Fall 9-1-2008

ANTH 511.01: Seminar in Physical Anthropology - Ancient Migrations Seminar

Unknown
University of Montana, Missoula

ANCIENT MIGRATIONS SEMINAR

In the 1970's, L.L. Cavalli-Sforza and others demonstrated a general correspondence between gene frequency distributions and linguistic groups. This was a surprise because through most of the 20th century anthropologists subscribed to the point of view that genes, culture, and language are independent of each other. This pioneering work initiated a field of inquiry into human migration and population history that is fundamentally multidisciplinary. In the decades since, the results of DNA analysis, archaeology, bioarchaeology, and other fields have also contributed to our understanding of the historic and prehistoric forces that have shaped contemporary human populations.

This class will be an exploration of the use of DNA, genetics, bioarchaeology, paleoanthropology, archaeology, linguistics, and other data, to investigate the migrations and population history of modern humans. The focus will be on identifying when modern humans first arrived in a region, the transformations and interactions they experienced through time, and the major populations and isolates living there today. The primary theoretical framework will be cladistic (i.e. change caused by endogenous mechanisms, adaptive or not) with due consideration given to ethnogenetic (i.e. population interaction) and diffusional models for change in biology, culture, and language through time.

This class is intended for MA and PhD students in all subfields of anthropology.

This class will follow classic seminar format, which is intended to help graduate students make the transition from instructor-driven education modes (e.g. lectures followed by exams) to student-driven education modes (e.g. thesis, professional paper, or dissertation research). Following this format, the class meetings will normally consist of presentations combined with discussion. I will lead the first few class meetings, but I expect that students will take over the presentation/discussions after that. Each student will be responsible for two or more presentations, perhaps as a member of a presentation team. For each class meeting I will provide you with one or more readings that everyone must read and the presenter should use as a starting point for their further research into the topic. For each class meeting I will supply a few questions that the presentation/discussion should explore, though these are intended only as a starting point for discussion.

Grading will be based on general class participation, presentations, and a term paper that is developed from one or more of the presentations.

Students who do well in this class can expect the following outcomes:

- develop familiarity with the findings from the field of ancient migration studies;
- gain a feel for the literature of ancient migration studies, as it exists in several different fields;
- improvement in the skill of synthesis in the form of combining and reconciling disparate data;
- build the skill of reading “smart”;
- develop breadth of knowledge by learning the vocabulary of and gaining familiarity with a variety of current methods and theories used in the sciences;
- improved skills in searching for appropriate literature;
- improved skills in communicating knowledge, both orally and in writing.

This is a class that spans all the subdisciplines of anthropology and encompasses the entire world. There is a massive amount of data on ancient migrations that has not been well sythesized. Therefore, there are three hypotheses that I will reject as ridiculous: (1) that students with a background and interest in one subdiscipline are incapable of understanding the data or results of another subdiscipline; (2) that North America is the only geographic region of interest and/or

relevance, and (3) that information on the genetics, linguistics, or archaeology of a given geographic region does not exist. I will not be receptive to arguments or excuses based on these hypotheses.

For some topics there are too many readings for you to do all of them, unless you are the person presenting that day. In this case I will split you into two groups as follows:

Arch group: Auge, Merritt, Moschelle, Stevens, and Tallier

Phys group: Baranko, Burch, Christy, Dudzik, Foust, Kemp, Luger, Luksha, Munch, both Schmidts

My Comments on Doing Readings

This class is not required for any students. Therefore, I assume that all students who have enrolled in the class have done so because they want to learn how to evaluate several lines of evidence and how to synthesize them to obtain a picture of the population history of a certain people. Given this, I will have little tolerance for any behavior which suggests that a student is trying to avoid learning the material. On the other hand, I encourage and try to reward behavior which suggests that a student is attempting to enhance how quickly or thoroughly they learn the material, how to minimize the effort involved, and similar wholesome strategies.

Nothing is more important in a class like this than coming to class prepared. Being prepared means having read the assigned material, reflected upon the material so as to understand it, and thus being able to follow and contribute to discussions of the material. Reading the materials and reflecting upon them can be done simultaneously by some people, but others need to treat these as separate steps. In this class, however, there is an enormous amount of material to read – so much that unless you have nothing else going on in your life other than this class, you will find it difficult to read it all, much less think about what you have read. FEAR NOT!!! All you need is to learn how to read "smart".

"Smart reading" is nothing new or mysterious. Every professional academic learns how to do it at some point in their education. Smart reading recognizes that scientific articles are written by experts in a particular topic and are intended to be read by other experts in the same topic. In some fields the intended audience is, literally, half a dozen or so researchers spread around the world. So, what about the rest of us? The rest of us pick and choose the material of interest for our own uses.

A scientific article is highly compartmentalized. This means that it is emphatically <u>not</u> written like a "story", which is intended to be read from beginning to end. Instead, the information of a particular type is all placed together in a certain section of the article. This makes it easier for us non-experts to find exactly the information we are interested in. For example, if we are interested in the methods used, we would look in the "materials and methods" section. If we are interested in the expert's interpretation of their data, we would look in the "discussion" section and/or the "conclusion" section. Most scientific articles will be in standard 5-part scientific format (which is a misnomer, since most will have 6 or more parts). The standard sections are the abstract, the introduction, the materials and methods section, the results section, the discussion section, and the conclusions section.

The abstract of an article is your best friend. It is always located at the beginning of the article. The article's author summarizes the most important aspects of the materials, methods, results, and interpretations in the abstract. It is often short – a paragraph or two. Always read the abstract first. Think about it for a few moments. Then, let it guide you in determining what other sections of the article you should read for the purpose at hand. In those cases where you are short on time and can't read the article thoroughly <u>at least read the abstract and spend a moment reflecting on what it says</u>.

After reading the abstract, the choice of which other sections of the article to read should be clear given the nature of the topic to be discussed in the relevant class meeting. The introduction section is where the author(s) will present the background for the study, including why they are doing it, it's relevance, and a review of previous literature on the subject. The materials (people, skeletons, genes, projectile points, words, etc.) used and the analytical methods applied to them will be presented in the "materials and methods" section. The results of the analyses, without interpretation, are presented in the "results" section. Interpretations of what the results mean are presented in the "discussion" section. Overall conclusions are placed in the "conclusions" section.

