

# Careers in Biological Anthropology

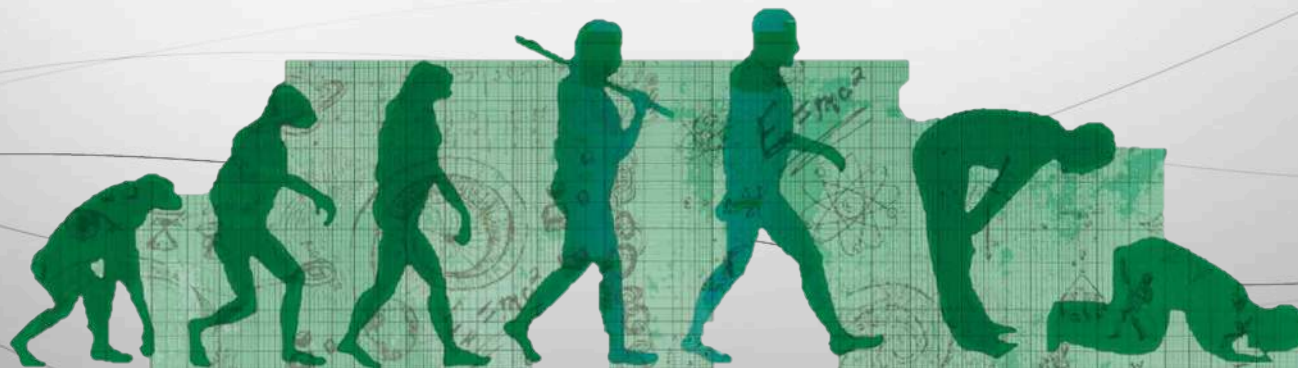
A Presentation By:

- ◆ Alissa Allred
- ◆ Cristina Gallardo
- ◆ Arianna Lokeni
- ◆ Kimberly Paulsen
- ◆ Meagan Buchele
- ◆ Virginia Figón
- ◆ Megan Mullineaux
- ◆ Courtney Southwick



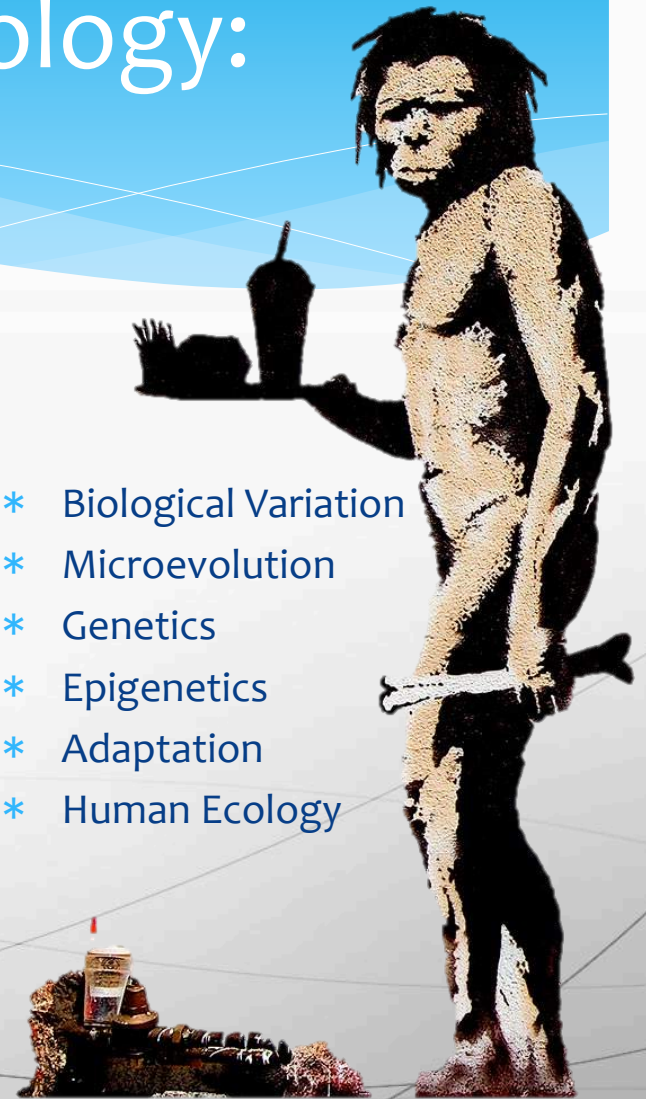
# What is Biological Anthropology?

