

Summer Study Abroad

Syllabus

UHON 4808 Paleontology in China

(3 cr., three weeks in June; 15-20 students. Open for all students in the U.S.).

Instructor:

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Textbook/Readings:

Students will be given a Xeroxed course handbook, including journal articles/ book chapters and background information on geology and geography. Students will also be given assigned readings.

Course Outline:

The course provides first-hand experience excavating a wide range of fossils from three world-renowned fossil sites in northeast China, from geological formations spanning 130 millions years ago (Ma) onwards to 50 Ma. Additionally, visits to at least 6 natural history museums throughout northeast China demonstrate a wealth of information on ancient life biodiversity.

Three outstanding and world-renowned fossil sites to be visited (see Figure 1), representing three critical geological time periods when the modern ecosystem in the Northern Hemisphere was being shaped, are **1**) Chaoyang fossil site (early Cretaceous, ~130 Ma; **site C** in Fig. 1), **2**) Jiaying fossil site (early Paleocene, ~65 Ma; **site E** in Fig. 1), and **3**) Fushun Coal Mine (early Eocene, ~50 Ma; **site D** in Fig. 1). These sites contain fossils such as one of the earliest flowering plants, insects, feathered dinosaurs, primitive birds, unusual mammals, rich amber deposits, plant leaves with fine structures, and mammalian fossils preserved with stomachs and associated plant fragments. These fossils clearly demonstrate **1**) the evolution of biodiversity in East Asia and **2**) biogeographical connections to North America and Europe. Students in the course will encounter many plants in fossils (magnolia, chestnut, birch, alder, basswood, hornbeam, etc.), an excellent example of the east Asia-southeast North America disjunct floristic distribution pattern, one of the best known biogeographical phenomena in North Hemisphere.

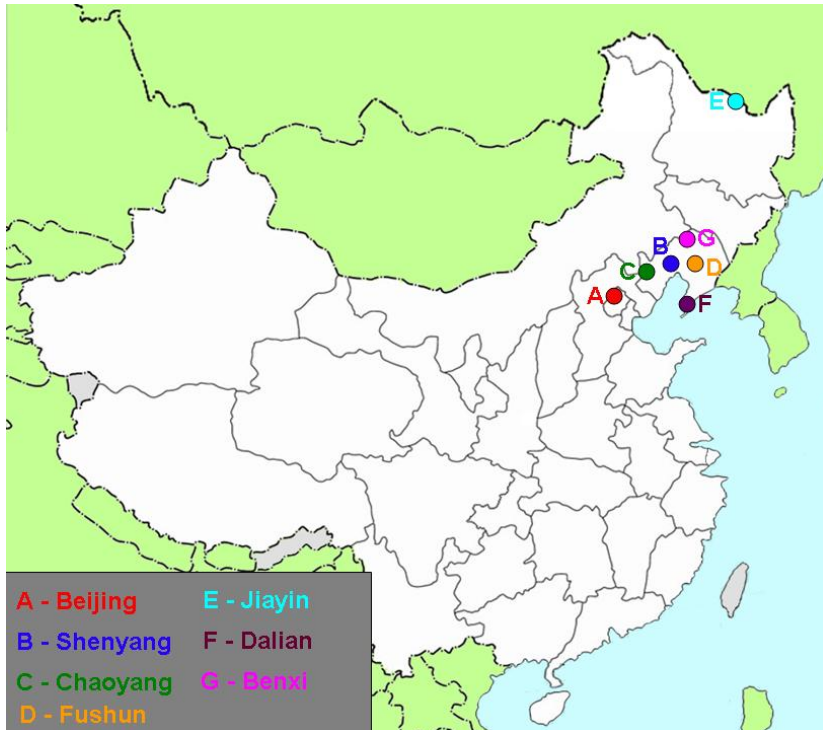


Figure 1. Map showing the fossil sites to be visited and travel routes.

- **Site C** – Chaoyang fossil site (early Cretaceous, ~130 million years old), west Liaoning Province; **Site D** – Fushun Coal Mine (early Eocene, ~50 million years old), east Liaoning Province; **Site E** – Jiayin fossil site (early Paleocene, ~65 million years old), north Heilongjiang Province.
- Travel will follow the order of routes from **A → B → C → B → E → D → B → G → B → F → A**.

