

Duluth Campus

Department of Sociology -Anthropology
College of Liberal Arts

228 Cina Hall
1123 University Drive
Duluth, Minnesota 55812-3306

Office: 218-726-7551
Fax: 218-726-7759

16 September 2012

1601 Prehistoric Cultures Week 3:

Heredity and Evolution / Variation and Adaptation

Patterns of Variation

Journey of Man

This week we're going to have a closer look at genetics, DNA, and the work of Spencer Wells and the Genographic Project team at National Geographic.

Before we return to the Genographic Project we'll have close look at one of the **main related concepts** in Anthropology, and Prehistoric Cultures in particular . . .

variation.

The video *Patterns of Variation* briefly discusses the **concept of "race"** then explains **how today anthropologists and scholars ". . . analyze genetics and DNA, the cornerstone of genetic studies, to describe and understand human diversity"** ([Coast Learning Systems](#)). *Patterns of Variation* will discuss a few more basic terms and ideas relating to Ch. 4 of the text *Understanding Humans*: "Human Variation and Adaptation."

After viewing *Patterns of Variation* we'll return to watch Spencer Wells http://en.wikipedia.org/wiki/Spencer_Wells and the National Geographic Genographic team in action <http://www.d.umn.edu/cla/faculty/troufs/anth1602/pcgenographicproject.html#title>, as they go around the world on a . . .

Journey of Man. . . .

It's a long journey, and a long video—it will take 120 minutes. So be prepared.

"JOURNEY OF MAN tells the remarkable story of the human journey out of Africa and into the rest of the world, tracing history through evidence uncovered in the Y-chromosome of man's DNA. Traversing six continents, the film takes viewers on a fascinating journey into the hidden world of their ancestry and offers a modern look at our ancestor's lives." -- National Geographic

And as time permits we'll have a look at **my DNA results as part of the National Genographic Project's Journey**. We'll briefly compare the "journey" of my Roufs ancestors with the DNA results of Professor Emeritus **Tom Bacig**, and interesting comparison as Prof. Bacig is part Canadian Metis.

Over the next three or four weeks we'll continue on and off to look at slide materials aimed at setting the basic analytic, theoretical and historical framework for the course, as time permits. We'll get back to that next week . . . and in the weeks that follow. And in-between we'll have a look at "How to Study for Exams."

Don't forget that your **Case Study is due Friday, 21 September 2012**. Details of the Case Study are at <http://www.d.umn.edu/cla/faculty/troufs/anth1602/case_studies/pcCS-01.html#title>. As mentioned last week, it is basically a short summary of (A) your view of "What's New" in the world of anthropology, and (B) what news you personally find most interesting (and why).

If you have any questions about anthropology, or about the class and the assignments, please let me know: <mailto:troufs@d.umn.edu>.

Be sure to check the details of the activities and assignments each week on your **moodle** HomePage.

Try to coordinate your Week 3 forum posts with this week's video presentation *Patterns of Variation* . . .

- [Forum: "Black as Barack" \(Due by Friday, 28 September 2012\)](#)

Don't forget to share your ideas, including study-questions with your classmates. Discuss them on-line with the others in class . . .

f2012 DAY 1601

- [Live chat for Project Collaboration](#)
- [General Student Discussion Area Forum](#)

f2012 CE 1602

- [Live chat for Project Collaboration](#)
- [General Student Discussion Area](#)

Your **moodle** Class Topics and Reading Assignments for Week 3 will look something like the information at the end of this memo. There are a lot of materials assigned, so **be sure to read the avisos that come with the assignments for Chs. 3-4-5** . . .

