Subject: SERCC Newsletter
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From: Scientific Editing and Research Communication Core
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Scientific Editing and Research Communication Core

Preparing a Graphical Abstract for Your Next Research Manuscript

A graphical abstract is a single visual representation that summarizes the most important parts of a study, and it is intended to pique the reader's interest. As an overview figure for a manuscript, it should be distinct from the other figures and, like a written abstract, it should quickly convey the take-home message. Graphical

abstracts are typically designed to accompany journal articles, in which case they provide an opportunity to improve on the abstract by utilizing images. However, graphical abstracts can also serve other purposes. For example, they can be generated to use on a conference poster, enhance a lab website, or share a scientific message on social media.

Below, we briefly summarize some of the key points to consider when generating a graphical abstract. Most of these ideas are illustrated in this video[1] from BioRender, and they are also discussed in greater detail in several resources[2–5].

Note that BioRender provides a library of templates for graphical abstracts; these can be a great starting point. Programs other than BioRender that can be used to generate graphical abstracts include Canva, Microsoft PowerPoint, and Adobe Illustrator[2].

Layout and Story Flow: Focus on the Key Message

- Keep graphical abstracts simple and concise.
    - Avoid including distracting information. Clutter (visual or textual) can overwhelm a reader.
    - Keep the focus on the main points you wish to convey.
- Present the information in a logical order.
    - Be sure to start at the beginning of your "story" and make the flow intuitive. For example,
        - if the story is about a linear process, follow the order we naturally use to read information on a page, i.e., from left to right and from top to bottom;
        - if multiple outcomes are possible, use branching; and
        - if a circular process is described (e.g., a life cycle), make the path circular and clockwise.
    - Get input on the flow of your graphical abstract early on.
        - Give a colleague a draft and have them mark up the copy to show how they absorb the information.
        - Ask them to show you both where in the image they start and what path their eyes follow; this will help you identify any distractions and other points of confusion as you refine your graphical abstract.

Color: Keep in Mind the Associations a Reader Might Make

- Use color judiciously and consistently to highlight the important features (e.g., "main characters") of a story and to create associations that allow for a cohesive and logical flow of information. For example,
    - readers tend to associate warm colors like red with "villains," so use

these to represent dangerous agents (e.g., cancer cells or inflammation);
    - readers tend to associate cool colors like blue with “heroes” so use these to highlight positive agents (e.g., healthy cells or anti-inflammatory agents); and
    - readers will expect green to indicate GFP—be sure not to disappoint them.
- Limit your color palette.
    - Too many colors will distract readers and defeat the purpose of the graphical abstract.
- Use colors that are color-blind safe.
    - Common graphics resources like those available in BioRender and the Adobe suite enable you to test this.

Highlights: Make it Easy to Spot Relevant Differences

- Format contextual, repeating elements consistently.
    - Make them the same color, height, and shape, and place them in the same relative position wherever they appear.
    - Align repeating elements horizontally or vertically using guidelines or an alignment tool.
- Highlight the elements that change as appropriate for your design.
    - Make sure that contrast is good, using:
        - transparency to dim “background elements,” i.e., the contextual information that needs to be included but isn’t the focus (usually 50% transparency works well); and
        - bright colors for the elements that change, to distinguish them from any dimmed background.
    - If the point is that the shape and/or size of an element changes, depict these differences by using distinct shapes and sizes.
    - If the point is that an element shifts to a new place, depict it in its new position.

Other Considerations

- Tailor your graphical abstract to your target audience and to where it will be posted.
    - Know your audience.
    - Consider what this audience will need to know.
- Be sure to comply with your publisher’s requirements.
    - These may vary depending on where the graphical abstract will be posted.
    - See example of guidelines from Elsevier[3].
- Get feedback not only early in the process of designing your graphic abstract,

but at multiple stages.

It may feel daunting to design a graphical abstract but don't be afraid to get started. Once you do, you might have fun—and you might even come up with new ideas for your project in the process!

