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Geography is the science of place, space, and environment. Each place on earth is distinguished by a unique mix of natural resources, cultural practices, and economic and political systems. Geographers study what makes each place unique, and the connections and interactions between places.

With its highly ranked graduate and undergraduate programs, Clark University is one of the best places in the world to study Geography. As an undergraduate student, you will have the opportunity to work with nationally and internationally known faculty to examine why places are different, how those differences shape how we live, and how we in turn shape our environment. The Geography major and minor at Clark are set up in such a way to give the student a broad understanding of physical and human elements that comprise this field of study.
PROGRAM OVERVIEW

GEOGRAPHY OVERVIEW

Use the perspectives of place and space to address societal and environmental challenges

Why are things located where they are? What makes societies and biophysical environments different from place to place? How does location affect access to the things all species need to survive and flourish?

As a geography major you use the concepts of place and space to better understand the physical and social processes that shape our planet. You explore why places are different; the economic, political and cultural systems that connect us locally, regionally and globally; and how we shape—and in turn are shaped by—our environment.

AREAS OF EXPERTISE

Clark’s Geography program is generally and broadly broken down into the following four sub-fields:

- **Human Environmental Geography**
  - Analyzes the ways that human societies have used, shaped and constructed nature; impacts of societies, economies and cultures on ecological systems; and societal and environmental consequences of the interaction. (Also referred to as Nature Society). Examples of research and practice: environmental policy and practice, food systems, agriculture, animal geographies, international development, natural resource extraction, water resource management, socio-environmental movements and conflicts, sustainability, land use, vulnerability, environmental change, resilience, hazards, and more.

- **Urban Economic Geography**
  - Examines the ways that space and location shape economic, sociopolitical and cultural life; ways that economic, sociopolitical and cultural factors shape space and location; and relationships between these processes and the dynamics of urban life. (Also referred to as Globalization, Cities and Development). Examples of research and practice: socio-spatial dynamics of cities, economies, and industries, theories and discourses of economic development, innovation and entrepreneurship, social movements, legal geographies, place-making processes,
critical social theory, urban politics, globalization, sustainability, political ecology, and more.

- **Earth System Science**
  o Examines how the Earth system (ecosphere, atmosphere, hydrosphere, and lithosphere) naturally functions, how these systems interact with one another, and how they are affected by humans. Examples of research and practice: terrestrial ecosystems, global change, surface water, cold-region hydrology, terrestrial and marine biogeochemistry, polar climate change, forest ecology, glaciology, landscape and disturbance ecology, and more.

- **Geographic Information Science**
  o Examines the acquisition, analysis and communication of geographic information; principles and techniques important in cartography, remote sensing, geographic information systems and spatial analysis. Examples of research and practice: conservation GIS, land change modeling, image time series analysis, image classification, decision support, system development, remote sensing of the cryosphere, remote sensing of forest ecosystems, and more.

Students will take courses and explore each of these areas throughout their time in the program.

**LOOKING AHEAD**

**Clark’s Fifth Year M.Sc. Accelerated Degree Program (ADP)**

Geography offers one of 13 of Clark’s fifth year accelerated Master’s degree programs: **M.Sc. in GIS**. Eligible undergraduate students often continue their studies after graduation right here in the department, and can earn a Master’s degree in GIS in one year, tuition free. To learn more about the M.Sc. in GIS ADP, [visit our website](#) or contact our [Graduate Program Administrator](#) for more information.
DECLARING A MAJOR OR MINOR IN GEOGRAPHY
The first step for students considering a major or minor in Geography is to read this guide. The
next step is to set up an appointment with the Undergraduate Program Coordinator, who will
answer any specific questions the student has, and work with the student to determine a strong
faculty advisor pairing.

Students begin by taking one introductory level course in each of the four most common areas of
study in Geography (fulfilling the four Core courses requirement). Generally, after completing theour core courses, students enroll in upper-level, in-depth courses of particular interest to them
(four Specialization courses). Geography majors also focus on the development and application of
a variety of skills useful in Geographical work and research (through the Skills course and Capstone
credit requirements). Students will find that many of their Geography courses involve active
participation in research projects and/or hands-on problem-solving activities.

GEOGRAPHY MAJOR REQUIREMENTS [11 COURSES]
- 4 Core Courses
- 1 Skills Course
- 1 Research Methods Course (GEOG 141*)
- 4 Specialization Courses
- 1 Capstone Course/Credit

GEOGRAPHY MINOR REQUIREMENTS [7 COURSES]
- 2 Core Courses
- 1 Skills Course
- 3 Specialization Courses
- 1 Elective Geography Course
CORE OVERVIEW
(4 courses for Major, 2 courses for Minor)

Core courses emphasize fundamental geographic concepts over four distinct areas of study. Courses in the core are designed to build frameworks for understanding the earth, space, and place in a physical and human context.

We strongly encourage you to take the core courses early in your program, not only because it will give you a more thorough understanding of the different areas of study in Geography, but also because core courses are often prerequisites for 200-level courses.

Majors must select at least one course from each of the following four core areas. Minors must select at least two courses from any of the following four core areas.

