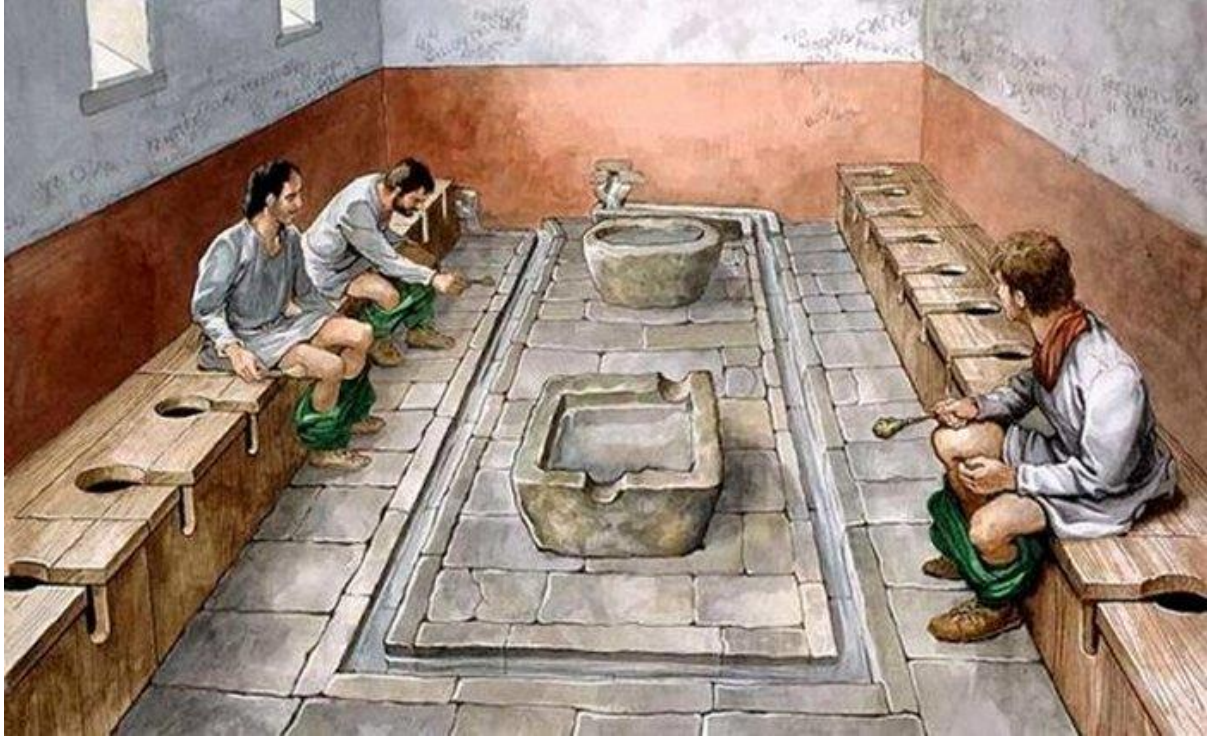


## THE PRIVATE LIFE OF THE PRIVY: A SECRET HISTORY OF TOILETS



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Spring 2019  
Joukowsky Institute for Archaeology and the Ancient World  
Brown University

### Syllabus

**Schedule:** Monday, Wednesday, Friday 1-1.50pm, Room TBC, Rhode Island Hall

A course with Dr Jennifer Bates, Postdoctoral Research Associate in Archaeology, Joukowsky Institute for Archaeology and the Ancient World.

**Jennifer's Office Hours:** Monday's 2-4

**Office:** Room 208, Rhode Island Hall

**Email:** jennifer\_bates@brown.edu

### Course Description:

Everybody has to go to the toilet. It's a fundamental basic biological need. But where we go, what 'equipment' we use, what goes into the loo (both from out of us and along with that effluence), and the morals and ideals imbued in that act vary from culture to culture and across time and space.

This course aims to introduce you to some of these debates, not only those from deep time but also those in the modern world. It will start with some very basic questions: what is poo, what are toilets, cesspits and latrines, and how have these changed over time, and move through to more complex

questions about how ideas of gender, religion, disease and sanitation have shaped toilets and the act of going to the loo over time.

The course will also allow you to gain experience in archaeological science techniques, and to debate and discuss their application to wider theoretical questions beyond toilet archaeology. We will look at how archaeologists and other scientists have tried to identify human and animal waste from ancient (and some modern) contexts through more traditional techniques like geoarchaeological (soil), archaeobotanical (plant) and zooarchaeological (animal) analyses, and also how the new technologies of ancient DNA, archaeo-chemistry and parasitology are coming to the fore in shaping our approaches and questioning. Through active discussion and case study application you will gain a critically aware understanding of how these techniques are being applied and developed in ongoing archaeological research.

### **Learning Outcomes:**

Through taking this course you will:

- 1) Explore a range of social, technological and theoretical questions that archaeologists, historians, social anthropologists, sociologists, economists and medical researchers (amongst others) are interested in, both in relation to ancient and modern concerns.
- 2) Become familiar with a range of archaeological science techniques that can be applied across a range of questions (beyond the archaeology of the toilet!)
- 3) Use geoarchaeological, archaeobotanical, zooarchaeological, isotopic and archaeochemical datasets to reconstruct past waste management habits
- 4) Be able to critically evaluate and model human attitudes and actions towards one of the most basic acts, and how it intersects with all aspects of our lives both in the past, today and for the future.

### **Class Structure:**

Classes will be run three times a week, involving lectures relating to the archaeology poo. Core readings relating to these themes will be uploaded to Canvas or (in the case of books for self-selected readings) held at the Rockefeller Library (see below).

