense of the Dissertation Proposal, following the presentation and a general question period non-committee members will be asked to leave the room and students are required to field questions from the dissertation committee members. It is expected that these questions largely will pertain to the proposal; however, students may be asked to answer questions to assess the student's knowledge of the area of research relevant to their dissertation research topic. It is expected that the oral presentation plus defense should take approximately two hours, after which students will be asked to leave the room to allow the members of the dissertation committee to decide among the following grade options: pass, pass with conditions, or fail. Following that decision, the committee will ask the student to return in order to discuss their decision and provide comments and constructive feedback on the presentation and proposed research plan. It is expected that no more than two attempts at this stage will be required for a student who expects to earn a doctoral degree.

C5. Carrying Out the Project

As for master's theses, the dissertation committee chair is expected to assume the major role in guiding the student through the project. Other faculty generally contribute to selected aspects of the project. It is important that the student keep each of the committee members up-to-date on significant aspects of the project. In the case of conflicting or extreme demands from the committee, the student should inform the chair and request a committee meeting to resolve any issues. Any substantial change in the proposed project should trigger a meeting of the full committee.

C6. Writing the Dissertation

Be sure to strictly follow the Graduate School guidelines for Dissertations to the letter. Otherwise you will have a lot of unnecessary hassle at the last minute when you need it the least. Students should use the table format, reference

format, and reference citation method of the American Journal of Epidemiology. If you transfer over any of your dissertation proposal text to the dissertation, please change the text from the future tense to the past tense.

The chapter headings of the dissertation are as follows: Introduction; Review of the Literature; Methods; Results; Discussion. As with all scientific writing, the writing of the dissertation usually involves an intense period of writing, editing, rewriting, editing, rewriting, and so forth. To maximize the clarity and impact of the writing included in the dissertation, students are encouraged to contact the University's Writing Center, and meet one-on-one with a writing tutor. This may be especially beneficial for students who do not have extensive experience with scientific writing or for whom English is a second language. Information on the Writing Center can be found at:

<http://www.umass.edu/writingcenter/>

C7. Final Doctoral Oral Examination (Dissertation Defense)

Scheduling the Defense

When the committee chair affirms a consensus among the committee members that the project is essentially completed and is ready for the defense, the chair fills out and signs the **Dissertation Defense Notification Form**. The student can then take the signed form to the Department Administrator and request that the defense be scheduled. **Please note the following:** 1. the submission of the defense form must precede the defense by at least two weeks; 2. The date, time and location of the defense must be advertised to the public for at least 1 week, and cannot be held without this requisite advance notification.

Who May Attend the Dissertation Defense

The Graduate School requires that every member of the Dissertation Committee be present for the examination, or the defense must be rescheduled and re-announced in the same manner. The dissertation defense is public. Departmental faculty member and students are welcome to attend.

The Dissertation Defense Process

Note that the Graduate School requires that all members of the committee must be present for the defense to be held. Each committee member shall have received a "final" polished version of the dissertation at least a week before the defense. The committee chair oversees the proceedings of the defense. The student is expected to present, generally in about 40 minutes, a synopsis of the key elements of the project, especially emphasizing methods, analytical approach, results, limitations, and the significance of the results within the context of the literature. Usually, questions of information/clarification are asked during the presentation, but matters of substance are held for the question period.

Outcomes of the Dissertation Defense

When the presentation is finished, the chair directs the question period. Upon completion of the question period, the committee then meets in private to discuss the student's performance and votes for a pass or not. To pass, the candidate must receive a unanimous vote. Committee members may recommend additional minor changes to the dissertation at this time, as some new issue may have been raised during the dissertation defense question period.

The student should bring one copy of the **Dissertation Signature Page** printed on acid-free paper (regular printer paper is generally acid-free and adequate for these purposes) to the defense, which will be signed by all committee members indicating that the student has passed the defense. If only minor changes are required in the final version of the dissertation, then most members of the committee are willing to sign the cover sheets at that time. The dissertation committee chair signs the cover sheet only when the final copy of the corrected dissertation is received. The Graduate Program Director will then sign the cover sheet after the committee chair.

The student should also bring a copy of the **Notification of Completion of Dissertation Defense Form**, included in the Appendix, to the defense. Upon completion of a successful defense, the committee members sign the form. The student

then returns the completed form to the Departmental office. In addition, the Committee Chair must send notification by email regarding the successful Dissertation Defense to the Department's Graduate Program Director, who will then provide formal notification to the Graduate School that you have successfully defended your dissertation.

