

Journal club guidelines for microbial ecology group meetings

Goals for Journal Club

Our inter-lab journal club has the following goals.

- Provide **broad** exposure to current research in microbial ecology. The goal is not to cover specialist papers within our individual research areas. Rather, we aim to stay current with **recent advances in the field as a whole**, and relate new ideas, results, and methods back to our own individual research interests, which are diverse.
- Provide a forum for discussing **scientific writing**. How are results presented? What's the story? Is there writing that is particularly good, bad, confusing? Do the authors make conclusions that are supported by the data? Where is the persuasive writing in the paper?
- Provide a forum to practice **data analysis**, particularly with respect to **figures and tables**. A good paper often can tell a story well through figures and tables alone.
- Provide exposure to **novel experimental or data analysis methods** in microbial ecology.
- Provide a forum for practicing **critical review of the scientific literature**. Successful science is built around successful peer review, both formally and informally. We will undoubtedly read some bad papers. We will undoubtedly read some good papers with bad science or writing in them. We should identify these parts of a paper and apply lessons learned to our own work.
- Encourage **broad participation** from **all** lab members. Journal clubs work best when there is informed, prepared, open discussion and debate among all members. The best way to accomplish this is by picking exciting papers of broad interest, and by ensuring that everyone comes prepared, having critically read the paper ahead of time.

Guidelines for picking potential papers

- Papers should be of **broad interest**, usually in the field of microbial ecology. The papers should not be exclusively tied to an individual participant's or individual lab's research interests.
- Choose papers from **high-quality journals**, listed below.
- Choose **recently published** papers (within the last few months).
- Choose **primary scientific literature** (rather than review or opinion pieces).

Acceptable Journals

These journals are chosen for the quality of papers they typically publish, as evidenced by metrics based on citation statistics and general reputation in the field. If you want to pick a paper from outside this list, consult with your advisor first, making a case for quality of the study and broad interest within the group.

- Science
- Nature
- PNAS
- The ISME Journal
- Environmental Microbiology
- Applied and Environmental Microbiology
- Microbiome

Preparing for Journal Club -- for the discussion leader

The first job of the discussion leader is to present the group with 3 potential papers to vote on. At least **two weeks prior** to the journal club, an email should be sent to the group which contains:

- Title and citation information for each paper in the body of the email
- Abstract for each paper in the body of the email
- PDF attachments of the 3 papers
- A mechanism (online poll, reply to email, etc.) and deadline by which to vote for one of the three papers.

The article chosen for discussion should be disseminated to the group at least **one week prior** to the journal club.

During journal club, the job of the discussion leader is to begin by briefly (2 minutes) summarizing the paper. The discussion leader should be the expert on the paper and should **lead the discussion** for the duration of the meeting. The discussion leader should consider using the "Critical Review of Primary Literature" worksheet (attached) to guide the discussion. The discussion leader may also consider bringing a list of questions for the group to discuss. The discussion leader's job is not to prepare a lengthy presentation for the rest of the room but to **facilitate** discussion and **engage** all members of the group.

Preparing for Journal Club -- for everyone else

Journal club is most beneficial when there is informed, prepared, open discussion and debate among all members. Come prepared by critically reading the paper. Bring questions for the group, identify parts of the study and manuscript you thought were done well, and identify parts of the manuscript that you think stretch conclusions beyond what the data shows. Use the "Critical Review of Primary Literature" worksheet (attached) to guide your reading of the paper.