

**BIO 202 – Biodiversity  
Summer 2009**

- Dr. Fred Scharf, Friday Hall 1059
- Dr. Greg Chandler, Dobo Hall 214
- Office hours = Tues and Thurs 10:30am - 12:00pm
- All lectures here (Friday 1014)
- Mon –Thurs: 8:00 – 10:05am
- Labs in Friday Hall 1011 (either MW or TTh 12:30 – 3:20pm)
- Required texts:
  - Customized ebook that includes selected chapters from McGraw-Hill texts on Animal Diversity and Plant Biology (<http://www.ebooks.primisonline.com>)
  - Customized lab manual (sold as course pak in bookstore – you will need a binder to store it)
  - Photographic Atlas for laboratory (may also need a binder)
- All exams are mandatory
  - May 21, June 1, June 8, June 16

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- Grading: total of 660 points
  - 400 pts from lecture exams (multiple choice, short answer, definitions, essays)
  - 60 pts from quizzes (unannounced during lecture)
  - 200 pts from two lab practicals
- Grade scale: 90% and > = A; 80-89% = B; 70-79% = C; 60-69% = D; below 60% = F
- Missed exams require written documentation of your reason – make-up exams will be all essay
- Absolutely no make-ups for missed quizzes

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**Science of Zoology**

- Study of animal life
- Definition of life
  - We must separate living from non-living matter
  - How?
  - History of life is what defines it

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## Properties of life

1. Chemical uniqueness
2. Complex hierarchy
3. Reproduction
4. Genetic program
5. Metabolism
6. Development
7. Interaction with environment
8. Movement

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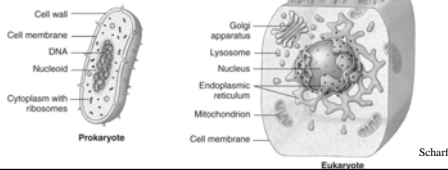
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## Why are animals unique?

- **Animals are Eukaryotes**
  - Group includes plants and fungi
  - Cells contain membrane-enclosed nuclei
- **Nutrition comes from other organisms**
  - Animals lack photosynthesis, cell walls, absorptive abilities of fungi
  - Many animals must capture food

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## Scientific Principles and Methods

- ❖ Science should be testable against the observed world
- ❖ Science is falsifiable
- ❖ Hypothesis formation and testing
  - ❖ Hypothetico-deductive method
- ❖ Theories and paradigms

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## Origin of Life

- Earliest life about 4 billion years ago
- Thought to be Heterotrophs – derived nutrition from the environment
- Autotrophs thought to evolve slightly later – could synthesize their food from inorganic sources (e.g., light)

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## Origin of Life

- Variety of cyanobacteria (prokaryotes) arose about 3 billion years ago
- Dominated oceans for 1-2 billion years, producing atmospheric oxygen
- First eukaryotes appear about 1.5 billion years ago
- Animals first appear in the early Cambrian nearly 600 million years ago
- “Cambrian explosion” – many phyla within a short time period (few million years)

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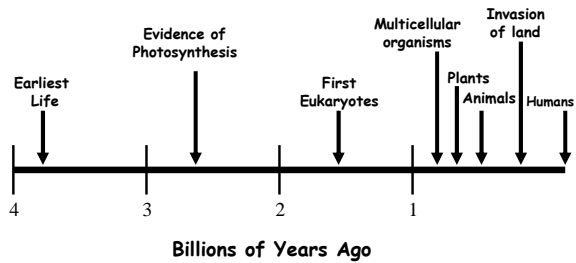
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## Biological Time



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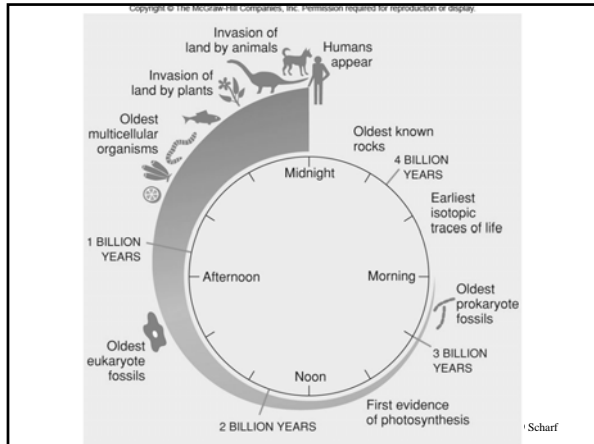
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