C8. Submission of the Dissertation

After the Dissertation defense is successfully passed, students should work with their Dissertation chair to complete any additional revisions required by the committee. After the chair has determined that the final draft is acceptable and signs the Signature Page, the student should submit the dissertation to the Graduate School electronically through Scholarworks. Information on the submission process may be found at:

<http://www.umass.edu/gradschool/current-students/masters-degree-requirements-and-thesis-information/electronic-thesis-submission-pro>

Archiving of dissertation data and statistical code

After the Dissertation defense is passed and prior to graduation, students should make sure that a final version of their dissertation data set and relevant statistical code (SAS, STATA logs, etc) have been archived in the appropriate folder on the J drive, along with documentation. Students should confirm the location of data with their Chair.

Publications from the Dissertation

Where the dissertation results are publishable, the student is encouraged to write-up a first draft of a manuscript with him/herself as first author. If the student does not prepare a draft of a manuscript within six months of the defense, especially where the student was using faculty or agency data, it is the prerogative of the committee chair or other committee member or agency person to prepare a first draft and include the student as a co-author. If multiple manuscripts will be prepared for submission for publication, additional time may be provided to students to prepare these drafts, as may be necessary for work incremental to that for the first manuscript. Students should work with their dissertation chair to discuss specifics regarding manuscript preparation timing and authorship.

In the case of the use of faculty data or data from an outside agency, it is vitally important the authorship of paper(s) resulting from the project be explicitly negotiated in writing in advance of beginning the project. Such an agreement should state the order of authorship for any potential publication(s) and the general content of such publication(s). Failure to address this issue in advance has caused unhappy complications in the past.

Final Steps

1. Review the **Checklist for Doctoral Degree Form** and verify that you have met all of the requirements for graduation. This checklist can be found on the Graduate School website
2. Pay the commencement and placement fees at the Graduate School Office of Degree Requirements.
3. Fill out the yellow **Doctoral Degree Eligibility Form** from the Office of Degree Requirements. You may wish to list only those courses needed to fulfill the degree requirements. The Eligibility Form must be reviewed and signed by the Departmental Graduate Program Director who certifies that you have met all the degree requirements. The form will then be signed by the Department chair.
4. Fill out a final copy of **Epidemiology Tracking Form**, which will serve as an archive copy of your record with us. The **Tracking Form** and the **Degree Eligibility Form** for the Graduate School should both be filled out as soon as the dissertation defense is scheduled. Do not delay until the last moment.
5. Submit your dissertation to the Graduate School through Scholarworks, following procedures described on their website at <http://scholarworks.umass.edu/theses>
6. Submit one original copy of your signed **Dissertation Signature Page** printed on acid-free paper to the Graduate Student Service Center.
7. Provide a hard copy of the final draft of your dissertation in a modest binder to each member of your committee.

VII. APPENDICES

- Travel application and forms
- Other forms, memos, and emails
 - Dissertation Committee Membership
 - This should be sent by email to Diane Wolf (dwolf@schoolph.umass.edu) and/or the Graduate Program Director (Dr. Paula Stamps, stamps@schoolph.umass.edu) from either the Committee Chair or by the student with the Chair copied on the email
 - Dissertation Prospectus, Proposal, Proposal Signature Page
 - These documents are internal to the Department. Students should work with their Committee Chair to determine whether copies will be provided to the Department Administrative Assistant to be added to their file, kept by the student, and/or by the Chair.
 - Notification of Results of Dissertation Defense
 - Results of the defense, along with the date of the defense and names of committee members present and supporting the defense result, should be sent by email from the Committee Chair to Diane Wolf (dwolf@schoolph.umass.edu) and the Graduate Program Director (Dr. Paula Stamps, stamps@schoolph.umass.edu).
 - Dissertation Signature Page
 - Additional examples of doctoral degree requirements and sample forms can be found at: <https://www.umass.edu/gradschool/current-students/graduate-student-handbook/3-degree-certification>.
- American Journal of Epidemiology (AJE) formatting guidelines

Department of Biostatistics & Epidemiology
Graduate Student Travel Grant Application

Students who are presenting their research at a meeting, in either an oral or poster presentation, are eligible for up to \$500 per academic year. Students who are not presenting at the meeting are eligible for reimbursement of up to \$200 per academic year.