- Human Environmental Geography
- Urban Economic Geography
- Earth System Science
- Geographic Information Science (GIS)

SKILLS OVERVIEW
(1 course for Major, 1 course for Minor)

Skills courses give you the opportunity to acquire and apply research, literacy, numeracy, and mapping skills for generating and interpreting knowledge. Our goal is for students to become critical thinkers and to have an understanding of how knowledge is created. Skills courses must be either offered by the Geography Department or offered by other departments with a Geography attribute.

RESEARCH METHODS OVERVIEW
(Required for Major, Not Required for Minor)

Geography 141* Research Design and Methods in Geography is required for the major. It is advised that you to complete this course before taking 200-level courses in Geography, preferably during your sophomore year (particularly if you plan to study abroad). Research Methods is offered at least once per year, typically in the spring semester.

Comparable courses in other departments may be subject to substitution for the Geography Research Methods course with the approval of the advisor and the Chair of the Undergraduate
Studies Committee. However, this does not reduce the total number of Geography courses required for the major. Thus, majors for whom a substitution has been granted will need to take an additional Geography course to ensure that a total of 11 Geography courses are taken. See Additional Rules for details on substitutions.

**SPECIALIZATION OVERVIEW**

*(4 courses for Major, 3 courses for Minor)*

Specialization courses are a collection of courses that form a coherent combination (a collaborative effort between you and your advisor). Specialization courses give you an opportunity to explore a specific subject area in depth. Majors are required to take four specialization courses, three of which must be at a 200-level and one of which may be either at a 100- or 200-level. The Geography Department also (at times) allows students to perform an internship for credit that can count as a 200-level specialization course, upon approval of the advisor and the University.

*It is not a requirement* that students determine a specialization within Geography, but it is typically a path followed by many students as they take their core courses and generally become particularly interested in one of the four areas. To specialize in one of the four areas in Geography, students must take their four specialization courses within that subject matter.

For example, if a student wants to specialize in GIS as a Geography major, they would take the following:

- 4 Core Courses (as normal)
- 1 Skills Course (GIS related)
- Research Methods (as normal, GEOG 141)
- 4 Specialization Courses within the GIS field (indicated on the Course Offerings page)
- Capstone Credit related to interests within Geography & GIS

Specializing in a subject area within Geography **does not waive the requirement to take a core course in that subject area**. All Geography students must take the 4 core courses (1 in each area) to begin, and then they may continue through the major and choose a specialization if they wish to do so.
CAPSTONE OVERVIEW
(Required for Major, Not Required for Minor)

One Capstone credit is required for the Geography major. To meet the Capstone requirement, **the student must earn a 200-level credit** that relates to the student’s specialization.

The following options can qualify as a capstone based upon the approval of the student's faculty advisor:

- A graduate level course as indicated by a combined 200/300 level status
- Human Environment Regional Observatory (HERO) program, Forest Ecology Research Lab (FERL) work, Biogeosciences Research Group, Extractive Industries Research Group, or the Polaris Project
- Directed Study with a faculty advisor (GEOG 299)
- Internship (GEOG 299)
- Honors thesis (GEOG 297)
- Research experience (GEOG 299)

The student's faculty advisor is the judge to determine whether any particular credit satisfies the capstone criteria. The advisor will make the judgment based on the purpose of the capstone, which is for the student to integrate content and skills in Geography, as applied to a particular topic.

The student must obtain their advisor's permission on the **Capstone Form**, and then deliver the form to the Undergraduate Program Coordinator **before** beginning the qualifying activity and before registration for the 200-level credit.

**It is also the student's responsibility to coordinate all processes necessary outside of the departmental requirements (i.e. internship registration, any other Clark forms needed, etc.).**

Upon completion of the Capstone credit, the student must obtain on the Capstone Form the permission of the professor/supervisor who awards the Capstone credit and then submit the form to the Undergraduate Program Coordinator.

MINORING IN GEOGRAPHY

Students wishing to minor in Geography must complete a total of seven courses, which constitute a subset of the major. These courses must adhere to the following:

- Core courses: two courses from two of the four core course areas, student’s choice
GEOGRAPHY @ CLARK

- Skills Course: one course required
- Specialization Courses: three required, with at least two at the 200 level or above
- Geography Elective: one at any level

ADDITIONAL RULES

Double Counting
If students are double majors, 2 courses may be cross-counted with the Geography major and minor. However, within the program, each Geography course can satisfy only one requirement for the major or minor, meaning that no course can count in two areas toward the major or minor. Geography majors are required to take 11 GEOG courses in accordance with the guidelines.

Double Majors
All majors must complete 11 Geography courses in accordance with the plan described in this guide, even when they have a second major. Two credits at most can count simultaneously for a first and a second major, subject to the approval of the faculty advisor in each department.

Substitutions
All majors must complete 11 “GEOG” courses unless the course is listed in this guide (e.g. IDND 066, ID 296), or if they have received approval from their faculty advisor and the Chair of the Undergraduate Studies Committee to substitute a non-geography course into their program.

To substitute a non-geography course to count towards a geography requirement, you will need to seek approval of your faculty advisor. In order to do this, you must complete the Petition to Replace a Geography Requirement form.

If you have approval to count a non-geography course towards one of your geography requirements, you are still expected to complete 11 GEOG courses total, replacing the replacement credit with a geography elective.

Letter Grades
Letter grades of less than C- do not count towards the Geography major or minor.