### **Course Texts:**

There are no key texts for this course, but there are a wide range of readings listed in the course syllabus. You do **NOT** have to purchase these for yourself, the relevant articles/chapters for the course have been scanned and uploaded to Canvas, or in the case of books which you should be reading selectively from have been held at the Rockefeller Library for use in the library.

While there is no key reading for this course, a good primer book on the archaeological science covered in this course is Brothwell, D.R., Pollard, A.M. (Eds.), *Handbook of Archaeological Sciences*. John Wiley & Sons, Ltd., Chichester, pp. 393–402. Again, you do NOT have to purchase this, and a copy has been reserved for use in the Rockefeller Library for this course.

As well as the readings for the lectures, there is a vast literature available out there. For extra suggestions pop by my office during my office hours!

### **Canvas:**

The Canvas course page will be the main tool for checking on announcements, view set weekly readings, view assignments, and post and respond to questions. Please make sure you have set yourself as receiving announcements for the course page and make sure you check it regularly for important information like rooms changes etc.

### **A Note on Reading and Note-Taking:**

Your success in this course will depend in no small part upon completing the assigned readings for the lectures thoroughly and on time, as well as attending the lectures and completing the assignments.

Readings for the basis for the course lectures and class discussions, as well as the written assignments (detailed below). Read the papers, make notes and discussion will flow.

### **Referencing and Resources:**

The preferred referencing style is **Harvard**, which is the most common style used in Archaeology and Anthropology. These consist of in text citation (author, date, page numbers) followed by a detailed citation of the publication in the bibliography.

You are also reminded that using libraries is **essential**. Key readings are listed in the syllabus and will be made available online, but it is also important you expand your reading into other works and scholars. A useful tip is to use the bibliographies of the provided readings but be aware of the dates of publications.

In addition, online resources like JStor and WebofKnowledge for finding articles, academia.edu and researchgate are important repositories of scholarly research. Students are encouraged to use these sites to broaden their reading and familiarize themselves with looking up scholars and their research.

I will be uploading a **pdf entitled 'Useful Resources' on Canvas**. Please look at it as this has a guide to referencing styles, bibliography building and places you can go to look for articles, books and chapters.

### **Course Requirements and Expectations:**

Over 16 weeks, you will spend 3 hours per week in class (48 hours total). Required reading is expected to take up approximately 5 hours per week (65 hours total). In addition, research and writing for the final assessment is estimated at total of approximately 30 hours over the course of the term.

### **Assessment:**

**The breakdown of course assessment is as follows:**

- **Attendance and participation (10%)**
- **Writing Responses (4 x 5% = 20%)**
- **Poster (20%)**
- **Research proposal (50%)**

### **Writing Responses**

There are four writing responses staggered throughout this course to get you thinking about the different topics and practice your critical assessment and writing skills. Each is worth 5% of the overall final mark.

For **each** writing response you will chose **ONE READING** from the allotted lectures and engage with the aims and outcomes of that paper. Think about what the authors were trying to achieve and whether they did so. Are you convinced by their argument? Would you have done the same thing? Is there any other technique they could have applied to their dataset?

Each response should be **250-500 words** (Font size 12, 1.5 spacing) and submitted by email (to [Jennifer.bates@brown.edu](mailto:Jennifer.bates@brown.edu)).

Deadlines and reading lists:

1. Lecture 6 to Lecture 14, **Due 11.59pm Sunday 24<sup>th</sup> February 2019**
2. Lecture 15 to Lecture 20, **Due 11.59pm Sunday 10<sup>th</sup> March 2019**
3. Lecture 24 to Lecture 32, **Due 11.59pm Sunday 16<sup>th</sup> April 2019**
4. Lecture 33 to Lecture 41, **Due 11.59pm Sunday 5<sup>th</sup> May 2019**

## Poster

You will design a poster worth 20% of the overall final mark, on **one of two** topics:

### EITHER

- a) A case study relating to ancient toilets from your readings (a site, an ancient toilet, a range of ancient toilets studied by someone, an ancient waste management system etc.). You will summarise the main points of the case study in your poster – where it is, what archaeological evidence was used in its interpretation, what conclusions were reached. You must also determine what imagery to put in the poster and how to structure it.

### OR

- b) A methodology (or multiproxy approach) used to study ancient toilets/waste. You will summarise the how the methodology works, what can be learnt from it, and give an example/two of where it has been applied. You must also determine what imagery to put in the poster and how to structure it.

Posters will be submitted by email (to [jennifer\\_bates@brown.edu](mailto:jennifer_bates@brown.edu)) in **PDF format by 11.59pm on Friday 15<sup>th</sup> March 2019**. They will be printed out by Jennifer and displayed in the Joukowsky at a poster evening event (accompanied by pizza), date TBA.

## Research Proposal

The final assignment is to explore the social and cultural contexts and implications of ancient toilets, waste or waste management systems.

First: select one site, toilet, waste management system, or toilet-related object from your readings. Find out as much as possible about the archaeological context, analysis and interpretation of that case study.

Then: critically engage with your chosen case study and create a proposal for how you would analyse the site. Look at what has been done already: what is it, how old, how was it used, by whom and where? Who has analysed it, how did they do so, and what answers did they come up with?

Think about the types of questions you would want to ask of the site – you will be contextualizing and interpreting the case study further by thinking about some of the aspects we are covering in this course: what are the social organisation implications of the way the site/toilet/waste management system/toilet object was made? What does it tell us about health in the past, or attitudes towards morality and religion? Does it tell us anything about peoples lives, where they came from, what objects they used and how they used them, their diet or cooking practices? What do we learn about migration, trade, people moving around, and the kinds of wider environments and landscapes they moved through?

