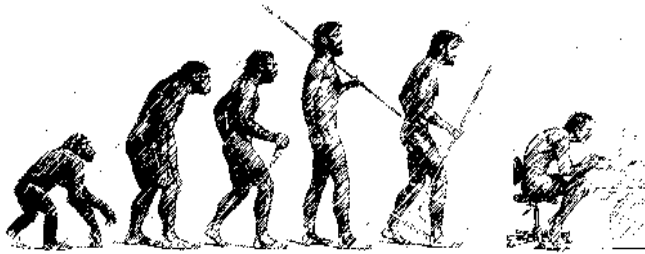


# ANTHROPOLOGY 1

## INTRODUCTION TO BIOLOGICAL ANTHROPOLOGY



**Course Purpose and Goals:** What does it mean to be human? Where did we come from? When did we evolve? Why are we the way we are? Why is it that humans are similar in fundamental aspects but different in many other ways, and what is the significance of these similarities and differences? These are the type of questions addressed in the field of biological anthropology – the branch of anthropology that seeks to understand human biology from an evolutionary perspective. This course tackles these and similar questions through an introduction to evolutionary theory and basic human genetics; evolutionary and comparative biology of humans and our closest living relatives, nonhuman primates; origins of uniquely human anatomical and cultural development; and modern human variation, health and adaptation. The overall goal of the course is to give you the information and tools to build a solid understanding of biological anthropology and the relevance of human evolutionary biology to matters of modern-day concern. Emphasis will be not only on lecture learning, but also peer and group discussion, self-directed research and critical thinking skills.

### ***Required Textbooks:***

**EPA = Essentials of Physical Anthropology (2nd edition), Clark Larsen, Edition: 2nd ISBN: 978039391938**

**PA = A Photographic Atlas for Physical Anthropology, Brief Edition, 2005 Paul Whitehead, ISBN: 9780895826688.**

**YOU MUST HAVE A CLICKER FOR THE COURSE (iClicker+ classroom response system – AVAILABLE IN THE BOOKSTORE FOR PURCHASE OR RENT)**

**Note:** you may use a copy of the full version of “Photographic Atlas for Physical Anthropology”, by Whitehead et al. 2004; this is just a longer and more extensive version of the same material. While you can obtain and use older versions of “Essentials of Physical Anthropology” by Larsen or the fuller version of this textbook called “Our Origins” there is substantial material that is newly added to the 2nd essentials edition that you will be responsible for. If you use an older version, it will be your responsibility to be sure to read the correct material and be sure not to miss anything. Both textbooks will also be on hold at the Anthropology Library 2-hour loan desk.

**BSp=** There is a BSpace website set up for this course. The site provides you continual access to an up-to-date copy of the course outline and syllabus. All weekly lab/section extra readings, assignments, announcements, lecture outlines, additional figures/images, study guides, and required supplementary readings (as announced in class) will also be posted on this website.

**These materials will *not* be handed out on paper.**

**You will need to be able to use the Internet and the BSp site to successfully complete this course. If you have problems with this, talk directly to the Head GSI Melanie Miller or Professor Agarwal as soon as possible.**

**Course Requirements:** There is no prerequisite for this course. Your grade will be based on 5 things: your participation in lecture and lab section; completion of work in lab sections (the lab workbook); a major research assignment; and midterm and final exams. Breakdown of final grade:

- (1) Lecture attendance and participation (10%)**
- (2) Lab section attendance and participation (10%)**
- (3) Completion of lab section assignments/workbook (5%)**
- (4) Fiction novel research assignment:**
  - a) book summary (10%)**
  - b) annotated bibliography (10%)**
  - c) critical research report (20%)**
- (5) Midterm (15%) and final (20%) examinations**

**The overall course grading scale is as follows:**

<b>97-100=A+</b>	<b>87-89=B+</b>	<b>77-79=C+</b>	<b>67-69=D+</b>	<b>Below 60=F</b>
<b>93-96=A</b>	<b>83-86=B</b>	<b>73-76=C</b>	<b>63-66=D</b>	
<b>90-92=A-</b>	<b>80-82=B-</b>	<b>70-72=C-</b>	<b>60-62=D-</b>	

**PASS/NO PASS cut off is C-**

**Lecture:**

**Time and location:** Tuesday/Thursday 12:30-2:00 pm, Wheeler Hall. Note: you **must** also be enrolled in a discussion/lab section to be in this course.

