

Day 1 Getting Published

1. Effective academic writing (09:00 – 10:15)

This module focuses on how to clearly communicate complex scientific ideas in an article to ensure the reader understands the value of the study for the field. We first discuss important writing strategies to improve clarity: conciseness, specificity, and logical sentence structure. We then focus on strategies to improve readability, such as using balanced active and passive voice and appropriate word choice to better engage readers.

Break (10:15 – 10:30)

2. Writing a clear Introduction and a transparent Methods sections (10:30 – 12:00)

This module highlights the importance of the Introduction in providing context for the reader to understand the study and appreciate its importance. We also discuss how the research question and the related aims emphasize the novelty of the study. Next, we look at how to write a transparent and thorough methodology to validate the study design and build confidence in the results.

Lunch (12:00 – 13:00)

3. Preparing impactful Figures (13:00 – 14:10)

This section discusses the challenges in presenting complex data to readers and the importance of figures and tables to achieve this. We will review how to determine which graph is most appropriate for your data, how to create logical tables, and how to process images in an appropriate manner.

Break (14:10 – 14:20)

4. Guiding readers through the Results & highlighting their value in the Discussion (14:20 – 15:30)

In this module, we review useful strategies to ensure that readers can understand the significance of the findings by clearly presenting the trends and patterns amongst the data in the Results. We then discuss how to interpret the importance of these findings and synthesizing them into the broader context of the literature in the Discussion. Finally, we highlight the role of the conclusion in maximizing the impact and influence of the study in the field.

Break (15:30 – 15:40)

5. Writing effective Titles, Keywords, and Abstracts (15:40 – 16:50)

This section begins with how to write a title that will catch the reader's attention when they are looking for articles online. We then discuss the importance of keywords and strategies for choosing ones that will increase your discoverability. Finally, we discuss strategies for writing an impressive abstract to improve your impact and influence in the field.

Final Q&A session (16:50 – 17:00)

Day 2 Harnessing Generative AI in Academic Publishing

1. Generative AI for biomedical and clinical researchers (09:00 – 10:30)

- How GenAI is being used in biomedical and clinical research
- Why outputs vary: probabilistic generation and hallucinations
- Responsible deployment of GenAI in the lab and the clinic

This module introduces how generative AI is currently being used in biomedical and clinical research workflows, such as multi-omics, diagnostics, and precision medicine. We then examine how these models generate output, covering probabilistic generation and randomness, to explain why the same prompt can produce different answers and lead to hallucinations. Finally, we discuss local deployment for biomedical and clinical research, where data privacy, cost, and the regulatory backdrop (including the NHC's clinical AI guidelines) shape what's deployable.

Break (10:30 – 10:45)

2. Responsible use of generative AI (10:45 – 12:00)

- Limitations and biases with generative AI
- Generative AI and research integrity
- Editorial policies for using generative AI

This module begins by discussing important limitations that researchers should be aware of when using generative AI, such as hallucinations, biases, and ethical concerns. We then review some of the common issues related to generative AI and research integrity, such as data privacy, data manipulation, and paper mills. Finally, we cover editorial policies about using generative AI in manuscript preparation, authorship, and peer review.

Lunch (12:00 – 13:00)

3. Context engineering (13:00 – 14:10)

- From prompt engineering to context engineering
- Overview of clearly structured prompts
- Useful context engineering strategies for researchers

This module covers how to effectively communicate with generative AI, including the shift from prompt engineering to context engineering (and why). We first discuss why reasoning models have made many earlier prompt engineering techniques less necessary and why the field has moved from clever phrasing toward clear structuring of the prompt for the model. We then review the foundations of well-structured prompts, including clarity, precision, context, iteration, and structural elements. Lastly, we cover practical context engineering strategies for researchers, including role and persona prompts and few-shot examples.

Break (14:10 – 14:20)

4. Generative AI in academic publishing (14:20 – 15:30)

- Assisting in literature reviews
- Improving your manuscript
- Support with the publication process

This module discusses various use cases of generative AI in the preparation and publication of a manuscript. We first review ways generative AI can be used to synthesize and review the literature, including deep research workflows, assistance with systematic reviews, and multimodal analysis of full-text PDFs and figures. We also introduce researcher-specific AI-driven tools. We then recommend responsible ways to use generative AI to improve the clarity, readability, and structure of a manuscript prior to submission, including reviewing your own figures and methods section. Lastly, we discuss how LLMs can be used to identify and evaluate journals, improve cover letters, or respond to reviewer comments.

Break (15:30 – 15:40)

5. Other uses of generative AI in academia (15:40 – 16:50)

- Grant writing
- Science communication
- Academic presentations
- Agentic AI

This last module introduces other ways generative AI can be used to support a researcher's journey in academia. We first illustrate how generative AI can be used for brainstorming new ideas and formulating research questions and aims, along with assessing their feasibility, when preparing grant proposals. We then demonstrate how generative AI can help amplify the impact of a published study by helping to write engaging social media posts to promote the article. We also show how generative AI can be used to help prepare and refine academic presentations before presenting the study at a conference. Finally, we introduce agentic AI, including autonomous multi-agent systems that can plan and execute complex research tasks such as hypothesis generation and experimental design, and discuss what their emergence may mean for biomedical research in the near future.

Final Q&A (16:50 – 17:00)

This material includes concepts and knowledge that shall not be disclosed outside the client's organization and shall not be duplicated, used or distributed, in whole or in part, for any purpose other than internal review and evaluation.

©2026 Springer Nature. All rights reserved