"Smart reading" involves using this compartmentalized structure to our advantage. For example, the topic for some of the class meetings will be about methods or the use of certain types of data. In this case, here's how you should prioritize your reading of an assigned article: (1) read the abstract, (2) skim the introduction to see why the author is using this type of data or methodology, (3) read the "materials and methods" section carefully, and finally skim the "discussion" and "conclusions" sections to see whether the author does any interpretation of how well the data or methodology worked in addressing the question of interest.

The topic of most of the class meetings in the last half of the class will be on the population history of a certain region of the world. In most of these cases, we are not very interested in the methods used but are very interested in the interpretation of the results. In this case, here's how you should prioritize your reading of an assigned article: (1) read the abstract, (2) skim the introduction to see the context of the study, (3) read the "discussion" and "conclusion" sections. Done!

Another aspect of "smart reading" is how confusing material is treated. Put simply, skip over it. You can always come back to it later if it proves to be important. Don't allow yourself to become bogged down, at least in your first pass over the section you are reading. The confusion may evaporate as you read the rest of the section. If not, it's easier to figure out something once you understand the context in which it appears than it is when you first encounter it and don't have the full context. Or, you may decide that the confusing material isn't important after all, in which case you can ignore it.

Yet another aspect of learning how to read smart is judging which articles deserved more attention than others. They all deserve some attention (else I wouldn't have put them on your reading list). However, some are more important than others. For example, for the first formal presentation I have assigned an article by Moore and an article by Eswaran. Of the two, the article by Moore is very much more important. Note that I have put some comments [in brackets] about how to approach them. For the Moore article I say [read carefully], and for the Eswaran article I say [Read this one for the main idea of a "diffusion wave" and take a look at the comments that follow the main article.] This reflects the fact that Moore's article really gets to the heart of the debate about models for transmission and diffusion of things from one group to another. The Eswaran article is more peripheral, and actually I think the replies/comments to the article are more interesting from our perspective than the actual article itself. I've tried to guide you in building this type of judgement by bracketed comments for the first part of the course. At a certain point I stop giving these comments, and let you get some experience exercising this form of judgement for yourselves.

Obviously, I encourage you to build your skills at "smart reading". Without it, this class will be impossible, but if using this skill the class will be merely challenging.

My Philosophy on Graduate Education

Graduate education is designed to help graduate students make the transition between two modes of learning. As undergraduates you participated almost entirely in a mode of learning that was instructor driven. That is, the instructor determined every detail of what the material of the class was going to be. Then the instructor lectured, you read the textbook, you took notes, and at some point you took an exam designed to "capture" the amount you had learned as a number that was combined with other such numbers to eventually give you a grade for the class.

In contrast, observe how your professors learn things. If they want to learn something new do they take a class? Usually not. Instead, they go to the library and the internet to find books and articles on the subject, read these materials, and therefrom gain the knowledge they are seeking. Further, your professors engage in research, in which they actually generate new knowledge – the raw material for all those books and articles.

A seminar is something like a "half-way house" between these two modes of learning. Although there is an instructor (me!), who sets the overall topic and who chooses those materials from which you will learn it, there is very little lecturing, little to no notetaking, and no exams (at least in this class). Instead, the instructor serves as more of a moderator or facilitator of presentations and discussions of material. The primary responsibility for learning the material to the point where you can give these presentations and participate in these discussions is yours as the student. In addition, you have the opportunity to do a lightweight form of research in the form of writing a term paper.

Another view of graduate education sees a field (say anthropology) as a geographic region (say Missoula County). Introductory classes are like a brief tour of the region (say pointing out Missoula, Mount Jumbo, the Clark Fork River, etc.). Upper level undergraduate classes explore certain parts of the region in more detail (say a detailed study of the Clark Fork river system). In this view, graduate education is partly a continuation of this trend of exploring an ever more detailed part of the region (say Rattlesnake Creek). However, the most important part of a graduate education is not the details of the region but learning how to use certain tools (say GPS units and compasses) to explore the region on your own. If you know how to use those tools you can explore any part of the region to any level of detail you desire. Eventually, as the culmination of your graduate experience, your mentor will ask you to choose an unexplored (or underexplored) part of the region and send you out to explore and map it.

Therefore, in my view, graduate education is about learning how to use the tools of an academic. These tools are many, but pretty obvious. I also consider it part of my job to challenge you in such a way that you improve in your use of these academic tools. In evaluating your performance I give higher weight to your ability to use these tools than I do to your detailed knowledge of a certain area of the field.

What I Expect of Presenters and Their Presentations

The process and criteria for evaluating presentations is always subjective and imprecise on the part of the professor, and often poorly understood by the students being evaluated. Therefore, let me try to make it clear what I am looking for.

- I am not explicitly looking for a polished and smoothly presented speech ala Toastmasters. However, a more polished presentation presented in a more accomplished manner can't help being evaluated more highly than one that is not.
- I have no apriori expectations of technology used. There is no need to put together elaborate Powerpoints unless it is of help to you as the presenter. In fact, I would discourage use of technology in most cases, though I certainly won't count it against you in my evaluation.
- Presentations should not be a "one-person show". Try not to adopt the role of an instructor lecturing to an undergraduate class. Instead, try to draw the class into discussions of the material and issues.
- Part of the goal of this class is for you to develop an academic anthropological worldview. Therefore, I reward attitudes and approaches that reflect this type of worldview. Realizing that everyone has different backgrounds, I give lower evaluations of presentations that are "too philosophical", "too biological", "too religious", or in some other way violate the nature of anthropology as a broad, 4-field, fundamentally scientific discipline.
- Presenters should stick with scientific evidence. I believe that anthropology is a science, and that the only valid basis for drawing conclusions or forming opinions is on the basis of some evidence. However, I have a broad view of what constitutes evidence. It should be clear that I

consider genetic, bioarchaeological, archaeological, linguistic, and ethnographic evidence to have approximately equal value. These are all forms of scientific evidence. However, I also encourage speculation if it is clearly presented as such. Speculation is often the first step in the scientific method, and often leads to the formulation of new theories and the acquisition of new evidence.