- **read and study for basic concepts and definitions**
- **the main concepts and definitions will be reviewed in class**
- **do not worry too much about the biochemistry and biostatistics**

Best Regards,

Tim Roufs

[Anth 1602 Prehistoric Cultures](#)

Week 3 — Heredity and Evolution / Variation and Adaptation



DAY Week 3 Memo
CE Week 3 Memo

1601 Week 3 Day 5, Tuesday, 18 September 2012
CE Week 3, Monday, 24 September 2012 nlt 5:42
video:

Patterns of Variation

(28 min., 2008, UM DULUTH Library Multimedia QH431 .P377 2008 DVD)

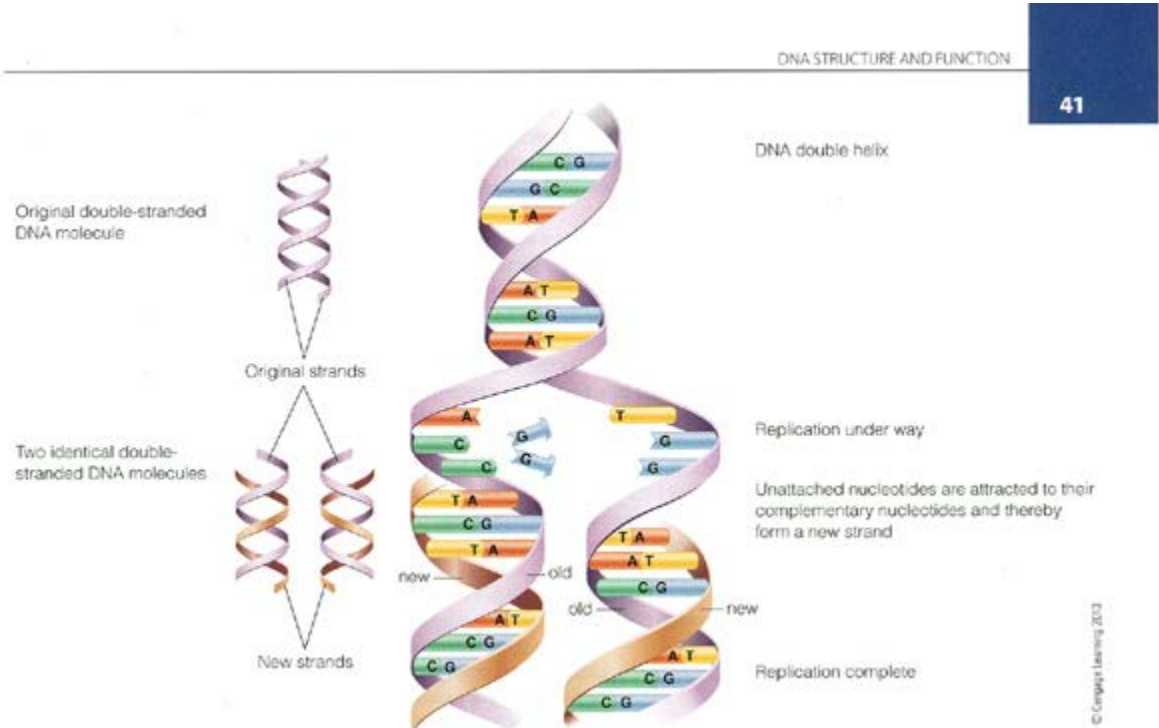
[film HomePage](#)
[transcript](#)

we will have a look at the sister concept Week 13
video:

Patterns of Adaptation

(28 min., 2008, UM DULUTH Library Multimedia QP82 .P38 2008 DVD)

[film HomePage](#)
[transcript](#)



[DNA](#)

CONTENTS	
viii	
CHAPTER 3	CHAPTER 4
Heredity and Evolution 37	Modern Human Variation and Adaptation 69
The Cell 38	Historical Views of Human Variation 70
DNA Structure and Function 39	The Concept of Race 71
DNA Replication 39	Contemporary Interpretations of Human Variation 73
Protein Synthesis 40	Human Polymorphisms 75
Cell Division: Mitosis and Meiosis 42	Polymorphisms at the DNA Level 75
Mitosis 45	Human Biocultural Evolution 76
Meiosis 46	AT A GLANCE: Former and Contemporary Approaches to the Study
The Genetic Principles Discovered by Mendel 48	of Human Variation 77
Mendel's Principle of Segregation 49	Population Genetics 79
Dominance and Recessiveness 50	The Adaptive Significance of Human Variation 80
Mendel's Principle of Independent Assortment 52	Solar Radiation, Vitamin D, and Skin Color 81
Mendelian Inheritance in Humans 52	The Thermal Environment 84
Misconceptions Regarding Dominance	High Altitude 87
and Recessiveness 54	Infectious Disease 89
Polygenic Inheritance 55	AT A GLANCE: Zoonoses and Human Infectious Disease 90
AT A GLANCE: Mendelian and Polygenic Traits 57	The Continuing Impact of Infectious Disease 91
Genetic and Environmental Factors 57	Summary of Main Topics 94
Mitochondrial Inheritance 58	Critical Thinking Questions 94
New Frontiers 58	