Biological Anthropology is the study of the biological and behavioral variation of humans through the scope of evolution. It takes into account human origins, physical and cultural adaptations, and the past and present diversity of peoples around the world.



# Subjects of research included within Biological Anthropology:

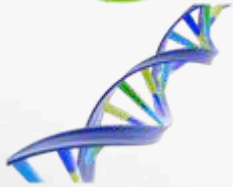
- \* Human Evolution
- \* Paleoanthropology
- \* Evolutionary Ecology
- \* Primatology
- \* Cognition & Behavior
- \* Life History
- \* Aging & Mortality
- \* Growth & Development
- \* Reproduction & Fertility
- \* Maternity
- \* Sexual Dimorphism
- \* Anthropometrics
- \* Morphology
- \* Osteology
- \* Zooarchaeology
- \* Taphonomy
- \* Paleopathology
- \* Disease & Epidemiology
- \* Hormones & Metabolism
- \* Diet & Nutrition
- \* Subsistence Strategies
- \* Population Structure
- \* Population Growth
- \* Migration
- \* Biological Variation
- \* Microevolution
- \* Genetics
- \* Epigenetics
- \* Adaptation
- \* Human Ecology



# Biological Anthropology offers career paths in the following areas of specialization:



\* Public Health



\* Genetics



\* Forensic Anthropology



\* Primatology and Evolutionary Ecology

# Careers in Public Health

By Virginia Figón and Courtney Southwick





# What is Public Health?



Public Health is an interdisciplinary field in which the goals are to prevent disease, improve overall wellness, and expand health-related knowledge within human communities.

\* Opportunities to study Public Health at the **University of Utah** are *plentiful*:

- ✦ College of Social and Behavioral Science
- ✦ College of Health
- ✦ Global Health Initiative - study abroad!

\* In the **Dept. of Anthropology**, courses with content concerning Public Health matters include:

- |   |  |
|---|--|
| ✦ 4252 Human Biology (Dr. O'Rourke)                         | ✦ 4291 Evolution of Human Health (Dr. McCullough & Dr. Paine)              |
| ✦ 4192 Culture, Health, and Healing (Dr. Ainsworth)         | ✦ 4334 Population Issues in Anthropology (Dr. Harpending & Dr. Pennington) |
| ✦ 4193 Medical Anthropology (Dr. Ainsworth)                 | ✦ 4133 Maternal & Child Health (Dr. Pennington)                            |
| ✦ 4242 Anthropology of Clinical Health Care (Dr. Ainsworth) | ✦ 4234 Genes, Health, & History (Dr. Rogers)                               |
| ✦ 4130 The Anthropology of Food (Dr. Weissner)              |  |

# How does Biological Anthropology approach matters of Public Health differently?

## Biological Anthropology:

- \* Human populations evolve cultural, behavioral, and biological adaptations to fit their environments.
- \* Disease results when human biology and behavior are maladapted to modern environments and new cultural practices.
- \* Diseases can be prevented by understanding human biology in terms of evolutionary ecology.



## Conventional Medicine:

- \* Adaptive responses to the environment and cultural influences on human biology tend to be ignored.
- \* Health is evaluated by comparing the structure and function of an individual's body systems to what is average for most humans.
- \* Standard treatments are given to all patients with a focus on immediate care rather than disease prevention and wellness.