- I see the primary role of the presenter to be synthesis of the information in the readings.
  - One form of "synthesis" is drawing together and emphasizing the commonalities of the various readings, then pointing out the ways in which the readings disagree. For example, a set of readings about the peopling of the Americas may agree that the original migrants were from Siberia, but have different ideas about the routes of migration.
  - Another form of synthesis is taking readings that each address a piece of an overall picture and drawing together the entire picture from them. For example one article may discuss initial migrations to Europe, a second discuss migrations to Europe during the Neolithic, and a third might discuss migrations and population interactions since the Neolithic. In this case you can draw them together to present an overall picture of migrations through time.
  - Yet another form of synthesis, is integration of current information with information that has been previously considered or discussed. For example, the discussion of modern populations of Native Americans may depend on the information discussed in the previous presentation on initial migrations to the Americas.
  - Other forms of synthesis exist as well. In fact there are too many to discuss adequately in this syllabus.
- I see the secondary role of the presenter to be a facilitator of discussions. Inevitably, there are times when nobody wants to speak, and at these times the presenter should seek to draw people out. Equally inevitably, there are times when everyone wants to talk at once, and then the job of the facilitator is to recognize them each in turn and to give everyone wishing to speak a fair chance to do so.
- Presenters should give consideration to all sides of a debate. Inevitably, you will find one position more attractive than another, but you must give due consideration to other views as well. Presenters should be considerate of the other students who are contributing to the discussion, whether or not their viewpoints agree with yours.

What I Expect of Class Conduct

The most important thing I expect is participation in the class and in the discussions. This does not mean that I expect every person to contribute an equal number of seconds of speaking. I expect students to vary in the frequency and extent of their contribution for many reasons, most of which are obvious. I expect all students to contribute something at each class meeting. Likewise, I will not tolerate a single student or small group of students monopolizing a class meeting.

Of nearly equal importance is mutual respect and tolerance. Respect for, and cultivation of diversity is a fundamental value for anthropologists. In fact, the UM faculty exhibits a large amount of intellectual diversity. I disagree with my colleagues about many things, yet I have deep respect for all of them and tolerance of those cases in which their views differ from mine. I do not feel that I (or they) or my views (or theirs) are in any way diminished by the fact that a colleague disagrees with me. Further, I value the diversity of viewpoints that exist – our students are much better because of it. In this class we are not members of different "teams" – we are all colleagues. We are not in competition – we are in cooperation to gain as deep an understanding of the topic of this class as possible. Our understanding will be deeper because of differences in opinions and viewpoints. The class session must be a safe environment in which to speak or share an idea, no matter how far out it may seem to anyone else. I will enforce this. I encourage people to respectfully "talk out" their differences in

opinions about an issue. However, if a comment or idea seems too inappropriate it is often best to simply ignore it and move on.

Term Papers

- The paper should be on a topic of your choice, related to ancient migrations of peoples somewhere in the world. It can be theoretical, methodological, or areal. I imagine that most of you will build your term paper out of the topic that you did a presentation on. However, you need not be limited in this way. It is also perfectly valid to do a paper on some subset of a topic we covered. For example, a paper on the origins and present-day nature of the Pomo peoples would be acceptable. Your paper may be of the "library" type, wherein you synthesize literature; or it may be of the "experimental" type, wherein you perform some analysis of some data and present the results. I encourage you to treat your term paper as a chapter in your thesis or dissertation. In general, you may use a paper you prepared for another class as the basis for your paper in this class, with reworking to make it fit the topic and goals of this class, but it's probably best to check with me before doing this.
- There are no length requirements for term papers. However, I will remind you that academics rewards two virtues – brevity and thoroughness. So, the best thing to do is start, cover the topic thoroughly, then stop. David Hurst Thomas's PhD dissertation was rumored to be 7 pages long, and Tim White's was rumored to be over 500 pages long. In both cases, the work was just as long as it needed to be – no more, no less.
- Term papers should be single spaced in 12 to 14 point font, single sided, 1 inch margins all around. I can read sans serif style fonts better, but if you feel you must use Times New Roman or some other serifed font, go ahead.
- Your finished paper should be submitted electronically. Please, no printed papers. You may email it to me, put it in Blackboard's digital dropbox (but be sure to tell me that's what you are doing), or bring it to me on a flash drive or CD. I can handle most word processor formats. Please don't submit as a pdf (Acrobat) file, since it is difficult to make comments in these files. I will return your paper with comments, probably via email, after I read it.
- I shouldn't have to say that I expect your paper to be well written, with good spelling, grammar, formatting, etc. In scientific writing the biggest virtue is clarity. Use scientific 5-part format, using the articles you are reading as examples of this type of format.
- I also shouldn't have to say that I expect your paper to be well cited with an extensive bibliography. I do not consider the assigned readings for a topic to be enough for a thorough exploration of the topic. Again, the principles are brevity and thoroughness. I expect you to have learned how to do citations and references correctly by this point. I don't care what citation or bibliographic style you use so long as it is one recommended by a major anthropological journal and is applied consistent throughout.

