

# AUTHOR GUIDELINES



Catalyst

Facets of Biochemistry & Biomedical Sciences

## FROM THE DESK OF THE MANAGING EDITORS

Welcome to the second volume of *Catalyst*, an entirely student-run, open-access, peer-reviewed journal based in the Department of Biochemistry and Biomedical Sciences. As another summer comes to a close, we reflect on the breadth and quality of the scientific research being conducted at McMaster by undergraduate and graduate students alike, across all disciplines. McMaster was recently named the most research-intensive university in Canada, a testament to the innovation, drive, and culture of our institution. Our goal with *Catalyst* is to take a small snapshot of this remarkable work and present it for all to see.

This summer saw a significant change in our editorial staff. Veteran editors Maleeha Qazi, Emily Day, and Siddharth Nath are all leaving the journal, as Maleeha and Emily are finishing their PhD degrees, while Sid is going to medical school. The three editors have been invaluable team members and were essential to the journal's success over the years, and we would like to thank them for their contributions, and wish them luck in their future endeavors.

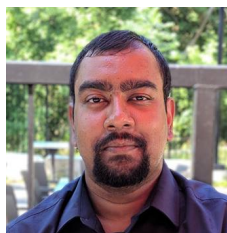
Ashley Adile, an MSc student in Dr. Sheila Singh's lab, remains as an editor, continuing her hard work from the previous year. Joining her is Hannah Stacey, a PhD candidate in Dr. Matthew Miller's lab, and Sabih Rashid, a recent MSc graduate from Dr. Lesley MacNeil's lab. Both Hannah and Sabih completed their undergraduates at McMaster, and their years of experience with the university's research community will help expand the scope of the journal.

*Catalyst* has also instituted many changes in our submissions and review processes and we encourage you to have a look before you begin preparing your submission. Science is rapidly evolving, and we feel incredibly privileged to catalog a handful the breakthroughs happening within the life sciences at McMaster. We hope you are as excited about this issue of *Catalyst* as we are.

With many thanks,



Ashley Adile



Sabih Rashid



Hannah Stacey

# Instructions for Authors

*Catalyst: Facets of Biochemistry and Biomedical Sciences* (abbreviated: *Catalyst*) is an open-access, entirely student-run, peer-reviewed publication with two annual issues (January and June). We accept submissions for the following sections:

- **Papers (Original Research & Reviews):** maximum 3,500 words and 6 figures/tables
- **Protocols:** maximum 2,500 words and 3 figures/tables
- **Perspectives:** maximum 2,000 words and 2 figures
- **Multimedia:** presubmission inquiries required

**Please carefully read all guidelines listed below. Your paper MUST be formatted in line with journal style or it will be returned to you without review. For specific formatting instructions for each submission type, download a template from the Catalyst website prior to beginning. This document is not a complete guide, you must use a template.**

All submissions must adhere to the following:

- **Title:** should be no more than one line of text and should describe your paper without being overly complex or simplistic.
- **Authors:** list all authors in order of contribution with their affiliations. Ensure all authors are aware that they are being listed on the manuscript and that they meet criteria for authorship. One member of the team (typically the first or last author) should be corresponding author. It will be their responsibility to communicate with *Catalyst* staff. Only communications from a university-linked email address are acceptable. The corresponding author must be from McMaster University.
- **Abbreviations:** all abbreviations should be listed in full form the first time they are mentioned in the text of your paper. They can subsequently be listed in short form everywhere else in your paper.
- **References:** all references must follow the Nature format. See [www.nature.com](http://www.nature.com) for details. Only published research articles and textbooks are acceptable sources. Wikipedia, although a great starting point, is not acceptable.
- **Tables and Figures:** you are permitted to include as many tables and figures as specified by your article type. Tables and figures must be original work from the authors, you cannot use items from other papers. All tables and figures must be accompanied by a brief caption. All tables and figures must be referred to in the text at least once, with parentheses as follows, "protein x has similar expression levels in cancer cells and healthy cells (Figure 1)". In order to maintain research integrity, please submit unaltered images only. Any evidence of data manipulation will result in automatic rejection of the manuscript without additional review and may negatively impact eligibility to publish in *Catalyst* in the future. If in doubt, visit <https://www.mcmaster.ca/academicintegrity/> for our complete Research Integrity Policy.

## Ready to prepare a manuscript for submission?

- Visit <https://journals.mcmaster.ca/catalyst> sign up for Open Journal Systems (OJS) and download a template specific to your article type as well as the 'Template Guide'.
- All submissions **must** be done through OJS. We do not accept manuscript submissions via email.