While a significant portion of lecture class will involve “lecture”, the emphasis in this class is on active and engaged learning. As such, class time will also involve partner and class discussion, start of class quizzes or question and films clips, and the use of iClickers (Audience Response System (ARS)). The use of the iClickers in class is intended to be fun and break up lecture time. It will enable us to interact dynamically through question-and-answer polling in various group settings, and provide me feedback in order to gauge how material is being understood. Your participation and attendance in lecture counts towards a **10% participation grade**.

Outlines of my lecture slides will be posted the day before the lecture, and it is suggested that you bring these outlines to lecture to aid in taking notes. The online lecture outlines will only include the main presented slides, and as such it is essential that you understand and take down the information in lecture that you will be responsible for and tested on. Note, it may not always be possible to put all images presented in lecture online due to size and copyright, but any essential images or concepts will be shown and discussed in lab section or given in your lab workbook.

**No Cell Phone or Texting during class lecture or section!! You will be asked to leave lecture if you are surfing the net, watching movies, or playing with an electronic device in class. DO NOT bring in a friend(s) iCLICKER for them to get their attendance – this will result in an AUTOMATIC LOSS OF YOUR PARTICIPATION GRADE.**

**Professor: Dr. Sabrina Agarwal**, Associate Professor of Anthropology: is a specialist in skeletal biology and bioarchaeology, with particular interest in the health and disease of past populations and active research in the area of bone loss and osteoporosis from an evolutionary and biocultural perspective.

**Office: 2251 College (room 212), Archaeological Research Facility building, on campus next to Boalt Law. NOTE Where this building is on the campus map to avoid getting lost!!**

<http://www.berkeley.edu/map/googlemap/>

**Office Hours: MONDAYS 11:00am-12:30pm AND/OR WEDNESDAY 11:00-12:00pm** : *To ensure an appointment, sign up in advance using the BSp course website WejoinIn TAB OR directly on*  
<http://www.wejoinin.com/sheets/apnpw>

*by the day before the scheduled time you are requesting. Please choose a 15min interval of time. You can come in yourself or in small groups/pairs – you MUST include an email contact in case I need to change you appointment.*

**Email: agarwal@berkeley.edu**

**Email contact: \*\*\* BE SURE TO USE “ANTHRO1” in your email subject header \*\*\* or your email could end up unread in a spam box!**

**Lab/Discussion sections (weekly): beginning the week of MONDAY January 27th !!**  
**LOCATION: Barrows 65 (downstairs in main building)**

A significant portion of this course is devoted to hands-on learning, critical thinking skills, and discussions that take place in section lab time. **As such, your participation in discussions and activities in section will be evaluated, and your attendance will be noted. Missed sections will negatively impact both your attendance/participation grade (10% of final grade) and your workbook grade (5% of final grade)** (unless due to legitimate medical reasons, see below). Your lab workbook is graded for completeness at the end of term as part of this grade. Material presented in section will also be tested on the midterm and final exams.

**Lab assignments:** there will be weekly lab assignments that will be graded at the end of the course as a whole. These assignments are to be completed in your Lab Workbook to be purchased the first week of class (available at Copy Central on Bancroft Ave). If you miss a lab section due to legitimate medical reasons, you must inform your GSI with documentation and make arrangements to complete the lab for your lab workbook outside your section time. Lab workbooks are to be handed in in section during the last week of sections. Your lab workbook grade is 5% of your final grade. Before coming to a given lab meeting, you must have: read the appropriate chapter of the lab workbook (and any additional bspace reading for that week) and completed the Take Home Quiz for that week. All Labwork assignments are to be completed in section class. If you miss a lab section due to legitimate medical reasons, you must inform your GSI with documentation and make arrangements to complete the lab for your lab workbook

outside your section time. **Be sure to purchase the Workbook at Copy Central on Bancroft Way BEFORE coming to section the week of January 27th.**

**Head Graduate Student Instructor: Melanie Miller** email: [anthro1gsi@gmail.com](mailto:anthro1gsi@gmail.com)

**Other Graduate Student Instructors:**

**Celise Chilcote** ([celisec@berkeley.edu](mailto:celisec@berkeley.edu)), **Anna Harkey** ([harkey@berkeley.edu](mailto:harkey@berkeley.edu)),

**Di Hu** ([dihu@berkeley.edu](mailto:dihu@berkeley.edu)), **Brandon Nida** ([nida13@berkeley.edu](mailto:nida13@berkeley.edu))

Course GSIs are advanced graduate students in Anthropology with an emphasis on Archaeology and/or Biological Anthropology, working on their PhDs in these subject areas. They each have their own office hours (held weekly in Barrows).