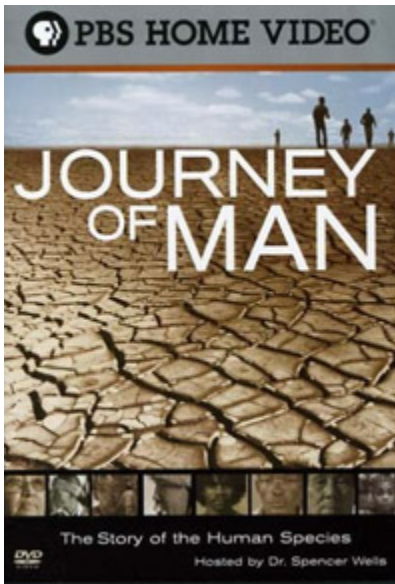
1601 Week 3 Day 5, Tuesday, 18 September 2012, begins,
and finishes on Day 6, Thursday, 20 September 2012

CE Week 3, Monday, 24 September 2012 nlt 6:25
video:

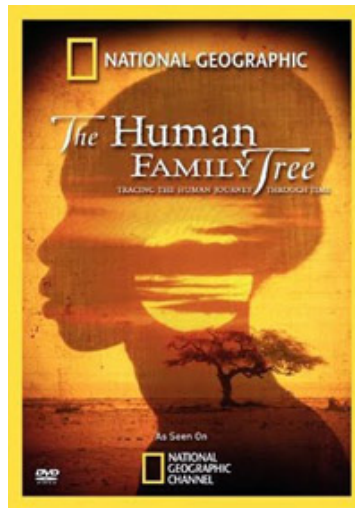
Journey of Man . . .

(120 min., 2003, UM DULUTH Library Multimedia GN281 .J687 2003 DVD)

[film HomePage](#)
[course viewing guide](#)



[DNA](#)
[The Genographic Project](#)



2009
[The Human Family Tree HomePage](#)

DAY 06 Thursday, 20 September 2012 (cont.) video:

Journey of Man . . .
(120 min., 2003, DVD 742)

film [HomePage](#)
[course viewing guide](#)

Heredity and Evolution:
The National Geographic Genographic Project

Roufs Genographic
slides: (.pdf) ([.pptx](#))

~tbacig/

Genographic Project Slides:
([Genographic_Roufs.pptx](#))



Venus of Willendorf

For Week 3 Activities see [moodle](#)

assignment:

This is a lot of material for the week, but with this material the major points will be covered in class. When you are done looking over Chs. 3-5 you should know what an item is; you do not have to know all of the details of how it works--except for the items that we go over in class.

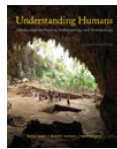
- ~ Ch. 3, "Heredity and Evolution" pp. 37-68
- ~ Ch. 4, "Modern Human Variation and Adaptation," pp. 69-94
- ~ Ch. 5, "Macroevolution: Processes of Vertebrate and Mammalian Evolution," pp. 95 -114

NOTE:

- **read and study for basic concepts and definitions**
- **the main concepts and definitions will be reviewed in class and on the class handouts**
- **do not worry too much about the biochemistry and biostatistics**

~ Page through "Appendix C: Population Genetics," pp. 428-430

(Check the Week 03 Assignments page for list of terms)
see note in Moodle



assignment:

▫ [Case Study](#)

DAY [Case Study "What's New? Current Trends and New Discoveries"](#) due Friday, 21 September 2012, 11:55 p.m.

CE [Case Study "What's New? Current Trends and New Discoveries"](#) is due Friday, 21 September 2012, 11:55 p.m.

-- [Web: Texas A&M News](#)