Anthropology graduates interested in Public Health can pursue further education at the **U. of Utah**:



## Interdisciplinary Graduate Certificate Programs

- \* Public Health Certificate
- \* Global Health Certificate
- \* Women's Health Certificate
- \* Demography Certificate
- \* Health Communication Certificate
- \* Patient-Centered Research Methods / Comparative-Effectiveness Research Certificate
- \* Personalized Health Care Certificate



## Graduate Degree Programs

- \* Master of Science in Biological Anthropology
- \* Master of Arts in Cultural Anthropology / Health Services Administration (Joint Credential)
- \* Master of Public Health
- \* Master of Science in Public Health
- \* Sociology of Population and Health (PhD)
- \* Master of Science in Health Promotion and Education
- \* Master of Occupational Therapy



# What career options exist in Public Health?



- \* **Occupational Therapist:** *Rehabilitate patients recovering from illnesses, injuries, addictions, and trauma; persons with disabilities; and new refugees in their professional and daily living activities by recommending alternative means to perform tasks, employer accommodations, and the use of adaptive equipment.*
- \* **Community Health Worker:** *Document health concerns for specific subpopulations within a community, conduct outreach efforts to increase awareness of and access to healthcare services; and keep data on feedback.*
- \* **Clinical Research Coordinator:** *Oversee clinical research projects by instructing study employees on objectives and methods, managing subject enrollment, maintaining records, and ensuring protocol compliance.*
- \* **Biostatistician:** *Collaborate with physicians and scientists to design studies; apply statistical methods to analyze surveys and clinical data; and form conclusions and predictive models on the basis of statistical results.*
- \* **Epidemiologist:** *Investigate and describe the etiology and distribution of human diseases by collecting data through interviews, surveys, and biological samples and assessing demographic trends to define high-risk segments of the population, establish effective treatments, and reduce negative health outcomes.*

# Community Health Worker

## Sample Employment Opportunities:

- \* Hospital Administrator
- \* Director of Family Health Services
- \* Health Educator
- \* Public Health Consultant
  - ◇ *Opportunities in private companies, non-profit organizations, government, international agencies.*

## Job Entry Requirements:

- \* Master of Public Health
- \* Anthropology, BS (with emphasis on Biological Anthropology) is good preparation.
  - ◇ *The two degrees fit together well, because you are trained in science but are also more culturally aware than most science graduates.*

## Advantages & Disadvantages of this Career:

- \* Pay is not great, though some directors can make upwards of \$100k.
- \* Great benefits for government jobs.
- \* The Bureau of Labor Statistics predicts that job opportunities will increase by 12-23% in the next ten years, making growth as fast as average or much faster than average.



# Epidemiologist



## Sample Employment Opportunities:

- \* World Health Organization (WHO)
- \* Centers for Disease Control and Prevention (CDC)
- \* National Institutes of Health (NIH)
- \* State and county health departments
- \* Health insurance providers
- \* Pharmaceutical companies
- \* Research universities

## Job Entry Requirements:

- \* Master of Science in Public Health
  - ◇ Anthropology, BS
  - ◇ Undergraduate courses in Statistics and Epidemiology
- \* Specialization in an area of Public Health:
  - ◇ Emergency Response
  - ◇ Environmental health
  - ◇ Infectious diseases
  - ◇ Chronic diseases
  - ◇ Oral health
  - ◇ Maternal and child health
  - ◇ Occupational health
  - ◇ Injury
  - ◇ Substance abuse
  - ◇ Bioterrorism