#### **Fiction novel research assignment:**

A significant part of your total grade (40%) is based on a three-part research assignment on a fiction novel. You must choose one novel to read from a list of four possible books (list provided online). **You must choose your book and sign up the week of February 3rd in lab section.** The novels are from a variety of genres, but each deals with the course material in some fashion. Your assignment will involve your reading, reviewing and summarizing your chosen novel and critically researching and commenting on its scientific biological anthropology content (*see also the detailed instructions for each research assignment online*).

The assignment is in three incremental parts:

**a) Book Summary:** this is a short summary of the novel (300-500 max words) and should include a synopsis of the book and very brief introduction to the *two* topics the novel touches upon that relate to material in this course (biological anthropology) that you will expand upon in your final critical research report. It is due on **March 11<sup>th</sup>** and is worth **10% of your final grade**.

**b) Annotated Bibliography:** this is a list of at least 10 sources you have researched and found that deal with the topics you have decided to focus on in your critical report. You are to annotate three of the sources you list. It is due on **April 8<sup>th</sup>** and is also worth **10% of your final grade**.

**c) Critical Research Report:** this is the final step of the assignment and is a 1500 word (max 6 page double-spaced) critical report that discusses the two topics you have chosen to focus on in detail, using and citing at least 5 of the supporting sources you have given in your bibliography. Along with the detailed instructions for the whole research assignment you will also be given a detailed breakdown of the evaluation and grading criteria for this report. It is due on **May 1<sup>st</sup>**, and is worth **20% of your final grade**.

**ALL THREE PARTS OF THE ASSIGNMENT MUST BE HANDED IN AT LECTURE ON THE DUE DATE; ELECTRONIC SUBMISSIONS WILL NOT BE ACCEPTED. Late assignments will receive a deduction of 5% a day.**

#### **Examinations:**

There will be a midterm exam held in lecture on **February 27<sup>th</sup>** worth a total **15% of your final grade**, and a final exam will be held during the exam period scheduled for **THURSDAY, MAY 15, 2014 3:00-6:00pm** location TBA, worth a total **20% of your final grade**. Both examinations will be multiple choice and short answer format. Exams will cover material in lecture, textbook and posted readings, all additional material posted on bspace, and all lab section material. **All exams**

**must be written in ink.** The final exam will be cumulative, although emphasis will be on material covered after the midterm exam.

**Some Crucial Policy Notes:**

Please note the exam dates NOW and plan your schedule so that you can attend them. If there are conflicts that are class-related please bring these to the attention of your GSI personally within the first two weeks of class. **No make up exams will be given**, and consideration for missed exams will only be given with prior notice and due to illness with medical documentation.

Questions about grading of exams and section assignments can be brought to the attention of the Head Graduate Student Instructor only within one week after the item has been handed back to you. After that week, no changes will be considered or made in the point scores for any exams or assignments. You must write out what your concerns are, and you must bring this with your graded assignment to the Head GSI's Office Hours (or an alternate pre-arranged meeting with the Head GSI).

**Requests for incompletes** will only be considered if you have completed and passed more than 50% of the requirements for credit in the course. Do not assume that an incomplete will automatically be granted even if this requirement is fulfilled. The university regulations concerning incomplete grades say that the professor has the discretion to grant an incomplete if your work is of "passing" quality and you cannot complete the course due to circumstances beyond your control. You will need to document those circumstances.

**Students with documented disabilities** who are authorized to have special arrangements for exams must contact the professor with the documentation no later than two weeks before the exam so that we can accommodate their needs.

**Honor Code**

**The student community at UC Berkeley has adopted the following Honor Code: "As a member of the UC Berkeley community, I act with honesty, integrity, and respect for others." Your instructors join you in pledging to adhere to this code.**

**Cheating:** A good lifetime strategy is always to act in such a way that no one would ever imagine that you would even consider cheating. All students should be aware of what it means to "cheat." This is a serious academic offense, and the University policy on cheating and plagiarism will be enforced in this course. The definition and consequences of plagiarism and other forms of dishonesty are set out in the The Code of Student Conduct (<http://sa.berkeley.edu/code-of-conduct>). The Code of Student Conduct (the "Code") lays the foundation for that understanding and governs the conduct of Berkeley students. It articulates the University's expectations regarding standards of conduct, both academic and with respect to the rights of others. Often what is considered an offense is subtle, and you are strongly urged to look at the Code. If you are unclear as to what constitutes cheating or plagiarism, please ask the professor or your GSI. We'll be happy to make sure that you don't do anything to unintentionally hurt yourself. Anyone caught cheating on a quiz, exam, or any assignment in this course will receive a failing grade in the course and will also be reported to the University Center for Student Conduct. In order to guarantee that you are not suspected of cheating, please keep your eyes on your own materials and do not converse with others during the quizzes and exams.

