

Summary of Research Progress: A L^AT_EX Template to Help You With Your Quals

Your Name

Professor Sandy Cheeks Research Laboratory
Department of Chemistry, Massachusetts Institute of Technology, Cambridge, MA, USA

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1 Some Simple Commands The text you're reading is contained in the sections/0_example_uses.tex file. Separating words, phrases, sentences, etc. by a newline continues the same paragraph.

Instead, separate text by two newlines to start a new paragraph.



Figure 1: **This is the top hit for “science” on [pixnio](#).** (They provide free images!)



Figure 2: I guess Edison's work *does* outshine mine...

Formatting is generally easiest if you include figures with the `\begin{figure}` command, as in Fig. 1. However, as with Fig. 2, you can save space by wrapping text around figures with the `wrapfig` package. More details about using `wrapfig` are available [here](#). Captions number correctly regardless of your chosen command.

When formatting text, `\textit{}` *italicizes* text, `\textbf{}` **bolds** text, and `\underline{}` underlines text. For more information, overleaf has many high-quality tutorials [here](#), and the answer to nearly any L^AT_EX question can be googled. (Oh yeah, the `hyperref` package provided that hyperlink functionality via `\href{ }{ }`.)

Equations are written like

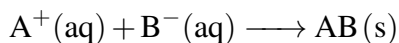
$$E = mc^2, \tag{1}$$

and the `amsmath` (American Math Society) style is used to format equations in the document. Alternatively, math can be written in-text like so: $E = mc^2$.

Chemical equations are easy to include thanks to the `mhchem` package.



If you'd prefer *not* to number an equation (whether mathematical or chemical), use $\$$:



Reference sources *within* the document with `\ref{label_defined_in_text}`. This can be done with multiple objects, e.g. Fig. 1, Eq. 1, and Section 3.

Reference outside sources with `\cite{name_in_refs.bib}`. Conveniently, references¹ automatically² number³ according⁴ to⁵ order⁶ of⁷ appearance.⁸ Also, if multiple citations are included at once, then sequential articles are formatted with a dash to save space.¹⁻⁸ This is done according to the *J. Am. Chem. Soc.* (with title) formatting guidelines.

You can add subsections to help break up your report. For example, Subsection 1.1 discusses a bit about the formatting of this document.

1.1 The Formatting Guidelines This document uses letter paper, which is sized 8.5"× 11", and has 1 inch margins everywhere. It uses single-spaced 12 point Times Roman font for all text. Page numbers are included in the bottom right and shown with 12 point Times Roman font.

In lieu of a cover page, the report's title and your name, lab, department, and oral exam date can be inserted in the header of the file `main.tex`, and they're displayed as in this template. (Comments walk you through these steps and begin with `%`.) Similarly, the file will currently save as `Lastname-Firstname-Year.pdf`, but you can change this to your information by modifying the text on line 39 of `main.tex`. Otherwise, the only change you should need to make to `main.tex` is deleting lines 71 and 72, which will remove this tutorial information.

The sections for your written report should be written in files 1-6 in the `sections` folder. Placing different information in the different files makes it easier to independently save multiple versions of each section, replace them, rearrange them, etc., rather than always needing to modify the main file. Simply remove the existing text, which inserts lorem ipsum text as a placeholder.

Image files can be placed in the `figures` folder to maintain organization. Replace `gantt.chart.png` in that folder with your own, which is probably easiest to make as a table in Microsoft Word.

Place your references in `refs.bib` using Bib_{TEX} format. This can easily be done with [Zotero](#), which will provide the Bib_{TEX} citation given just the DOI number. Conveniently, Zotero can be [directly linked to your Overleaf](#) so that the references are also directly imported, meaning you don't even need to copy/paste the references. If you do this, you'll need to change line 17 of the main text from `\addbibresource{refs.bib}` to `\addbibresource{refs.bib,imported_file.bib}` or `\addbibresource{imported_file_name.bib}`. NOTE: Only bibliographic items references in the text via the `\cite{}` command will appear in the bibliography at the end of the document.