**Questions? Concerns? Ideas? Contact us:** [bbscatalyst@gmail.com](mailto:bbscatalyst@gmail.com)

# Template Guide

How to use the Catalyst templates:

- Catalyst follows a journal style in order to ensure all articles are consistently formatted and to improve the experience for our readers.
- Please note, **if your article is not formatted according to journal style, it will be returned to you without review**. Catalyst staff are responsible for assessing articles based on scientific merit. We do not provide re-formatting services.
- Before commencing with your submission, please ensure you have downloaded the appropriate template. **These files are separate from the 'General Submission Requirements'**. We provide templates for:
  - Original research articles
  - Review articles
  - Protocols
  - Perspectives
- The templates are pre-formatted to the required size, font, and font styling (bold, italics, underline, etc.). To use the template, simply replace the text of the template with your own text. For example, when writing the title of your paper, simply highlight the title section of the template and replace it with the text of your title. The same can be done for all sections. Templates are pre-formatted to use the column set up where appropriate. Simply download, and write!

Questions? Concerns? Ideas? Contact us: [bbscatalyst@gmail.com](mailto:bbscatalyst@gmail.com)

# Sample Original Article

Author<sup>1</sup>, Author<sup>2</sup>, Author<sup>3</sup>, Author<sup>4</sup>

<sup>1</sup>Undergraduate Student, Department of Biochemistry and Biomedical Sciences, Faculty of Health Sciences, McMaster University, Canada

<sup>2</sup>Undergraduate Student, Life Sciences Program, Faculty of Science, McMaster University, Canada

<sup>3</sup>PhD candidate, Department of Pathology and Molecular Medicine, Faculty of Health Sciences, McMaster University, Canada

<sup>4</sup>MSc student, Department of Medicine, Faculty of Health Sciences, McMaster University, Canada

\*Corresponding author: corresponding\_author@mcmaster.ca

## Abstract

The abstract **should NOT** be in column format it should be written completely across the page.

## Introduction

Your introduction to references should be in column format. Use the 'Columns' function in your word processor. We recommend using Microsoft Word. Your introduction will provide background information on your field as well as the motivations for conducting your experiments.

## Results

*Use italicized subheadings.* State what you found, but do not interpret. This is meant to provide an objective view of what your experiments yielded. Remember, the rest of the paper is in column format. You should also embed figures here.



**Figure 1:** *Highly accurate representation of science.* Your figure captions should be formatted in an embedded style as well.

## Discussion

Here, you discuss your results. Remember, you should not simply state what you found or discovered. You should include your interpretation of what you think your results mean, how they fit into the bigger scientific picture, and what the next steps might be. Do NOT use any subheadings; but rather paragraphs to separate thoughts.

## Materials and Methods

*Use italicized subheadings to denote different assays and protocols.* Discuss how you conducted the work. Include appropriate units wherever possible. Also include the name of assay kits or reagents and their manufacturer (eg, Monarch DNA Gel Extraction Kit (New England Biolabs).

## Acknowledgements

Here you can thank anyone who helped you with this work but did not contribute sufficiently enough to satisfy the criteria for authorship. If this work was conducted as a part of a funded research placement (eg, NSERC Undergraduate Student Research Award), you should also mention that here. If the work was conducted in an academic research lab, acknowledge the principal investigator here. For work completed as part of a course, mention "This work was completed as part of the requirements of BIOCHEM XXXX, Winter 2018, at McMaster University".

## References

1. Your references should be numbered in the order they appear in the text. Add references by including a superscript at the end of each sentence that is referenced. For a sentence that is referenced by two or more articles, use a comma (eg, 3,4) or hyphen (eg, 3-6), respectively. For a sentence that is referenced with multiple articles that may not be in sequence use a hyphen and comma (eg, 2-3, 5).
2. Your references in this list should follow the Nature format (eg, [nature.com](http://nature.com)).

# Sample Review Article

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<sup>1</sup>Undergraduate Student, Department of Biochemistry and Biomedical Sciences, Faculty of Health Sciences, McMaster University, Canada

<sup>2</sup>Undergraduate Student, Life Sciences Program, Faculty of Science, McMaster University, Canada

<sup>3</sup>PhD candidate, Department of Pathology and Molecular Medicine, Faculty of Health Sciences, McMaster University, Canada

<sup>4</sup>MSc student, Department of Medicine, Faculty of Health Sciences, McMaster University, Canada

\*Corresponding author: corresponding\_author@mcmaster.ca

## Abstract

The abstract **should NOT** be in column format it should be written completely across the page.

## Introduction

Your introduction to references should be in column format. The remainder of the paper will be in column format. Use the 'Columns' function in your word processor. We recommend using Microsoft Word. Your introduction will provide background information on your field as well as the motivations for conducting this review.

### Idea 1: Protein X is involved in DNA repair

In a review, you are not presenting the results of experiments you conducted, rather, you are synthesizing information from past work. You should organize your review into different ideas and format them as subheadings as shown. You can choose to discuss anything you like, but make sure you draw from primary research articles and not from other review papers! Remember, the rest of the paper is in column format. You should also embed figures here that describe any relevant ideas. **Figures must be your own and cannot be taken from primary research papers.**



**Figure 1:** *Highly accurate representation of science.* Your figure captions should be formatted in an embedded style as well.

## Discussion

Here is where you will bring everything you have talked about thus far together. Synthesize your

ideas into an overall picture. Discuss where the field might be headed next and identify the key issues that remain.

