Geography

Degrees Offered

• Master of Arts
• Doctor of Philosophy

Nature of the Program

The Graduate Program in Geography at West Virginia University provides students with the opportunity to study for a master of arts or a doctor of philosophy degree with an area of emphasis in one or more of the following fields:

• Geographic information science
• Environmental geography
• Human geography

The Graduate Program in Geography was designated a program of excellence by the West Virginia University Board of Governors in 1998, 2003, and 2008. This award is given to superlative degree programs in recognition of their contribution to higher education in West Virginia and national recognition.

Research

Students who are interested in pursuing research in an area other than these may do so provided the research area matches the interest of a faculty member in the department who agrees to supervise the student’s program. Students who wish to focus their research on a particular region are encouraged to do so. The Graduate Program in Geography at WVU has strong links with the University’s Regional Research Institute, the State GIS Technical Center, the Geology Program, the Water Research Institute, the International Studies Program, the West Virginia Geological and Economic Survey, the Center for Women’s Studies, and the Center for Black Culture and Research.

Computing Facilities

The Geography program has extensive computing facilities housed in a new 98,000 square foot building dedicated exclusively to geography and geology. The new building has five computer laboratories dedicated to teaching and research. The department has ESRI ArcGIS, ERDAS Imagine, and ENVI site licenses. In addition, the department supports SAS, SAS-Graph, JMP, Surface III, Oracle, and extensive database and statistical packages. The department’s geovisualization research group operates an immersive four-wall 3-D display environment or CAVE. The remote sensing program operates an ASD full-range portable spectroradiometer.

FACULTY

CHAIR
• Tim Carr - Ph.D. (University of Wisconsin-Madison)

ASSOCIATE CHAIR FOR GEOGRAPHY
• Karen Culcasi - Ph.D. (Syracuse University)

PROFESSORS
• Trevor Harris - Ph.D. (University of Hull)
  Geographic Information Science
• Amy Hessl - Ph.D. (University of Arizona)
  Biogeography, Forest Ecosystems
• Randall Jackson - Ph.D. (University of Illinois)
  Director Regional Research Institute, Economic Geography
• Brent McCusker - Ph.D. (Michigan State University)
  Land Use Change, Africa
• Timothy Warner - Ph.D. (Purdue University)
  Remote Sensing

PROFESSOR EMERITUS
• Greg Elmes - Ph.D. (Penn State University)
  Geographic Information Science
• Ken Martis - Ph.D. (University of Michigan)
  Political, Electoral and Historical Geography

ASSOCIATE PROFESSORS
• Jamison Conley - Ph.D. (Penn State University)
  Spatial Analysis, Geocomputation
• Karen Culcasi - Ph.D. (Syracuse University)
  Political Cartography, Middle East
• J. Steven Kite - Ph.D. (University of Wisconsin-Madison)
  Geomorphology, Quaternary Studies, Geoarchaeology
• Brenden McNeil - Ph.D. (Syracuse University)
  GIScience, Environmental Modeling
• Bradley Wilson - Ph.D. (Rutgers University)
  Food Justice, Solidarity Economies, Political Ecology

ASSOCIATE PROFESSOR EMERITUS
• Robert Hanham - Ph.D. (Ohio State University)
  Regional Development

ASSISTANT PROFESSORS
• Martina Caretta - Ph.D (Stockholm University)
  Feminist Geography, Human Dimensions of Water
• Jonathan Hall - Ph.D. (Ohio State University)
  Desert Ecology, Biogeography
• Insu Hong - Ph.D. (Arizona State University)
  GIScience, Virtual Reality and Spatial Optimization
• Rick Landenberger - Ph.D. (West Virginia University)
  Remote Sensing, Geosciences Education
• Eungul Lee - Ph.D. (University of Colorado)
  Climatology, Land-Atmosphere Interactions
• Aaron Maxwell - Ph.D. (West Virginia University)
  Remote Sensing, GISc, Physical Geography
• Maria Alejandra Perez - Ph.D. (University of Michigan)
  Human Geography, Science & Society, Speleology, Latin America
• Jamie Shinn - Ph.D. (Penn State University)
  Environmental Governance, Political Ecology, Adaptation to Climate Change

Admission/Application Requirements
M.A. applicants must submit GRE scores, a personal two-page statement defining the applicant’s interest in geography and career intentions, and two letters of recommendation from people who are familiar with the student’s undergraduate training.

