

The Name of the Title Is Hope

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A clear and well-documented \LaTeX document is presented as an article formatted for publication by ACM in a conference proceedings or journal publication. Based on the “acmart” document class, this article presents and explains many of the common variations, as well as many of the formatting elements an author may use in the preparation of the documentation of their work.

CCS Concepts: • **Do Not Use This Code** → **Generate the Correct Terms for Your Paper**; *Generate the Correct Terms for Your Paper*; Generate the Correct Terms for Your Paper; Generate the Correct Terms for Your Paper.

Additional Key Words and Phrases: Do, Not, Us, This, Code, Put, the, Correct, Terms, for, Your, Paper

ACM Reference Format:

Ben Trovato, G.K.M. Tobin, Lars Thørvöld, Valerie Béranger, Aparna Patel, Huifen Chan, Charles Palmer, John Smith, and Julius P. Kumquat. 2018. The Name of the Title Is Hope. *J. ACM* 37, 4, Article 111 (August 2018), 11 pages. <https://doi.org/XXXXXXXX.XXXXXXX>

1 Introduction

ACM’s consolidated article template, introduced in 2017, provides a consistent \LaTeX style for use across ACM publications, and incorporates accessibility and metadata-extraction functionality necessary for future Digital Library endeavors. Numerous ACM and SIG-specific \LaTeX templates have been examined, and their unique features incorporated into this single new template.

If you are new to publishing with ACM, this document is a valuable guide to the process of preparing your work for publication. If you have published with ACM before, this document provides insight and instruction into more recent changes to the article template.

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ACM 1557-735X/2018/8-ART111

<https://doi.org/XXXXXXXX.XXXXXXX>

The “acmart” document class can be used to prepare articles for any ACM publication — conference or journal, and for any stage of publication, from review to final “camera-ready” copy, to the author’s own version, with *very* few changes to the source.

2 Template Overview

As noted in the introduction, the “acmart” document class can be used to prepare many different kinds of documentation — a double-anonymous initial submission of a full-length technical paper, a two-page SIGGRAPH Emerging Technologies abstract, a “camera-ready” journal article, a SIGCHI Extended Abstract, and more — all by selecting the appropriate *template style* and *template parameters*.

This document will explain the major features of the document class. For further information, the *LaTeX User’s Guide* is available from <https://www.acm.org/publications/proceedings-template>.

2.1 Template Styles

The primary parameter given to the “acmart” document class is the *template style* which corresponds to the kind of publication or SIG publishing the work. This parameter is enclosed in square brackets and is a part of the `documentclass` command:

```
\documentclass[STYLE]{acmart}
```

Journals use one of three template styles. All but three ACM journals use the `acmsmall` template style:

- `acmsmall`: The default journal template style.
- `acmlarge`: Used by JOCCH and TAP.
- `acmtog`: Used by TOG.

The majority of conference proceedings documentation will use the `acmconf` template style.

- `sigconf`: The default proceedings template style.
- `sigchi`: Used for SIGCHI conference articles.
- `sigplan`: Used for SIGPLAN conference articles.

2.2 Template Parameters

In addition to specifying the *template style* to be used in formatting your work, there are a number of *template parameters* which modify some part of the applied template style. A complete list of these parameters can be found in the *LaTeX User’s Guide*.

Frequently-used parameters, or combinations of parameters, include:

- `anonymous, review`: Suitable for a “double-anonymous” conference submission. Anonymizes the work and includes line numbers. Use with the `\acmSubmissionID` command to print the submission’s unique ID on each page of the work.
- `authorversion`: Produces a version of the work suitable for posting by the author.
- `screen`: Produces colored hyperlinks.

This document uses the following string as the first command in the source file:

```
\documentclass[acmsmall, screen, review]{acmart}
```

3 Modifications

Modifying the template — including but not limited to: adjusting margins, typeface sizes, line spacing, paragraph and list definitions, and the use of the `\vspace` command to manually adjust the vertical spacing between elements of your work — is not allowed.

Your document will be returned to you for revision if modifications are discovered.

4 Typefaces

The “acmart” document class requires the use of the “Libertine” typeface family. Your \TeX installation should include this set of packages. Please do not substitute other typefaces. The “lmodern” and “ltimes” packages should not be used, as they will override the built-in typeface families.

5 Title Information

The title of your work should use capital letters appropriately - <https://capitalizemytitle.com/> has useful rules for capitalization. Use the `title` command to define the title of your work. If your work has a subtitle, define it with the `subtitle` command. Do not insert line breaks in your title.