Pass/Fail
Credits with a grade of “Pass” can count towards the major or minor only in the case of Internships to fulfill the Capstone requirement. Other types of credits that are registered as Pass/No Record do not count towards the major or minor.
ADDITIONAL COMPONENTS

RESEARCH / INTERNSHIP CREDITS
Students are urged to take advantage of internship opportunities. Please view our Careers and Opportunities website,* or contact Career Services to learn more about possible opportunities. If students satisfy the requirements for the internship to count as an academic credit at Clark, then the internship can count as a Specialization Course or Capstone toward the Major, subject to the approval of the Advisor.

Career Services can be reached at 508.793.7258 or careers@clarku.edu.

*See also: School of Geography Moodle Page (in Resources).

TRANSFER CREDITS
Transfer credits are evaluated on a case-by-case basis for major/minor credit. If you have transferred to Clark from another university, or if you have taken courses elsewhere that you feel should count in place of a major/minor requirement, consult your advisor and they will instruct you on the process.

STUDYING ABROAD
The Geography department encourages students to spend at least one semester studying abroad, which is an added reason to consult your advisor early in your geography program. For more information, contact the Study Abroad office at 508.793.7363 or studyabroad@clarku.edu.

HONORS IN GEOGRAPHY
The Honors Program in Geography gives eligible students the opportunity to conduct a major research project. To graduate with honors, a student must complete a two-semester honors project conducted under the supervision of two faculty members: the honors supervisor who must be a member of Geography, and the honors reader who does not necessarily need to be a member of Geography. Students are encouraged to perform the honors project during the spring semester of the junior year and fall semester of the senior year.

Geography Honors is open to juniors who, by the end of the first semester of the junior year, have a minimum grade point average of 3.25 overall and 3.50 in the Geography major, and can obtain the approval of an honors supervisor and an honors reader.
For full information on the Honors Program, please view the School of Geography's Guide to Undergraduate Honors. Applications can also be found at the same link.

Additionally, eligible students may choose to join Clark's chapter of Gamma Theta Upsilon (GTU), the International Geographical Honors Society. Visit the GTU website to learn more about the benefits of becoming a member.

DEPARTMENTAL AWARDS & OPPORTUNITIES
The geography department nominates a number of students (juniors and seniors) each year to receive an array of departmentally-funded awards to recognize academic achievement. Additionally, the department nominates and recommends one graduating student for each of the University awards in the appropriate fields. To learn more about this, visit our website.

RESEARCH PRESENTATIONS
Each year, a number of geography students participate in one or more research presentations on and off campus. Students are encouraged to take advantage of these opportunities as they are great platforms for sharing research, networking, and practicing public speaking and presentation skills. Students can also receive Capstone credit for presentations, subject to advisor approval.

- Fall Fest & Academic Spree Day
- AAG Conference (American Association of Geographers)
- NESTVAL (The New England-St. Lawrence Valley Geographical Society)
- AGU Conference (American Geophysical Union)

DEPARTMENTAL EVENTS
The geography department hosts a number of events each academic year that students of all programs are welcome and encouraged to attend.

- Colloquium Speaker Series
- Annual Wallace W. Atwood Lecture
- Practicing Geography Week

See our website and Facebook page for updates and listings of upcoming events.
STUDENT LIFE

Clark Undergraduate Geography Association (CUGA)
CUGA is the voice of Geography, GES, and ESS majors, with student representation on the undergraduate studies committee and the opportunity to attend departmental meetings. CUGA representatives are able to vote and give their ideas and opinions on various topics that concern undergraduate majors. They also attend field trips and periodically have group gatherings to discuss topics of interest such as research, internships, courses and future jobs. If you are interested in joining CUGA, email clarkcuga@gmail.com to learn more.

INTERDISCIPLINARY PROGRAMS

Urban Development Social Change (UDSC) Concentration
The Urban Development Social Change concentration provides students majoring in any field with a structured program of study that enables them to understand the historical, social, economic and political factors that have shaped U.S. cities and how cities have, in turn, affected the lives of their inhabitants.

Human Environment Regional Observatory (HERO)
The Human-Environment Regional Observatory program is a unique undergraduate-graduate-faculty experience that engages in research on human-environment relationships in Massachusetts. HERO Fellows conduct hands-on research under the mentorship of Clark University faculty. The research conducted by HERO Fellows often leads to scholarly publications, presentations at academic conferences across the USA, and awards and honors.

RESOURCES

Moodle
The School of Geography Moodle page is a unique resource to all undergraduate students in the department. If you are a Geography/GES/ESS major or minor, you will have access to this page that serves as a hub for online resources, job/internship postings, research opportunities, program materials, event postings, and more.

This page can be accessed by logging into Moodle with your Clark credentials, going to “My Courses”, and selecting “GEOG_ug Undergraduate School of Geography”. If you are enrolled in one of our programs and you do not see this on your Moodle page, contact the Undergraduate Program Coordinator.
GIS Help Desk
Each year the Geography department hires one or more undergraduate students to staff our GIS Help Desk; a departmental resource that provides free, one-on-one tutoring and guidance to undergraduate and graduate students seeking assistance in GIS programs and applications. The GIS Help Desk is located in the Geography Main Office (Jefferson 220) and runs during the week for set hours. These hours change each semester, so be sure to check our website and Facebook page for the most recent schedule. The Help Desk only runs when classes are in session and sometimes during finals, depending on availability of the staff.