Ph.D. applicants should send three letters of recommendation, GRE scores, and a two-page research statement. Applicants are strongly encouraged to contact potential doctoral advisors among the faculty prior to application.

To receive full consideration, including consideration for funding opportunities, all applications for Fall admission must be submitted by January 1. To be considered for Fall admission without financial assistance, application material must be received by April 1.

Prospective M.A. students must have an overall cumulative undergraduate GPA of 3.0.

Prospective Ph.D. students must hold a M.A./M.S. degree and a cumulative GPA of at least 3.3 in their previous graduate work. Students with degrees in other non-geography disciplines are encouraged to apply although they may be asked to make up deficiencies in geography during the first year in the program.

International students are encouraged to submit their materials at least three months in advance of all deadlines.

Teaching Assistantships
A small number of graduate teaching assistantships are competitively awarded by the Geography program on an annual basis. Teaching assistants are employed to work in support of undergraduate courses. Applicants who wish to be considered for a teaching assistant position should make that request known in their application.
Research Assistantships

Research assistantships must be applied for through the faculty member whose research is providing the funding. The geography faculty are engaged in numerous funded research projects, many of which provide graduate students with opportunities for obtaining research skills and experience as well as employment and tuition aid. Furthermore, the professional contacts made in the course of faculty research frequently provide graduate students with opportunities for career development.

Master of Arts

The Master’s Program in Geography at West Virginia University provides students with cutting edge training in the history and theory of geography, experience with advanced geographic research methodologies and specialized mentoring from faculty experts across three sub-disciplinary areas of specialization (Human Geography; Environmental Geography; Geographic Information Science). The M.A. is designed so that full-time students should satisfy all program requirements within two years. Students are expected to be well-grounded in one or more of the program’s three areas of specialization.

DEGREE REQUIREMENTS

To earn an M.A. in Geography at WVU students must complete 31 credit hours of graduate courses (based upon the curriculum described below), form a committee of graduate faculty to supervise your thesis or project, and then complete and publicly defend your thesis or project.

ADVISING

Throughout the admissions process the Graduate Committee coordinates with faculty to assist new students to identify a potential advisor. In the Fall semester M.A. students are required to select an advisor who can aid the student to develop a Plan of Study. The student should choose an advisor no later than two weeks before the end of their first semester in the program. Until an advisor is selected M.A. students will be supported by the Graduate Committee.

Master of Arts

MAJOR REQUIREMENTS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>GEOG 601</td>
<td>Geographic Traditions</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 600</td>
<td>Geography Research Colloquium (repeated)</td>
<td></td>
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<tr>
<td>GEOG 594</td>
<td>Seminar</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 603</td>
<td>Qualitative Research in Geography</td>
<td></td>
</tr>
<tr>
<td>GEOG 701</td>
<td>Advanced Research Methods</td>
<td></td>
</tr>
<tr>
<td>GEOG 600</td>
<td>Geography Research Colloquium (repeated)</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 780</td>
<td>Non-Thesis Project (plus an additional 3 hours of electives)</td>
<td>3-6</td>
</tr>
<tr>
<td>GEOG 797</td>
<td>Research (thesis students)</td>
<td></td>
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<tr>
<td>Thesis Proposal</td>
<td></td>
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<tr>
<td>Thesis Defense</td>
<td></td>
<td></td>
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<tr>
<td>Electives</td>
<td></td>
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</tbody>
</table>

Total Hours: 30-33

ACADEMIC PROGRESS

Students must maintain a GPA of 3.0 and complete all course, examination and dissertation requirements in a timely fashion. The academic progress of every doctoral student is reviewed each year. Students must submit a self-evaluation signed by their advisor by January 15. The Graduate Committee will conduct its annual review of students in February and communicate with students in March. Waivers to the PhD deadlines, timing requirements, and other rules may be requested from the Graduate Coordinator. Waivers are only given under extraordinary circumstances.