How would you go about analysing the site to address these questions? Propose a strategy to address these areas, remembering to think about the types of datasets and techniques you will need to do so. You should remember to think about whether these will be available with your case study, and if not how you could get around these issues, or if such questions may not be possible to answer with your chosen case study. (NB: did the original archaeologists think about this...?)

Use at least 7 different academic sources for this (peer-reviewed scholarly journal articles or books – these should include the initial case study and then further reading relating to the interpretation, so theory on social context, and perhaps some comparative case studies where we learn different things because of different evidence. You can even throw in modern case studies to compare your ancient ones to).

The proposal should be around 2000 words (Font size 12, 1.5 spacing about 6 pages).

The assignment is due by email (to [Jennifer\\_bates@brown.edu](mailto:Jennifer_bates@brown.edu)) by **11.59pm on Monday 6<sup>th</sup> May**.

### **Referencing, Resources and Recommended Textbooks:**

The preferred referencing style is **Harvard**, which is the most common style used in Archaeology and Anthropology. These consist of in text citation (author, date, page numbers) followed by a detailed citation of the publication in the bibliography.

You are also reminded that using libraries is **essential**. Key readings are listed in the syllabus and will be made available online, but it is also important you expand your reading into other works and scholars. A useful tip is to use the bibliographies of the provided readings and to build from there.

In addition, online resources like JStor and WebofKnowledge for finding articles, academia.edu and researchgate are important repositories of scholarly research. Students are encouraged to use these sites to broaden their reading and familiarize themselves with looking up scholars and their research.

Jennifer will be uploading a **pdf entitled 'Useful Resources' on Canvas**. Please look at it as this has a guide to referencing styles, bibliography building and places you can go to look for articles, books and chapters.

### **Assistance:**

Please ask questions in class, by email, or in my office hours. I am more than happy to discuss anything with you that will help you to succeed in this class, and if you have a question then doubtless others are also thinking the same thing too. **So please, the most important policy in this class is that if you don't know something or have a question, ask!**

### *Student and Employee Accessibility Services*

Please inform me (after class or during my office hours) if you have a disability or other condition that might require some modification of any of these course procedures. For more information contact Student and Employee Accessibility Service (SEAS) at 401-863-9588 or [SEAS@brown.edu](mailto:SEAS@brown.edu)

### **Classroom Policies:**

Attendance is mandatory. Tardiness can cause disruptions, please keep it to a minimum, and in the lab sessions it will not be allowed due to the safety procedures.

Turning in late assignments without due reason will not be accepted. You know the due date of your assignments in advance, plan accordingly. If you are worried about handing in an assignment late for a particular reason, talk with me in advance by email, after class or in my office hours, accommodations can and will be made (I am more than happy to do so for due reason). You can hand in a hard copy of an assignment or send a hard copy with another student if you wish (for example if your computer breaks down but you cannot attend a lecture). You can turn assignments in early should you wish.

I do not provide copies of the powerpoint presentations, as you will get more out of these classes by attending, taking good notes and interacting with the discussions. Handouts will however be given in the lab sessions as these will form part of the lab notes books. Take careful notes in all lectures and lab sessions and feel free to ask me to pause and go over a point if you need me to, I encourage it!

### **Interacting with Your Professor:**

The best way to get in touch with me is in person, either just after class (before is not so good as I will be in preparation mode and you won't necessarily have my undivided attention) or in office hours. Email ([Jennifer\\_bates@brown.edu](mailto:Jennifer_bates@brown.edu)) is also a good way to get hold of me. Do not rely on Canvas chat, as I don't have time to login everyday and check it. Also, while many other lecturers may prefer a formal title for interactions, I prefer to be addressed as 'Jennifer'.

### **Email Policy:**

Please email me all questions etc. in one go, rather than bombard me with hundreds of emails in one day. You will receive a far quicker and more eloquent response. If the subject matter is something more

complex, requiring more than a single email reply, come and find me in office hours and we will discuss it in more detail.

I will try to reply to emails within 24 hours, but give me at least 48 hours before sending me a follow up (weekdays – weekends you will NOT get a reply). If it is Urgent, add this in the subject line and I will follow up urgently.

**Classroom Civility:**

Brown supports the principles of freedom of expression for both faculty and students, and the rights for faculty to teach and students to learn. In order to maintain these rights classroom conditions should not impede the learning process. A disruptive classroom will not be tolerated. Please do not allow cell phones to ring, read magazines, mess about on Facebook, make obnoxious remarks or engage in other rude activities. Sanctions for activities deemed to impinge upon faculty and student rights can be found here: <https://www.brown.edu/offices/student-conduct/code>

**Academic Dishonesty:**

All students at Brown must abide by the copyright policies standards outlined here: <https://it.brown.edu/computing-policies/copyright-infringement-policy>. Penalties for violating these can be severe, so please familiarize yourselves with them.

**Plagiarism** is a serious offence and penalties can include a warning, reprimand or grade adjustment, although further penalties at the Dean's discretion can also be applied. A simple guideline is never plagiarize. More information can be found here in the academic code: <https://www.brown.edu/academics/college/degree/index.php?q=policies/academic-code/>

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## WEEKLY SCHEDULE

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### Week 1

#### Wednesday 23rd January 2019

*Lecture 1: What Can Viking Poo Tell Us About Life 1000 Years Ago?*

- <http://castlesandcoprolites.blogspot.com/search/label/coprolites>
- <https://www.bbc.co.uk/newsround/39563321>

#### Friday 25<sup>th</sup> January 2019

*Lecture 2: Whose Who in the World of Poo?*

- Bryant, V.M., Dean, G.W., 2006. Archaeological coprolite science: The legacy of Eric O. Callen (1912–1970). *Palaeogeography, Palaeoclimatology, Palaeoecology* 237, 51–66. <https://doi.org/10.1016/j.palaeo.2005.11.032>