Map Library
The Guy H. Burnham Map & Aerial Photograph Library is an active spatial data information center of global scope. The collection consists of 230,000 maps, 7,800 aerial photographs, 1500 CD-ROMs, as well as atlases, journals, globes, map reference materials, tourist information and monographs (primarily on the subjects of cartography, history of cartography, computerized cartography, map and imagery interpretation, remote sensing and GIS). The library provides service to the faculty, students, and staff of Clark University, as well as the general public throughout New England.

Clark Labs
Since 1987, Clark Labs has been actively developing the IDRISI GIS and Image Processing software which has been used by professionals in a wide range of industries in more than 180 countries. In 2015, Clark Labs released the TerrSet Geospatial Monitoring and Modeling software which includes the IDRISI GIS and Image Processing tools, along with an additional constellation of software tools for monitoring and modeling the earth system.

Geography Newsletters
The department releases two digital newsletters per year, each of which feature highlights from the previous semester and announcements for upcoming months. These newsletters compile updates from departmental faculty, doctoral students, graduate students, undergraduate students, alumni, and staff, and are available online in our digital archive.
# 2017-18 COURSE OFFERINGS

## CORE COURSE OFFERINGS

Courses shaded in gray are TBD, likely will not be offered during the current academic year. Course offerings are subject to change.

### HUMAN ENVIRONMENTAL | CORE COURSES

<table>
<thead>
<tr>
<th>COURSE #</th>
<th>COURSE TITLE</th>
<th>Instructor</th>
<th>Offered Next</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 017</td>
<td>Environment and Society</td>
<td>McCarthy</td>
<td>FA17</td>
</tr>
<tr>
<td>GEOG 075</td>
<td>Americans and the Environment</td>
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<tr>
<td>GEOG 090</td>
<td>Native Americans, Land and Natural Resources</td>
<td>Nirmal</td>
<td>FA17</td>
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<tr>
<td>GEOG 101</td>
<td>Food Justice and Food Movements</td>
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<td>SP18</td>
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<tr>
<td>GEOG 105</td>
<td>The Keeping of Animals</td>
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<tr>
<td>GEOG 106</td>
<td>Water &amp; the City [NEW COURSE] [FYI]</td>
<td>Roy Chowdhury</td>
<td>FA17</td>
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<tr>
<td>GEOG 126</td>
<td>Living in the Material World</td>
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<tr>
<td>GEOG 136</td>
<td>Gender and Environment</td>
<td>Nirmal</td>
<td>FA17</td>
</tr>
<tr>
<td>GEOG 179</td>
<td>Global &amp; Local Environmental Justice</td>
<td>Bornschlegl</td>
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<tr>
<td>GEOG 180</td>
<td>Earth Transformed: Human Action</td>
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### URBAN ECONOMIC | CORE COURSES

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<tbody>
<tr>
<td>GEOG 016</td>
<td>Introduction to Economic Geography</td>
<td>Murphy</td>
<td>FA17</td>
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<tr>
<td>GEOG 020</td>
<td>American Cities: Changing Spaces, Community Places</td>
<td>Best</td>
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<tr>
<td>GEOG 028</td>
<td>Discover Worcester [FYI]</td>
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<tr>
<td>GEOG 052</td>
<td>Global Change, Regional Challenges</td>
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<tr>
<td>IDND 066</td>
<td>Global Society</td>
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<td>GEOG 107</td>
<td>Miracles of Asia</td>
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<tr>
<td>GEOG 127</td>
<td>Political Economy of Development</td>
<td>Peet</td>
<td>FA17</td>
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<tr>
<td>GEOG 152</td>
<td>Geography of Globalization</td>
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<tr>
<td>GEOG 157</td>
<td>Psychogeography &amp; Cultural Spaces</td>
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<tr>
<td>GEOG 172</td>
<td>City Planet: Urban Challenges in a Globalized World</td>
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### EARTH SYSTEM SCIENCE | CORE COURSES

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<tr>
<td>GEOG 102</td>
<td>Weather and Climate</td>
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<td>SP18</td>
</tr>
<tr>
<td>GEOG 104</td>
<td>Earth System Science</td>
<td></td>
<td>SP18</td>
</tr>
<tr>
<td>GEOG 116</td>
<td>Forest Ecology</td>
<td>Kulakowski</td>
<td>FA17</td>
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<td>GEOG 119</td>
<td>Arctic in the Anthropocene</td>
<td>Frey</td>
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## GEOGRAPHIC INFORMATION SCIENCE | CORE COURSES

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<tbody>
<tr>
<td>GEOG 087</td>
<td>Introduction to Environmental Information Sys.</td>
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<td>GEOG 190</td>
<td>Introduction to GIS</td>
<td>Sangermano</td>
<td>FA17</td>
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<td>GEOG 190</td>
<td>Introduction to GIS</td>
<td>Sangermano</td>
<td>SP18</td>
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SKILLS COURSE OFFERINGS
COURSES SHARED IN GRAY ARE TBD, likely will not be offered during the current academic year.
COURSE OFFERINGS ARE SUBJECT TO CHANGE.