Allowed expenses include the following: all travel (including air, train, bus, car fare); conference fees; lodging; parking and/or taxi/shuttle fees. Travel funding is processed as a business expense reimbursement, and must follow the IRS rules, which state that expense reimbursements be processed within 60 days and documented with original receipts.

Please complete the attached BioEpi Student Travel Grant Application Form, including obtaining the signature of your faculty advisor, and forward it to the Department Chair.

During travel, be sure to keep all original travel receipts.

Within two weeks after travel, complete the SPHHS Travel and Reimbursement Request Form, attach your original receipts and the signed Graduate Student Travel Grant Application. Please give these documents to Deb Osowski, who will gather the necessary signatures and submit the forms for reimbursements. As long as both forms and the original receipts are received, the reimbursement process should be quick. You should keep copies of these receipts for your own records, since the originals will not be returned to you.

Questions about the process can be directed to Deb Osowski.

**Department of Biostatistics & Epidemiology
Graduate Student Travel Grant Application**

Student Name: _____ SPIRE ID#: _____
Program: _____ ___Master's ___Doctoral
Email: _____

Nature of participation in conference:

___Presenting a paper
___Presenting a poster
___Participating in a panel presentation
___Other: Please specify: _____

Name of conference: _____
Location of Conference: _____
Scope of Conference: ___National ___Regional ___Local

Estimated total costs of conference: _____

Other sources of funds: ___Division ___Faculty grant ___Other (not personal)

Date of travel: _____

Signature of faculty advisor indicating support of application:

Department Chair Approval Date Amount approved

TABLE FORMAT AND STYLE

Each table must be formatted by using the table feature in Word. Tables should be numbered (Arabic numerals) in the same consecutive sequence in which they are mentioned in the text. They should be concise and self-explanatory. Use a single top rule, a single rule below the headings, and a single bottom rule. Avoid using internal headings, and do not use rules within the table body. Column headings should be clearly delineated, with straddle rules over pertinent columns to indicate subcategories. Whenever possible, data in vertical columns should have the same unit of measurement. Divide overly long tables into 2 or more tables, for example, 1 table for men and 1 for women. Multipart tables are not acceptable.

Table titles should give details on the place of the study, the time of the study, and the study population (if applicable). The designation "Table 1" should be typed flush left, followed by a period and the title. **In the title, capitalize all main words, including prepositions of 4 or more letters.** For example, "Baseline Characteristics of Infants With Initial and Follow-up Screening, London, United Kingdom, 2001–2003." (In the text, use an uppercase beginning letter for the words "Table," "Figure," and "Appendix.") In the table body, leave blank spaces for no entry; avoid using dashes. **Order of footnotes: 1) Abbreviations: (no footnote symbol, listed alphabetically, separated by semicolons); 2) other footnotes as necessary, each preceded by a superscript lowercase letter.**

REQUIREMENTS FOR FIGURES

Letters, numbers, decimal points, and symbols should be large enough and sharp enough to be readable when figures are reduced and scanned (no smaller than 8 pt in print). All figures will be reduced to fit either in 1 column or within the 2 column width of the *Journal* page. On maps, add scale (in kilometers or meters) and direction north.

All multipanel figures should have locants to identify each panel. Locants should be capital letters followed by a closing parenthesis, for example, A). Locants should be approximately the same size as the rest of the text in the figure and should appear above and completely to the left of the y-axis title.

When plotting relative measures of effect (e.g., relative risks, relative odds), a logarithmic scale **must** be used unless there is a compelling reason to use an arithmetic scale. If bars are used to plot the relative measures, they should start at the baseline level of 1.0 rather than at zero.

Figure legends should not be included on the figures themselves but should be typed after the reference list. Each legend should be a separate paragraph and should include details on the place of the study, the time of the study, and the study population (if applicable). Define all figure abbreviations in the legend.

