Lecture 1:
Introduction: location, aims, background. Geography, history, and structure of the course. Assessments – types and deadlines. Logistics and group work.
The Carboniferous period.
Welcome!

We’re going here!
AIM: to provide you with a comprehensive knowledge of the outstanding geology of County Clare as well as aspects of the geomorphology, ecology and archaeology of this region...a window to the region....
Information on Website:
TODAY/TONIGHT!

• Outline course: structure, assessments, deadlines
• Outline some logistics, arrangements, costs
• Some KEY issues for you!
• Outline geography of region and very brief history
• The Carboniferous Period – nomenclature
• Part 2: begin to look at broad geological evolution

In all sessions, please ask, interrupt, question, discuss
Course Structure

- One, 1-2 hour session per week
- Two-week field course: field work and evening ‘refresher’ lectures, with practical work related to the field day
Course Structure

- Approx. ten days visiting different localities
- 3 day ‘mapping’/paleoenvironmental reconstruction project at end (working in pairs)
Shell/Chevron Fieldwork Bursaries: CONGRATULATIONS!!

You are ALL the recipients of Shell/Chevron Fieldwork Bursaries that are subsidizing your trip to about $925/person

NOW your part of the deal!
• Attend all sessions
• Complete all assessments
**Assessment**

**Geology 415:**
- Attendance: 5%
- Group Seminar during Spring semester: 20%
- Field Group Seminars (x2): 5% each (10% total)
- Field Notebook Feedback (will be marked in field half way through course): 15%
- Evening Group Seminar: 20%
- Final Field Report: 20%
- Final Field Map: 10%

**Geology 515:**
- Attendance: 5%
- Group Seminar during Spring semester: 10%
- Term Paper (literature based): 10%; Date Due: Friday April 29th
- Field Group Seminars (x2): 5% each (10% total)
- Field Notebook Feedback (will be marked in field half way through course): 15%
- Evening Group Seminar: 20%
- Final Field Report: 20%
- Final Field Map: 10%

*Report and Final map are due on Sunday June 5th: these must be emailed as a pdf to Jim*
People

Jim Best

Drew Phillips

Nathan Webb
People

Colleagues from University of Nebraska Lincoln

Chris Fielding

Tracey Frank
First Aid

Possible one-day refresher .....in process of investigating this now!

Costs

• $1350
• Check on what it includes/doesn’t include!! (maybe need to provide own: travel to/from O’Hare; field kit (incl. hard hats); breakfast, packed lunches/sandwiches)
• Additional Dublin hostel costs (2 nights costs): possibly about $70/person; food in Dublin.
Dates

Depart Monday May 16\textsuperscript{th}; most return Tuesday May 31\textsuperscript{st}

Pick up air ticket/seat assignment confirmation tonight
Key things for you to look after.......  

- Passports/visas  
- Study Abroad Office forms  
- US Citizens – US Dept State Travel registration  
- Your field kit  
- Dietary/health issues
Passports/visas

- You MUST have one!
- Give me passport details by next week
- Obtain visa IF you need it. Most of you don’t need one but this is your responsibility (link on course website)
Study Abroad Office:

• All courses going abroad have to satisfy UIUC regulations

• You ALL will have to complete 4 forms:
  • Personal Data Sheet (will be used for insurance)
  • Risk and Release of Responsibility
  • Account Information
  • Dismissal Form
Extra Funding: Undergrads

• LAS Study Abroad Scholarship
  Only eligible IF you haven't had one before (let me know tonight). Department submits your name – up to $500

• I4I funds
  $500-1000

To be eligible to apply for the I4I Scholarship, you must:
• Intend to be an enrolled, undergraduate, degree-seeking student at the University of Illinois at Urbana-Champaign at the time of study abroad (international degree-seeking students ARE eligible)
• Meet academic requirements of your Illinois College to be eligible to study abroad
• Identify a study abroad program, approved by the University of Illinois, to which you intend to apply or have already applied
• You may receive only one I4I Scholarship for a given study abroad program, and you may receive only one scholarship during a given scholarship cycle. However, if you intend to participate in another study abroad program, you may apply for another I4I Scholarship in a later cycle. You may also be selected to receive both an I4I Scholarship and an IPS Scholarship during one application cycle.

• YOU must apply
• I4I – deadline FEBRUARY 15th
Dept State - Smart Traveler Enrolment Program (STEP)

- UIUC requires all to register
- "Travel registration is a free service provided by the U.S. Government to U.S. citizens who are traveling to, or living in, a foreign country. Registration allows you to record information about your upcoming trip abroad that the Department of State can use to assist you in case of an emergency."
- Link will be put on course website
- https://travelregistration.state.gov/ibrui/
- YOU will have to do this individually (where applicable) and provide me with a written confirmation that you have done this
Your field kit

You need to provide the below that you **must** bring with you.

**You should make sure you bring:**

- **hard hat**
- Proper full field gear – waterproofs, warm cloths, study boots, sun screen!
- field notebooks (x2)
- compass-clinometer (we may bring some department ones but you can buy cheaper Silva ones)
- hand lens and grain size cards
- 5m tape (builders tape)
- geological hammer (we really only need one per pair of people so you could share with someone in your group; DON’T pack in hand luggage!)
- mapboard/case with plastic bags to put this in if it rains
- a camera
Dietary/health issues

Need to tell ME *(tonight after this Introductory session)*:

- **Special diets?** – vegetarian/vegan/Guinness-only diet?
- **Health** - medications (that I need to be aware of); conditions (e.g. asthma, diabetes, acrophobia, travel sickness), allergies
- **Any other issues** I should be aware of as they would affect your travel and participation in field course
SYLLABUS – a rough outline

Week 1 (w/b Jan 18th): NO CLASS


Basin evolution in NW Europe in the Carboniferous: past legacies and plate tectonics. Links to North American geology and global controls on sedimentation.