If a permit is granted, we will collect and bring the collections back to our museum. Through on-site exploration, hands-on collection, reading, discussion, and guest lectures, students can gain insights into the amazing biodiversity in the geological past. Using China's fossil resources as an example, this trip offers an in-depth look into the evolution of life shaping our world. Students also learn techniques in paleontology ranging from learning how this type of scientific investigation is conducted to attaining scientific data in the field to learning how this type of scientific investigation is conducted. Students are required to take notes in the field and will take an on-site final exam involving fossil determinations, rock recognition, and paleoenvironment interpretation. This will also be an introduction to a totally different culture for the students from ETSU, and will bring them a more global perspective on both science and humanity.

Highlights of this study abroad course:

- Two days of cultural and historical tours in **Beijing**, China's most dynamic and international metropolis; visiting the Forbidden City, the Great Wall, and several museums (National Museum, Natural History Museum, Earth Museum, ...)
- Unique travel experience in China: 10 hours overnight train ride between Beijing and NE China;
- Six days of experience at fossil sites;
- Visit several natural history museums in NE China and the first China's GeoPark;

- Cultural exposure through interaction with Chinese students (who will join us for the field trip);
- All these activities surround the central theme of this course: fossils from NE China and their importance for understanding evolution of lives on Earth.
- Led by Dr. Liu, a paleobotanist native to China who has traveled extensively within China and has been working on Chinese fossil plants in the past decade.

Provisional itinerary (July 13-August 3, 2009):

- July 13-14: Travel to **Beijing** (capital of China)
 14: stay overnight at the North China University of Technology (NCUT) in **Beijing**
 15: Train ride from **Beijing** to **Shenyang** & stay in the dorm on the Shenyang Normal University campus (SNU)
 16: Visit Paleontological Museum of Liaoning, SNU
 17: Bus ride from **Shenyang** to **Chaoyang** (**Site C**, fig. 1)
 18-19: Field work on **Site C** & visit the fossil museum on site.
 20: back to **Shenyang**; discussion/guest lectures
 21: Train ride from **Shenyang** to **Jiayin** (**Site E**)
 22-23: Field work on **Site E**
 24: Train ride from **Jiayin** to **Fushun** (**Site D**)
 25-26: Field work on **Site D**
 27: Train ride from **Fushun** back to **Shenyang**, discussion/guest Lectures & summarize the field work
 28: Bus ride to **Benxi** to visit the GeoPark & earth science museum and back to **Shenyang** late afternoon
 29-30: Bus ride from **Shenyang** to **Dalian** to visit the natural history museum
 31: Train ride from **Dalian** to **Beijing** and stay at NCUT
 Aug. 1: Visit museums of natural history and earth science in **Beijing**
 2: Sightseeing in **Beijing**
 3: back to the States

Timetable: The 3-week field trip in July starts in **Beijing**.

Proposed three fossil sites and associated activities

Locality	Age	Significance	Activity
Site 1. (Site C) Chaoyang	Early Cretaceous (130 Ma)	Mesozoic lagerstätten, yielding Jehol ancient biota, a preserved paleoecosystem through volcanic events	Collecting, determining paleoecology, group discussion on the evolution of early flowering plants (guest lecture from Dr. G. Sun, SNU)
Site 2. (Site E) Shanwang	Early Paleocene (65 Ma)	Cretaceous-Tertiary mass extinct site (K/T boundary site); best known in Asia	Collecting, describing stratigraphic sections, discussing taphonomy and paleoecology and how the ancient environment was formed; K/T mass extinct.
Site 3. (Site D) Fushun	Early Eocene (50 Ma)	Developed under a global warming climate, including many east Asian and North American disjunct genera; one of the largest open-pit coal mines in Asia	Collecting insects and leaves, reconstructing paleoclimate (nearest living relative comparison, leaf margin analysis and foliar physiognomic analysis), interpreting east Asian-North American disjunct distribution pattern; revisiting the concept of east Asian-

			east North America disjunct taxa and tracing their pattern. Field exam.
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Course grades and assignments:

Grades

Journal (15 x 10 pts)	- 150 pts
Discussion (10 x 5pts)-	50 pts
Term paper	- 100 pts
Total -----	- 300 pts

A = >93%	A-=90-93%	
B+=87-89%	B =83-86%	B-=80-82%
C+=75-79%	C =70-74%	C-=65-69%
D+=62-64%	D =55-61%	F <55%

Journal:

Students will keep a journal, with entries of 250 words or more per entry. 15 journal reports representing the main activities in the field trips/museum are required. Students will also be given a specific question to address as part of the journal entry. Journals will be collected after students return to ETSU (due on August 5).