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<tr>
<td>GEOG 110</td>
<td>Introduction to Quantitative Methods</td>
<td>Pontius</td>
<td>FA17</td>
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<tr>
<td>GEOG 110</td>
<td>Introduction to Quantitative Methods</td>
<td>Estes</td>
<td>SP18</td>
</tr>
<tr>
<td>GEOG 141</td>
<td>Research Design and Methods in Geography**</td>
<td>Roy Chowdhury</td>
<td>SP18</td>
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<tr>
<td>GEOG 190</td>
<td>Introduction to GIS</td>
<td>Sangermano</td>
<td>FA17</td>
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<tr>
<td>GEOG 190</td>
<td>Introduction to GIS</td>
<td>Sangermano</td>
<td>SP18</td>
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<tr>
<td>ID 296</td>
<td>Advanced Vector GIS</td>
<td>Ogneva-Himmelberger</td>
<td>FA17</td>
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<tr>
<td>GEOG 246</td>
<td>Geospatial Analysis with R</td>
<td>Estes</td>
<td>FA17</td>
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<td>GEOG 247</td>
<td>Intermediate Quantitative Methods in Geography</td>
<td>Ratick</td>
<td>FA17</td>
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<td>GEOG 252</td>
<td>Urban Design Research Lab</td>
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<td>GEOG 260</td>
<td>GIS &amp; Land Change Models</td>
<td>Pontius</td>
<td>SP18</td>
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<td>GEOG 282</td>
<td>Advanced Remote Sensing</td>
<td>Rogan</td>
<td>SP18</td>
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<tr>
<td>GEOG 293</td>
<td>Introduction to Remote Sensing</td>
<td>Sangermano</td>
<td>FA17</td>
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<td>GEOG 296</td>
<td>Advanced Raster GIS</td>
<td>Eastman</td>
<td>SP18</td>
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<tr>
<td>ID 213</td>
<td>Web Mapping &amp; Open Source GIS</td>
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</tbody>
</table>

**GEOG 141 can only be counted as a Skills course when a student’s Research Methods requirement is fulfilled in another department (subject to approval). Otherwise, a different skills course is required in addition to GEOG 141.

See the online Academic Catalog for complete Course Listings and Descriptions.
SPECIALIZATION COURSE OFFERINGS

COURSES SHADED IN GRAY ARE TBD, likely will not be offered during the current academic year.

COURSE OFFERINGS ARE SUBJECT TO CHANGE.

HUMAN ENVIRONMENTAL | SPECIALIZATION COURSES

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<tbody>
<tr>
<td>GEOG 220</td>
<td>Property &amp; the Global Environment</td>
<td>McCarthy</td>
<td>SP18</td>
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<td>GEOG 225</td>
<td>Environmental Politics</td>
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<td>GEOG 237</td>
<td>Feminism, Nature and Culture</td>
<td>Emel</td>
<td>FA17</td>
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<td>GEOG 238</td>
<td>Animal Geographies</td>
<td>Emel</td>
<td>FA17</td>
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<td>GEOG 261</td>
<td>Decision Methods: Env. Management Policy</td>
<td>Ratick</td>
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URBAN ECONOMIC | SPECIALIZATION COURSES

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<tr>
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<td></td>
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<tr>
<td>GEOG 224</td>
<td>Economy &amp; Environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEOG 241</td>
<td>Suburbia: Culture, Politics &amp; Space</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEOG 248</td>
<td>Social Justice &amp; The City</td>
<td>Best</td>
<td>SP18</td>
</tr>
<tr>
<td>GEOG 252</td>
<td>Urban Design Research Lab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEOG 257</td>
<td>Internet Geographies</td>
<td>Alvarez Leon</td>
<td>SP18</td>
</tr>
<tr>
<td>GEOG 258</td>
<td>Utopian Visions, Urban Realities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEOG 274</td>
<td>Africa’s Development in Global Context</td>
<td>Murphy</td>
<td>SP18</td>
</tr>
<tr>
<td>GEOG 280</td>
<td>Urban Ecology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEOG 286</td>
<td>Special Topic: Cities, Capitalism &amp; Crisis</td>
<td>Sphar</td>
<td>FA17</td>
</tr>
<tr>
<td>GEOG 289</td>
<td>Development Policy</td>
<td>Peet</td>
<td>SP18</td>
</tr>
</tbody>
</table>

EARTH SYSTEM SCIENCE | SPECIALIZATION COURSES

<table>
<thead>
<tr>
<th>COURSE #</th>
<th>COURSE TITLE</th>
<th>Instructor</th>
<th>Offered Next:</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 205</td>
<td>Introduction to Hydrology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEOG 216</td>
<td>Field Methods: Environmental Science</td>
<td>Kulakowski</td>
<td>FA17</td>
</tr>
<tr>
<td>GEOG 232</td>
<td>Landscape Ecology</td>
<td>Rogan</td>
<td>FA17</td>
</tr>
<tr>
<td>GEOG 263</td>
<td>Climate System &amp; Global Environmental Change</td>
<td>Frey</td>
<td>SP18</td>
</tr>
<tr>
<td>GEOG 283</td>
<td>Terrestrial Ecosystems and Global Change</td>
<td>Williams</td>
<td>SP18</td>
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</tbody>
</table>