If your title is lengthy, you must define a short version to be used in the page headers, to prevent overlapping text. The `title` command has a “short title” parameter:

```
\title[short title]{full title}
```

6 Authors and Affiliations

Each author must be defined separately for accurate metadata identification. As an exception, multiple authors may share one affiliation. Authors’ names should not be abbreviated; use full first names wherever possible. Include authors’ e-mail addresses whenever possible.

Grouping authors’ names or e-mail addresses, or providing an “e-mail alias,” as shown below, is not acceptable:

```
\author{Brooke Aster, David Mehldau}
\email{dave,judy,steve@university.edu}
\email{firstname.lastname@phillips.org}
```

The `authornote` and `authornotemark` commands allow a note to apply to multiple authors — for example, if the first two authors of an article contributed equally to the work.

If your author list is lengthy, you must define a shortened version of the list of authors to be used in the page headers, to prevent overlapping text. The following command should be placed just after the last `\author{}` definition:

```
\renewcommand{\shortauthors}{McCartney, et al.}
```

Omitting this command will force the use of a concatenated list of all of the authors’ names, which may result in overlapping text in the page headers.

The article template’s documentation, available at <https://www.acm.org/publications/proceedings-template>, has a complete explanation of these commands and tips for their effective use.

Note that authors’ addresses are mandatory for journal articles.

7 Rights Information

Authors of any work published by ACM will need to complete a rights form. Depending on the kind of work, and the rights management choice made by the author, this may be copyright transfer, permission, license, or an OA (open access) agreement.

Regardless of the rights management choice, the author will receive a copy of the completed rights form once it has been submitted. This form contains \LaTeX commands that must be copied into the source document. When the document source is compiled, these commands and their parameters add formatted text to several areas of the final document:

- the “ACM Reference Format” text on the first page.
- the “rights management” text on the first page.
- the conference information in the page header(s).

148 Rights information is unique to the work; if you are preparing several works for an event, make
 149 sure to use the correct set of commands with each of the works.

150 The ACM Reference Format text is required for all articles over one page in length, and is optional
 151 for one-page articles (abstracts).

152

153 8 CCS Concepts and User-Defined Keywords

154 Two elements of the “acmart” document class provide powerful taxonomic tools for you to help
 155 readers find your work in an online search.

156 The ACM Computing Classification System — <https://www.acm.org/publications/class-2012> — is
 157 a set of classifiers and concepts that describe the computing discipline. Authors can select entries
 158 from this classification system, via <https://dl.acm.org/ccs/ccs.cfm>, and generate the commands to
 159 be included in the \LaTeX source.

160 User-defined keywords are a comma-separated list of words and phrases of the authors’ choosing,
 161 providing a more flexible way of describing the research being presented.

162 CCS concepts and user-defined keywords are required for all articles over two pages in length,
 163 and are optional for one- and two-page articles (or abstracts).

164

165 9 Sectioning Commands

166 Your work should use standard \LaTeX sectioning commands: `\section`, `\subsection`, `\subsubsection`,
 167 `\paragraph`, and `\subparagraph`. The sectioning levels up to `\subsubsection` should be numbered;
 168 do not remove the numbering from the commands.

169 Simulating a sectioning command by setting the first word or words of a paragraph in boldface
 170 or italicized text is **not allowed**.

171 Below are examples of sectioning commands.

172

173 9.1 Subsection

174 This is a subsection.

175

176 *9.1.1 Subsubsection.* This is a subsubsection.

177

178 *Paragraph.* This is a paragraph.

179 Subparagraph This is a subparagraph.

180

181 10 Tables

182 The “acmart” document class includes the “booktabs” package — <https://ctan.org/pkg/booktabs> —
 183 for preparing high-quality tables.

184 Table captions are placed *above* the table.

185 Because tables cannot be split across pages, the best placement for them is typically the top
 186 of the page nearest their initial cite. To ensure this proper “floating” placement of tables, use the
 187 environment `table` to enclose the table’s contents and the table caption. The contents of the table
 188 itself must go in the `tabular` environment, to be aligned properly in rows and columns, with the
 189 desired horizontal and vertical rules. Again, detailed instructions on `tabular` material are found in
 190 the *\LaTeX User’s Guide*.

191 Immediately following this sentence is the point at which Table 1 is included in the input file;
 192 compare the placement of the table here with the table in the printed output of this document.

193 To set a wider table, which takes up the whole width of the page’s live area, use the environment
 194 `table*` to enclose the table’s contents and the table caption. As with a single-column table, this
 195 wide table will “float” to a location deemed more desirable. Immediately following this sentence

196

Table 1. Frequency of Special Characters

Non-English or Math	Frequency	Comments
∅	1 in 1,000	For Swedish names
π	1 in 5	Common in math
\$	4 in 5	Used in business
Ψ_1^2	1 in 40,000	Unexplained usage

Table 2. Some Typical Commands

Command	A Number	Comments
<code>\author</code>	100	Author
<code>\table</code>	300	For tables
<code>\table*</code>	400	For wider tables

is the point at which Table 2 is included in the input file; again, it is instructive to compare the placement of the table here with the table in the printed output of this document.