PRESENTATION SCHEDULE

DATE	DAY	TOPIC	PRESENTER
8/26	T	01. Introduction	Randy
8/28	R	02. Models of Transmission of Everything	Randy
9/2	T	03. Cladistic Models and Methods	Randy
9/4	R	04. An Overview of Human Evolution	Randy
9/8	T	05. Working with DNA Evidence	
9/11	R	06. Working with Allele Frequency Evidence	
9/16	T	07. Working with Bioarchaeological Evidence	
9/18	R	08. Working with Archaeological Evidence	
9/23	T	09. Working with Linguistic Evidence	
9/25	R	10. Working with Other Types of Evidence	
9/30	T	11. Out of Africa Migrations: 40 to 100kya	
10/2	R	12. Interactions Between Modern and Pre-Modern Humans	
10/7	T	13. The 50kya “Language/Culture Event”	
10/9	R	14. Modern Populations of Africa	
10/14	T	15. Southwest Eurasia (i.e. the Middle East)	
10/16	R	16. Northwest Eurasia (i.e. Europe)	
10/21	T	17. Isolates of Europe (Basques, Saami, Romani, et al.)	
10/23	R	18. Central and South Eurasia (i.e. India and the “Stans”)	
10/28	T	19. Australia and New Guinea	
10/30	R	20. Southeast Eurasia (i.e. Laos, Malaysia, Java, etc.)	
11/4	T	!!! Election Day Holiday !!!	
11/6	R	21. Far East Eurasia (i.e. China, Japan, Korea, etc.)	
11/11	T	!!! Veterans’ Day Holiday !!!	
11/13	R	22. North Eurasia (i.e. Siberia)	
11/18	T	23. Isolates of Eastern Eurasia (Ainu, Vedda, etc.)	
11/20	R	24. The Americas: Initial Migrations	
11/25	T	25. The Americas: Modern Native American Populations	
11/27	R	!!! Thanksgiving Holiday !!!	
12/2	T	26. The Pacific Islands	
12/4	R	27. Summary and Conclusions	Randy
12/8	M	10:10-12:10 Final wrap-up of class. Papers due.	

I will assign topics to each student at the second meeting of the class.

Presentations and Readings

Presentation: Introduction
Basic Question: How is this class going to work?
Readings: Take a look at the world MtDNA map and the world language map. You might find yourself referring to these maps often over the semester.

Presentation: Models of Transmission of Everything
Basic Question: How are genes, culture, language, and everything else transmitted across time and space?
Readings: Everyone read them both

- Moore JH. 1994. Putting Anthropology Together Again: The Ethnogenetic Critique of Cladistic Theory. American Anthropologist 96(4): 925-948. [Read this one carefully.]
- Eswaran V. 2002. A Diffusion Wave out of Africa: The Mechanism of the Modern Human Revolution? Current Anthropology 43(5): 749-774. [Read this one for the main idea of a "diffusion wave" and take a look at the comments that follow the main article.]

Presentation: Cladistic Models and Methods
An overview of the cladistic method.
Readings: Everyone read it.

- Wiley EO et al. 1991. The Compleat Cladist: A Primer of Phylogenetic Procedures. THE University of Kansas Museum of Natural History Special Publication No. 19. 168pp. [Read chapters 1, 2 and 7. Skim the rest.]

Presentation: An Overview of Human Evolution
This presentation will place the origin of modern populations within the overall context of human evolution.
Readings: Everyone read all.

- Strait DS and Grine FE. 2004. Inferring hominoid and early hominid phylogeny using craniodental characters: the role of fossil taxa. Journal of Human Evolution 47: 399-452. [Pay more attention to the results than to the methods (though they are a good example of the cladistic method). Read carefully from p. 438 to 441. Note that Praeanthropus afarensis is their name for Australopithecus afarensis.]
- Anton SC and Swisher CC. 2004. Early Dispersals of Homo from Africa. Annual Review of Anthropology 33: 271–296. [Read for the main points.]
- Trinkaus E. 2005. Early Modern Humans. Annual Review of Anthropology 34: 207–230. [Read for the main points.]

Presentation: Working with DNA Evidence.
Questions:

- What are the advantages, disadvantages, mechanisms of inheritance, and other distinctions between the three forms of DNA evidence (MtDNA, Y-chromosome DNA, and nuclear DNA)?
- What are the advantages and disadvantages of DNA evidence with respect to other types of evidence, such as linguistics and archaeology (i.e. why do so many analyses privilege the DNA evidence)?
- What is the logic and process behind tracing population history using DNA evidence (i.e. how do you make a tree or map of population relationships from DNA evidence)?

Readings: Everyone read all.

- Groleau R. 2002. Tracing Ancestry with MtDNA [Internet]. [Cited 2008 Mar 7]. Available from http://www.pbs.org/wgbh/nova/neanderthals/mtdna.html. [Read Carefully.]
- Jobling MA, Tyler-Smith, C. (2003) the Human Y Chromosome: An Evolutionary Marker Comes of Age. Nature Reviews Genetics 4: 598-612.
- Li JZ, et al. 2008. Worldwide Human Relationships Inferred from Genome-Wide Patterns of Variation. Science 319: 1100-1104. [Read for the overall message. Pay attention to the methods.]

Presentation: Working with Allele Frequency Evidence.
Questions:
- What are the advantages and disadvantages of working with allele frequency evidence in reconstructing population history?
- What are the logic and process behind tracing migrations using allele frequency data?
- Does allele frequency data agree with DNA data, in general, as to basic migration events?

Readings: Everyone read all.
- Amos W. and Manica A. 2006. Global genetic positioning: Evidence for early human population centers in coastal habitats. Proceedings of the National Academy of Sciences of the United States of America 103(3): 820-824 [Read carefully.]
- Richards M. 2003. The Neolithic Invasion of Europe. Annual Review of Anthropology 32:135–162. [Note the comparison between the classical allele frequency approach and the approach based on DNA.]

Presentation: Working with Bioarchaeological Evidence.
Questions:
- What are the advantages and disadvantages of working with bioarchaeological evidence in reconstructing population history?
- What are the logic and process behind tracing migrations using morphological similarity?

Readings: Everyone read all.
- Larsen CS. 2002. Bioarchaeology: The Lives and Lifestyles of Past People. Journal of Archaeological Research 10(2): 119-166. [Read the section on “Population History and Biological Relatedness” carefully, skim the rest.]
- Blom DE, et al. 1998. Tiwanaku 'Colonization': Bioarchaeological Implications for Migration in the Moquegua Valley, Peru. World Archaeology 30(2): 238-261. [Read for understanding of how bioarchaeology is used to infer migrations.]
- Slaus M et al. 2004. Craniometric Relationships among Medieval Central European Populations: Implications for Croat Migration and Expansion. Croatian Medical Journal 45(4): 434-444. [Read for understanding of how bioarchaeology is used to infer migrations.]

Presentation: Working with Archaeological Evidence
Questions:
- What are the advantages and disadvantages of working with archaeological evidence in reconstructing population history?
- What are the logic and process behind tracing migrations using archaeological data?
- How sorts of migration processes might be revealed by archaeological data that would be invisible to genetic or morphological data?