### Week 2

#### Monday 28<sup>th</sup> January 2019

*Lecture 3: What is that Smell? The Constituent Parts of Faeces.*

- Rose, C., Parker, A., Jefferson, B., Cartmell, E., 2015. The Characterization of Feces and Urine: A Review of the Literature to Inform Advanced Treatment Technology. *Critical Reviews in Environmental Science and Technology* 45, 1827–1879. <https://doi.org/10.1080/10643389.2014.1000761>
- Curtis, V., Aunger, R., Rabie, T., 2004. Evidence that disgust evolved to protect from risk of disease. *Proceedings of the Royal Society B: Biological Sciences* 271, S131–S133. <https://doi.org/10.1098/rsbl.2003.0144>

#### Wednesday 30<sup>th</sup> January 2019

*Lecture 4: Is it a Poo? Defining and Determining At a Basic Level.*

- Reinhard, K.J., Bryant, V.M., 1992. Coprolite Analysis: a biological perspective on archaeology. *Archaeological Method and Theory* 4, 245–288.
- Jouy-Avantin, F., Debenath, A., Moigne, A.-M., Moné, H., 2003. A Standardized Method for the Description and the Study of Coprolites. *Journal of Archaeological Science* 30, 367–372. <https://doi.org/10.1006/jasc.2002.0848>

#### Friday 1<sup>st</sup> February 2019

*Lecture 5: Whose Scat is That?*

- <http://icwdm.org/Inspection/Scat.aspx>
- Koromila, G., Karkanias, P., Hamilakis, Y., Kyparissi-Apostolika, N., Kotzamani, G., Harris, K., 2018. The Neolithic tell as a multi-species monument: Human, animal, and plant relationships through a micro-contextual study of animal dung remains at Koutroulou Magoula, central Greece. *Journal of Archaeological Science: Reports* 19, 753–768. <https://doi.org/10.1016/j.jasrep.2018.03.011>
- Farlow, J.O., Chin, K., Argast, A., Poppy, S., 2010. Coprolites from the Pipe Creek Sinkhole (Late Neogene, Grant County, Indiana, U.S.A.). *Journal of Vertebrate Paleontology* 30, 959–969. <https://doi.org/10.1080/02724631003762906>

### Week 3

#### Monday 4<sup>th</sup> February 2019

*Lecture 6: The World's Earliest Toilet or a Rubbish Pit? The Prehistory of the Toilet.*

- Antoniou, G., De Feo, G., Fardin, F., Tamburrino, A., Khan, S., Tie, F., Reklaityte, I., Kanetaki, E., Zheng, X., Mays, L., Angelakis, A., 2016. Evolution of Toilets Worldwide through the Millennia. *Sustainability* 8, 779. <https://doi.org/10.3390/su8080779>
- Matthews, W. (2005) *Micromorphological and microstratigraphic traces of uses and concepts of space*. I. Hodder (ed) 2005. *Inhabiting Çatalhöyük: Reports from the 1995-1999 seasons*. London, McDonald Institute for Archaeology/British Institute of Archaeology at Ankara. 355-399.

#### Wednesday 6<sup>th</sup> February 2019

*Lecture 7: Making the Toilet More Complex – the History of the Bog.*

- Koloski-Ostrow, A.O. 2015. *The Archaeology of Sanitation in Roman Italy: Toilets, Sewers, and Water Systems*. Chapel Hill, University of North Carolina Press. Pp.1-37 and Pp.52-83.
- Smith, D.N., 2013. Defining an indicator package to allow identification of ‘cesspits’ in the archaeological record. *Journal of Archaeological Science* 40, 526–543. <https://doi.org/10.1016/j.jas.2012.06.014>

#### Friday 8<sup>th</sup> February 2019

*Lecture 8: Poo Where It Originates. Looking at Faeces in Skeletal Remains.*

- Berg, G.E., 2002. Last Meals: Recovering Abdominal Contents From Skeletonized Remains. *Journal of Archaeological Science* 29, 1349–1365. <https://doi.org/10.1006/jasc.2001.0796>
- Reinhard, K.J., Geib, P.R., Callahan, M.M., Hevly, R.H., 1992. Discovery of colon contents in a skeletonized burial: Soil sampling for dietary remains. *Journal of Archaeological Science* 19, 697–705. [https://doi.org/10.1016/0305-4403\(92\)90039-6](https://doi.org/10.1016/0305-4403(92)90039-6)

### Week 4

#### Monday 11<sup>th</sup> February 2019

*Lecture 9: Excuse Me, is there Anymore Loo Roll in Your Stall? The Material Culture of the Toilet.*

- Robinson, D., 1987. Spice and Famine Food? The botanical analysis of two post-Reformation pits from Elgin, Scotland. *Circaea* 5, 21–27.
- <https://www.sapiens.org/column/curiosities/ancient-roman-bathrooms/>

#### Wednesday 13<sup>th</sup> February 2019

*Lecture 10: Hey Siri, How do I Dry My Phone Out After Its Been in the Loo? Material Culture that Fell in the Toilet.*

- Bush, D.R., 2000. Interpreting the latrines of the Johnson’s Island Civil War Military Prison. *Historical Archaeology* 34, 62–78. <https://doi.org/10.1007/BF03373631>
- MacGregor, A., 1976. *Finds from a Roman Sewer System and an Adjacent Building in Church Street*. York Archaeological Trust, CBA.

#### Friday 15<sup>th</sup> February 2019

*Lecture 11: Read All About it! Texts and the Toilet.*

- Zias, J.E., Tabor, J.D., Harter-Lailheugue, 2006. Toilets at Qumran, the Essenes, and the Scrolls: new anthropological data and old theories. *Revue de Qumran* 22, 631–640.