GEOGRAPHIC INFORMATION SCIENCE | SPECIALIZATION COURSES

<table>
<thead>
<tr>
<th>COURSE #</th>
<th>COURSE TITLE</th>
<th>Instructor</th>
<th>Offered Next:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID 296</td>
<td>Advanced Vector GIS</td>
<td>Ogneva-Himmelberger</td>
<td>FA17</td>
</tr>
<tr>
<td>GEOG 246</td>
<td>Geospatial Analysis with R</td>
<td>Estes</td>
<td>FA17</td>
</tr>
<tr>
<td>GEOG 247</td>
<td>Intermediate Quantitative Methods in Geography</td>
<td>Ratick</td>
<td>FA17</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Instructor</td>
<td>Semester</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------------------</td>
<td>------------</td>
<td>----------</td>
</tr>
<tr>
<td>GEOG 260</td>
<td>GIS &amp; Land Change Models</td>
<td>Pontius</td>
<td>SP18</td>
</tr>
<tr>
<td>GEOG 279</td>
<td>GIS &amp; Map Comparison</td>
<td>Pontius</td>
<td>SP18</td>
</tr>
<tr>
<td>GEOG 282</td>
<td>Advanced Remote Sensing</td>
<td>Rogan</td>
<td>SP18</td>
</tr>
<tr>
<td>GEOG 293</td>
<td>Introduction to Remote Sensing</td>
<td>Sangermano</td>
<td>FA17</td>
</tr>
<tr>
<td>GEOG 296</td>
<td>Advanced Raster GIS</td>
<td>Eastman</td>
<td>SP18</td>
</tr>
</tbody>
</table>
FORMS & PAPERWORK

In this section you will find a number of forms that you will need throughout your time as a Geography major or minor. Most of these forms are kept for departmental records, but some of them should be submitted to the Registrar’s office, etc. Please review the instructions on each form before submitting it. **All forms below are required unless otherwise noted.**

**MAJOR DECLARATION FORM**
This form is used when you are ready to formally declare a major, minor, or concentration. In Geography, if you plan to declare the major, you will first need to have a faculty advisor in the department. If you have questions about this or need help finding a faculty advisor, contact the Undergraduate Program Coordinator. If you plan to declare a Geography minor, you do not need to have a faculty advisor.

Once you have obtained your new faculty advisor’s signature, return this completed form to the Undergraduate Program Coordinator, who will make a copy for departmental records and then will send it over to the Registrar’s Office to be processed.

This form can be found on the Registrar’s Website, or you can pick one up in the Geography office.

**Must be completed by:** Undeclared students must declare a major before the second semester of their second year at Clark. Otherwise, if a student is adding Geography as a minor or a second major, there is no specific deadline.

**Return to:** Undergraduate Program Coordinator

- Form completed Date Completed: _________________

**MAJOR/MINOR WORKSHEETS**
These worksheets are meant to keep track of your progress throughout your time in the Geography major or minor. The department will keep a copy of this sheet on hand and it is recommended that you update it each semester. This is helpful for advising appointments so that your advisor can see which requirements you have completed and which requirements still remain.

**Return to:** Undergraduate Program Coordinator

- Form completed Date Completed: _________________
**CAPSTONE FORM (REQUIRED FOR MAJORS ONLY)**
This form is to notify the department of your plans to satisfy the capstone requirement. You should have this form signed twice: once before registering for the credit that will satisfy this requirement, and again before the end of the semester when you are nearing the end of your project. The department will hold onto this form when it is passed in the first time so that you can request it back to have it signed a second time at the end of the semester.

**Must be completed by:** This form must be completed before registering for the capstone, and then a second time before the last day of the semester in which the credit was taken.

- ☐ Form completed (1) Date Completed: _______________________
- ☐ Form completed (2) Date Completed: _______________________

**GRADUATION CLEARANCE FORM**
The graduation clearance form is intended to notify the Registrar’s Office of your remaining requirements. **All students are required to complete this form once they have registered in 20 units at Clark** (normally happens by the end of the first semester of the third year). This form needs to be signed by your faculty advisor for each major/minor/concentration you are enrolled in.

To complete this form, you should make an appointment with your faculty advisor and bring a copy of your most recent unofficial transcript as well as the most recently completed version of your major/minor worksheet. This will help your advisor see what you have completed, and will also help determine which courses you can plan to take to satisfy your remaining requirements.

**Must be completed by:** The Registrar’s Office will notify you when you are eligible to complete a graduation clearance form. If you do not complete the form by the given deadline, a hold will be put on your account and you will not be able to register for courses for the upcoming semester.

**Return to:** Registrar’s Office (939 Main Street, Room 305 in the Alumni and Student Engagement Center – ASEC)

These forms are not retained by the Geography department. This form can be found on the Registrar’s Website, or you can pick one up in the Geography office.

- ☐ Form completed Date Completed: _______________________


RESEARCH/INTERNSHIP CREDIT APPROVAL FORMS (OPTIONAL)
These forms are used if you plan to pursue an internship or research opportunity for academic credit (e.g. to satisfy a capstone requirement). The first step is to read the Academic Credit Internship Program Description, then fill out the Academic Internship Application online. Next, you will need to download the following forms from the Career Services website and complete them by the deadline listed: Internship Supervisor Agreement Form, Policies and Procedures Agreement Form, Signatures sheet, and internship timesheet.