Week 3 (w/b Feb 1st): Basin formation and tectonics in Western Ireland: setting the scene for basin infill. Basin opening, closure and tectonics. Mineralisation and hydrocarbons.

Week 4 (w/b Feb 8th): The sedimentary history of the Western Irish Carboniferous basin – nomenclature, paleontology and zoning. Sources of sediment and basin paleogeographic reconstructions. Models for basin fill.

Week 5 (w/b Feb 15th): The Carboniferous of Illinois and the mid-west USA: analogies to western Europe.

Week 6 (w/b Feb 22nd; double lecture): Sedimentology: a refresher on rivers and deltas; basinal shales, turbidites and deep-sea sediments. Sedimentology: a refresher on Carboniferous seafloor communities, paleoecology and trace fossils; sequence stratigraphy and controls on sedimentation. Allo cyclic and autocyclic controls.

Week 7 (w/b Feb 29th): Reservoir geology: heterogeneities, scales and outcrop analogues. Uses of analogues and methods of approach.

Week 8 (w/b March 7th): Quaternary geology and glaciation in Ireland and County Clare.

Week 9 (w/b March 14th): NO CLASS - seminar research

SPRING BREAK EASTER no class

Week 10 (w/b March 28th): Group seminars (see seminar page)

Week 11 (w/b April 4th): NO CLASS - seminar research

Week 12 (w/b April 11th): Group seminars (see seminar page)

Week 13 (w/b April 18th): NO CLASS - seminar research

Week 14 (w/b April 25th; double lecture): Group seminars (see seminar page); Logistics: travel dates, times, field work aims and field safety.

Week 15 (w/b May 2nd): NO CLASS
Location

Ireland

- International Boundary
- County Boundary
- Road
- River
- National Capital
- County Seat
- City or Town

© 2007 GeoWorldMap

Location

ULSTER

CONNAUGHT

LEINSTER

MUNSTER

North Atlantic Ocean

Irish Sea

Saint George's Channel

Great Blasket Island

Dingle Bay

Celtic Sea

Bay of Biscay

Atlantic Ocean

North Channel

Scotland (U.K.)
Major facts about the Geomorphology and History of County Clare

• Origin of name: name comes from the Irish word 'Clár', meaning a board or plank – comes from a board that was placed across the river Fergus outside Ennis
• Neolithic settlements on Limestone area to north – the Burren (a very important karst landscape)
• Present county formed, from a very early period, a native principality, Tuath-Mumhan, or Thomond, signifying "North Munster"
• Divided into ‘cantreds’ or ‘baronies’, each occupied by their ruling families - O'Briens, O'Connors were two of main clans (you’ll see the O’Brien name a lot!)

Information from County Clare Library Website (see Course website for Link)
Many Viking raids in 9th/10th centuries
Vikings finally defeated at the beginning of the 11th century by the most famous of the O'Briens, Brian Boru
After the Norman invasion, ‘Thomond’ was granted to Thomas de Clare, but he was eventually defeated by the O'Briens. O'Briens became Earls of Thomond and remained the major force in the county for centuries. Present county boundaries were established by the English administration in 1565.
Major facts about the Geomorphology and History of County Clare

• The county was badly affected by the Great Famine of 1845-47: over 50,000 people died, many emigrated.
• Population decline continued: 1841 – 286,000; 1851 – 212,000; 1966 – 73,500; 2006 – 111,000
• Many disputes and conflicts with England that have led to a complex, and at times violent, history
• There is an abundance of antiquities and archaeological remains throughout the county. County Clare has at least 2,300 earthen and stone forts, 130 megalithic tombs, 190 castles, 150 ancient churches, 3 cathedrals, 8 monasteries, 10 stone crosses, 5 round towers, besides numerous lesser monuments.

Information from County Clare Library Website (see Course website for Link)
Major facts about the Geomorphology and History of County Clare

County Clare DOMINATED by Carboniferous age rocks

BEDROCK GEOLOGY
March 2005

www.wfdireland.ie/
Major facts about the Geomorphology and History of County Clare

LGM c. 22 ka

Covered in many parts by sediments from last glacial advance

From Bowen et al., 2002
Quaternary Science Reviews
From Cofaigh and Evans, 2007
Quaternary Science Reviews
LGM: c. 19 ka.

Early deglaciation

Deglaciation

From Cofaigh and Evans, 2007
Quaternary Science Reviews
The Carboniferous Period – a time of change....

<table>
<thead>
<tr>
<th>Era</th>
<th>Period</th>
<th>Millions of Years Ago</th>
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<tr>
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- End of the Dinosaurs
- First Dinosaurs, Mammals, Birds
- First Reptiles
- First Amphibians
- First Land Plants
- First Fishes
- First Invertebrates
### Carboniferous Nomenclature

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<tr>
<th>SYSTEM</th>
<th>SUB-SYSTEM</th>
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<th>GLOBAL STAGE [Eastern Europe]</th>
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# Carboniferous Nomenclature and Ages

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Timescale from Gradstein et al., 2004
Next: Part II of tonight!!

Basin evolution in NW Europe in the Carboniferous: past legacies and plate tectonics. Links to North American geology and global controls on sedimentation.