## Week 5

Monday 18<sup>th</sup> February 2019

NO LECTURE

Wednesday 20<sup>th</sup> February 2019

Lecture 12: *Moss, Seeds and Microscopic Plants, Looking at the Vegetation in Your Loos.*

- Greig, J., 1981. The investigation of a medieval barrel-latrine from Worcester. *Journal of Archaeological Science* 8, 265–282. [https://doi.org/10.1016/0305-4403\(81\)90003-0](https://doi.org/10.1016/0305-4403(81)90003-0)
- Carrión, J.S., Gil, G., Rodríguez, E., Fuentes, N., García-Antón, M., Arribas, A., 2005. Palynology of badger coprolites from central Spain. *Palaeogeography, Palaeoclimatology, Palaeoecology* 226, 259–271. <https://doi.org/10.1016/j.palaeo.2005.05.016>

Friday 22<sup>nd</sup> February 2019

Lecture 13: Guest lecture by Dr Christina Warriner (Harvard University) – TBC

## Week 6

Monday 25<sup>th</sup> February 2019

Lecture 14: *All the Small Critters. Using Animals to Think About Waste Disposal (and Visa Versa).*

- Rowan E. (2014) *The fish remains from the Cardo V sewer: new insights into taphonomy, consumption and the fishing economy of Herculaneum.* In: E. Botte and V. Leitch (eds.) *Fish and Ships: Production et commerce des salsamenta durant l'Antiquité.* Arles: Errance, 61-74.
- Stiner, M.C., Munro, N.D., Sanz, M., 2012. Carcass damage and digested bone from mountain lions (*Felis concolor*): implications for carcass persistence on landscapes as a function of prey age. *Journal of Archaeological Science* 39, 896–907. <https://doi.org/10.1016/j.jas.2011.10.020>
- Reinhard, K.J., Ambler, J.R., Szuter, C.R., 2007. Hunter-gatherer use of small animal food resources: coprolite evidence. *International Journal of Osteoarchaeology* 17, 416–428. <https://doi.org/10.1002/oa.883>

Wednesday 27<sup>th</sup> February 2019

Lecture 15: *Are You Sure that is Soil...? Geoarchaeological Approaches to Ancient Toilet Identification.*

- Shillito, L.-M., Matthews, W., 2013. Geoarchaeological Investigations of Midden-Formation Processes in the Early to Late Ceramic Neolithic Levels at Çatalhöyük, Turkey ca. 8550-8370 cal BP: geoarchaeological investigations of midden-formation processes. *Geoarchaeology* 28, 25–49. <https://doi.org/10.1002/gea.21427>
- Dunseth, Z.C., Shahack-Gross, R., 2018. Calcitic dung spherulites and the potential for rapid identification of degraded animal dung at archaeological sites using FTIR spectroscopy. *Journal of Archaeological Science* 97, 118–124. <https://doi.org/10.1016/j.jas.2018.07.005>

Friday 1<sup>st</sup> March 2019

Lecture 16: *Whose Scat Was This? Using DNA to Think about Ancient Waste.*

- Poinar, H.N., Kuch, M., Sobolik, K.D., Barnes, I., Stankiewicz, A.B., Kuder, T., Spaulding, W.G., Bryant, V.M., Cooper, A., Paabo, S., 2001. A molecular analysis of dietary diversity for three archaic Native Americans. *Proceedings of the National Academy of Sciences* 98, 4317–4322. <https://doi.org/10.1073/pnas.061014798>

- Sutton, M., 1996. Experiments on the Determination of Gender from Coprolites by DNA Analysis. *Journal of Archaeological Science* 23, 263–267. <https://doi.org/10.1006/jasc.1996.0023>
- Speller, C.F., Kemp, B.M., Wyatt, S.D., Monroe, C., Lipe, W.D., Arndt, U.M., Yang, D.Y., 2010. Ancient mitochondrial DNA analysis reveals complexity of indigenous North American turkey domestication. *Proceedings of the National Academy of Sciences* 107, 2807–2812. <https://doi.org/10.1073/pnas.0909724107>

## Week 7

### Monday 4<sup>th</sup> March 2019

*Lecture 17: You Are What You Eat! Isotopic Approaches to Poo.*

- Iacumin, P., Bocherens, H., Chaix, L., Mاريوth, A., 1998. Stable Carbon and Nitrogen Isotopes as Dietary Indicators of Ancient Nubian Populations (Northern Sudan). *Journal of Archaeological Science* 25, 293–301. <https://doi.org/10.1006/jasc.1997.0206>
- Verostick, K.A., Teixeira-Santos, I., Bryant, V.M., Reinhard, K.J., 2018. The Skiles Mummy: Care of a debilitated hunter-gatherer evidenced by coprolite studies and stable isotopic analysis of hair. *International Journal of Paleopathology*. <https://doi.org/10.1016/j.ijpp.2018.08.004>

### Wednesday 6<sup>th</sup> March 2019

*Lecture 18: Going Chemical! Residues and the Archaeo-chemistry of Coprolites*

- Shillito, L.-M., Bull, I.D., Matthews, W., Almond, M.J., Williams, J.M., Evershed, R.P., 2011. Biomolecular and micromorphological analysis of suspected faecal deposits at Neolithic Çatalhöyük, Turkey. *Journal of Archaeological Science* 38, 1869–1877. <https://doi.org/10.1016/j.jas.2011.03.031>
- Gill, F.L., Bull, I., 2012. *Lipid Analysis of Vertebrate Coprolites*, in: Hunt, A.P., Milan, J., Lucas, S.G., Spielmann, J.A. (Eds.), *Vertebrate Coprolites: Bulletin 57*. New Mexico Museum of Natural History and Science, Albuquerque, pp. 93–98.

