EPSRC Centre for Doctoral Training in
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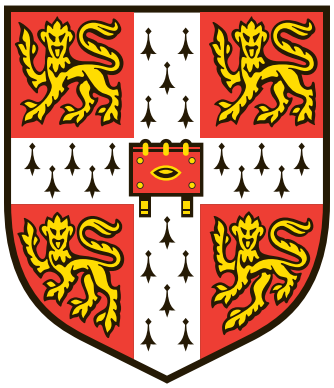
# Sensor CDT MRes Report


## A. N. Author



Department of Chemical Engineering & Biotechnology

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This dissertation is submitted as part-fulfilment for the degree of
Master of Research

Porterhouse College

24 August 2015

The work described in this report is the result of my own research, unaided except as specifically acknowledged in the text, and it does not contain material that has already been used to any substantial extent for a comparable purpose. This report contains 2 pages (excluding this page and the appendices) and 2,500 words.

Signed: *A. N. Author* Date: 24 August 2015

(Student)

I confirm that I have cleared the laboratory space I have used for the work described in this report, to the satisfaction of the Sensor CDT Teaching Fellows and the responsible laboratory technician. All chemical and biological samples have been properly and safely disposed of according to University guidance.

Signed: *A. N. Author* Date: 24 August 2015

(Student)

I confirm that the student above has cleared the laboratory space used in this project to my satisfaction.

Signed: _____ Date: _____

(Senior Teaching Fellow)

# Sensor CDT MRes Report

**A. N. Author**

**This document provides a brief overview of how to use the Sensor CDT MRes report LaTeXtemplate. In addition to the document class, you will need the TeX Gyre Termes, Myriad Pro, XITS Math and DejaVu Sans Mono typefaces installed in your system. It is important to define values for `\title`, `\author`, `\college`, `\date`, and `\wordcount` in the document preamble.**

## Contents



Just start typing the main text after the abstract and table of contents. Don't worry about setting any fonts of anything, this is done for you.

LaTeXprovides environments for producing lists. We can create lists like

1. the first item,
2. the second item,
3. the third item,

by using the `enumerate` environment. Similarly, we can create lists like

- the first item,
- the second item,
- the third item,

by using the `itemize` environment.

After a while, we'll have finished the introduction and will want to move onto the next section. This can be achieved by using the `\section` command.

## 1 A new section

Notice that the section heading has been automatically added to the table of contents with the correct page number. We can add subsections by using the `\subsection` command.

### 1.1 On mathematics and tables.

Again, the subsection heading (and page number) has been added to the table of contents automatically.

We can now write some mathematics, first as a display equation, using the `equation` environment:

$$A = \frac{\partial \theta}{\partial t} + u \cdot \nabla \theta = 0. \tag{1}$$

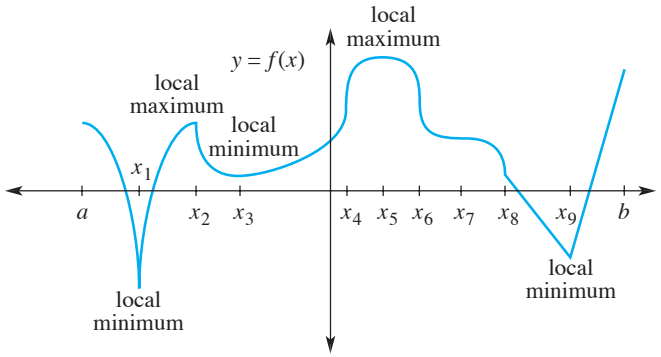


**Figure 1:** LKB1 phosphorylates Thr-172 of AMPKα *in vitro* and activates its kinase activity.

We can also write mathematics inline, like $x^2 + y^2 = z^2$. If the equation should not be numbered, we should use the `equation*` environment. This naming scheme applies to many environments, such that the version suffixed with an asterisk has no number.

Now we've moved onto the second column, without using any command. The typesetting engine will decide when it's best to switch to the next column, as well as determining where tables and figures should sit.