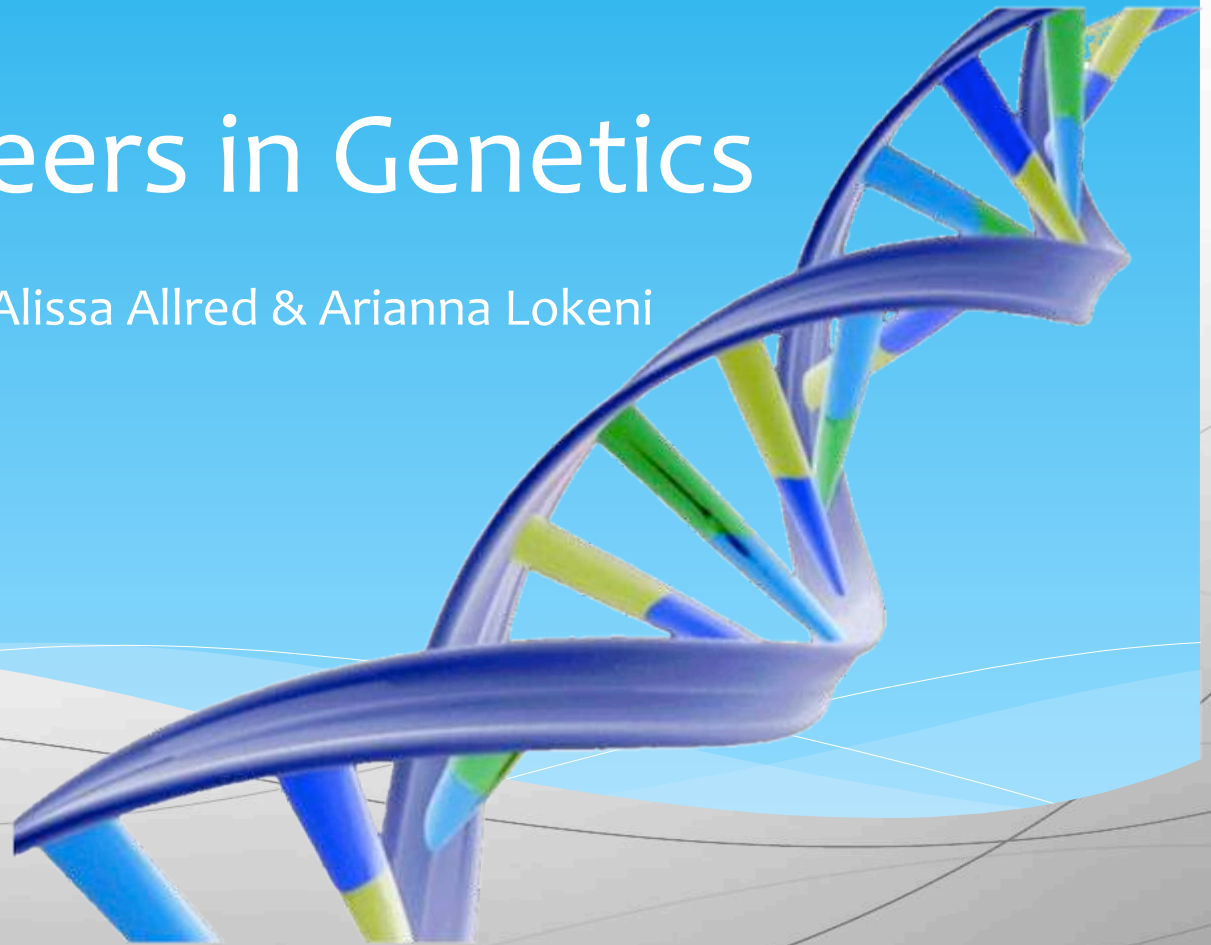
## Advantages & Disadvantages of this Career:

- \* Many international job opportunities.
- \* \$65,000 median annual wage.
- \* \$70,000 to \$130,00 for Epidemiologists at the CDC.
- \* Job competition is intense while job growth in Epidemiology remains average.
- \* Risk of exposure to the Public Health threats that one studies.



# Careers in Genetics

By Alissa Allred & Arianna Lokeni





# Genetics

*"... [ Anthropological Geneticists seek to] understand human genetic and biological variation and human evolution, and to reconstruct human population history and demographic history..."*

## **Skills:**

- \* Molecular biology
- \* DNA sequencing, mapping, gene frequency and expression
- \* Lab techniques: sampling, measuring, processing, tests, and analysis
- \* Statistical data
- \* Problem solving, critical thinking, and researching/investigating

## **Highest level of Education to be successful:**

- \* Masters BS/A
- \* Ph.D for higher positions/salary



# Genetics Careers

## 1. CDC: Interdisciplinary Behavioral Scientist

- \* \$124,995- \$157,100/year

### Requirements:

- \* BA/S or Higher
- \* Experience related to appropriate position or work

## 2. Thermo Fisher: Next-Gen Sequencing, CA

- \* \$60,000 - \$78,000/year

### Requirements:

- \* BS + 6 yrs. experience, Master's + 4 yrs. experience, or PhD
- \* Familiar with sequencing technology

## 3. Genetic Counselor

- \* \$48,000 - \$71,000/year
- \* Determine risks for disorders and diseases that are hereditary in patients.