Best of luck with this increasingly important aspect of publication,
Chris Blaumueller and the SERCC Team

Resources:

1. Top 4 design tips: Designing Graphical Abstracts, Shiz Aoki, video in the bioRender Learning Hub
2. What is a Graphical Abstract and Why Do I Need One for My Paper? Kerry Stricker, from *Springer Nature Research Solutions*, May 26, 2023
3. Graphical Abstract, from the Elsevier Author Tools & Resources Pages
4. 5 Tips for Creating a Graphical Abstract, Catherine Zettel Nalan, from *Springer Nature Research Solutions*, December 12, 2023
5. Points of View: The Overview Figure, Bang Wong, *Nature Methods* 8, 365 (2011).

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Announcements

NEW: Large-Scale Proposal Development Service (LSPDS)

The SERCC and the Research Administration Support Office (RASO) are collaborating to provide CCOM faculty and staff with expert resources in preparing, writing, and submitting large, complex grant proposals. Both writing/editing and pre-award administrative support are available to alleviate the administrative burden of these applications. For additional information about these services, contact Jennifer Barr by clicking on the

NIH Grants and Funding Information Status

NIH grants and funding policies and processes are evolving as NIH aligns these with new agency priorities. Keep apprised of the latest changes that affect NIH grants administration and funding. The webpage linked to above is updated as new information becomes available; check back regularly for updated information.

email link above.

Upcoming Opportunities

Have a question about writing grants or research articles? Contact us and we will answer it in a future newsletter.

Mallinckrodt Foundation Grant Program 2025
Limited Submission | Internal Deadline: June 19
The mission of the Foundation is to support early-stage investigators engaged in basic biomedical research that has the potential to significantly advance the understanding, diagnosis or treatment of disease. Tenure track faculty in the first four years of their appointment, with no current R01 funding, are eligible to apply. Limit: one application per institution
Sponsor Deadline: August 1
More Information | Limited Submission Application

Maximizing Pivot to Find Funding and Collaborators
June 24 | 10:00 a.m.–11:00 a.m. | Zoom
July 30 | 1:00 p.m.–2:00 p.m. | In person
Do you want to minimize your time spent searching for funding opportunities or potential project collaborators? Join us either virtually or in person to learn how Pivot can save you time and effort in identifying the right funding opportunities for your research, as well as identifying collaborators with the relevant expertise.
Registration

Burroughs-Welcome Fund: Climate Change and Human Health Seed Grants
Application deadline: July 24
These are small grants to promote the growth of new connections between scholars, practitioners, educators, and/or communicators working to understand, spread the word about, and mitigate the impacts of climate change on human health. Review will be conducted quarterly. After each quarterly review, we will support, decline, or send proposals back to applicants for revision, but may hold some proposals over for a future review. Proposals are accepted on a rolling basis until July 24.
More Information and Application

G. Harold and Leila Y. Mathers Charitable Foundation: Mathers Grant Program
Limited Submission | Internal Deadline: August 7
The Foundation has primarily supported basic science, ideally with potential translational applications. The Foundation now also embraces innovative

translational research proposals. Past areas of research support include immunology, the microbiome, genomics, structural biology, cellular physiology, neuroscience, and others. Covid-19 related research projects (aims or sub-aims) will not be considered for support.
Sponsor LOI Deadline: October 3
Sponsor Deadline: December 12 (by invitation only)
Limited Submission Application

Robert Wood Johnson Foundation: Exploring Equitable Futures Program
Application deadline: October 15
The Exploring Equitable Futures Program, previously called Pioneering Ideas for an Equitable Future, has several goals: Economic Inclusion for Family Wellbeing, Equitable and Accountable Public Health and Healthcare Systems, and Healthy and Equitable Community Conditions. Proposals are accepted on a rolling basis until October 15, 2025.
More Information and Application