Discussions:

We will meet 10 times in the evenings to discuss the day’s activities. Points will be assessed based on preparation and participation.

Term paper:

5 pp., plus references. Students will use CBE style for reference citation (<http://library.osu.edu/sites/guides/csegd.php>). Any topic related to the course, approved by the instructor, may be used; suggested topics will be provided. Students will pick topic and carry out some library research before leaving ETSU. The term paper will be due 2 week after students return to the States.

TRAVEL

1. ENTRY/EXIT REQUIREMENTS:

A valid passport and visa are required to enter China and must be obtained from Chinese Embassies and Consulates before traveling to China.

To apply for Visa

1). *Address:*

Visa Office of the Chinese Embassy
2201 Wisconsin Avenue, NW, Suite 110, Washington, DC 20007

Tel.: (202) 338-6688; Fax: (202) 588-9760; Email: chnvisa@bellatlantic.net

Alternative: The application for China visa can also be handled by a travel agency – China Visa Office (<http://www.visa-chinese.com/china-tourist-visa.htm>), which charge \$29.00 per person (service fee), in addition to the \$130.00 visa application fee (with a single entry) charged by the Chinese Embassy. (Total cost: \$159.00 per person).

2). *Visa Application form:*

<http://www.visa-chinese.com/china-visa-application-form.pdf>

3). **More information:** can be accessed from the website of the Chinese Embassy in Washington DC (<http://www.china-embassy.org/eng/hzqz/zgqz/t84246.htm>).

2. SAFETY AND SECURITY:

(Mostly excerpted as being relevant from the US Department of State Website, http://travel.state.gov/travel/cis_pa_tw/cis/cis_1089.html)

Americans visiting or residing in China are advised to take the normal safety precautions travelers take when in any foreign country. Specifically, travelers should remain aware of their surroundings and of events that are happening around them. Travelers should respect local police requirements to avoid travel in some areas.

Terrorism is rare in China, although a small number of bombings have occurred in areas throughout China. Recent bombings have largely been criminal activity, frequently the result of commercial disputes. Last year there were over 80, 000 incidents of social unrest according to the Chinese government. The vast majority of these local incidents related to disputes over land seizures, social issues or environmental problems. While some

incidents have grown to larger scales and involved some violence, these demonstrations have not been directed against foreigners.

For the latest security information, Americans traveling abroad should regularly monitor the [Department's Internet web site](#), where the current [Worldwide Caution Public Announcement](#), [Travel Warnings](#), and [Public Announcements](#) can be found.

Up-to-date information on safety and security can also be obtained by calling (888) 407-4747 toll free in the United States., or for callers outside the United States and Canada, a regular toll-line at (202) 501-4444. These numbers are available from 8:00 a.m. to 8:00 p.m. Eastern Time, Monday through Friday (except U.S. federal holidays).

3. CRIME:

(Mostly excerpted as being relevant from the US Department of State Website:
http://travel.state.gov/travel/cis_pa_tw/cis/cis_1089.html)

China has a low crime rate. *Pocket-picking* is the most common crime, often targeting tourists at sightseeing destinations, open-air markets, airports, and in stores. *Violence against foreigners* is rare. However, incidents of violence against foreigners, including sexual assaults have been reported, usually in urban areas where bars and nightclubs are located. Special caution should be exercised when visiting bar districts late at night, especially on weekends. *Robberies*, sometimes at gunpoint, have occurred in western China and more recently in Beijing.

You should always exchange dollars for RMB at banks, hotels and official exchange offices because *it is illegal to exchange dollars through unauthorized agencies* and because of the existence of considerable volume of *counterfeit currency* in China. You should decline when asked by locals to exchange money at a preferential rate, because unofficial exchanges usually result in receiving *counterfeit currency* and possibly left to face charges of breaking foreign exchange laws. It is also advisable to carry small bills (RMB 10, 20 and 50 notes) for travel by taxi to avoid receiving counterfeit money from taxi drivers as change when you pay with large bills.

For your safety, you should always apply common sense regarding safety and security issues, such as refusing to open your room door to anyone you do not know personally while staying in hotels and not allowing yourselves to be driven to bars or an individual's home unless you know the person.