### Requirements:

- \* Masters or higher
- \* Licensing is required in some states



# Careers in Forensic Anthropology

By Meagan Buchele, Cristina Gallardo, & Kimberly Paulsen



# Forensic Anthropology

- \* Forensic anthropology is the application of anthropology, osteology and other forensic sciences to the legal process.
- \* Forensic anthropology is used in legal settings to identify human remains and the context of death.
- \* Forensic anthropologists do NOT do any of the following: collect trace evidence (hair, fibers), run DNA tests, analyze ballistics or weapon evidence, analyze blood spatter, conduct autopsies





# Careers in Forensic Anthropology



- \* Academia
  - \* earn between \$75,000 - \$90,000
  - \* Need a Ph.D and experience in the field
- \* Lab Technician
  - \* earn between \$45,000-\$50,000
  - \* Bachelors Degree
- \* Government Jobs
  - \* FBI
  - \* Courtroom witnesses
  - \* JPAC- finding the remains of POW/ MIA from all past wars and conflicts
    - \* \$58,000-\$72,000
    - \* Masters and/or Ph.D

# Graduate Schools

University of Florida-  
Gainesville



- \* University of Florida - Gainesville
  - \* C.A. Pound Human Identification Laboratory
- \* University of Tennessee- Knoxville
  - \* this school has the body farm in which you can get more hands on work
- \* Boston University
  - \* Outdoor Research Facility
- \* California State University, Chico

University of Tennessee-  
Knoxville



# At the U

- \* Classes

- \* Intro to Forensic Anthropology and the "Science" of CSI- Derinna Kopp
- \* Human Osteology- Dr. Jack Broughton
- \* Forensic Anthropology- Derinna Kopp

- \* Biology, Zooarchaeology, evolution and other anthro classes

# Careers in Primateology and Evolutionary Ecology

By Megan Mullineaux





# Cognition and Behavior

## Evolutionary Ecology

- \* The study of the evolutionary basis for animal behavior due to ecological pressures



## Primateology

- \* The study of non-human primates



# Know Thyself

## Question Person

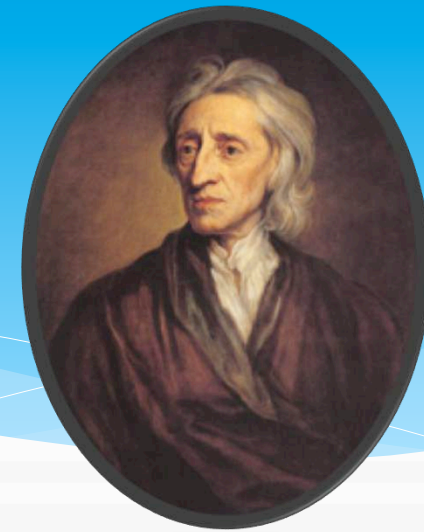
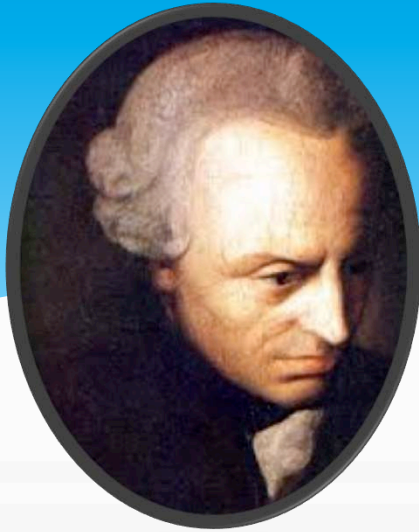
**I am interested in the communicative behavior of multiple primate species and how it relates to human language development.**