The M.A. Thesis Option

The M.A. thesis is an independent research project undertaken by the student. The thesis research should adhere to the following:

• Demonstrate knowledge of the literature in the student’s chosen field
• Use data and methods appropriate to the research
• Draw conclusions from the research endeavor
M.A. thesis option students develop a thesis proposal toward the end of the first year and during the first summer. The first step is to develop a written thesis proposal. This must be completed to the satisfaction of the student’s advisor and thesis committee no later than October 1 of the student’s second year. This is followed by an oral presentation to all students and faculty in the geography program no later than October 31 (unless there are scheduling conflicts). Presentations must be advertised within the department. Students should aim to complete the thesis proposal process well before the October deadline in order to ensure progress towards graduation the following semester. Students not able to meet this schedule should seek a meeting with their advisor to resolve the issue prior to the deadline dates.

The defense of the thesis takes place when the advisor and the committee agree that a defendable copy of the thesis is complete. The defense date must be advertised at least two weeks in advance. Only in exceptional circumstances will the thesis committee waive the two-week requirement for advertising thesis proposals and defenses. The thesis examination is graded on a pass/provisional pass/fail basis. To pass the examination, there can be no more than one unsatisfactory grade from the committee members. A student who fails may submit another thesis or a revised version upon the approval of the student’s committee. No student may be re-examined more than once. A student who is given a provisional pass will generally be required to make minor revisions or corrections to the thesis.

Thesis proposals and defenses are not normally scheduled between June 15 and August 15.

**The Professional Master’s Option**

**Overview**

The professional master’s option consists of an additional graduate course and a three-credit-hour project (GEOG 780). The professional master’s option is designed for students interested in a more focused project than the traditional research thesis option. It is not recommended for students considering entering a Ph.D. program. The thesis project has strict deadlines and must be completed in one semester and after the completion of GEOG 601 and either GEOG 603 or GEOG 701.

**Deadlines and Timetable**

Students planning on selecting the professional masters’ option must make a written request to the Geography Graduate Committee no later than two weeks before the start of the semester in which the project is undertaken. The request should be endorsed by the student’s advisor. Only after the written request has been received will the geography graduate director issue a permit for the course. It is strongly recommended that the project topic be selected prior to the beginning of the semester.

A written project plan is to be submitted to the advisor and committee no later than three weeks after the start of the semester. The project plan includes an objective, methods, and timetable. No public presentation of the proposal is required.

The student is required to have meetings with the advisor and the committee in weeks seven and eleven to present progress reports.

The project must be completed and successfully defended by the end of the semester in which the project was undertaken. If the student completes the project, passes the defense, and submits the project to the library by the end of the semester, the student will be given a grade of S (satisfactory) for the project (GEOG 780).

If the student completes and defends the project, but is unable to submit the project to the library by the university deadline, the student will be assigned an (I) incomplete for the project. The student then has up to two weeks after the last day of exam week to submit the project to the library; otherwise, the I is converted to a U (unsatisfactory).

If the student completes the project and fails the defense or if the project is not completed and defended by the end of the semester, the student will be given a grade of U for the GEOG 780 course.

Students who receive a grade of U may reapply to do a different project the following semester. Students cannot reapply more than once.

The Graduate Committee may grant an extension to the one semester deadline under exceptional circumstances.

**Project Topic and Defense**

The choice of a project topic is to be determined by close interaction and agreement between the student, advisor, and committee. The project may comprise a wide range of activities, but is usually either (a) an applied problem-solving exercise with minimal literature review, (b) an empirical test of an idea from the literature with minimal literature review, or (c) a literature review or development of a conceptual idea using the literature.

The project is defended in a public presentation at the end of the project semester, but no later than the university deadline for a thesis defense. The defense time and location must be published in the department no less than two weeks in advance. The standard for passing will be that the majority of the advisory committee (two or more of the three members) evaluate the work as substantially meeting the goals identified in the written research plan.

Most projects are expected to be in written form (fifteen to twenty pages). Other forms of presentation may be acceptable such as maps, software, video, land-use plan, image classification, field-trip guide, work of art, etc.; however, a written document explaining the project is still required.
Doctor of Philosophy

A limited number of the required courses may be waived if the student has already completed an equivalent course and can demonstrate proficiency with the material.

