



### **[BIO S39G] Biological Skills – Marine Genomics**

Prof. April Horton

Enrollment: up to 16

Dates: April 29 to May 22

Extra cost: \$630

Locations: Bates campus; Downeast Institute, Beals, Maine; Schiller Coast Studies Center, Orr's Island, Maine

Prerequisite: BIO 195

This course is designed to build particular skills in an area of biology, with a general aim of preparing students for summer internships and careers in the biological sciences. The Marine Genomics version of the course builds skills in breeding and rearing bivalves (oysters, clams) as well as molecular and genomic analysis of selectively bred lines of shellfish. Shellfish are important to the health of Maine's marine ecosystem as well as commercially important to Maine's coastal economy and have experienced problems with overfishing, habitat loss, and disease. Students will travel to the Downeast Institute's (DEI) Marine Research Laboratory where scientists conduct applied research on commercially important shellfish species in Maine. There, students will learn about Maine's coastal economy and marine environment and enter into a collaborative project with DEI researchers to use molecular and genetic approaches to study genomic selected shellfish lines, impacts of predation of shellfish populations, or candidate species for shellfish aquaculture. At Bates, students will learn molecular biology approaches to isolating and characterizing nucleic acids from shellfish as well as bioinformatic approaches to studying shellfish genomes. The course is intended for students majoring in biology but may be relevant to students interested in biochemistry, neuroscience, earth and climate sciences, or environmental studies, or preparing for health-related careers.

### **[EACS s30] Earth Science in Aotearoa New Zealand**

Prof. Zachary Murguia Burton & Rebecca Minor, Assistant in Instruction

Enrollment: up to 16

Dates: April 29 to May 21

Extra cost: \$5,000

Location: Aotearoa New Zealand – multiple locations

Prerequisite: At least one (1) EACS course at the introductory (100) level.

There are only a few places on Earth where students could visit and walk across a co-located transform plate boundary and convergent plate boundary. There are even fewer places where these boundaries manifest as major strike-slip faults producing devastating earthquakes and



major subduction zones producing frequent volcanism and active hydrothermal systems. And there is only one place where students can explore the site of the world's largest supervolcano eruption of the past 70 millennia, see geysers and hot springs near geothermal renewable energy plants, trace the globally significant Alpine Fault plate boundary on land, visit spectacular glacier-carved (climate change-influenced) fiords dubbed the 8th Wonder of the World, visit active glaciers and analyze glacial sediment, conduct a meaningful course-long field research project integrating mapping with in-situ mineralogical and geochemical data collected with state-of-the-art analytical instruments (ultimately contributing to the scientific community and literature), engage with and learn from Māoritanga (indigenous Māori culture) throughout the country, hear and watch firsthand accounts of a deadly and damaging series of recent earthquakes, meet and learn from government scientists and local academics while guided by a Bates instructor whose PhD fieldwork was in the island country, take "one of the most beautiful ferry rides" and also "one of the top 10 coastal drives" in the world, visit geological sites prominent in popular culture as filming locations (Lord of the Rings, Chronicles of Narnia, Wolverine, etc.), and overall have a once-in-a-lifetime opportunity to experience a geologically, biologically, and culturally unique set of islands (all of the above being within easy driving distance)—and that place is Aotearoa New Zealand.

### **[REL/ASIA S26] The Buddhist Himalaya**

Prof. Alison Melnick & Eric Dyer, Assistant Director of Student Academic Support

Enrollment: up to 12

Dates: April 24 to May 21

Extra cost: \$5,000

Location: India – multiple locations

This course uses experiential learning to give students a firsthand experience of the unique religious history and practices of the Buddhist Himalaya, through interaction with traditionally Buddhist communities in rural and urban Ladakh. Students will conduct ethnographic fieldwork relating to modern Buddhist practice, and will also examine these from historical, anthropological, and literary perspectives. They will observe rituals, interview practitioners, and participate in the daily life of the Buddhist community. Through sustained engagement in Buddhist culture, including meeting with practitioners and visiting religious organizations and sites (including monasteries, stupas, temples, and pilgrimage sites), and time spent in both villages and larger towns, students will complete this course with a unique depth of intercultural understanding. The class will involve reading and discussion about Ladakhi Buddhism, brief research papers, daily journaling, and a group research component. We will have a brief stay in Delhi at the end of the trip, with a planned visit to the Taj Mahal (a UNESCO World Heritage



site) in Agra.

### **[AVC S16/ASIA S16] Understanding Vietnam – Its History and Culture**

Prof. Trian Nguyen & Prof. Liping Miao

Enrollment: up to 18

Dates: April 29 to May 22

Extra cost: \$4,800

Location: Vietnam – multiple locations

During Spring May 2024, Bates College will sponsor a short-term unit abroad program in Vietnam. The unit affords students an opportunity to study a wide range of Vietnamese culture, art, architecture and history through an interdisciplinary lens. Students explore Vietnam within the framework and context of specific historical and visual cultural, ranging from ancient monuments to contemporary sites. No prior study of culture or language is required. The program starts the first and second week, anchoring in Hanoi, the 1000 years old capital of Vietnam, to explore a few chosen historical monuments and visit Perfumed Mountain, ancient capital Hoa-Lu, and Ha-Long Bay. Students then fly to Hue, the last dynastic capital of Vietnam, known as the heartbeat of the country and the center of culture and Buddhist temples. The unit then travels to Hoi-An, the most charming ancient town, with diverse cultures and architectures. The unit takes a one-day trip to My-Son, the ancient capital of Cham kingdom. The last leg of the unit is Saigon, the former capital of the South Vietnam, now renamed as the Ho Chi Minh City, the metropolitan center of the country. From there, students will visit Cu-Chi Tunnels, the legendary site of the Vietnam/American War.