

Journal Clubs for Professional Development in the Sciences

This document is for anyone who works or studies within the sciences and is interested in expanding their knowledge and developing their skills in a group setting.

What is a Journal Club and when are they useful?

Journal Clubs are group, collaborative learning activities which are designed to help those in the sciences keep up with the latest research and hone their critical thinking skills. A group will come together to read and discuss one or more journal articles, or other related material, and these sessions can take on different formats.

Journal Clubs are useful for helping scientists stay up to date on research findings, developments and trends and to keep their critical thinking and communication skills sharp. Journal Clubs are also helpful for building rapport, community, and belonging amongst groups, and for creating a small-scale or large-scale organizational culture of lifelong learning. This can be as small as within a lab, or as large as a department or even span an organization¹.

Journal Clubs are an effective way to continue developing the knowledge and skills of scientists, and in keeping with the Bicycle Principles², which advocate for the need for quality STEM short-format trainings, Journal Clubs are a way to create Catalytic Learning² because they create a habit of bite-sized learning, professional development and knowledge sharing.

What are some considerations to make when organizing a journal club?

- **What are the purposes and goals of your Journal Club?**
 - Are you and your members looking to keep up with research within a highly specialized topic area, perhaps even from one journal, or will you work with a broader topic area?
 - Does your group want to offer nuanced critiques to the research or share higher-level takeaways from the work?
 - How formal or informal is your Journal Club intended to be?
- **Who, and how many people will be involved in the Journal Club?**
 - The more people you have generally means more coordination and compromises. Consider the goals of your group: smaller, more specialized groups may meet at a consistent time, or may schedule on a session-by-session basis, while larger groups may have more success operating on a drop-in basis. Make sure to be as inclusive as possible, which often means not only creating a time and format that means that participants are available, but also one that encourages those of all experience levels to join and benefit from the discussions³.
- **How often will you meet and for how long?**
 - Attention and time are finite resources. Generally, the more frequently you meet, the less time you will need, and vice versa. Make sure that

everyone has time and space to participate. If your group is consistently going over or under time, consider making changes to your session format. Discussing multiple papers can be helpful if your group is going under time, and collaborative learning strategies can be useful if your group is going over time, and this variety will help keep engagement high if your session is longer.

- **Will you meet in person or online?**
 - Regardless of the medium for meeting, consider how you will ensure that everyone has equitable access to the session and that everyone has opportunities to participate fully and in meaningful ways⁴.
- **How will you decide on what to read? Will you discuss one paper all together or multiple papers?**
 - Some groups may choose a journal that matches their interests, and exclusively read papers that come from this journal. Other groups may choose a broader topic area and rotate through more specific subtopics.
 - For groups that are interested in the details of a paper, it may make sense to have all members pre-read one paper, whereas for groups interested in interdisciplinary topics or higher-level takeaways, it may be helpful for everyone to come with a paper of their choice to discuss.
- **How will you create a positive and meaningful learning experience? Will your members take on different roles throughout the session?**
 - Journal Clubs are traditionally seen as a forum for critiques of papers, and while critiquing papers is important for developing critical thinking and for honing our abilities to detect quality research, learning is more enriching when discussion also considers:
 - How the paper builds upon previous research
 - How the research intersects with other research findings or research trends
 - The applications of the research
 - Trends within the field
 - What the readers found interesting
 - Regularly seek feedback on the journal club format and topics and change where necessary. Offer members choice whenever possible.
- **How do I stimulate discussion and ensure everyone can contribute?**
 - A journal club is not only a way to translate research to practice, and stimulate critical thinking but also serves as a tool to build a shared mental model, improving group performance¹. This requires allowing a critical stance on contributions, thorough consideration of ideas and comments, and open dialogue to address differences in opinion.
 - To create a positive environment, ensure there are ways for everyone to have the ability to speak up, to share their thoughts and to ask questions without judgment and to agree or be free to disagree⁵.

How do I sustain a Journal Club?

Groups can be hard to organize and finding a schedule that stays consistent can be difficult. Keeping your attendees motivated and participating can also be a challenge.

Some suggestions are:

- Create reminders through communications channels that will reach your members
 - Email or listserv reminders might be helpful when you are inviting a larger group, but Slack or group chat messages might be more helpful for smaller groups
- Create predictability in your schedule
 - Some Journal Clubs will follow a set schedule such as “Every Other Monday” or “The Last Friday of the Month”. This schedule can work well when you are inviting a large number of people and/or when the Journal Club operates on a drop in basis.
 - When you have a smaller group, it may be helpful to set up the next meeting time at the end of the meeting and coordinate on a session by session basis.
- Add incentives
 - Pair Journal Club with fika or a Bring-Your-Own-Lunch get together. Some Journal Clubs even meet at a pub!
 - Add themes if your group is receptive, like holiday baking or make the session a potlucks
- Keep the readings relevant
 - The interests of the group may change over time, and so too will the research within your field. Does your group read from one research journal only? Are there exciting papers coming out that are related to your group’s interests? Are all of your members contributing to the reading list? Consider mixing things up. Periodically discuss with your group what they are interested in reading and discussing and change course as needed.

Further Reading

1. Van Den Bossche, P., Gijssels, W., Segers, M., Woltjer, G., and Kirschner, P. (2011). Team learning: building shared mental models. *Instr Sci* 39, 283–301. 10.1007/s11251-010-9128-3.
2. Williams, J.J., Tractenberg, R.E., Batut, B., Becker, E.A., Brown, A.M., Burke, M.L., Busby, B., Cooch, N.K., Dillman, A.A., Donovan, S.S., et al. (2023). An international consensus on effective, inclusive, and career-spanning short-format training in the life sciences and beyond. *PLoS ONE* 18, e0293879. 10.1371/journal.pone.0293879.
3. Tan, T.M., and Venkatesh, M.J. (2023). Reimagining journal clubs for inclusive scientific training. *Trends in Cell Biology* 33, 531–535. 10.1016/j.tcb.2023.03.012.
4. Deenadayalan, Y., Grimmer-Somers, K., Prior, M., and Kumar, S. (2008). How to run an effective journal club: a systematic review. *J Eval Clin Pract* 14, 898–911. 10.1111/j.1365-2753.2008.01050.x.
5. Mazal, J., and Truluck, C. (2014). Organizing and leading a journal club. *Radiol Technol* 85, 549–553.

Have questions? Connect with us at traininghub@scilifelab.se

Visit the [SciLifeLab Training Portal](#) for more courses and training!