

Standards,
Precautions &
Advances in
Ancient
Metagenomics

SPAAM2: Pandemic Edition

21 & 22 September 2020



Welcome!



<https://tenor.com/6GKK.gif>



<http://gph.is/1Uwf9oj>



<https://tenor.com/bczmj.gif>



What is SPAAM?

- 👤🤝👤 An **open community** of palaeo- and archaeogenetic researchers
- 🌱 Grass-roots organised
- 📁 A **collaborative** community
- 🛠️ **Share** experiences and knowledge (problems and solutions)
- ✅ **Improve quality** of ancient metagenomic research
- ☐ **Support network** to help each other!

And more! What do you want it to be? - Session 6!



History







- Workshop in 2016 (Jena, Germany)
- Broad overview of ‘current state of the field’
 - Metagenomic applications in paleogenetics
 - Metagenomic methods/tools/frameworks
 - Applications and techniques from both modern and ancient fields
 - ‘Practical’ sessions (how-to guides) of computational tools
- Few ‘select’ labs represented
- Outcome:
 - Warinner, C., et al. (2017). A Robust Framework for Microbial Archaeology. Annual Review of Genomics and Human Genetics, 18, 321–356. DOI: 10.1146/annurev-genom-091416-035526
- And then:



<https://tenor.com/zoKz.gif>



Purpose of this event?

-  Resurrect SPAAM in a new form!
 - Organised by PhD/Postdocs FOR PhD/PostDocs 
 - For novices AND experienced!
-  Discuss! Discuss! Discuss!
-  Start building collaborative networks of researchers
-  Identify common challenges at practical level
-  Improve by consensus standards in field
- TL;DR: Talk! Share! Discuss! Plan! **No stupid questions**



<https://gph.is/2cTLnbO>

Code of Conduct!

<https://spaam-workshop.github.io/#/spaam2/codeofconduct>

- If you're here (talking or listening!): assumption is that you agree!
- Contact any of the organisers if you need to report (slack or emails in link above)!



SPAAM2 Theme: Trash!



<https://giphy.com/gifs/funny-fail-collection-101zSb0Dslq0hy>

Organisers: The Trash Collective



Clio /
🇫🇷 in 🇫🇷 /
Ancient
metagenomics



James /
🇬🇧 in 🇩🇪 /
Oral
Microbiomes



Anna /
🇬🇷/🇬🇧 in 🇩🇰 /
Genome
resolved
metagenomics



Alex /
🇩🇪 in 🇩🇪 /
Palaeofaeces



Åshild (Ash) /
🇳🇴 in 🇩🇰 /
Pathogen
genomics






Irina /
🇺🇸 in 🇩🇪 /
Oral
Microbiomes

Introductions!

Who are you?

(Short and concise!)

-  Name
-  Nationality and Lab
-  Primary research field
 - E.g. ancient microbiomes or pathogen genomics
 - Wet lab and/or dry lab?
 - How long in the field?



Session Summary

SESSION 1 Trash in, trash out: Optimizing and standardizing laboratory practices in ancient metagenomics.

Chair: Irina. **Icebreakers:** Jaelle, Zandra

SESSION 2 Removing the persistent trash: Challenges in genotyping and filtering out contaminant reads from genome alignment.

Chair: Ash. **Icebreakers:** Susanna, Kun

SESSION 3 Sorting and Recycling the Trash: authentication, standards, and reproducibility in ancient metagenomic research (Part 1).

Chair: James. **Icebreakers:** Sterling, Nikolay

SESSION 4 Sorting and Recycling the Trash: authentication, standards, and reproducibility in ancient metagenomic research (Part 2).

Chair: Clio. **Icebreaker:** Miriam, Nico, James

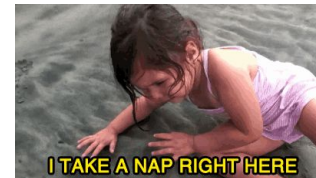
SESSION 5 Reuse the refuse: Applying new analytical methods beyond current practises

Chair: Anna, Alex. **Icebreakers:** Maxime, Antonio

SESSION 6 Discussion: Future steps for SPAAM

Chair: ???