**Collaboration and Independence:** Reviewing lecture and reading materials and studying for exams can be enjoyable and enriching things to do with fellow students. This is recommended. However, unless otherwise instructed, assignments are to be completed independently and materials submitted should be the result of one's own independent work.

**Plagiarism:** To copy text or ideas from another source without appropriate reference is plagiarism and will result in a failing grade for your assignment and usually further disciplinary action. For additional information on plagiarism and how to avoid it, see, for example: <http://gsi.berkeley.edu/teachingguide/misconduct/prevent-plag.html>

**Academic Integrity and Ethics:** Cheating on exams and plagiarism are two common examples of dishonest, unethical behavior. Honesty and integrity are of great importance in all facets of life. They help to build a sense of self-confidence, and are key to building trust within relationships, whether personal or professional. There is no tolerance for dishonesty in the academic world, for it undermines what we are dedicated to doing – furthering knowledge for the benefit of humanity.

Your experience as a student at UC Berkeley is hopefully fueled by passion for learning and replete with fulfilling activities. And we also appreciate that being a student may be stressful. There may be times when there is temptation to engage in some kind of cheating in order to improve a grade or otherwise advance your career. This could be as blatant as having someone else sit for you in an exam, or submitting a written assignment that has been copied from another source. And it could be as subtle as glancing at a fellow student's exam when you are unsure of an answer to a question and are looking for some confirmation. One might do any of these things and potentially not get caught. However, if you cheat, no matter how much you may have learned in this class, you have failed to learn perhaps the most important lesson of all.

**Study Help:** There are various resources to help you manage and meet your responsibilities in this course and your other courses.

The Student Learning Center is located in the Cesar Chavez Center on Lower Sproul Plaza. SLC assists students in achieving academic, personal and professional goals through services including tutoring, study groups, writing workshops and courses.

Student Life Advising Services is another academic counselling and advising service within the Division of Undergraduate Education. Their services are extended to all students, with a priority outreach to entering Educational Opportunity Program Freshpersons and Transfer students (i.e., first generation college and low-income students), underrepresented students, Summer Bridge students, Incentive Awards Program students, and students who participated in outreach programs (e.g., EAOP, Upward Bound, MESA, etc.). They provide both general and specialized academic counselling and peer advising.

**Course Schedule of Topics: \* Subject to change\***

DATE	TOPIC	READINGS	SECTION TOPIC each week (Starting Jan 27)
	<b><i>Section 1. Biological Anthropology, Genetics, and Evolutionary Theory</i></b>		
Jan. 21	Course Business What is Biological Anthropology	EPA Chapter 1 p3-19	no section (first week)
Jan. 23	Development and History of Evolutionary Theory	EPA Chapter 2 p19-41	
Jan. 28	Inheritance of Biological Traits	EPA Chapter 3 p41-66	1. Evolutionary Thought and Genetics
Jan. 30	Modern Evolutionary Theory	EPA Chapter 4 p67-94	
Feb. 4	The Origin and Diversification of Life on Earth	EPA Chapter 6	2. Processes of Evolution and Inheritance <b>SIGN UP FOR FICTION NOVEL IN SECTION THIS WEEK!</b>
	<b><i>Section 2. Primates: Our Relatives and Ourselves</i></b>		
Feb. 6	What is a Primate I: Overview and Classification What is a Primate II: The prosimians, tarsiers and NWM (Anatomy and Adaptations)	EPA Chapter 6 p. 145-154 PA CH1	
Feb. 11	What is a Primate III: The OWM (Anatomy and Adaptations)	EPA Chapter 6 p. 145-154 PA CH1	3. Classification and Vertebrate and Mammalian Evolution
Feb. 13	What is a Primate IV: The Lesser and Great Apes (Anatomy and Adaptations)	EPA Chapter 6 p. 145-154 PA CH1	
Feb. 18	Lecture TBA – Primate behavior	EPA Chapter 7	4. The Strepsirhines and Monkeys <b>(NOTE: Monday Feb 17th is a holiday; Monday sections will have Lab Four on Mon Feb 24th)</b>
Feb. 20	Primate Behaviour	EPA Chapter 7	
Feb. 25	Comparative Primate Anatomy: Models for Human Evolution	PA CH2	<b>Monday 24<sup>th</sup> (Lab Four make-up for Monday sections ONLY). All other labs cancelled this week</b>
Feb. 27	<b>MIDTERM EXAM</b>	<b>STUDY!!!</b>	