Readings: Everyone read all.
- Van Gijseghem H. 2006. A Frontier Perspective on Paracas Society and Nasca Ethnogenesis. Latin American Antiquity 17(4): 419-444. [Read his theory on frontiers, which seems insightful for migration in general. Read for understanding of how archaeology is used to infer migrations.]
- Stone T. 2003. Social Identity and Ethnic Interaction in the Western Pueblos of the American Southwest. Journal of Archaeological Method and Theory 10(1): 31-67. [Read for

understanding of how archaeology is used to infer migrations. Pay attention to her presentation of ethnographic observations and theory on migrations.]

- Burmeister S. 2000. Archaeology and Migration: Approaches to an Archaeological Proof of Migration. Current Anthropology 41(4): 539-567. [Read for understanding of the limits to archeological detection of migration events.]

Presentation: Working with Linguistic Evidence
Questions:

- What are the advantages and disadvantages of working with linguistic evidence in reconstructing population history?
- How does historical linguistics work and how is it similar to or different from methods of working with biological data?
- My opinion is that those people who work with DNA are not worried enough about homoplasy, while those who work with linguistic evidence are overly worried about homoplasy. Do you agree or disagree?

Readings: Everyone read all.

- Hill JH. 2001. Proto-Uto-Aztecan: A Community of Cultivators in Central Mexico? American Anthropologist 103(4): 913-934. [Read for understanding of how linguistic evidence is used to infer migrations.]
- Holm HJ. 2007. The New Arboretum of Indo-European ‘‘Trees’’. Can New Algorithms Reveal the Phylogeny and Even Prehistory of Indo-European? Journal of Quantitative Linguistics 14(2–3): 167 – 214. [Read for understanding of how comparative historical linguistics works and how it can be abused.]
- Kaiser M and Shevoroshkin V. 1988. Nostratic. Annual Review of Anthropology 17: 309-329.

Presentation: Working with Other Types of Evidence.
Questions:

- How can data from disease causing or parasitical organisms that associate with humans be used to infer migrations and population history?
- What can ethnographic studies of modern peoples tell us about how migrations may have occurred in the past?
- Can artifacts be analyzed in the same manner as biological data to reconstruct population history and migration? What is missing in these studies relative to similar analyses using biological data?

Readings: Everyone read all.

- Montenegro A, et al. 2006. Parasites, Paleoclimate, and the Peopling of the Americas. Current Anthropology 47(1): 193-200. [Read for understanding of how the genetics of a parasite can be used to infer details of human migrations.]
- Thomas MG et al. 2000. Y Chromosomes Traveling South: The Cohen Modal Haplotype and the Origins of the Lemba—the “Black Jews of Southern Africa”. American Journal of Human Genetics 66:674–686. [Read to see how oral traditions can sometimes be verified through genetic analysis.]
- Temkin I and Eldredge N. 2007. Phylogenetics and Material Cultural Evolution. Current Anthropology 48(1): 146-153. [Read for understanding of how material culture artifacts can be analyzed in the same manner as biological data.]

Presentation: Out of Africa Migrations: 40 to 100kya.
Questions:

- What do we know about the nature and timing of the first migrations of modern peoples from Africa?

Readings: Everyone read all.

- Manning P. 2006. Homo sapiens Populates the Earth: A Provisional Synthesis, Privileging Linguistic Evidence. [Read for the overall messages.]
- Underhill PA and Kivisild T. 2007. Use of Y Chromosome and Mitochondrial DNA Population Structure in Tracing Human Migrations. Annual Review of Genetics 41: 539–564. [Read for the overall messages. Start by reading the summary points at the end.]
- Atkinson QD. 2008. mtDNA Variation Predicts Population Size in Humans and Reveals a Major Southern Asian Chapter in Human Prehistory. Molecular Biology and Evolution Volume: 25(2): 468-474.

Presentation: Interactions Between Modern and Pre-Modern Humans
Questions:

- Note that this discussion inevitably focuses on the Neanderthals of Europe and their interaction with modern humans. This is because Europe is the most intensely studied region at this time horizon.
- What are the positions on the question of whether modern Europeans can trace all or part of their ancestry to the Neanderthals?
- What types of evidence do each of these positions rely on?
- What are the strengths and weaknesses of these positions and the evidence they are based upon?
- Is there any possibility of a synthesis or consensus on this issue?

Readings: Everyone read all.

- Wolpoff MH et al. 2004. Why Not the Neandertals? World Archaeology 36(4): 527-546. [Read this one carefully, as it is a good summary of the issues.]
- Hodgeson JA and Disotell TR. 2008. No evidence of a Neanderthal contribution to modern human diversity. Genome Biology 9:206. [Read for the main idea.]
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Presentation: The 50kya "Language/Culture Event"
Questions:

- What is the “standard model” of language acquisition by humans?
- What are the “language revolution model” and the “language evolution model”?
- What evidence supports each of these two models, and what are their strengths and weaknesses?

Readings: Everyone read all.

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- Gentilucci M and Corballis MC. 2006. From manual gesture to speech: A gradual transition. Neuroscience and Biobehavioral Reviews 30: 949–960. [Presents the “standard model” of language evolution. Presents the “language revolution model” (“human revolution”) beginning on p. 597.]
- Trinkaus E. 2007. Human Evolution: Neandertal Gene Speaks Out. Current Biology 17(21): 917-919. [The most recent statement of the “language evolution model”. Note the evidence from the FOXP2 gene.]

Presentation: Modern Populations of Africa
Questions:

- What language families exist in Africa?
- Do the populations of Africa correspond to linguistic groupings?
- What does the evidence say about the origins of, and relationships between, the modern populations of Africa?

Readings: Everyone read the Wikipedia article and the MacEachern article. Arch group read Beleza et al, Barstoen, and Myles et al. Phys group read Batini et al, Tishkoff et al, and Wood et al.