2 Long-Term Objective Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetur id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis

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3 Introduction Citations¹ automatically² number³ according⁴ to⁵ order⁶ of⁷ appearance.⁸

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6 Gantt Chart for Future Planning Fusce mauris. Vestibulum luctus nibh at lectus. Sed bibendum, nulla a faucibus semper, leo velit ultricies tellus, ac venenatis arcu wisi vel nisl. Vestibulum diam. Aliquam pellentesque, augue quis sagittis posuere, turpis lacus congue quam, in hendrerit risus eros eget felis. Maecenas eget erat in sapien mattis porttitor. Vestibulum porttitor. Nulla facilisi. Sed a turpis eu lacus commodo facilisis. Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. Mauris tempor ligula sed lacus. Duis cursus enim ut augue. Cras ac magna. Cras nulla. Nulla egestas. Curabitur a leo. Quisque egestas wisi eget nunc. Nam feugiat lacus vel est. Curabitur consectetur.

7 Contributions and Acknowledgements Suspendisse vel felis. Ut lorem lorem, interdum eu, tincidunt sit amet, laoreet vitae, arcu. Aenean faucibus pede eu ante. Praesent enim elit, rutrum at, molestie non, nonummy vel, nisl. Ut lectus eros, malesuada sit amet, fermentum eu, sodales cursus, magna. Donec eu purus. Quisque vehicula, urna sed ultricies auctor, pede lorem egestas dui, et convallis elit erat sed nulla. Donec luctus. Curabitur et nunc. Aliquam dolor odio, commodo pretium, ultricies non, pharetra in, velit. Integer arcu est, nonummy in, fermentum faucibus, egestas vel, odio.

I thank Greg Schuette for providing a L^AT_EX template for this written report.⁹

8 Gantt Chart

Month	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Oral Exam												
Synthesize X												
Characterize X												
Examine catalytic reactivity of X												
Expand substrate scope												
Mechanistic study												
Manuscript writing												

References

- (1) Youssef, K.; Schuette, G.; Cai, Y.; Zhang, D.; Huang, Y.; Rahmat-Samii, Y.; Bouchard, L.-S. Scalable End-to-End RF Classification: A Case Study on Undersized Dataset Regularization by Convolutional-MST. **2021**, Publisher: arXiv Version Number: 2, DOI: [10.48550/ARXIV.2104.12103](https://doi.org/10.48550/ARXIV.2104.12103).
- (2) Sood, A.; Schuette, G.; Zhang, B. *Coupling chromatin folding with histone modifications reveals dynamical asymmetry in the epigenetic landscape*; preprint; Biophysics, 2022, DOI: [10.1101/2022.11.02.514881](https://doi.org/10.1101/2022.11.02.514881).
- (3) Schuette, G.; Ding, X.; Zhang, B. Decorrelating Hi-C contacts enhances identification of the interactions driving genomic structure and organization. *Biophysical Journal* **2023**, *122*, 494a, DOI: [10.1016/j.bpj.2022.11.2638](https://doi.org/10.1016/j.bpj.2022.11.2638).
- (4) Schuette, G. K. K. Applying Distributed Learning of Deep Neural Networks to Improve Their Classification Accuracy on Radio-Frequency Datasets, English, MA thesis, Los Angeles, CA 90095: UCLA, 2020.
- (5) Youssef, K.; Schuette, G.; Cai, Y.; Zhang, D.; Huang, Y.; Rahmat-Samii, Y.; Bouchard, L.-S. Scalable Undersized Dataset RF Classification: Using convolutional multistage training. *IEEE Antennas and Propagation Magazine* **2023**, 2–15, DOI: [10.1109/MAP.2022.3208813](https://doi.org/10.1109/MAP.2022.3208813).
- (6) Schuette, G.; Ding, X.; Zhang, B. *Efficient Hi-C inversion facilitates chromatin folding mechanism discovery and structure prediction*; preprint; Biophysics, 2023, DOI: [10.1101/2023.03.17.533194](https://doi.org/10.1101/2023.03.17.533194).
- (7) Zhang, B.; Wolynes, P. G. Topology, structures, and energy landscapes of human chromosomes. *Proceedings of the National Academy of Sciences* **2015**, *112*, 6062–6067, DOI: [10.1073/pnas.1506257112](https://doi.org/10.1073/pnas.1506257112).
- (8) Zhang, B.; Wolynes, P. G. Shape Transitions and Chiral Symmetry Breaking in the Energy Landscape of the Mitotic Chromosome. *Physical Review Letters* **2016**, *116*, 248101, DOI: [10.1103/PhysRevLett.116.248101](https://doi.org/10.1103/PhysRevLett.116.248101).
- (9) Schuette, G. MIT Second-Year Qualifying Exam Written Report LaTeX Template, <https://github.com/charlespwd/project-title>, 2023.