



**ADULT OSTEOLOGY RESEARCH LABORATORY WORKSHOP**

**MEDIEVAL CRISIS POPULATIONS**

**June 6 – July 3, 2021**

**Odorheiu Secuiesc, Transylvania, Romania**

**PROJECT DIRECTOR:**

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Dr. Zsolt Nyaradi, PhD  
Expert Archaeologist  
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**Project Web Site:**

<https://www.archaeotek-archaeology.org/adult-osteology-laboratory>

**Project Application Form:**

<https://www.archaeotek-archaeology.org/application-bioarchaeology>

**Academic Credits (3-6 credits) available through University of South Florida - Not Mandatory (additional USF credit tuition applies) - USF Program Brochure – Credit Application Page:**

<https://educationabroad.global.usf.edu/index.cfm?FuseAction=Programs.ViewProgramAngular&id=23628>

**I. Workshop description:**

The aim of this project is to evaluate how the major political events of the 16th and 17th centuries have physically impact local Transylvanian populations. For that purpose, we have been studying human remains excavated from several medieval cemeteries from eastern Transylvania. During the summer of 2020, we will concentrate our efforts on analyzing the exceptionally well preserved skeletal remains excavated from the collapsed medieval „Lost Church” located in the community of Valeni/Patakfalva.

The osteology workshop will train students to conduct osteological analyses and frame bioarchaeological research questions. The collection that we will study is housed at the “Haaz Rezso” Museum in Odorheiu Secuiesc (known as Székelyudvarhely in Hungarian), Harghita County, in the heart of Transylvania. Students will receive daily lectures on topics related to human skeletal biology and spend the first two weeks intensively reviewing human osteology through the hands-on study of our extensive human skeletal research collection. Other lecture topics will include a discussion of sex and age estimation, osteometrics, and an introduction to skeletal and dental pathologies. In addition, some lecture topics will discuss related aspects of applied areas of human osteology and various specialties within the discipline such as skeletal trauma analysis and stable isotope analysis.

**Osteology Laboratory Research Workshop**

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Upon completion of this workshop:

1. Students will have in-depth knowledge of all bones in the human body, including landmarks, muscles attachments and articulations.
2. Students will understand fundamental concepts related to the human dentition.
3. Students will understand how to obtain basic demographic data from archaeological skeletal populations.
4. Students will understand how systematic data collection and peer review facilitates bioarchaeological research.

Our participants are taught to conduct proper intensive research under laboratory conditions. This process entails the intensive acquisition of the skills and knowledge required to fulfill the expectations of a genuine research project. As students become more familiar with the questions that the osteological collection allows to address, they will choose a research topic they will address in small groups, leading to formal podium presentations at the **Eighth International Student Colloquium on Osteology and Bioarchaeology**, in Odorheiu Secuiesc.

The Adult Osteology Research Laboratory Workshop or equivalent is required for both our [Juvenile Osteology Research Laboratory Workshop](#), and [Commingled Remains Ossuary Excavation and Laboratory Workshop](#).

## II. Historical Background:

As the 15<sup>th</sup> century ends, the southeastern European frontier collapses in front of the Ottoman Turks. The heroes (and their legend) that held back the Eastern invaders have died: Vlad Dracula the Impaler, prince of Wallachia died in 1476; Holy Stephan the Great, prince of Moldavia in 1504; Skanderberg (Iskender Bey), lord of Albania in 1468. The fall of Constantinople in 1453 and the defeat of the united European army at the great Battle of Mohacs in 1526 opened the way for the Ottoman expansion into Europe. By 1529, Suleiman the Magnificent has conquered southeastern Europe, the Kingdom of Hungary collapsed, and the Ottoman troops were battering the walls of Vienna. The Ottoman expansions was finally checked in 1683, when the arrival of King Jan III Sobieski of Poland's heavy cavalry charge under the walls of besieged Vienna broke the Ottoman army and won a crucial victory.

In Transylvania, the Saxon fortresses and the Szekely armies held the Ottomans armies at bay (more or less) successfully. With the collapse of the Kingdom of Hungary in 1526, its Transylvanian territories became a political battlefield between European and the Ottoman backed princes until the Principality of Transylvania was born as an autonomous political entity in 1570. In 1600, Michael the Brave, with the support of the Transylvanian Szekely armies, beat the Ottoman princes and their supporters and realized the first union of the three Romania principalities into one kingdom.

The lost church of Patakfalva (RO: Valeni), our current excavation site, is the sister church of the one previously explored in Telekfalva (RO: Teleac), which was filled with juvenile remains. Our excavation has demonstrated that it is significantly older, built around the 10-11<sup>th</sup> c. AD, on top of a migration period tumulus. Our ongoing excavation has yielded the well preserved skeletal remains of over 600 individuals, ranging from prenatal to advanced elderly. It also served the Telekfalva community until they built their own church around 16-17<sup>th</sup> c.

