

# Systematic Evidence Evaluation

## Course Outline:

This 25-hour (5x3-hour online lectures and facilitated group work, and 10 hours of preparation and personal assignments) course introduces participants to systematic evidence evaluation as a powerful tool to synthesise knowledge in environmental science or other fields of research with a policy or practice focus. This tool is used to summarise the existing evidence base and highlight the evidence gaps of a subject. It is a powerful method that can help improve decision-making in policy, and direct new research. This online course will draw on best practice guidance and published systematic reviews and systematic maps to take students through the process of starting a systematic evidence evaluation. Participants will learn how to apply some of the elements used in a systematic review to make their own work (not just future systematic reviews) more robust and reliable. An important feature of the course is that it will proceed in an open, collaborative environment with shared learning and peer-to-peer support. Active participation helps build confidence in applying the techniques of systematic review and simulates the work of a real systematic review team in action. The course comprises plenary sessions for the whole group and breakout sessions for smaller group work. Participants will receive access to all materials presented during the course and a certificate recognising their participation.

## Course Structure:

Seminar 1: An Introduction to Systematic Evidence Evaluation  
Seminar 2: Starting a Systematic Evidence Evaluation  
Seminar 3: Searching for Literature  
Seminar 4: Screening & Data Extraction  
Seminar 5: Presenting a Systematic Evidence Evaluation with Impact

## Skills Developed on this Course:

Critical Appraisal	Reference Management
Data Analysis	Research Design
Data Visualisation	Resource Discovery
Database Design	Science/Policy Interface
Question Framing	Spreadsheets
Geographic Information Systems (GIS)	Systematic Evidence Evaluation
Online Tools	Teamwork
Project Planning	Transparent Research

## Course Requirements:

No previous experience required for this introductory course to Systematic Evidence Evaluation. Participants are expected to have basic computer literacy and an interest in environmental science policy or research. A stable internet connection and a computer is required installed with:

Windows: 7 (or newer)  
Mac: OS 10.9 (or newer)  
Linux: Debian Lenny  
Speakers and a microphone  
Web browser: Chrome, or Safari

Zoom - <https://zoom.us/download>  
Publish or Perish - <https://harzing.com/resources/publish-or-perish>  
Mendeley - <https://www.mendeley.com>  
Colandr - <https://www.colandrapp.com/>  
Kahoot - <https://create.kahoot.it/auth/login> (OPTIONAL)

## Seminar 1: An Introduction to Systematic Evidence Evaluation

**Aim:** Introduce the concepts of systematic evidence evaluation and the history of systematic reviews.

Material covered in this seminar includes:

- I) An Introduction to Systematic Evidence Evaluation
  - i) What is 'Evidence'
  - ii) Fact Checking & Fake News
- II) A History of Systematic Evidence Evaluation
  - i) Spock & the Invention of the Systematic Approach
  - ii) From Medicine to Social Policy: Who Uses Systematic Evidence?
- III) Types of Systematic Evidence Evaluation
  - i) Collaboration is key: Information Overload!
  - ii) Bringing the Science Back Into Literature Reviews
  - iii) Examples of Systematic Reviews & Systematic Maps

Interactive Activities:

- I) Trusting the evidence poll
- II) Evidence role play
- III) Interactive quiz

## Seminar 2: Starting a Systematic Evidence Evaluation

**Aim:** Understand the processes involved in setting up a systematic evidence evaluation.

Material covered in this seminar includes:

- I) Where to Begin
  - i) Steps Involved in a Systematic Evidence Evaluation
- II) Question Framing & PICO
  - i) Good Questions vs Bad Questions: What can a Systematic Review Answer?
  - ii) Developing a PICO/PE(C)O framework
  - iii) Additional frameworks
- III) Protocols & Procedures
  - i) Developing a Protocol
  - ii) Stakeholder Engagement
  - iii) Reporting Framework & Project Transparency

Interactive Activities:

- I) Good Question Better Question Best Question
- II) PICO/PE(C)O
- III) Kahoot Quiz

## Seminar 3: Searching for Literature

**Aim:** Develop, carry out, and validate a robust search strategy and store references.

Material covered in this seminar includes:

- I) Search Strategies
  - i) Keywords and Boolean Logic
  - ii) Bibliographic Database Searching
  - iii) Searching for 'Grey Literature'
  - iv) Search Validation Methods
  
- II) Reference Management
  - i) Tools for Reference Management
  - ii) Importing/Exporting References
  - iii) Building ROSES
  
- III) Inclusion criteria
  - i) Eligibility
  - ii) Developing inclusion criteria based on PICO

Interactive Activities:

- I) Boolean Generation
- II) Running a Search
- III) Reference Managers Import/Export
- IV) Inclusion Criteria

## Seminar 4: Screening & Data Extraction

**Aim:** Understand and implement the steps involved in screening records for relevance and extracting relevant data from studies that meet inclusion criteria.