	<b>Section 3. Human Evolution: The Fossil Record</b>		
<b>Mar. 4</b>	Reconstructing Early Hominids: Paleoanthropology	EPA Chapter 8 PA CH3	5. The Apes
<b>Mar. 6</b>	From the Earliest Primates to the Age of Hominoids	EPA Chapter 9	
<b>Mar. 11</b>	The Earliest Humans? <b>book review and summary DUE in lecture</b>	EPA Chapter 10	6. Comparative Primate Anatomy
<b>Mar. 13</b>	Australopithecines to Early <i>Homo</i>	EPA Chapter 10	
<b>Mar. 18</b>	The First Human Diaspora: <i>Homo erectus/ergaster</i>	EPA Chapter 11	7. Early Primate And Hominin Evolution
	<b>Section 4. Prehistoric and Historic Humans</b>		
<b>Mar. 20</b>	Premodern Humans	EPA Chapter 11	
<b>Mar. 24</b> <b>Mar. 28</b>	<b>Spring Break</b>	<b>Spring Break</b>	<b>Spring Break</b>
<b>Apr. 1</b>	Anatomically Modern Humans, Art and Culture	EPA Chapter 12	8. Earliest Hominines & <i>Australopithecus</i> and <i>Paranthropus</i>
<b>Apr. 3</b>	Human Skeletal Biology and Forensic Anthropology	EPA Chapter 13	
<b>Apr. 8</b>	Bioarchaeology I <b>annotated bibliography DUE</b>	EPA Chapter 13	9. Later Hominins And Culture
<b>Apr. 10</b>	AAPA meetings – lecture TBA Bioarchaeology II	Readings on Bspace	



	<b>Section 5. What it Means to be Human: Variation and Adaptability</b>		
<b>Apr. 15</b>	Life History and Life Strategies	Bspace readings	10. Skeletal Biology and Bioarchaeology
<b>Apr. 17</b>	lecture TBA	TBA	
<b>Apr. 22</b>	Human Variation	EPA Chapter 5	11. no labs SAA meetings Work on your RESEARCH PAPER!!
<b>Apr. 24</b>	Human Adaptation I	EPA Chapter 5	
<b>Apr. 29</b>	Human Adaptation I	EPA Chapter 5	11, 12. Human Life Cycle, Adaptation And Variation  <b>HAND IN LAB WORKBOOKS FOR GRADING IN SECTION</b>
<b>May 1</b>	<b>Last formal lecture</b> How it all Fits Together with Biological Anthropology <b>critical research report DUE</b>	Readings on Bspace	
<b>May 5 May 9</b>	<b>Reading/Recitation/Review (RRR) week</b>	Study, open office hours and review section	May 5 <sup>rd</sup> - May 9 <sup>th</sup> <b>Optional Review Lab held during your regular section time. (Pick up graded lab workbook during your section time.)</b>
<b>May 15 3:00-6:00pm</b>	<b>FINAL EXAM THURSDAY, MAY 15, 2014 3:00-6:00pm location TBA</b>	<b>EXAM</b>	

## **Breakdown of Learning Objectives:**

### ***Section 1. Biological Anthropology and Evolution***

*What the section is about:* the principles of evolution and biological inheritance; the biological basis for how human evolution came about; the understanding that the same processes that made humans made all the other species on the planet.

By the end of section 1 you should be able to:

- Identify what is biological anthropology and its subfields
- Trace the development of evolutionary thought and identify the influences on the development of evolutionary theory by Charles Darwin
- Describe natural selection and give a case of natural selection that exemplifies natural selection in action
- Describe the basic principles of Mendelian inheritance
- Describe the structure of a cell and the structure and function of DNA and RNA; what a gene does; and how mutation occurs
- Compare and contrast cell division in mitosis and meiosis
- Describe the patterns of inheritance for autosomal dominant, recessive and sex-linked traits
- Describe the difference between Mendelian and polygenic traits and construct a family pedigree for a Mendelian trait
- Describe the factors that produce and distribute genetic variation and discuss how evolution occurs without natural selection
- Discuss why genetics is important to the study of evolution
- Describe the geologic time scale and identify the major events in vertebrate evolution

### ***Section 2. Primates: Our Relatives and Ourselves***

*What the section is about:* the anatomy, adaptations, genes, behaviour, and evolution of our closest relatives, the non-human primates; how studying non-human primates can help us learn about ourselves, and understand human origins and the development of early human behaviour.