Authors should submit their figures with the manuscript. Color figures are not recommended; there is a per-figure charge to print in color. The charge per color figure is £350 / \$600 / €25. Color figures can be published at no charge as Web-only material (refer to the Supplementary Data section of these Instructions). Figures with gray tones are not recommended either. For clarity, use polka dots, hatch marks, or other line art markings instead of grays to differentiate from either black or white. **If your figures were created in Word, Excel or PowerPoint, then please submit in that format. For all other programs, please save these figures directly to either EPS or PDF files and submit in that format.**

REFERENCES

Number references consecutively in the order in which they are mentioned in the text. Reference numbers in the text are full-sized Arabic numerals in parentheses within the sentence. For 3 or more consecutive references cited all at once, use, for example, (1-4). Format other references as (4, 5, 12), with spaces between the reference numbers.

When directly quoting material in the text, give the reference number followed by the page number(s) of the quotation, for example, (24, p. 65).

Important: *All statements of scientific fact should be referenced.* Failure to do so may cause considerable delay in processing the manuscript and may necessitate renumbering of the references.

References to personal, *written* communications should be inserted in parentheses in the text rather than in the reference list. Give the person's name, institutional affiliation, "personal communication," and the year. Verbal communications are

not acceptable as supporting documentation.

The reference list should be limited to published or "in press" references. No "submitted" manuscript should appear in the reference list. A manuscript submitted for publication but not yet accepted may be referenced in parentheses in the text. Give the author's name, institutional affiliation, and "unpublished manuscript." Unpublished data may also be cited in the text (e.g., communications with the paper's coauthors). However, authors should not refer to "forthcoming" papers or promise future publication of results.

References must be verified by the author(s) against the original documents and must give the exact authors' last names, initials, and article title. **Please supply the entire page range and issue number (in parentheses); see examples below.** If only 1 page number is given, indicate in parentheses after the title whether the reference is a letter, an editorial, or an abstract. For manuscripts *accepted* (not submitted) but not yet published, designate the journal followed by a period and then "In press." For references to papers presented at conferences, give the location (city and state or country), month and days, and year of the conference. For references published online in advance of print publication, provide the journal abbreviation followed by the digital object identifier (DOI) number in parentheses.

For articles originally published in a language other than English, indicate the language in parentheses after the article title provided in English.

Examples of correct forms of references follow. Type references double-spaced. The titles of journals should be abbreviated according to the *List of Journals Indexed in Index Medicus* (published by the National Library of Medicine). For more than 3 authors, list the first 3 and add "et al."

EXAMPLES OF REFERENCE STYLE

Standard journal article

Nakajima S, Saijo Y, Kato S, et al. Effects of prenatal exposure to polychlorinated biphenyls and dioxins on mental and motor development in Japanese children at 6 months of age. *Environ Health Perspect.*2006;114(5):773–778.

Standard journal article with a published correction/erratum

Korpi A, Mantjarvi R, Rautiainen J, et al. Detection of mouse and rat urinary aeroallergens with an improved ELISA [published correction appears in *J Allergy Clin Immunol.* 2004;113(6):1226]. *J Allergy Clin Immunol.* 2004;113(4):677–682.

Journal article with digital object identifier (article not yet in print)

Sturmer T, Gefeller O, Brenner H. A computer program to estimate power and relative efficiency to assess gene-environment interactions in flexibly matched case-control studies. [published online ahead of print August 10, 2005]. *Comput Methods Programs Biomed.*(doi:10.1016/j.cmpb.2003.08.003).

Article in an online-only journal that accounts for the lack of a page range

Laupland KB, Davies HD, Low DE, et al. Invasive group A streptococcal disease in children and association with varicella-roster virus infection. Ontario Group A Streptococcal Study Group. *Pediatrics.* 2000;105(5):E60.

Secondary Citation

Richardson HJ. *Disabilities and Problems of Hong Kong Veterans, 1664–1965. (Report to Canadian Pensions Commission).* Ottawa, Canada: Canadian Pensions Commission; 1965. Cited by: Tennant CC, Goulston KJ, Dent OF. The psychological effects of being a prisoner of war—40 years after release. *Am J Psychiatry.*1986;143(5):618–621.

Secondary Quotation

Kato S, Sherman PM. What is new related to *Helicobacter pylori* infection in children and teenagers? *Arch Pediatr Adolesc Med.* 2005;159(5):415–421. Quoted by: Prazar G. How many pediatricians does it take to change a practice? or how to incorporate change into practice [editorial]. *Arch Pediatr Adolesc Med.*2005;159(5):500–502.

Book

Rothman KJ, Greenland S, eds. *Modern Epidemiology.* 2nd ed. Philadelphia, PA: Lippincott-Raven, Publishers; 1998.