- Wikipedia contributors. 2008. Languages of Africa [Internet]. Wikipedia, The Free Encyclopedia [cited 2008 Apr 18]. Available from: http://en.wikipedia.org/w/index.php?title=Languages_of_Africa&oldid=205122837.
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- MacEachern S. 2001. Genes, Tribes, and African History. Current Anthropology 41(3): 357-384.
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- Tishkoff SA et al. 2007. History of Click-Speaking Populations of Africa Inferred from mtDNA and Y Chromosome Genetic Variation. Molecular Biology & Evolution 24(10): 2180–2195.
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Presentation: Southwest Eurasia (Near and Middle East)
Questions:

- What language families exist in Southwest Eurasia?
- The Near and Middle East sit at the crossroads of paths of migration from Asia, Africa, and Europe. How is this reflected in the genetic, linguistic, and archaeological evidence?
- What populations existed in the past and exist today in Southwest Eurasia?
- What can we say about the population history of the peoples of Southwest Eurasia?
- Is it fair to say that the peoples of Southwest Eurasia are a single, fairly homogeneous population despite all their differences in language, religion, and culture?

Readings: Everyone read Skelton, Buhler et al., the abstract and conclusions of the 3 Nasidze et al. articles, and the abstract and conclusions of Shepard & Herrara. Arch group read Asouti, Levy et al., and Roostalu et al. Phys group read Abu-Amero et al., and Buhler et al, Di Benedetto et al.

- Skelton RR (compiler). n.d. Language Families of Southwest Asia.
- Abu-Amero KK et al. 2007. Eurasian and African mitochondrial DNA influences in the Saudi Arabian population. BMC Evolutionary Biology 7: 32.
- Asouti E. 2006. Beyond the Pre-Pottery Neolithic B interaction sphere. Journal of World Prehistory 20: 87–126.
- Buhler S et al. 2006. HLA-C molecular characterization of a Lebanese population and genetic structure of 39 populations from Europe to India–Pakistan. Tissue Antigens 68: 44–57.
- Di Benedetto G et al. 2001. DNA Diversity and Population Admixture in Anatolia. American Journal of Physical Anthropology 115:144–156.

- Levy TE and Holl AFC. 2002. Migrations, Ethnogenesis, and Settlement Dynamics: Israelites in Iron Age Canaan and Shuwa-Arabs in the Chad Basin. Journal of Anthropological Archaeology 21, 83–118.
- Malyarchuk BA et al. 2002 Mitochondrial DNA Polymorphism in Populations of the Caspian Region and Southeastern Europe. Russian Journal of Genetics 38: 434–438.
- Nasidze I et al. 2004. Mitochondrial DNA and Y-Chromosome Variation in the Caucasus. Annals of Human Genetics 68: 205-221.
- Nasidze I et al. 2005. MtDNA and Y-chromosome Variation in Kurdish Groups. Annals of Human Genetics 69: 401–412.
- Nasidze I et al. 2007. Close Genetic Relationship Between Semitic-speaking and Indo-European-speaking Groups in Iran. Annals of Human Genetics 72: 241–252.
- Roostalu U et al. 2007. Origin and Expansion of Haplogroup H, the Dominant Human Mitochondrial DNA Lineage in West Eurasia: The Near Eastern and Caucasian Perspective. Molecular Bioliology & Evolution 24(2): 436–448.
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Presentation: Northwest Eurasia (Europe)
Questions:

- What language families exist in Europe?
- Is it fair to say that the Europeans form a single, homogeneous population?
- Do the European Neolithic and the Indo-European language family relate to each other? What are current ideas on the timing of the arrival of the Neolithic and Indo-European in Europe?
- What can be said about the population history of the Indo-European speakers of Europe?

Readings: Everybody read the Wikipedia article and the Roebroeks article. Arch group read Gray and Atkinson, Haak et al., and Sokal et al. Phys group read Brace et al, Piazza et al., and Sykes.

- Wikipedia contributors. Languages of Europe [Internet]. Wikipedia, The Free Encyclopedia; 2008 Jul 7, 15:01 UTC [cited 2008 Jul 9]. Available from: http://en.wikipedia.org/w/index.php?title=Languages_of_Europe&oldid=224145640.
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- Roebroeks W. 2006. The human colonisation of Europe: where are we? Journal of Quaternary Science 21(5) 425–435.
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Presentation: Isolates of Europe
Questions:

- What language families do the Saami and Romani languages belong to?
- Basque is a linguistic isolate, but what other languages has it been linked to by some authorities?

- Who are the Saami, and what do we know of their population history?
- Who are the Basques, and what do we know of their population history?
- Who are the Romani, and what do we know of their population history?

Readings: Everybody read all.

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- Wikipedia contributors. Basque language [Internet]. Wikipedia, The Free Encyclopedia; 2008 Jul 6, 01:39 UTC [cited 2008 Jul 9]. Available from: http://en.wikipedia.org/w/index.php?title=Basque_language&oldid=223834403.
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- Niskanin M. 2002. The Origin of the Baltic Finns from the Physical Anthropological Point of View. The Mankind Quarterly 18(2): 121-153.
- Perez-Miranda AM et al. 2005. Microsatellite data support subpopulation structuring among Basques. Journal of Human Genetics 50:403–414.
- Quintana-Murci L. et al. 1999. Further characteristics of proto-European Y chromosomes. European Journal of Human Genetics 7, 603–608.

Presentation: Central and South Eurasia (India and the “Stans”)

Questions:

- What distinct populations and linguage families can be found in Central and South Eurasia?
- Central Asia was historically important as a travel corridor from the Far East to Europe and the Middle East. Is this reflected in the character of the peoples living there now?
- Central Asia has long been considered the homeland of the Aryans, that group of people much admired by White supremists. What can be said about the Aryans?
- What can be said about the genetic complexity of the Indian subcontinent?

Readings: Everyone read the two Wikipedia articles and the Kennedy article. Arch group read Field, Gutala et al., and McElreavy & Quitana-Murci. Phys group read Hemphill, Kivisild et al., and Lalueza-Fox et al.

- Wikipedia contributors. Languages of India [Internet]. Wikipedia, The Free Encyclopedia; 2008 Jul 8, 18:42 UTC [cited 2008 Jul 8]. Available from: http://en.wikipedia.org/w/index.php?title=Languages_of_India&oldid=224407617.
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- McElreavey K and Quintana-Murci L. 2005. A population genetics perspective of the Indus Valley through uniparentally-inherited markers. Annals of Human Biology 32(2): 154–162.