You should carry your passports with you out of reach of pickpockets. You are also encouraged to make photocopies of their passport bio-data pages and Chinese visas and to keep these in a separate, secure location. You are also encouraged to register with the nearest U.S. Embassy or Consulate General through the [State Department's travel registration](#) website so that they can obtain updated information on travel and security within China. By registering, you also make it easier for the Embassy or Consulate to contact you in case of emergency.

4. HEALTH ISSUES

- *Food Safety:* In the area of China we will be visiting, there are few concerns related to eating and drinking, all of which are easily managed.
- *Drink water:* We will insist that you drink only bottled water or adequately boiled water, regardless of location. Every residential facility in China, from the most elegant 5-star hotel to the most basic dormitory, provides its guests bottled water or an electric pot for boiling water.
- *Food:* We will insist that you **only eat foods that have been cooked, or that you can peel yourselves**. The typical Chinese meal consists of a wide variety of vegetables, meats, and rice or steam bread that are piping hot, many of which will be new to students. Raw foods are rarely encountered.
- *Medical Travel kit:* You are encouraged to schedule meetings with your own physician or the university Human Service to obtain counseling and the standard travel kit, which includes a variety of over-the-counter remedies for gastrointestinal discomfort.

5. DISEASE CONCERNS:

China does not require any vaccinations for entry. However, all participants will be directed to Human Service or comparable health services to be evaluated for the following vaccinations (refer to <http://wwwn.cdc.gov/travel/destinationChina.aspx>):

- Hepatitis A or immune globulin (IG),
- Hepatitis B,
- Japanese encephalitis,
- Rabies,
- Typhoid fever, and
- Booster doses for tetanus-diphtheria and measles.

Other diseases:

- **SARS:** Outbreaks of severe acute pulmonary syndrome (SARS) occurred in mainland China in 2003. Since there is no evidence of SARS transmission anywhere in the world right now, there is essentially no risk of acquiring SARS.
- **Avian (Bird) Flu:** Poultry and swine infected with Avian Flu were reported in southwest China in summer of 2006. The infection involves Influenza A (H5N1), a subtype of the type A influenza virus. The virus is so named because of its natural hosts wild birds. Although not typically infecting humans, the virus was found to infect human through direct bird-to-human transmission during an outbreak of avian influenza among poultry in Hong Kong; the virus caused severe respiratory illness in 18 people, of whom 6 died. There have been other instances of H5N1 human infection since then, but the virus thus far has not been capable of efficient human-to-human transmission. We will not travel to areas where avian

flu has been reported and will not visit any operation where groups of birds or swine are kept in confinement.

- ***Malaria***: The disease is considered to have been eradicated from Hunan according to a 2002 report of the Hunan Department of Health, and has never been an issue for Beijing.
- ***Yellow fever***: There is no risk for the disease in East Asia.

6. TRANSPORTATION:

Mobility to access the mountains, adjacent field sites, and various cultural sites in the cities is required because of the nature of the course. We will use hired bus for transportation. Most of these areas have good public transportation, and paved roads.

We will *fly to China directly* from O'Hare International Airport in Chicago to Beijing Capital International Airport by an international air carrier. *Within China*, we will travel by hired bus, train, and domestic air carrier.

China has an extensive rail network, and trains are modern and comfortable, and we travel from Beijing to Zhangjiajie in overnight sleeper trains, with four passengers per sleeping compartment in individual bunks. West Beijing Train Station requires luggage be x-rayed and you will need to present your ID when check in your sleeping compartment.

In most of the areas we will visit, there is a modern and lightly used toll highway system that is comparable in quality and safety to the United States Interstate Highway system. Taxi cabs are ubiquitous, safe, and well regulated. We will rent buses with driver from reliable companies and from bus fleet owned by local universities.

7. EMERGENCY PLANS

Meeting places will be the lodging for the evening. Every participant will be issued a card that states the name, location, and phone number of the lodging in both Mandarin and English. If someone is inadvertently separated from the group, any taxi driver can use the card to transport them back to the lodging.

Cell phone service is ubiquitous and inexpensive in China, and even remote villagers generally have or have access to these phones. We will carry with us at least one cell phone from a Chinese cell phone company at all times. Every participant will be given a card with this number and instructions in both Mandarin and English on how to contact the group as well as our hosts in each place we will visit.