### III. Nature of Instructional Activities:

Course material will be presented in lectures, discussions and hands-on exercises in the laboratory located in Odorheui Secuiesc. The workshop will run from approximately 8:30AM – 4:30PM Monday to Friday. Typically, mornings will be reserved for lecture and hands-on instruction while afternoons will be dedicated to study time and skeletal analysis. A lunch break will be scheduled each day, along with breaks in the morning and afternoon.

#### Objectives:

##### *Paleodemography*

1. To create a comparative base line for late medieval populations in order to evaluate changes through time and adaptive responses to socio-political and economic historical events.
2. To establish the skeletal biology of individuals and populations from medieval Transylvania:

##### *Estimation of:*

- a. Sex
- b. Age
- c. Stature
- d. Ancestry

##### *Identification of discrete and idiosyncratic traits:*

- a. Dental nonmetric variation
- b. Cranial nonmetric variation
- c. Postcranial nonmetric variation

3. To establish the skeletal health of individuals and populations from medieval Transylvania:

##### *Paleopathology:*

- a. Congenital disease
- b. Dental disease
- c. Joint disease
- d. Infectious disease
- e. Metabolic and endocrine disease
- f. Neoplastic disease
- g. Trauma

##### *Paleonutrition:*

- a. Isotopic reconstruction of diet
- b. Malnutrition related disease
- c. Nutritional deficiency related bone alterations

##### *Taphonomy*

- a. Understanding the role of the burial environment on skeletal preservation and recovery
4. Identification of post-mortem alterations on bones
  - a. Identification of funeral practices: post-mortem treatment of bodies
  - b. Identification of animal and/or vegetal alterations
5. Evaluation of conservation state and bone quality for analysis



**Required Text:** *Human Osteology, 3rd Edition* (2011) – Tim White, Michael Black, and Pieter Folkens

- Electronic or hard copies are acceptable.

### Required Readings:

Readings will be available electronically. All required readings should be completed before class lecture sessions or discussions. In addition, an electronic library of references will be available for those wishing to expand their personal library.

### Student Evaluation:

- **Bone Quizzes (30%):** 6 bone quizzes will be administered during the first two weeks of the workshop and will include whole bones and/or fragments. Students will be responsible for learning anatomical features as well as correct siding techniques.
- **Annotated Bibliography (10%):** Students will compile an annotated bibliography of 10 sources on a topic related to human osteology or bioarchaeology.
- **Laboratory Projects (20%):** Three projects will be assigned that give students practice in taking osteometrics, estimating age and sex, and describing skeletal pathology.
- **Research Project (30%):** During the last half of the workshop, students will work in groups to complete a research project developed in consultation with the Project Director and Project Assistant. Each group will present their findings on the last day of the workshop.
- **Participation (10%):** Participation is calculated from overall performance in both laboratory and lecture contexts. Students are encouraged to actively contribute to lecture discussions and to demonstrate that they are keeping up with the course material.

### Workshop Conduct:

Human remains represent a non-renewable resource and will be treated with respect and dignity at all times. Students will not bring food and/or drinks into the laboratory space. In addition, workshop participants will not utilize photographs of human remains for social media purposes without consent of the project director. In addition, workshop participants are to engage with each other in a professional and courteous manner at all times. All participants are expected to behave respectfully at all times towards the staff, other participants, and local people. All participants are required to abide by the rules and regulations of the workshop as well as Romanian laws. Likewise, the field school environment should be considered a safe space for people of different backgrounds and belief systems. Disrespectful and/or disruptive behavior will not be tolerated.



#### IV. Additional Weekend Field Trips:

Public transportation in Romania, under normal circumstances, is quite impractical as well as unpredictable, not to mention the great variability in cleanliness. As such, due to the COVID-19 situation, for the safety of our participants, our staff and our hosts, we will ensure our participants get to explore the magic of Transylvania, while limiting as much as possible the potential of getting infected. Consequently, in 2021, the following field day-trips are mandatory:

- Day Trip #1 (weekend 1):** Szekely Land Day Trip: visit of the Lost Churches sites, including our active site of Patakfalva (Valeni), the Jesus Chapel (the oldest medieval monument around Odorheiu Secuiesc), and the ethnographic museum in Cristuru Secuiesc.
- Day Trip #2 (weekend 1):** Medieval Saxon Heritage Day Trip: visit of some beautiful Saxon fortified churches (Cata, Homorod, Viscri) and the Rupea Fortress
- Day Trip #3 (weekend 2):** Brasov Castles Day Trip: visit of Bram Stoker's Bran Castle, Rasnov Fortress, and the amazing Peles Castle, the summer residence of the Romanian kings
- Day Trip #4 (weekend 2):** Visit of the salt mines of Praid, dubbed by our students "the Mines of Moria".