### Friday 8<sup>th</sup> March 2019

*Lecture 19: What Lurks Within. Parasites Part I: Identification.*

- Anastasiou, E., Mitchell, P.D., 2013. Simplifying the process of extracting intestinal parasite eggs from archaeological sediment samples: A comparative study of the efficacy of widely-used disaggregation techniques. *International Journal of Paleopathology* 3, 204–207. <https://doi.org/10.1016/j.ijpp.2013.04.004>
- Anastasiou, E., Papathanasiou, A., Schepartz, L.A., Mitchell, P.D., 2018. Infectious disease in the ancient Aegean: Intestinal parasitic worms in the Neolithic to Roman Period inhabitants of Kea, Greece. *Journal of Archaeological Science: Reports* 17, 860–864. <https://doi.org/10.1016/j.jasrep.2017.11.006>

## Week 8

### Monday 11<sup>th</sup> March 2019

*Lecture 20: Who Did it Come From? Parasites Part II: Animal or Human?*

- Shin, D.H., Oh, C.S., Shin, Y.M., Cho, C.W., Ki, H.C., Seo, M., 2013. The pattern of ancient parasite egg contamination in the private residence, alley, ditch and streambed soils of Old Seoul City, the Capital of Joseon Dynasty. *International Journal of Paleopathology* 3, 208–213. <https://doi.org/10.1016/j.ijpp.2013.04.002>

- Nezamabadi, M., Aali, A., Stöllner, T., Mashkour, M., Le Bailly, M., 2013. Paleoparasitological analysis of samples from the Chehrabad salt mine (Northwestern Iran). *International Journal of Paleopathology* 3, 229–233. <https://doi.org/10.1016/j.ijpp.2013.03.003>

### Wednesday 13<sup>th</sup> March 2019

*Lecture 21: Eeeewww! Parasites Part III: Why Study Them?*

- Yeh, H.-Y., Mao, R., Wang, H., Qi, W., Mitchell, P.D., 2016. Early evidence for travel with infectious diseases along the Silk Road: Intestinal parasites from 2000 year-old personal hygiene sticks in a latrine at Xuanquanzhi Relay Station in China. *Journal of Archaeological Science: Reports* 9, 758–764. <https://doi.org/10.1016/j.jasrep.2016.05.010>
- Mitchell, P.D., 2013. The importance of research into ancient parasites. *International Journal of Paleopathology* 3, 189–190. <https://doi.org/10.1016/j.ijpp.2013.08.002>

### Friday 15<sup>th</sup> March 2019

*Lecture 22: Haffenreffer Museum of Anthropology and RISD Museum Trips*

- No Readings – meeting point at the entrance desk of the Haffenreffer Museum

### Week 9

#### Monday 18<sup>th</sup> March 2019

*Lecture 23: Be Careful What You Eat! The Archaeology of (under)Cooking and Food Preparation.*

- Yeh, H.-Y., Pluskowski, A., Kalējs, U., Mitchell, P.D., 2014. Intestinal parasites in a mid-14th century latrine from Riga, Latvia: fish tapeworm and the consumption of uncooked fish in the medieval eastern Baltic region. *Journal of Archaeological Science* 49, 83–89. <https://doi.org/10.1016/j.jas.2014.05.001>
- Søre, M.J., Nejsum, P., Seersholm, F.V., Fredensborg, B.L., Habraken, R., Haase, K., Hald, M.M., Simonsen, R., Højlund, F., Blanke, L., Merkyte, I., Willerslev, E., Kapel, C.M.O., 2018. Ancient DNA from latrines in Northern Europe and the Middle East (500 BC–1700 AD) reveals past parasites and diet. *PLOS ONE* 13, e0195481. <https://doi.org/10.1371/journal.pone.0195481>

#### Wednesday 20<sup>th</sup> March 2019

*Lecture 24: I Don't Feel So Good! Health and the Toilet.*

- Anastasiou, E., Mitchell, P.D., 2013. Human intestinal parasites from a latrine in the 12th century Frankish castle of Saranda Kolones in Cyprus. *International Journal of Paleopathology* 3, 218–223. <https://doi.org/10.1016/j.ijpp.2013.04.003>
- Bryant, V.M., Reinhard, K.J., 2012. *Coprolites and Archaeology: the missing links in understanding human health*, in: Hunt, A.P., Milan, J., Lucas, S.G., Spielmann, J.A. (Eds.), *Vertebrate Coprolites: Bulletin 57*. New Mexico Museum of Natural History and Science, Albuquerque, pp. 379–387.

#### Friday 22<sup>nd</sup> March 2019

*Lecture 25: So Doc, What's the Prognosis? Medical Evidence.*

- Williams, F.S., Arnold-Foster, T., Yeh, H.-Y., Ledger, M.L., Baeten, J., Poblome, J., Mitchell, P.D., 2017. Intestinal parasites from the 2nd–5th century AD latrine in the Roman Baths at Sagalassos (Turkey). *International Journal of Paleopathology* 19, 37–42. <https://doi.org/10.1016/j.ijpp.2017.09.002>

- Matsui, A., Kanehara, Masaaki, Kanehara, Masako, 2003. Palaeoparasitology in Japan: discovery of toilet features. *Memórias do Instituto Oswaldo Cruz* 98, 127–136. <https://doi.org/10.1590/S0074-02762003000900019>

## Week 10

No lectures – spring break

## Week 11

Monday 1<sup>st</sup> April 2019

Lecture 26: *What Goes In... Thinking About Diet I.*

- Holden, T.G., 1991. Evidence of prehistoric diet from northern Chile: Coprolites, gut contents and flotation samples from the Tulán quebrada. *World Archaeology* 22, 320–331. <https://doi.org/10.1080/00438243.1991.9980149>
- Farnsworth, P., Brady, J.E., DeNiro, M.J., MacNeish, R.S., 1985. A Re-Evaluation of the Isotopic and Archaeological Reconstructions of Diet in the Tehuacan Valley. *American Antiquity* 50, 102–116. <https://doi.org/10.2307/280636>
- L.S. Cummings. 1994. *Anasazi diet: Variety in Hoy House and Lion House coprolite record and nutritional analysis*. K. Sobolik (Ed.), 1994. *Paleonutrition: The Diet and Health of Prehistoric Americans*, Center for Archaeological Investigations, Occasional Paper No. 22, Board of Trustees, Southern Illinois University. pp. 134-150.