### MAJOR REQUIREMENTS

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>GEOG 601</td>
<td>Geographic Traditions</td>
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<tr>
<td>Methods Course:</td>
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<tr>
<td>GEOG 603</td>
<td>Qualitative Research in Geography</td>
<td>3</td>
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<tr>
<td>GEOG 701</td>
<td>Advanced Research Methods</td>
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<tr>
<td>Geography Courses</td>
<td>6</td>
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<tr>
<td>Methods Electives:</td>
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<tr>
<td>GEOG 407</td>
<td>Environmental Field Geography</td>
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<tr>
<td>GEOG 452</td>
<td>Geographic Information Science: Applications</td>
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<tr>
<td>GEOG 453</td>
<td>Geographic Information Science: Design and Implementation</td>
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<td>GEOG 485</td>
<td>Methods of Geographic Research</td>
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<tr>
<td>GEOG 550</td>
<td>Geographic Information Science</td>
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<td>GEOG 603</td>
<td>Qualitative Research in Geography</td>
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<tr>
<td>GEOG 630</td>
<td>Seminar: Land Use and Cover Change</td>
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<td>GEOG 651</td>
<td>Geographic Information Science: Technical Issues</td>
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<td>GEOG 655</td>
<td>Remote Sensing Principles</td>
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<td>GEOG 701</td>
<td>Advanced Research Methods</td>
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<td>GEOG 753</td>
<td>Exploratory Spatial Data Analysis</td>
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<td>Seminar Course:</td>
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<tr>
<td>GEOG 607</td>
<td>Geography of Fire</td>
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<td>GEOG 612</td>
<td>Gender, Society and Space</td>
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<td>GEOG 615</td>
<td>Development Geography</td>
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<td>GEOG 621</td>
<td>Advanced Fluvial Geomorphology</td>
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<td>GEOG 694: Seminar</td>
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<td>Colloquium:</td>
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<td>Electives</td>
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<td>Comprehensive Examinations</td>
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<td>Dissertation</td>
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<td>Dissertation Defense</td>
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<tr>
<td>Total Hours</td>
<td>36</td>
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</table>

### EXAMINATIONS AND DISSERTATION

The student is required to pass an oral and three written comprehensive examinations no later than the fourth semester. The student will be examined on two areas of specialization and the student’s dissertation research topic. Upon successful completion of the comprehensive examination and no later than the end of the fifth semester, the student will be expected to defend a dissertation research proposal. The award of the Ph.D. is granted upon the successful defense of the dissertation itself.

### Graduate Certificate in GIS and Spatial Analysis

**CERTIFICATE CODE - CG37**

**Complete 4 of the following courses:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ARE 729</td>
<td>Spatial Econometrics</td>
</tr>
<tr>
<td>or ECON 729</td>
<td>Spatial Econometrics</td>
</tr>
<tr>
<td>RESM 540</td>
<td>Geospatial Modeling</td>
</tr>
<tr>
<td>RESM 575</td>
<td>Spatial Analysis for Resource Management</td>
</tr>
<tr>
<td>RESM 545</td>
<td>Spatial Hydrology and Watershed Analysis</td>
</tr>
</tbody>
</table>
**RESM 640** Geographic Information Systems for Aquatic Resource Management
**GEOG 550** Geographic Information Science
**GEOG 651** Geographic Information Science: Technical Issues
**GEOG 654** Environmental Geographic Information Systems Modeling
**GEOG 655** Remote Sensing Principles
**GEOG 752** Advanced Geographic and Information Science
**GEOG 753** Exploratory Spatial Data Analysis
**GEOG 755** Advanced Remote Sensing

**Independent Study Requirement:** 3

**RESM 585** GIS and Spatial Analysis Project

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**Total Hours** 15

*Students must take at least one of the course offerings from RESM/ARE/ECON (not counting RESM 585) and one from the GEOG course list.*

**Major Learning Outcomes**

**GEOGRAPHY**

The Graduate Program in Geography at West Virginia University trains students at the highest level to assume leadership roles in research, teaching, and applied work in Human Geography, Environmental Geography, and Geographic Information Science.

**M.A. Program**

- Master the existing scholarship in the study of Geography with the goal of using this scholarship in the pursuit of their own professional and/or research field.
- Conduct research in their area of specialization or engage in an applied geography project oriented to their professional goals.
- Prepare to be professionals in careers that require training at a high level in Geography.

**Ph.D. Program**

- Master the existing scholarship in the study of Geography with the goal of using this scholarship in the pursuit of their own research.
- Engage in and conduct original research in their area of specialization.
- Prepare to be professionals in careers that require training at the highest level in Geography.

The Geography Graduate Committee regularly reviews the structure and content of the M.A. and Ph.D. programs to provide the best possible education to students in order to meet the needs for highly trained individuals in Human Geography, Environment Geography, and Geographic Information Science.