Schedule + breaks!

- **13:00** Welcome and Introductions
- **13:30** Optimizing and standardizing laboratory practices in ancient metagenomics
- ----- **15:00 Short Break** -----
- **15:15** Challenges in genotyping and filtering out contaminant reads from genome alignment.
- ----- **17:30 Short Break** -----
- **18:30** Authentication, standards, and reproducibility in ancient metagenomic research (Part 1).
- **20:00** Daily Wrap up
- **20:15** Finish

- **13:00** Day Overview
- **13:10** Authentication, standards, and reproducibility in ancient metagenomic research (Part 2).
- ----- **15:30 Short Break** -----
- **15:45** Applying new analytical methods beyond current practises
- ----- **18:00 Short Break** -----
- **19:00** Discussion: Future steps for SPAAM
- **20:00** Daily Wrap up
- **20:15** Finish

Technology

Zoom Two 'tiers' (moderation purposes!):

Listed in participant list/your username (please don't change)!

- Talking

- Trust! Discussion participants are able to unmute themselves!
- To request speaking: Raise your hand on your webcam (or request in zoom chat if video not possible)! Chairs will call you to speak if needed.
- Please remind people of your name before speaking!

- Listening

- Ask and vote questions on slack in channel: **#spaam-open**
- Limited number will be brought up to chair

- **Slack:** #spaam-open

- Up-vote questions you also want to ask from others to increase chances of being asked!



- For tangential discussions alongside main chat
- Polls may be posted!

■ /poll "Do you love SPAAM?" "Yes" "No"

- **Note taking:**

- Feel free to make Google Docs/HackMD etc., and collaboratively make notes!
- **Organisers will also be doing so** (see next few slides...)



Twitter Policy

Icebreakers



Go wild!

#SPAAM2



Absolutely Do Not

Discussion



Please don't

(Images: <https://www.stickpng.com> / European Geosciences Union under Creative Commons License)

Expectations from you!

- **Community effort** to open the field of ancient metagenomics
- Discussant/ Listener - we need you!
- **This is not a lecture series** but a discussion workshop
- There are **no stupid questions!**
- Remember to engage and interact - either during discussions or in the #spaam-open
- Think about ways SPAAM could help you AND the community - make notes and don't be shy to share ideas



<https://gph.is/VwHJZN>

Possible Outcomes: the future is yours!

Possibilities

- Build networks! Talk to each other!

- E.g. Formalise - ICSB COSI?

<https://www.iscb.org/iscb-committees/cosi>

- Organically make projects

- Common training?
- Software?
- Working groups?
- Method development?
- Replication?
- Journal clubs?
- Pre-peer review?



<http://gph.is/2lmxD2k>

- Regular meetings?

- SPAAM3?



<http://gph.is/2cKreKv>

Will Happen

- Notes

- Organisers will be taking notes for all sessions
- All who attended (both tiers) listed
- Will make available via Google Docs link for one week for additional comments!
- Archived on Zenodo with DOI & put on website

- Opinion Paper

- Current practical challenges in the field
- Based on notes
- Organisers will draft on github privately
- Contributions accepted after (all contributors listed on github can be co-author)!

Acknowledgements

- Various supervisors and PIs for allowing organisers to spend time on this
- Organisers of original SPAAM to use the name (Alexander Herbig, Johannes Krause @ MPI-SHH)
- UCPH for Zoom setup
- Michelle O'Reilly for designing logo (MPI-SHH)
- Andaine Seguin-Orlando for original help in finding (cancelled) meeting rooms
- ISBA9 team for allowing us to be loosely-affiliated



Questions?



<http://gph.is/VwAZLA>