#### V. Research Team

- Project Director: Dr. Jonathan Bethard (University of South Florida)
- Scientific Director and Project Coordinator: Dr. Andre Gonciar (Director, Bio/Archaeological Techniques and Research Center, BioArch/ArchaeoTek – Canada)
- Archaeology Director: Dr. Zsolt Nyaradi (Expert Archaeologist – Haaz Rezso Museum of History and Ethnography, Odorheiu Secuiesc, Central Transylvania, Romania)

#### VI. Bibliography

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### Workshop Tentative Schedule

#### Week 1

Date	Lecture	Readings	Assignment and/or Assessment
Day 1	<p>Welcome and Orientation</p> <p>Introduction to Skeletal Biology</p> <p>Pelvic Girdle</p>	<p>White et al. (2012): Chapters 1–3</p> <p>White et al. (2012): Chapter 11</p>	Pre-Test
Day 2	Skull	White et al. (2012): Chapter 4	
Day 3	Axial Skeleton	White et al. (2012): Chapters 6-7	
Day 4	Pectoral Girdle and Upper Limb	White et al. (2012): Chapters 8-10	Bone Quiz 1
Day 5	<p>Lower Limb</p> <p>Archaeology of Historic Transylvania</p>	White et al. (2012): Chapter 12-13	Bone Quiz 2
Day 6	<b>Szekler Land Day Trip</b>		
Day 7	<b>Medieval Fortified Saxon Churches Day Trip</b>		

Week 2

Date	Lecture	Readings	Assignment and/or Assessment
Day 1	<b>Human Odontology and Dentition</b>	White et al. (2012): Chapter 5 Prince-Zinni and Crowley (2013) Prince and Ubelaker (2002)	
Day 2	<b>Osteometrics and Non-metric Traits</b>	Howells Appendix B Adams and Byrd (2002) Waxenbaum et al. (2010)	Lab Project #1 Assigned
Day 3	<b>Sex Estimation</b>	Phenice (1969) Walker (2008) Spradley and Jantz (2011) Klales et al. (2012)	
Day 4	<b>Age Estimation</b>	Algee-Hewitt (2013) Shirley and Jantz (2010)	Bone Quiz 3 Lab Project #2 Assigned
Day 5	<b>Stature Estimation and Secular Change</b>	Willey (2009) Raxter et al. (2006) Raxter et al. (2007)	Bone Quiz 4
Day 6	<b>Brasov Castles Day Trip</b>		
Day 7	<b>Salt Mines of Praid</b>		



**Week 3**

<b>Date</b>	<b>Lecture</b>	<b>Readings</b>	<b>Assignment and/or Assessment</b>
<b>Day 1</b>	<b>Istotope Analysis</b>	Bethard (2013) Ambrose et al. (2003) Price et al. (2012)	
<b>Day 2</b>	<b>Paleopathology</b>	Ortner (2011) Smith (2013) DeWitte and Stojanowski (2015)	Lab Project #3 Assigned
<b>Day 3</b>	<b>Skeletal Trauma Analysis</b>	Osterholtz (2012) Kroman and Symes (2013) Berryman et al. (2013)	
<b>Day 4</b>	<b>Bone Healing and Interpretation</b>	Cunha and Pinheiro (2009) Andrushko and Verano (2008)	Bone Quiz 5
<b>Day 5</b>	<b>Taphonomy</b>	Marden et al. (2013)	Bone Quiz 6
<b>Day 6-7</b>	<b>(Free)</b>		



**Week 4**

<b>Date</b>	<b>Lecture</b>	<b>Readings</b>	<b>Assignment and/or Assessment</b>
<b>Day 1</b>	<b>Applications of Hard Tissue Histology</b>	Wedel (2007) Guatelli-Steinberg and Huffman (2012)	
<b>Day 2</b>	<b>Bioarchaeology of Children</b>	Baxter (2008) Lewis (2012)	
<b>Day 3</b>	<b>Human Osteology and Human Rights: Colombia</b>	Gomez and Patino (2007) Bernardi and Fondebrider (2007)	Annotated bibliography due
<b>Day 4</b>	<b>Human Osteology and Mass Disasters/DVI: Haiti</b>	Briggs and Buck (2009)	
<b>Day 5</b>	<b>Workshop Wrap-Up</b>		Project Due
	<b>Project Podium Presentations at the 2021 Eighth International Student Colloquium on Osteology and Bioarchaeology</b>		