seung-goo.kim@ae.mpg.de

Dr. Seung-Goo [suŋgu] Kim @MPI-EA
Hochschule für Musik Karlsruhe

Methods in Empirical Musicology 1
How to read & write like a scientist

1. Schedule: Saturday 09:00–12:30

#	Date	Seminar	Exercise	Participation
0	10.10.2022 17:00–18:30	Intro to the course + misc.	-	
1	15.10.2022	**What is empirical music research?**	**Typology** of empirical methods with examples	
2	22.10.2022	**How to read**: analytic/critical reading of papers	Analyzing target papers	
3	29.10.2022	**How to review the literature**: integration of knowledge	**How to find**: scientific knowledge	
4	05.11.2022	**How to write**: scientific communication	**How to present**: presentation format	
5	12.11.2022	**Stat 1**: data types & descriptive	Raw data handling with SciPy	Submit a plan for a mini review
6	19.11.2022	**Stat 2**: probability & inference	SciPy or R	(Individual feedback); JC1 [NoHa]
7	26.11.2022	**Stat 3**: multiple conditions	SciPy or R	JC2 [YuSu]
8	03.12.2022	**Stat 4**: linear models	SciPy or R	JC3 [NiRe]
9	10.12.2022	**Stat 5**: how (not) to hack p-values	SciPy or R	JC4 [LaPe]
10	17.12.2022	**Data 1**: Overview of neuroimaging methods	Recorded lecture (by Prof. Bangert)	Submit a review (*optional*)
11	07.01.2023	**Data 2**: behavioral & ANS data	Recorded lecture	(Feedback will be given individually)
12	14.01.2023	**Data 3**: electromagnetism of CNS	Raw data handling with SciPy	JC5 [TiBe]
13	21.01.2023	**Data 4**: neuroimaging	Raw data handling with SciPy	JC6 [DaHö]
14	04.02.2023	**Research ethics:** open science	Discussion	
15	11.02.2023	-	Student presentation	Present a mini review

Teaching period: 04.Oct.2022–11.Feb.2023 | Christmas break: 24.Dec.2022 – 06.Jan.2023

2. Students' participation

- Proposal
  - Requirement: based on 3+ papers from 3+ groups
  - Format: abstract (≤ 500 words)
  - Due: 12 Nov 2022, 23:59 CEST
  - Feedback: will be individually given before next session (19 Nov 2022)
  - Grade = (+clarity +logic +novelty) ×-plagiarism
- Manuscript (optional; no grading)
  - Format: article manuscript (≤ 2500 words for the main text; i.e., not counting figure legends, tables, and references)
  - Due: 17 Dec 2022, 23:59 CEST
  - Feedback: will be individually given before next session (07 Jan 2023)
- **Presentation: practice journal club** (no grading)
  - Format: 15 min with slides (PDFs are easier for BBB)
  - When: 19 Nov 2022 to 17 Dec 2022 (only once for each)
  - Where: online (BBB)
  - What: a paper that will be reviewed for the final presentation (or any other paper as the presenter wants to share)
  - Note: Papers will be uploaded one week before each presentation.
- Presentation: mini review
  - Format: 15 min with slides (PDFs are easier for BBB)
  - When: 11 Feb 2023, 09:00–12:30 CEST
  - Where: could be offline (HfMK) or online (BBB), subject to the COVID restriction policies
  - Feedback: we will discuss together after each presentation, my feedback will be individually given within a week.
  - Grade = (+clarity +logic +criticism_based_on_evidence) ×-plagiarism

3. Contacts

- MOODLE (course site): https://moodle.hfm-karlsruhe.de/moodle/course/view.php?id=823
- BigBlueBottom (online meeting): https://conf.hfm.eu/b/seu-lrd-nbz-b7t
- EMAIL: seung-goo.kim@ae.mpg.de

4. References

- What is "Open Access"? Click on the cartoon below to watch Jorge Cham's beautiful video: "Open Access Explained"! 👇

- Empirical Music Research:

- Clarke et al., 2004, Empirical Musicology: Aims, Methods, Prospects, Oxford University Press, https://doi.org/10.1093/acprof:oso/9780195167498.001.0001 (*closed access*)
- Psychological methods:
  - Jhangiani et al., Research Methods in Psychology (Ed. 4), https://kpu.pressbooks.pub/psychmethods4e/ (*open access*)
- Statistics:
  - *Introductory*: Oja, 2022, PSYC 2200: Elementary Statistics for Behavioral and Social Sciences, LibreTexts, https://stats.libretexts.org/Courses/Taft_College/PSYC_2200%3A_Elementary_Statistics_for_Behavioral_and_Social_Sciences_(Oja) (*open access*)
  - *A bit more rigorous*: Heumann et al., 2016, *Introduction to Statistics and Data Analysis*, Springer, https://doi.org/10.1007/978-3-319-46162-5 (*open access*)
  - *Discussion related to p-hacking*: Gruber et al., 2020, *The Theory of Statistics in Psychology*, Springer, https://doi.org/10.1007/978-3-030-48043-1 (*open access*)
- Neuroscience:
  - *Comprehensive reference*: Purves et al., 2018, *Neuroscience (Ed. 6)*, Oxford University Press, https://learninglink.oup.com/access/purves-6e (*closed access*)
  - *Auditory-specific*: Poeppel et al., 2012, *The Human Auditory Cortex*, Springer, https://doi.org/10.1007/978-1-4614-2314-0 (*open access*)
- M/EEG:
  - *Introductory*: Cohen, 2014, *Analyzing Neural Time Series Data: Theory and Practice*, MIT Press, https://doi.org/10.7551/mitpress/9609.001.0001 (*open access*)
  - *A bit more rigorous*: Hansen et al., 2010, *MEG: An Introduction to Methods,* Oxford University Press. https://doi.org/10.1093/acprof:oso/9780195307238.001.0001 (*open access; downloadable per chapter*)
- Functional MRI:
  - *Introductory*: Poldrack et al., 2011, *Handbook of Functional MRI Data Analysis*, Cambridge University Press, https://doi.org/10.1017/CBO9780511895029 (*closed access*)
  - *Introductory Youtube channel*: Mumford, 2015, *Mumford Brain Stats*, https://www.youtube.com/c/mumfordbrainstats (*depending on your Youtube subscription/ad-blockers*)
  - *Oldies but goodies*: Frackowiak et al., 2004, *Human Brain Function (2nd Ed.)*, Elsevier, https://doi.org/10.1016/B978-0-12-264841-0.X5000-8 (*open access*)
- Qualitative methods:
  - *Reference*: Taylor et al., 2015, *Introduction to Qualitative Research Methods: A Guidebook and Resource (4th Ed.),* Wiley & Sons*.* https://www.wiley.com/en-us/Introduction+to+Qualitative+Research+Methods%3A+A+Guidebook+and+Resource%2C+4th+Edition-p-9781118767290 (closed access)
  - *The third way*: Teddie et al., 2009, *Foundations of Mixed Methods Research: Integrating Quantitative and Qualitative Approaches in the Social and Behavioral Sciences*, Sage, https://us.sagepub.com/en-us/nam/foundations-of-mixed-methods-research/book252072 (closed access)