

Special Topic Course ENVR SCI 592-07: Systematic reviews in environmental science

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Day/Time: Wed 11:10-12:25 (once per week)

Room: Terrell Library 106 in Pullman, Engin & CS Building Rm 209 in Vancouver, West Bldg Rm 224 in Tri-Cities

This special topic course aims to equip graduate students to conduct novel systematic reviews, and accelerate review components of graduate research. Course readings, discussion, instruction, and activities will involve:

- 1) examples of prior reviews published in environmental science, emphasizing systematic & data-intensive reviews;
- 2) computer exercises and group work where code-based methods of literature extraction and summary can be tested and applied, including visualization of results;
- 3) a review project that emphasizes a research question/hypotheses, leading to a mini-report and short oral presentation to peers.

Grades will be based on: Brief written reflections submitted to instructor by email or survey **by Fri 3pm** in designated weeks (35%), project handouts 1 & 2 (10% total), oral presentations of results from project handout 1 & 2 (10% total), final project mini-report (15%), final oral presentation of project (5%), participation (25%). Students may choose to substitute a teaching module (formal presentation on a tool or technique) in place of the final oral presentation of project. Students are encouraged to maximize efficiency by working with each other on any/all assignments.

Course materials & readings are shared at: <https://drive.google.com/drive/folders/0B8XT5yzDDyTbWlU5bk9xVWliUE0>

Selected Literature

Grimmer J and Stewart BM. 2013. Text as Data: The promise and pitfalls of automatic content analysis methods for political texts. *Political Analysis*. DOI: 10.1093/pan/mps028

Hampton et al. 2015. The Tao of open science for ecology. *Ecosphere*.

Liu J, Mooney H, Hull V, Davis SJ, Gaskell J, Hertel T, Lubchenco J, Seto KC, Gleick P, Kremen C, and Li S. 2015. Systems integration for global sustainability. *Science*: 347. DOI: 10.1126/science.1258832

Lortie, CJ and Bonte D. 2016. Zen and the art of ecological synthesis. *OIKOS*: 125. DOI: 10.1111/oik.03161

Lortie CJ, Stewart G, Rothstein H, and Lau J. 2015. How to critically read ecological meta-analyses. *Research Synthesis Methods*: 6. DOI: 10.1002/jrsm.1109

O'Leary BC, Kvist K, Bayliss HR, Derroire G, Healy JR, Hughes K, Kleinschroth F, Sciberras, Woodcock P, and Pullin AS. 2016. The reliability of evidence review methodology in environmental science and conservation. *Environmental Science & Policy*: 64. DOI: 10.1016/j.envsci.2016.06.012

Pullin AS and Stewart GB. 2006. Guidelines for systematic review in conservation and environmental management. *Journal of Plant Ecology*: 8. DOI: 10.1093/jpe/rtu030

Ruttan A and Lortie CJ. 2015. A systematic review of the attractant decoy and repellent plant hypotheses: do plants with heterospecific neighbors escape herbivory? *Journal of Plant Ecology*: 8. DOI: 10.1093/jpe/rtu030

Short T. 2004. *R* reference card.