Presentation: Australia and New Guinea
Questions:

- When did modern humans first arrive in Australia and New Guinea?
- What is the relationship between Australia and New Guinea in terms of languages, genetics, and archaeology?
- Does Australia seem to have been relatively isolated from the rest of the world since it's first inhabitants arrive (not counting recent migrations of Europeans)?
- What does the linguistic diversity of indigenous australian languages imply about the prehistory of Australia?

Readings: Everybody read the two Wikipedia articles. Arch group read Curnoe, Fairbairn et al., and Oconnell and Allen. Phys group read Hudjashov et al., Ingman and Gyllensten, and Walsh et al.

- Wikipedia contributors. Indigenous Australian languages [Internet]. Wikipedia, The Free Encyclopedia; 2008 Jun 15, 04:04 UTC [cited 2008 Jul 9]. Available from: http://en.wikipedia.org/w/index.php?title=Indigenous_Australian_languages&oldid=219423105.
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- Fairbairn AS et al. 2006. Pleistocene occupation of New Guinea's highland and subalpine environments. World Archaeology Vol. 38(3): 371–386.
- Hudjashov G et al. 2007. Revealing the prehistoric settlement of Australia by Y chromosome and mtDNA analysis. Proceedings of the National Academy of Science 104(21): 8726–8730.
- Ingman M and Gyllensten U. 2003. Mitochondrial Genome Variation and Evolutionary History of Australian and New Guinean Aborigines. Genome Research 13: 1600-1606.
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- Walsh SJ et al. 2007. A comprehensive analysis of microsatellite diversity in Aboriginal Australians. Journal of Human Genetics 52: 712–728.

Presentation: Southeast Eurasia (i.e. Laos, Malaysia, Java, etc.)
Questions:

- There seem to be relatively few archaeological or genetic studies of the peoples of Southeast Asia. What could be some of the reasons for this?
- When did people first arrive in Southeast Asia, and what have been their interactions with the rest of Asia and the Pacific since then?
- Southeast Asia seems to have considerable linguistic diversity, despite widespread language sharing. How can we explain this?

Readings: Everybody read the 4 Wikipedia articles and Hill et al. Arch group read Saruwatari et al. 2002 and Szabo & O'Connor. Phys group read Matsumara & Pookajorn and Saruwatari et al. 2006.

- Wikipedia contributors. Austro-Asiatic languages [Internet]. Wikipedia, The Free Encyclopedia; 2008 Jul 5, 00:33 UTC [cited 2008 Jul 9]. Available from: http://en.wikipedia.org/w/index.php?title=Austro-Asiatic_languages&oldid=223636406.

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- Saruwatari L et al. 2002. Peopling of Myanmar as Demonstrated by Genotyping of Urinary JC Virus DNA. Anthropological Science 110(3): 235-249.
- Saruwatari L et al. 2006. Dispersal of southeastern Asians based on a global phylogenetic analysis of JC polyomavirus isolates of genotype SC.
- Szabo K and O'Connor S. 2004. Migration and complexity in Holocene Island Southeast Asia. World Archaeology Vol. 36(4): 621 – 628.

Presentation: Far East Eurasia (i.e. China, Japan, Korea, etc.)
Questions:

- What are the main language families of the Far East?
- There seems to be very little DNA evidence gathered for migrations in the Far East. What are some possible reasons for this?
- What does the available evidence say about the initial migrations to the Far East and the relationships between them and the populations that live there now?

Readings: Everybody read the three Wikipedia articles and the Bellwood and Sanchez-Mazas article. Arch group read Aldenderfer & Zhang, Ding et al., and Derenko et al. Phys group read Hanihara, Hemphill & Mallory, and Zheng et al.

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- Bellwood P. and Sanchez-Mazas A. 2005. Human Migrations in Continental East Asia and Taiwan: Genetic, Linguistic, and Archaeological Evidence. Current Anthropology 46(3): 480-483.
- Derenko MV et al. 2004. Restriction polymorphism of mitochondrial DNA in Koreans and Mongolians. Russian Journal of Genetics 40(11): 1292-1299.
- Ding Y et al. 2000. Population structure and history in East Asia. Proceedings of the National Academy of Science 97(25): 14003–14006.
- Hanihara T. 1994. Craniofacial Continuity and Discontinuity of Far Easterners in the Late Pleistocene and Holocene. Journal of Human Evolution 27: 417-441.

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Presentation: North Eurasia (i.e. Siberia)
Questions:

- What are the main language families of Siberia?
- Siberia is another crossroads (of a sort – a geographically large one). What evidence links the peoples of Siberia with other parts of Eurasia?
- What evidence links the peoples of Siberia with the indigenous peoples of the Americas?
- An old hypothesis is that about 15kya to 20kya there existed a population called the "Paleomongoloids" that were widely spread over the eastern part of Eurasia, and which were the ancestors of some Siberians, some East Asians, and Native Americans. Is there support for the idea of "Paleomongoloids"?

Readings: Everybody read the three Wikipedia articles. Arch group read Crawford, Slobodin, Shabrova et al., and Starikoskaya et al. Phys group read Derenko, Malyarchuk, Pakendorf et al., and Phillip-Krawcsak et al.

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- Crawford MH. 2007. Genetic Structure of Circumpolar Populations: A Synthesis. American Journal of Human Biology 19: 203–217.
- Derenko M et al. 2007. Phylogeographic Analysis of Mitochondrial DNA in Northern Asian Populations. The American Journal of Human Genetics 81: 1025–1041.
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- Slobodin S. 2001. Western Beringia at the End of the Ice Age. Arctic Anthropology 38(2): 31-47.
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Presentation: Isolates of Eastern Eurasia

Questions: There are many isolate populations in Eastern Eurasia. Let's focus on three of them, the Ainu, the Vedda, and the Yeniseians.

- Who are the Ainu peoples? What family do their languages belong to? What are the hypotheses concerning their relationships with other populations?
- Who are the Veddic (Dravidian speaking) peoples? What family do their languages belong to? What are the hypotheses concerning their relationships with other populations?
- Who are the Yeniseian peoples? What family do their languages belong to? What are the hypotheses concerning their relationships with other populations?