Must be completed by: Deadline set on Career Services website

Return to: Career Services

☐ Forms completed Date Completed: _________________________

PETITION TO REPLACE A GEOGRAPHY REQUIREMENT (OPTIONAL)
This optional form is only necessary if you plan to petition to include a non-geography course in your geography curriculum. Some examples of when this request would be appropriate:

1) if you took a course through another academic department that you would like to count towards a specific geography requirement
2) if you are a double major and you took a course that overlaps with a required geography course (e.g. research methods)

This form is subject to the approval of your faculty advisor as well as the Chair of the Undergraduate Studies Committee. It is preferable that you complete this form before enrolling in the non-geography course.

Return to: Undergraduate Program Coordinator

☐ Form completed Date Completed: _________________________

CHANGE OF ADVISOR FORM (OPTIONAL)
This optional form is only necessary if you wish to switch to a new faculty advisor within the geography department. This form can be found on the Academic Advising Website, or you can pick one up in the Geography office.

Return to: Undergraduate Program Coordinator

☐ Form completed Date Completed: _________________________
# MAJOR WORKSHEET

To be completed by the student and advisor; kept on file with Undergraduate Program Coordinator

STUDENT NAME: ___________________________________ EMAIL ADDRESS:____________________________________

INTENDED GRADUATION YEAR: _______ FACULTY ADVISOR:__________________________________________________

## CORE COURSE REQUIREMENTS

<table>
<thead>
<tr>
<th>CORE CATEGORIES (1 COURSE REQUIRED FROM EACH CORE)</th>
<th>COURSE NUMBER &amp; TITLE</th>
<th>SEMESTER &amp; YEAR TAKEN</th>
<th>PROFESSOR</th>
<th>GRADE RECEIVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Environment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban Economic</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Earth System Science</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Geographic Information Science</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## SKILLS REQUIREMENTS

<table>
<thead>
<tr>
<th>SKILLS COURSE (1 REQUIRED)</th>
<th>COURSE NUMBER &amp; TITLE</th>
<th>SEMESTER &amp; YEAR TAKEN</th>
<th>PROFESSOR</th>
<th>GRADE RECEIVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skills Elective</td>
<td></td>
<td></td>
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</tbody>
</table>

## RESEARCH METHODS REQUIREMENT

<table>
<thead>
<tr>
<th>RESEARCH COURSE</th>
<th>SEMESTER &amp; YEAR TAKEN</th>
<th>PROFESSOR</th>
<th>GRADE RECEIVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 141: Research Methods</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

☐ Check this box if the Research Methods requirement was filled by a different course (accepted with advisor approval only), and if so indicate which course: ____________________
MAJOR WORKSHEET (Continued)

SPECIALIZATION REQUIREMENTS
Please circle your specialization area, or indicate if otherwise. All Specialization courses should be taken within the same category, unless otherwise advised by the student's faculty advisor.

<table>
<thead>
<tr>
<th>HUMAN ENVIRONMENT</th>
<th>URBAN ECONOMIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>EARTH SYSTEM SCIENCE</td>
<td>GIS</td>
</tr>
</tbody>
</table>

OTHER: ____________________________________________

<table>
<thead>
<tr>
<th>SPECIALIZATION COURSES (4 REQUIRED, 3 MUST BE 200-LEVEL)</th>
<th>COURSE NUMBER &amp; TITLE</th>
<th>SEMESTER &amp; YEAR TAKEN</th>
<th>PROFESSOR</th>
<th>GRADE RECEIVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 or 200 Level Course</td>
<td></td>
<td></td>
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<tr>
<td>200 Level Course</td>
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<tr>
<td>200 Level Course</td>
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<td></td>
</tr>
<tr>
<td>200 Level Course</td>
<td></td>
<td></td>
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</tbody>
</table>

CAPSTONE REQUIREMENT
Please circle the type of Capstone Credit, or indicate if otherwise. All Capstone credits must be pre-approved by the student's faculty advisor before registering for the credit (see Capstone Form on page 27).

DIRECTED STUDY/RESEARCH WITH FACULTY
INTERNERSHIP
OTHER: ____________________________

<table>
<thead>
<tr>
<th>CAPSTONE CREDIT TITLE</th>
<th>Course Number &amp; Title (if applicable)</th>
<th>SEMESTER &amp; YEAR COMPLETED</th>
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<tbody>
<tr>
<td></td>
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</table>

MEETINGS WITH ADVISOR

DATE: NOTES:
DATE: NOTES:
MINOR WORKSHEET

To be completed by the student and advisor; kept on file with Undergraduate Program Coordinator

STUDENT NAME: __________________________________ EMAIL ADDRESS:_____________________________

INTENDED GRADUATION YEAR: _______  FACULTY ADVISOR: _________________________________________

MAJOR/MINOR/CONCENTRATION:________________________________________________________________

CORE REQUIREMENTS

<table>
<thead>
<tr>
<th>CORE CATEGORIES (2 REQUIRED)</th>
<th>COURSE NUMBER &amp; TITLE</th>
<th>SEMESTER &amp; YEAR TAKEN</th>
<th>PROFESSOR</th>
<th>GRADE RECEIVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Environment</td>
<td></td>
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</tr>
<tr>
<td>Urban Economic</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Geographic Information Science</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SKILLS REQUIREMENTS

<table>
<thead>
<tr>
<th>SKILLS COURSES (1 REQUIRED)</th>
<th>COURSE NUMBER &amp; TITLE</th>
<th>SEMESTER &amp; YEAR TAKEN</th>
<th>PROFESSOR</th>
<th>GRADE RECEIVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skills Elective</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MINOR WORKSHEET (Continued)

SPECIALIZATION REQUIREMENTS

Please circle your specialization area, or indicate if otherwise. All Specialization courses should be taken within the same category, unless otherwise advised by the student’s faculty advisor.