By the end of section 2 you should be able to:

- Define primate taxonomic classification emphasizing the major taxa: suborder, superfamily, family, genus, and species
- Describe the place of primates in terms of mammalian heritage as well as the evolutionary trends that define the order Primates
- Describe the specific morphological (anatomical) and behavioural adaptations that distinguish the prosimians, monkeys (OWM and NWM), apes, and humans
- Describe the living hominoids and their primary morphological and behavioural characteristics
- Use knowledge of primate comparative anatomy to infer locomotor and dietary adaptations
- Describe the key skeletal anatomical features that humans share with the great apes and the features that set humans apart from the great apes
- Describe types of primate social interactions (grooming, dominance, affiliative, aggressive)

### **Section 3. Human Evolution: The Fossil Record**

*What the section is about:* the fossil (physical remains) and archaeological record of early humans starting from early primates in mammalian evolution to early hominoids, hominids, hominines, and the first humans to populate the Old World; how paleoanthropology reconstructs human biocultural evolution

By the end of section 3 you should be able to:

- Describe the specific fossil evidence for the earliest primate, anthropoid, and hominoid origins
- Define the differences between hominoids, hominids, and hominines.
- Describe the use of cladistics in Paleoanthropology and interpret a cladogram
- Discuss and assess the major theories for evolution and transition to bipedal locomotion
- Describe the morphology and possible behaviour of the earliest possible hominines (pre-australopithecines)
- Identify the major localities, specific groups, and unique anatomical features of the Australopithecines
- Compare and contrast the morphology of the earliest members of the genus *Homo* and members of the genus *Australopithecus*
- Describe the morphology and geographical distribution of *Homo erectus*, and the environmental changes during the Pleistocene that would have affected them as they expanded out of Africa
- Discuss the temporal changes in cranial morphology, brain size, tool techniques and other evidence for behavioural evolution in *H. erectus*, and the role of these factors in cultural adaptation
- Discuss the taxonomic relevance of the recent *H. erectus* fossil discoveries from Europe

### **Section 4. Prehistoric and Historic Humans**

*What the section is about:* the fossil and archaeological record of the earliest “archaic” human forms and anatomically modern forms of *H. sapiens*, and their distribution in time and space and associated cultures; the history and evolution of archaeological modern populations from a biocultural perspective; the applied field of forensic anthropology

By the end of section 4 you should be able to:

- Describe the morphology, and the geographical and temporal distribution of the early pre-modern forms of *H. sapiens* and discuss the variation seen in these early forms
- Describe Middle-Late Pleistocene cultural innovations (tool technology, hunting capabilities)
- Compare and contrast the morphology and culture of Neanderthal and Upper Palaeolithic anatomically modern *H. sapiens*
- Discuss the relationship that might have existed between Neanderthals and anatomically modern humans
- Identify the major bones of the human skeleton and describe basic bone physiology
- Explain how the study of skeletal remains can aid in forensic contexts
- Describe the types of data that bioarchaeologists use to reconstruct past lifestyles and health/disease patterns
- Discuss why the biocultural approach is integral in bioarchaeology

### **Section 5. What it Means to be Human: Variation and Adaptability**

*What the section is about:* molecular, morphological, physiological and cultural aspects that make humans unique; specifically the human brain and language, life history variables, and aspects of human variation and adaptation; how human evolution is intricately and inextricably linked to human culture.

By the end of section 5 you should be able to:

- Identify the parts and associated functions of the brain
- Discuss brain size and encephalization, and the role of allometry in cross-species comparisons
- Discuss the importance of language ability in the evolution of the human brain and in human origins
- Describe the features of human life-history that are atypical and unique when compared to other primates
- Trace the historic views of the concept of race and discuss the modern cultural, political and biological concept of race
- Describe polymorphisms and examples of blood-related polymorphic traits in humans
- Describe the relationship between malaria and sickle-cell anaemia
- Discuss the role culture has played in lactose tolerance in humans
- Describe long term and short term acclimatization in humans
- Discuss the production of melanin and the explanations for the variation that exist in human skin colour
- Describe how body shape and size is related to climate
- Discuss how variation in humans ultimately reflects our species-specific biocultural flexibility and adaptability