Readings: Everybody read the three Wikipedia articles. Arch group read Rubicz et al., Sengupta et al., and Vishwanathan et al. Phys group read Dodo & Kawakubo, Shigematsu et al., and Sharma et al.

- Wikipedia contributors. Yeniseian languages [Internet]. Wikipedia, The Free Encyclopedia; 2008 Jun 27, 12:32 UTC [cited 2008 Jul 10]. Available from: http://en.wikipedia.org/w/index.php?title=Yeniseian_languages&oldid=222070752.
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- Wikipedia contributors. Dravidian languages [Internet]. Wikipedia, The Free Encyclopedia; 2008 Jul 1, 19:51 UTC [cited 2008 Jul 10]. Available from: http://en.wikipedia.org/w/index.php?title=Dravidian_languages&oldid=222927994.
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- Vishwanathan H et al. 2004. Genetic structure and affinities among tribal populations of southern India: a study of 24 autosomal DNA markers. Annals of Human Genetics 68: 128–138.
- Shigematsu M et al. 2004. Morphological affinities between Jomon and Ainu: reassessment based on nonmetric cranial traits. Anthropological Science 112: 161–172.

Presentation: The Americas: Initial Migrations

Questions:

- What is the current consensus, if any, for the timing of the initial migrations to the Americas?
- What is the minimum number of migrations that probably contributed to the populations of modern Native Americans?
- What is the likely area or areas from which this migrants came?
- What route or routes did the initial migrants take to reach the U.S. and areas south of it?

Readings: Everybody read Schurr. Arch group read Buchanan & Collard, Gilbert et al., and Reidla et al. Phys group read Brace et al., Achilli et al., and Zegura et al.

- Achilli A et al. 2008. The Phylogeny of the Four Pan-American MtDNA Haplogroups: Implications for Evolutionary and Disease Studies. PLoS One 3(3): e1764, 8pp.
- Brace CL et al. 2001. Old World sources of the first New World human inhabitants: A comparative craniofacial view. Proceedings of the National Academy of Science 98(17): 10017–10022.

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- Gilbert TP et al. 2008. DNA from Pre-Clovis Human Coprolites in Oregon, North America. Science 320: 786-789.
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- Schurr TG. 2004. The Peopling of the New World: Perspectives from Molecular Anthropology. Annual Review of Anthropology 33: 551–583.
- Zegura SL et al. 2004. High-Resolution SNPs and Microsatellite Haplotypes Point to a Single, Recent Entry of Native American Y Chromosomes into the Americas. Molecular Biology and Evolution 21(1): 164–175.

Presentation: The Americas: Modern Native American Populations
Questions:

- What is the controversy surrounding Greenberg's hypothesis for classification of the languages of the Americas? What are some possible reasons for why linguists who study North American languages pretty much stand alone among scientists in opposing this classification? Why is Greenberg's hypothesis so attractive to other scientists?
- How do the oldest skeletons from North America compare with modern Native Americans and other peoples in the world? Is this a contrast with the data from ancient DNA (see the Gilbert et al. article from last presentation)? What are some possible explanations for this?
- What can be said about the populations and migrations of Native Americans after the time of the initial migrations to the Americas?

Readings: Everybody read the four Wikipedia articles, Eshleman et al., and Jones. Arch group read Gilbert et al, Malhi et al, and Mesa et al. Phys group read Jantz & Owsley, Stojanowski, and Mulligan et al.

- Eshleman JA et al. 2003. Mitochondrial DNA Studies of Native Americans: Conceptions and Misconceptions of the Population Prehistory of the Americas. Evolutionary Anthropology 12: 7–18.
- Gilbert MTP et al. 2008. Paleo-Eskimo mtDNA Genome Reveals Matrilineal Discontinuity in Greenland. Science 320: 1787-1789.
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- Mesa NR et al. 2000. Autosomal, mtDNA, and Y-Chromosome Diversity in Amerinds: Pre- and Post-Columbian Patterns of Gene Flow in South America. American Journal of Human Genetics 67: 1277–1286.
- Mulligan CJ et al. 2004. Population Genetics, History, and Health Patterns in Native Americans. Annual Review of Genomics and Human Genetics 5: 295–315.
- Stojanowski CM. 2004. Population History of Native Groups in Pre- and Postcontact Spanish Florida: Aggregation, Gene Flow, and Genetic Drift on the Southeastern U.S. Atlantic Coast. American Journal of Physical Anthropology 123: 316–332.
- Wikipedia contributors. Amerind languages [Internet]. Wikipedia, The Free Encyclopedia; 2008 Jul 10, 19:19 UTC [cited 2008 Jul 11]. Available from: http://en.wikipedia.org/w/index.php?title=Amerind_languages&oldid=224863509.

- Wikipedia contributors. Na-Dené languages [Internet]. Wikipedia, The Free Encyclopedia; 2008 Jul 11, 14:26 UTC [cited 2008 Jul 11]. Available from: http://en.wikipedia.org/w/index.php?title=Na-Den%C3%A9_languages&oldid=225021014.
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Presentation: The Pacific Islands
Questions:
- To what language family do most of the languages of the Pacific Islands belong? Where else is this language family found?
- How do the island groups of Melanesia, Micronesia, and Polynesia relate to each other.
- What can be said about the migrations of the populations of the Pacific Islands?
- What is the importance of Taiwan for the peopling of the Pacific?

Readings: Everybody read the two Wikipedia articles. Arch group read Kayser et al 2006, Larson et al, and Takasaka et al. Phys group read Kayser et al 2008, Lum et al, and Pietrusewsky and Chang.
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Presentation: Summary and Conclusions
Questions:
- What general principles can we extract from the material and topics in this class about:
  - models of how populations form;
  - the types of data that can be used to probe ancient migrations;
  - the overall patterns of migrations around the world;
  - local patterns of migration within regions of the world;

    - how well do genetics, language, ethnicity etc. correspond.
- How well did this class work for you?
    - Was important information excluded?
    - Were you so overloaded that you could not synthesize the material?