## Acknowledgements

Here you can thank anyone who helped you with this work but did not contribute sufficiently enough to satisfy the criteria for authorship. If this work was conducted as a part of a funded research placement (eg, NSERC Undergraduate Student Research Award), you should also mention that here. If the work was conducted in an academic research lab, acknowledge the principal investigator here. For work completed as part of a course, mention "This work was completed as part of the requirements of BIOCHEM XXXX, Winter 2018, at McMaster University".

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# Sample Protocol

Author<sup>1\*</sup>, Author<sup>2</sup>, Author<sup>3</sup>, Author<sup>4</sup>

<sup>1</sup>Undergraduate Student, Department of Biochemistry and Biomedical Sciences, Faculty of Health Sciences, McMaster University, Canada

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<sup>4</sup>MSc student, Department of Medicine, Faculty of Health Sciences, McMaster University, Canada

\*Corresponding author: [corresponding\\_author@mcmaster.ca](mailto:corresponding_author@mcmaster.ca)

## Abstract

The abstract **should NOT** be in column format it should be written completely across the page.

## Introduction

Your introduction to references should be in column format. Use the 'Columns' function in your word processor. We recommend using Microsoft Word. Your introduction will provide background information on the assay, its goal, and why you have chosen to write this protocol.

## Materials Required

- Here is where you will list all the 'ingredients' required to carry out your protocol. This should be in point-form.
- List specific kits and their manufacturers, for example, you might say "Seahorse Glycolysis Stress Test Kit (Agilent)".

## Protocol

- Write in a numbered format the methodology for carrying out your assay. You can also include diagrams and figures here as needed, but be sure they have a caption. **Figures must be your own and cannot be taken from primary research papers.**



**Figure 1:** *Highly accurate representation of science.* Your figure captions should be formatted in an embedded style as well.

## Discussion

Provide a concise summary of why your protocol is valuable. Discuss how it is different or novel from existing methods, or how it solves an existing issue within the field.

## Acknowledgements

Here you can thank anyone who helped you with this work but did not contribute sufficiently enough to satisfy the criteria for authorship. If this work was conducted as a part of a funded research placement (eg, NSERC Undergraduate Student Research Award), you should also mention that here. If the work was conducted in an academic research lab, acknowledge the principal investigator here. For work completed as part of a course, mention "This work was completed as part of the requirements of BIOCHEM XXXX, Winter 2018, at McMaster University".

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- Your references in this list should follow the Nature format (eg, [nature.com](https://doi.org/10.1038/nature)).

# Sample Perspective

Author<sup>1\*</sup>, Author<sup>2</sup>, Author<sup>3</sup>, Author<sup>4</sup>

<sup>1</sup>Undergraduate Student, Department of Biochemistry and Biomedical Sciences, Faculty of Health Sciences, McMaster University, Canada

<sup>2</sup>Undergraduate Student, Life Sciences Program, Faculty of Science, McMaster University, Canada

<sup>3</sup>PhD candidate, Department of Pathology and Molecular Medicine, Faculty of Health Sciences, McMaster University, Canada

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## Abstract

This is where you should include your abstract. The abstract **should NOT** be in column format it should be written completely across the page.

## Introduction

Your introduction to references should be in column format. Use the 'Columns' function in your word processor. We recommend using Microsoft Word. Your introduction will briefly introduce the topic on which you are writing your perspective. This should be a relatively short section of your paper.

## Subheading 1

A Perspective paper will not have traditional subheadings (Materials, Discussion, etc). Thus, you can use subheadings to organize ideas as you see fit. You may also include figures in your different sections as you see fit. **Figures must be your own and cannot be taken from primary research papers.**



**Figure 1:** Highly accurate representation of science. Your figure captions should be formatted in an embedded style as well.

## Parting Thoughts

Here is where you will summarize your perspective on the issue or topic you have written about. Where do you think the field is headed next? What problems require solving? Give us your parting

views on the topic and leave the readers with something to think about!

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# Sample Multimedia

Author<sup>1\*</sup>, Author<sup>2</sup>, Author<sup>3</sup>, Author<sup>4</sup>

<sup>1</sup>Undergraduate Student, Department of Biochemistry and Biomedical Sciences, Faculty of Health Sciences, McMaster University, Canada

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\*Corresponding author: [corresponding\\_author@mcmaster.ca](mailto:corresponding_author@mcmaster.ca)

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## Abstract (Multimedia Summary)

This is where you should include your abstract, or multimedia summary. Provide at least a few sentences describing your work, since this will serve as a video description, etc. Include all details that you believe to be relevant, such as background information or purpose of the work, as descriptive text is limited to this section (exception: submissions with image(s) should include separate photo/figure captions below each image). You may also wish to comment on where you think the field related to your work is headed next or what problems require solving; if so, do so here.

Insert image(s) below the abstract section. **Photo/figures must be your own and cannot be taken from primary research papers.** High resolution (300 dpi) are preferred. For video submissions: insert display photo below (no caption required) with video name above this photo, submit video [here](#) using the video name as the file name, and email [bbscatalyst@gmail.com](mailto:bbscatalyst@gmail.com) with the video name in the subject line.



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