<table>
<thead>
<tr>
<th>HUMAN ENVIRONMENT</th>
<th>URBAN ECONOMIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>EARTH SYSTEM SCIENCE</td>
<td>GIS</td>
</tr>
<tr>
<td>OTHER: ____________________________________________</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPECIALIZATION COURSES (3 REQUIRED, 2 MUST BE 200-LEVEL)</th>
<th>COURSE NUMBER &amp; TITLE</th>
<th>SEMESTER &amp; YEAR TAKEN</th>
<th>PROFESSOR</th>
<th>GRADE RECEIVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 or 200 Level Course</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200 Level Course</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200 Level Course</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</table>

ELECTIVE REQUIREMENT

<table>
<thead>
<tr>
<th>ELECTIVE GEOGRAPHY COURSE (ANY LEVEL)</th>
<th>COURSE NUMBER &amp; TITLE</th>
<th>SEMESTER &amp; YEAR TAKEN</th>
<th>PROFESSOR</th>
<th>GRADE RECEIVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

MEETINGS WITH ADVISOR (Optional)

DATE: NOTES:

DATE: NOTES:
CAPSTONE FORM

Please submit this completed form to the Undergraduate Program Coordinator in the Geography Office twice: once before registering for the credit, and again after completion of the credit.

STUDENT NAME: ___________________________ EMAIL ADDRESS: ___________________________

INTENDED GRADUATION YEAR: _____  FACULTY ADVISOR: ___________________________

CURRENT LEVEL (at time of first form submission):

☐ First Year
☐ Sophomore
☐ Junior
☐ Senior

NAME OF 200-LEVEL CREDIT, PROJECT, INTERNSHIP, etc.: ___________________________

________________________________________________

INITIAL DATE OF SUBMISSION: ___/___/____

SIGNATURE OF PROFESSOR WHO INTENDS TO AWARD THE CREDIT: ___________________________

(Print Name): ______________________________________________________________________________________________

SIGNATURE OF FACULTY ADVISOR APPROVAL: ___________________________

SIGNATURE OF STUDENT: ______________________________________________________________________________________

FINAL DATE OF SUBMISSION: ___/___/____

SECOND SIGNATURE OF PROFESSOR WHO HAS AWARDED THE CREDIT: __________________________

SECOND SIGNATURE OF FACULTY ADVISOR: _________________________________________________________

SECOND SIGNATURE OF STUDENT: ____________________________________________________________________________

This form is meant to stay in departmental files, but may be forwarded to the Registrar’s Office for confirmation of the credit. Blank Capstone forms can also be downloaded online or picked up in the Geography Main Office (Jefferson 220).
PETITION TO REPLACE GEOGRAPHY REQUIREMENT

Under extraordinary circumstances, the Chair of the Undergraduate Studies Committee, with consensus from the student’s faculty advisor, may approve a non-Geography course to count toward a Geography major or minor requirement. Transfer and study abroad credits must be pre-approved by Academic Advising or the Study Abroad office. Students may be asked to submit course syllabi, papers or materials, or a letter from an advisor/instructor for consideration.

In keeping with Program Guide requirements, the student must still complete a total of 11 Geography courses. Please submit this signed form to the Undergraduate Program Coordinator in the Geography Main Office. This form should be kept on file with student’s Major Worksheet.

STUDENT NAME: ____________________  ID NUMBER: ______________________________
MAJOR/MINOR/CONCENTRATION: ______________________________________________________________
INTENDED GRADUATION YEAR: _____  FACULTY ADVISOR: __________________________________________

COURSE SUBSTITUTION (attach any supporting materials or letters)

NUMBER & TITLE OF PROPOSED REPLACEMENT COURSE: ______________________________
INSTRUCTOR NAME: _______________________________  DEPARTMENT: _______________________________

PETITION TO REPLACE THE FOLLOWING GES REQUIREMENT:

☐ Core Course (00 or 100 level)
☐ Skills Course
☐ Research Methods Course (rarely accepted, typically only in cases of double-majors)
☐ Specialization Course (can be 100 level only if student has already taken enough 200-levels)

REASON FOR PETITION: ____________________________________________________________________________
______________________________________________________________________________________________________

GES ELECTIVE COURSE THAT WILL FULFILL THE 12th REQUIREMENT: ______________________________

Student Signature: ______________________________________________________________  Date: __/__/____

(This section to be completed by department faculty)

Faculty Advisor Signature: _____________________________________________________________  Date: __/__/____
USC Chair Signature: ________________________________________________________________  Date: __/__/____

☐ APPROVED  ☐ DENIED
"Geography nurtures a unique way of seeing our world. It bridges science and social science, the physical and human worlds, the local and global, the verbal and visual, the quantitative and qualitative. Maybe that's why so many professionals I meet say that if they could do it over again, they'd study geography."

-----------------------------

Anthony Bebbington, Professor, Graduate School of Geography