Material covered in this seminar includes:

- I) Screening
  - i) Introduction to Screening: Tools & Approaches
  - ii) Screening at Title & Abstract
  - iii) Cohen's Kappa Test
  - iv) Full-Text Acquisition - The Challenge of Journal Subscriptions
  - v) Screening at Full Text
  
- II) Data Extraction
  - i) Building an Extraction Sheet
  - ii) Extracting Data
  - iii) Critically Appraising Studies for Risk of Bias

Interactive Activities:

- I) Screening Exercise
- II) Kappa Test
- III) Data Extraction Exercise

## Seminar 5: Presenting a Systematic Evidence Evaluation with Impact

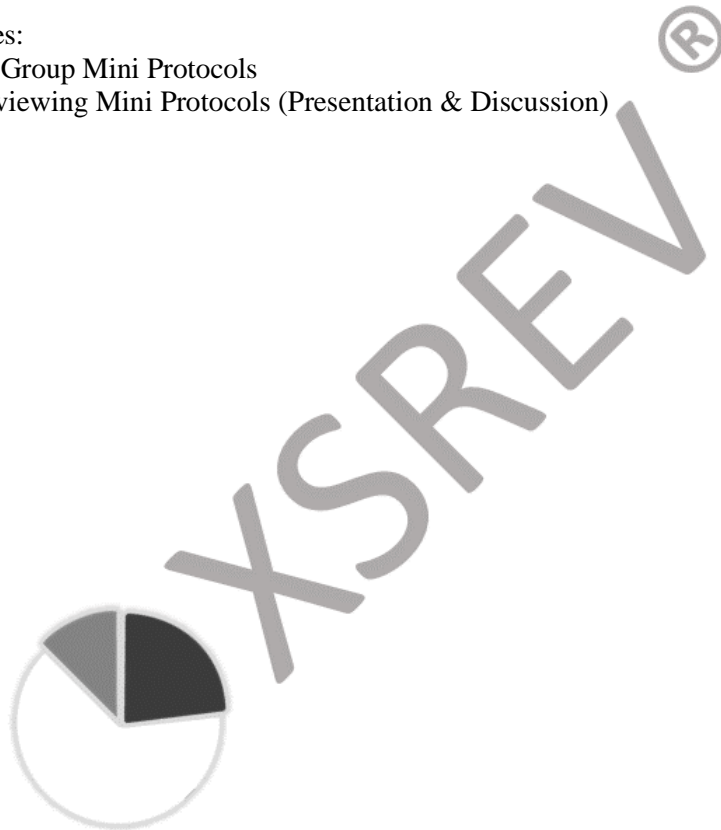
**Aim:** Gain a good understanding of how to handle the data and visualise the results.

Material covered in this seminar includes:

- I) Visualising Your Systematic Evidence Base
  - i) Basic Charts & Tables
  - ii) Mapping the Evidence
  
- II) Seminar Summary
  - i) Summary
  - ii) Closing Remarks

Interactive Activities:

- I) Creating Group Mini Protocols
- II) Peer Reviewing Mini Protocols (Presentation & Discussion)



### ‘Evidence Matters’

OXSREV works with others to improve policy and practice through better use of evidence. We follow good practice guidelines on finding, selecting and assessing evidence. We try to minimise bias in all our work. We document all our work at every step and share progress information and outputs with our clients. We maintain independence and encourage open peer-review. We enjoy our work. We particularly like working with stakeholders and embracing their ideas. We stay in touch with our trainees and welcome them to the wider collaboration of evidence synthesis - [www.oxsrev.org](http://www.oxsrev.org)

We strongly believe in the importance and values of equality and diversity. We are fully committed to equality of treatment for all participants, regardless of disability, race, gender, sexual orientation, religion, age or belief and will not tolerate any form of discrimination.