Wednesday 3<sup>rd</sup> April 2019

Lecture 27: *...Must Come Out! Thinking About Diet II.*

- Hald, M.M., Mosekilde, J., Magnussen, B., Sørensen, M.J., Hansen, C.H., Mortensen, M.F., 2018. Tales from the barrels: Results from a multi-proxy analysis of a latrine from Renaissance Copenhagen, Denmark. *Journal of Archaeological Science: Reports* 20, 602–610. <https://doi.org/10.1016/j.jasrep.2018.06.006>
- Märkle, T., 2005. Nutrition, aspects of land use and environment in medieval times in southern Germany: plant macro-remain analysis from latrines (late 11th–13th century a.d.) at the town of Überlingen, Lake Constance. *Vegetation History and Archaeobotany* 14, 427–441. <https://doi.org/10.1007/s00334-005-0087-6>
- Sobolik, K.D., 1994. Direct Evidence for the Importance of Small Animals to Prehistoric Diets: A Review of Coprolite Studies. *North American Archaeologist* 14, 227–244. <https://doi.org/10.2190/LW66-4V7J-AYC5-KLV1>

Friday 5<sup>th</sup> April 2019

Lecture 28: *But Sometimes Other Things Get Added in as Well – Looking at The Process of Using Toilets.*

- Robinson, M., Rowan, E., 2015. *Roman Food Remains in Archaeology and the Contents of the Roman Sewer at Herculaneum*, in: Wilkins, J., Nadeau, R. (Eds.), *A Companion to Food in the Ancient World*. John Wiley & Sons, Ltd, Chichester, pp. 105–116.
- Evans, D.H., 2010. *A Good Riddance of Bad Rubbish? Scatological Musings on Rubbish Disposal and the Handling of “Filth” in Medieval and Early Post-Medieval Towns.*, in: de Groote, K., Tys, D., Pieters, M. (Eds.), *Exchanging Medieval Material Culture, Studies on Archaeology and History Presented to Frans Verhaeghe*. Flemish Heritage Institute, Brussels, pp. 267–278.

- <https://www.bbc.com/news/science-environment-45222865>

## Week 12

### Monday 8<sup>th</sup> April 2019

*Lecture 29: Across the World to End Up Here. Looking at Trade Through the Things Found in Cesspits.*

- Badura, M., 2003. *Pimenta officinalis* Lindl. (pimento, myrtle pepper) from early modern latrines in Gdańsk (northern Poland). *Vegetation History and Archaeobotany* 12, 249–252. <https://doi.org/10.1007/s00334-003-0023-6>
- Bryant, V.M., Kampbell, S.M., Hall, J.L., 2012. Tobacco pollen: archaeological and forensic applications. *Palynology* 36, 208–223. <https://doi.org/10.1080/01916122.2011.638099>

### Wednesday 10<sup>th</sup> April 2019

*Lecture 30: At a Crossroads: Migrations and Latrines.*

- Ledger, M.L., Stock, F., Schwaiger, H., Knipping, M., Brückner, H., Ladstätter, S., Mitchell, P.D., 2018. Intestinal parasites from public and private latrines and the harbour canal in Roman Period Ephesus, Turkey (1st c. BCE to 6th c. CE). *Journal of Archaeological Science: Reports* 21, 289–297. <https://doi.org/10.1016/j.jasrep.2018.07.013>
- Yeh, H.-Y., Prag, K., Clamer, C., Humbert, J.-B., Mitchell, P.D., 2015. Human intestinal parasites from a Mamluk Period cesspool in the Christian quarter of Jerusalem: Potential indicators of long distance travel in the 15th century AD. *International Journal of Paleopathology* 9, 69–75. <https://doi.org/10.1016/j.ijpp.2015.02.003>

### Friday 12<sup>th</sup> April 2019

*Lecture 31: Handling a Crisis. Looking at How People in the Past Dealt with What We Know to be Latrine-Related Problems.*

- Summers, J., 1989. Soho: a history of London's most colourful neighbourhood. Bloomsbury, London.
- Reinhard, K.J., 1994. Sanitation and parasitism at Harpers Ferry, West Virginia. *Historical Archaeology* 28, 62–67. <https://doi.org/10.1007/BF03374201>

## Week 13

### Monday 15<sup>th</sup> April 2019

*Lecture 32: You Can't Go There! The Politics of Relieving Ones Self.*

- Herzig, R., 2008. *Gender and Technology*, in: Pursell, C. (Ed.), *A Companion to American Technology*. Blackwell, Oxford, pp. 199–211.
- Molotch, H.L., Norén, L. (Eds.), 2010. *Toilet: public restrooms and the politics of sharing*, *NYU series in social and cultural analysis*. New York University Press, New York. [Read Selectively, chose chapters that interest you. NOT on CANVAS, book reserved in Rockefeller for in-library use]