As an example, we'll define a table just after this line in the source, although it won't necessarily appear just below in the typeset PDF. By giving the table a label, we can reference it automatically with `\prettyref{tab:one-column-table}` to produce Table 1. For tables, the use of the `table*` environment means that the table spans two columns, but is still numbered.

**Table 1:** One-column table of repeat length of longer allele by age of onset class.

| | Repeat length | | | | |
|---|---|---|---|---|---|
| Age of onset / years | *n* | Mean | SD | Range | Median |
| Juvenile, 2–20 | 40 | 60.15 | 9.32 | 43–86 | 60 |
| Typical, 21–50 | 377 | 45.72 | 2.97 | 40–58 | 45 |
| Late, > 50 | 26 | 41.85 | 1.56 | 40–45 | 42 |

## 2 On figures

We can define figures in a similar way, with the asterisked version spanning two column. By giving the figure a label, we can reference it automatically with `\prettyref{fig:one-column-figure}` to produce Figure 1.

In addition, the `SCfigure` environment allows us to have a figure with the caption down the side. This is useful for figures that are larger than one column wide, but not quite large enough to span the whole page. Figure 2 demonstrates this.

## 3 On references

There are many ways of producing references in LaTeX, with the two most popular being BibLaTeXand BibTeX. These are outside

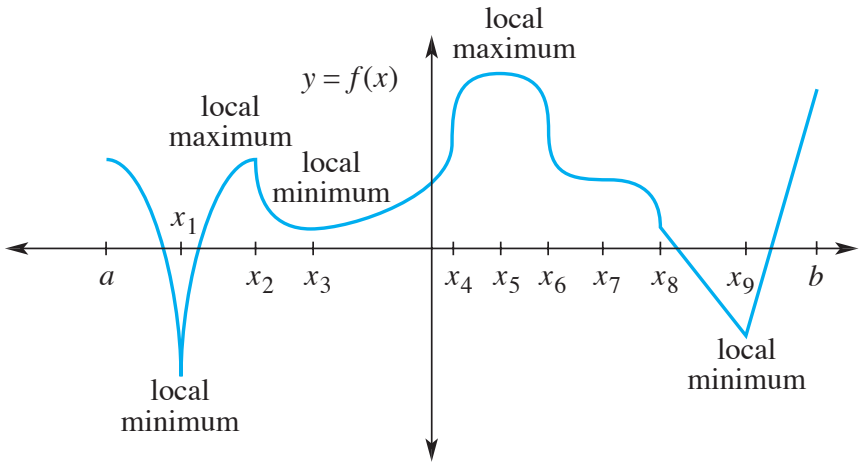


**Figure 2:** LKB1 phosphorylates Thr-172 of AMPKα *in vitro* and activates its kinase activity. This is a long caption that goes on and on to demonstrate how a figure with side caption would look. This kind of figure environment is useful when a figure is too wide for one column, but not wide enough to span an entire page.

the scope of this document, but in both cases citations are added with the `\cite` command, which must be given the key of the reference you want to cite. We can cite [1], [2] and [3] by using `\cite{kadison1959}`, `\cite{anderson1981}` and `\cite{anderson1979}`. The bibliography can then be added to the end of the document by using the `\printbibliography`, for BibLaTeX, or `\bibliography`, for BibTeX, commands.

## 4 Appendices

To add appendices, use the `\appendix` command, followed by `\section` commands for each appendix.

## References

1. Kadison, R. V. & Singer, I. M. Extensions of pure states. *Amer. J. Math.* **81,** 383–400 (1959).
2. Anderson, J. A conjecture concerning the pure states of $B(H)$ and a related theorem. *Topics in Modern Operator Theory,* 27–43 (1981).
3. Anderson, J. Extreme points in sets of positive linear maps on $B(H)$. *J. Funct. Anal.* **31,** 195–217 (1979).

# Appendices

## 1 Some supplemental material

Note that this page does not appear in the page count in the declaration and only has one column.