## Species Person

**I want to know everything there is to know about Gibbons.**

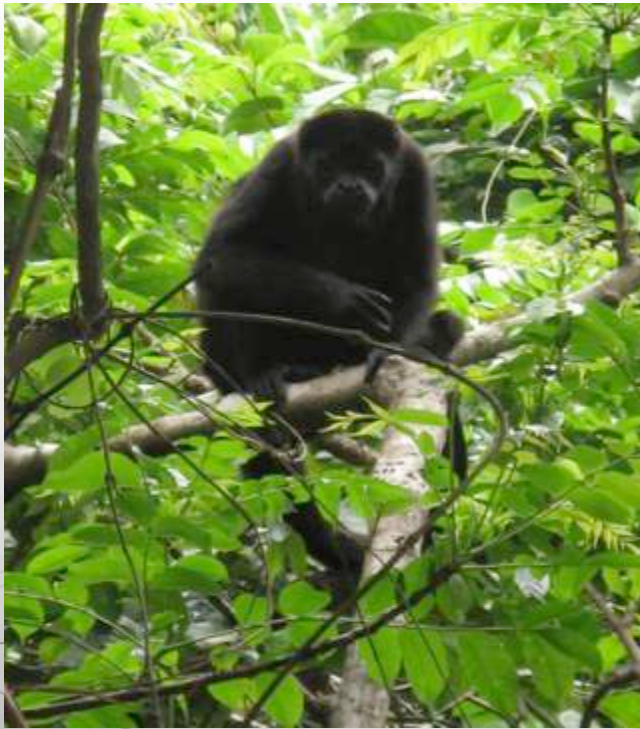


# Ethics



- \* What are your feelings/thoughts about captive research facilities?
- \* What do you feel/think about entering a wild primate habitat?
- \* Where do you stand on invasive research?
- \* Is there such a thing as non-invasive research?

# Do You Have What It Takes?





# Education and Experience



## Research Opportunities

- \* <http://pin.primate.wisc.edu/jobs/list/avail>
- \* <https://www.asp.org/research/>
- \* <http://www.nsf.gov/funding/>

## Graduate Program

Follow research and topics that interest you:

- \* Primatology
- \* Anthropology
- \* Psychology
- \* Ecology
- \* Zoology
- \* Biology

# Primate Resources



- \* **Primate Info Net:** A WWW site for people with an interest in the field of primatology.
- \* **International Primatological Society:** An association of scientists who do research on non-human primates.
- \* **World Directory of Primatologists:** Contact information for people in the field of primatology, compiled by the University of Wisconsin at Madison.
- \* **International Directory of Primatology:** A source of information about organizations, field studies, population management, information resources and people active in the field of primatology, compiled by the University of Wisconsin at Madison

# Additional resources for careers in Biological Anthropology are available from the following professional associations:

- ✧ American Association of Physical Anthropologists ([www.physanth.org](http://www.physanth.org))
- ✧ American Public Health Association ([www.apha.org](http://www.apha.org))
- ✧ Society for Public Health Education ([www.sophe.org](http://www.sophe.org))
- ✧ Partners in Information Access for the Public Health Workforce (<http://phpartners.org>)
- ✧ Council of State and Territorial Epidemiologists ([www.cste.org](http://www.cste.org))
  
- ✧ American Association for Anthropological Genetics ([www.anthgen.org](http://www.anthgen.org))
- ✧ Human Genome Organization ([www.hugo-international.org](http://www.hugo-international.org))
- ✧ American Society of Human Genetics ([www.ashg.org](http://www.ashg.org))
- ✧ National Society for Genetic Counselors ([www.nsgc.org](http://www.nsgc.org))
- ✧ Genetics Society of America ([www.genetics-gsa.org](http://www.genetics-gsa.org))
  
- ✧ American Academy of Forensic Sciences ([www.aafs.org](http://www.aafs.org))
- ✧ American Board of Forensic Anthropology ([www.theabfa.org](http://www.theabfa.org))
- ✧ American Board of Medicolegal Death Investigators ([www.abmdi.org](http://www.abmdi.org))
- ✧ American Board of Criminalistics ([www.criminalistics.com](http://www.criminalistics.com))
- ✧ Scientific Working Groups for Forensic Anthropology ([www.swganth.org](http://www.swganth.org))
- ✧ Joint POW/MIA Accounting Command ([www.jpac.pacom.mil/](http://www.jpac.pacom.mil/))



# Are there questions for our group members about careers in Biological Anthropology?

## Public Health:

- ✧ Virginia Figón
- ✧ Courtney Southwick

## Forensic Anthropology:

- ✧ Meagan Buchele
- ✧ Cristina Gallardo
- ✧ Kimberly Paulsen

## Genetics:

- ✧ Alissa Allred
- ✧ Arianna Lokeni

## Primateology & Evolutionary Ecology:

- ✧ Megan Mullineaux