### Wednesday 17<sup>th</sup> April 2019

*Lecture 33: I'm Sorry Sir but the Water Board Needs Access to Your Garden. Civic Engineering in the Past (and Today).*

- Jørgensen, D., 2010. “All Good Rule of the Citee”: Sanitation and Civic Government in England, 1400—1600. *Journal of Urban History* 36, 300–315. <https://doi.org/10.1177/0096144209359141>

- Vuorinen, H.S., 2010. Water, toilets and public health in the Roman era. *Water Science and Technology: Water Supply* 10, 411–415. <https://doi.org/10.2166/ws.2010.111>

### Friday 19<sup>th</sup> April 2019

*Lecture 34: Shedding Light on Social and Environmental Change.*

- Baeten, J., Marinova, E., De Laet, V., Degryse, P., De Vos, D., Waelkens, M., 2012. Faecal biomarker and archaeobotanical analyses of sediments from a public latrine shed new light on ruralisation in Sagalassos, Turkey. *Journal of Archaeological Science* 39, 1143–1159. <https://doi.org/10.1016/j.jas.2011.12.019>
- Trigg, H.B., Jacobucci, S.A., Mrozowski, S.A., Steinberg, J.M., 2017. Archaeological Parasites as Indicators of Environmental Change in Urbanizing Landscapes: implications for health and social status. *American Antiquity* 82, 517–535. <https://doi.org/10.1017/aaq.2017.6>

### Week 14

#### Monday 22<sup>nd</sup> April 2019

*Lecture 35: Filthy Habits! Thinking about Ideas of Morality Mapped onto Toilet Behaviour.*

- Koloski-Ostrow, A.O. 2015. *The Archaeology of Sanitation in Roman Italy: Toilets, Sewers, and Water Systems*. Chapel Hill, University of North Carolina Press. Pp.84-101.
- Bayless, M., 2012. *Sin and Filth in Medieval Culture: The Devil in the Latrine*. New York, Routledge. Pp. 1-28.

#### Wednesday 24<sup>th</sup> April 2019

*Lecture 36: Wasserluxus or Toilet Habits? How do we work out what is a belief or behaviour?*

- Jansen, M., 1989. Water supply and sewage disposal at Mohenjo-Daro. *World Archaeology* 21, 177–192. <https://doi.org/10.1080/00438243.1989.9980100>

#### Friday 26<sup>th</sup> April 2019

*Lecture 37: The Grandeur of Civilization? Or A Filthy Myth? Modern Ideas of Waste management and Morality.*

- Laporte, D., 2002. *History of shit*. MIT, Cambridge, Mass. London. [Read Selectively, chose chapters that interest you. NOT on CANVAS, book reserved in Rockefeller for in-library use]

### Week 15

#### Monday 29<sup>th</sup> April 2019

*Lecture 38: Interacting With Animals – Why Should We Care About Non-Human Dung?*

- di Lernia, S., 2001. Dismantling Dung: Delayed Use of Food Resources among Early Holocene Foragers of the Libyan Sahara. *Journal of Anthropological Archaeology* 20, 408–441. <https://doi.org/10.1006/jaar.2000.0384>
- Shahack-Gross, R., 2011. Herbivorous livestock dung: formation, taphonomy, methods for identification, and archaeological significance. *Journal of Archaeological Science* 38, 205–218. <https://doi.org/10.1016/j.jas.2010.09.019>

#### Wednesday 1<sup>st</sup> May 2019

*Lecture 39: Spread it Everywhere! Dung as a Functional Tool.*

- Bogaard, A., Heaton, T.H.E., Poulton, P., Merbach, I., 2007. The impact of manuring on nitrogen isotope ratios in cereals: archaeological implications for reconstruction of diet and crop management practices. *Journal of Archaeological Science* 34, 335–343. <https://doi.org/10.1016/j.jas.2006.04.009>

- Miller, N.F., 1984. The Use of Dung as Fuel : an Ethnographic Example and an Archaeological Application. *Palaeorient* 10, 71–79. <https://doi.org/10.3406/paleo.1984.941>
- Wald, C., 2017. The new economy of excrement. *Nature* 549, 146–148. <https://doi.org/10.1038/549146a>
- <https://www.bbc.co.uk/news/business-13941458>

### Friday 3<sup>rd</sup> May 2019

*Lecture 40: Making Sh\*t Things – Dung as Material Culture.*

- Boivin, N., 2000. Life rhythms and floor sequences: excavating time in rural Rajasthan and Neolithic Catalhoyuk. *World Archaeology* 31, 367–388. <https://doi.org/10.1080/00438240009696927>
- London, G., 1981. Dung-tempered Clay. *Journal of Field Archaeology* 8, 189–195. <https://doi.org/10.1179/009346981791505049>
- <https://www.bbc.com/news/health-43815369>
- <https://www.bbc.com/news/business-36162953>
- <https://news.nationalgeographic.com/2016/04/160429-kopi-luwak-captive-civet-coffee-Indonesia/>

### Week 16

#### Monday 6<sup>th</sup> May 2019

*Lecture 41: The Scoop on Space Poop – the Future of Waste Removal*

- Reinhard, K.J., Johnson, K.L., LeRoy-Toren, S., Wieseman, K., Teixeira-Santos, I., Vieira, M., 2012. Understanding the Pathoecological Relationship between Ancient Diet and Modern Diabetes through Coprolite Analysis: A Case Example from Antelope Cave, Mojave County, Arizona. *Current Anthropology* 53, 506–512. <https://doi.org/10.1086/665923>
- [worldtoilet.org/wp-content/uploads/2014/02/WecantWait1.pdf](http://worldtoilet.org/wp-content/uploads/2014/02/WecantWait1.pdf)
- <https://powerfrompoo.wordpress.com/>