Chapter in a Book

Robins JM. Marginal structural models versus structural nested models as tools for causal inference. In: Halloran ME, Berry D, eds. *Statistical Models in Epidemiology, the Environment, and Clinical Trials.* New York, NY: Springer-Verlag; 1999:95–134.

Chapter in a book (no chapter titles)

Robins JM. Chapter 3. In: Halloran ME, Berry D, eds. *Statistical Models in Epidemiology, the Environment, and Clinical Trials*. New York, NY: Springer-Verlag; 1999:95–134.

Committee or corporate author

Self-reported illness and health status among Gulf War veterans. A population-based study. The Iowa Persian Gulf Study Group. *JAMA*. 1997;277(3):238–245.

Supplemental issue

Giovannucci E. Alcohol, one-carbon metabolism, and colorectal cancer: recent insights from molecular studies. *J Nutr*. 2004;134(suppl):2475S–2481S.

Thesis

Knoll EG. *Mental Evolution and the Science of Language: Darwin, Muller, and Romanes on the Development of the Human Mind* [dissertation]. Birmingham, AL: University of Alabama; 1987.

Abstract

Joffe M, Santanna J, Feldman H. Partially marginal structural models for causal inference [abstract]. *Am J Epidemiol*. 2001;153(suppl):S261.

Letter

Deddens JA, Petersen MR. Re: “Estimating the relative risk in cohort studies and clinical trials of common outcomes” [letter]. *Am J Epidemiol*. 2004;159(2):213–214.

Agency publication

National Center for Health Statistics. *Plan and Operation of the Third National Health and Nutrition Examination Survey, 1988–94*. Hyattsville, MD: National Center for Health Statistics; 1994. (Vital and health statistics, series 1: programs and collection procedures, no. 32) (DHHS publication no. (PHS) 94-1308) (GPO no. 017-022-01260-0).

Conference presentation

Linna SL, Taanila A, Heikura U, et al. Shift of etiological pattern of intellectual disability in the two northern Finland birth cohorts 1966 and 1986 [abstract]. Presented at the Fourth Congress of the European Association of Intellectual Disability Medicine, Lahti, Finland, August 25–27, 2005.

Web page/Web site

Bureau of the Census, US Department of Commerce. Glossary of basic geographic and related terms—Census 2000. <http://www.census.gov/geo/www/tiger/glossary.html#glossary>. Published April 8, 2001. Updated January 5, 2004. Accessed February 24, 2005.

US Environmental Protection Agency. Final rule. "National primary drinking water regulations; arsenic and clarifications to compliance and new source contaminants monitoring." Part VIII. Federal Register 66, no. 14 (January 22, 2001):6876–7066. http://www.epa.gov/safewater/ars/arsenid_finalrule.htm.

Health Care Financing Administration. 1996 statistics at a glance. Baltimore, MD: Health Care Financing Administration. <http://www.hcfa.gov/stats/stathili.htm>. Published May 20, 1996. Accessed March 1, 1998.

Database or database entry

Bureau of the Census, US Department of Commerce. Census 2000 summary file 3. Washington, DC: Bureau of the Census; 2007. <http://www.census.gov/population/www/cen2000/>. Accessed January 8, 2007.

National Center for Biotechnology Information, US National Library of Medicine. Reference SNP cluster report: rs2077647. (NCBI Single Nucleotide Polymorphism database). Washington, DC: National Library of Medicine; 2007. http://www.ncbi.nlm.nih.gov/SNP/snp_ref.cgi?rs=2077647. Accessed May 12, 2009.

Software manual

Stata Corporation. Stata statistical software, release 9. College Station, TX: Stata Corporation; 2005.

Media reference

The man who helped indict smoking [editorial]. *New York Times*. January 18, 1997:A22.

ABC News. What happened over there? 20/20, August 14, 1992. Denver, CO: Journal Graphics, Inc; 1992. (Transcript

1235).

Goode E. Study finds jump in children taking psychiatric drugs. *New York Times*. January 14, 2003:A21, A25.

Sample Form: Dissertation Signature Form

TITLE

A Dissertation Presented

by

AUTHOR NAME IN FULL

Approved as to style and content by (add lines for additional members as needed):

(signature)

Name, Chairperson

(signature)

Name, Member

(signature)

Name, Member

Name, Department Head
Department name