Always use `midrule` to separate table header rows from data rows, and use it only for this purpose. This enables assistive technologies to recognise table headers and support their users in navigating tables more easily.

11 Math Equations

You may want to display math equations in three distinct styles: inline, numbered or non-numbered display. Each of the three are discussed in the next sections.

11.1 Inline (In-text) Equations

A formula that appears in the running text is called an inline or in-text formula. It is produced by the `math` environment, which can be invoked with the usual `\begin . . . \end` construction or with the short form `$. . . $`. You can use any of the symbols and structures, from α to ω , available in \LaTeX [25]; this section will simply show a few examples of in-text equations in context. Notice how this equation: $\lim_{n \rightarrow \infty} x = 0$, set here in in-line math style, looks slightly different when set in display style. (See next section).

11.2 Display Equations

A numbered display equation—one set off by vertical space from the text and centered horizontally—is produced by the `equation` environment. An unnumbered display equation is produced by the `displaymath` environment.

Again, in either environment, you can use any of the symbols and structures available in \LaTeX ; this section will just give a couple of examples of display equations in context. First, consider the equation, shown as an inline equation above:

$$\lim_{n \rightarrow \infty} x = 0 \tag{1}$$

246 Notice how it is formatted somewhat differently in the `displaymath` environment. Now, we'll
 247 enter an unnumbered equation:

248
$$\sum_{i=0}^{\infty} x + 1$$

251 and follow it with another numbered equation:

252
$$\sum_{i=0}^{\infty} x_i = \int_0^{\pi+2} f$$
 (2)

255 just to demonstrate \LaTeX 's able handling of numbering.

257 12 Figures

258 The “figure” environment should be used for figures. One or more images can be placed within a
 259 figure. If your figure contains third-party material, you must clearly identify it as such, as shown in
 260 the example below.



288
289 Fig. 1. 1907 Franklin Model D roadster. Photograph by Harris & Ewing, Inc. [Public domain], via Wikimedia
 290 Commons. (<https://goo.gl/VLCRBB>).

291
292 Your figures should contain a caption which describes the figure to the reader.
 293 Figure captions are placed *below* the figure.

Every figure should also have a figure description unless it is purely decorative. These descriptions convey what’s in the image to someone who cannot see it. They are also used by search engine crawlers for indexing images, and when images cannot be loaded.

A figure description must be unformatted plain text less than 2000 characters long (including spaces). **Figure descriptions should not repeat the figure caption – their purpose is to capture important information that is not already provided in the caption or the main text of the paper.** For figures that convey important and complex new information, a short text description may not be adequate. More complex alternative descriptions can be placed in an appendix and referenced in a short figure description. For example, provide a data table capturing the information in a bar chart, or a structured list representing a graph. For additional information regarding how best to write figure descriptions and why doing this is so important, please see <https://www.acm.org/publications/taps/describing-figures/>.

12.1 The “Teaser Figure”

A “teaser figure” is an image, or set of images in one figure, that are placed after all author and affiliation information, and before the body of the article, spanning the page. If you wish to have such a figure in your article, place the command immediately before the `\maketitle` command:

```
\begin{teaserfigure}
  \includegraphics[width=\textwidth]{sampleteaser}
  \caption{figure caption}
  \Description{figure description}
\end{teaserfigure}
```

13 Citations and Bibliographies

The use of Bib_T_EX for the preparation and formatting of one’s references is strongly recommended. Authors’ names should be complete — use full first names (“Donald E. Knuth”) not initials (“D. E. Knuth”) — and the salient identifying features of a reference should be included: title, year, volume, number, pages, article DOI, etc.

The bibliography is included in your source document with these two commands, placed just before the `\end{document}` command:

```
\bibliographystyle{ACM-Reference-Format}
\bibliography{bibfile}
```

where “bibfile” is the name, without the “.bib” suffix, of the Bib_T_EX file.

Citations and references are numbered by default. A small number of ACM publications have citations and references formatted in the “author year” style; for these exceptions, please include this command in the **preamble** (before the command “`\begin{document}`”) of your \LaTeX source:

```
\citestyle{acmauthoryear}
```

Some examples. A paginated journal article [2], an enumerated journal article [11], a reference to an entire issue [10], a monograph (whole book) [24], a monograph/whole book in a series (see 2a in spec. document) [18], a divisible-book such as an anthology or compilation [13] followed by the same example, however we only output the series if the volume number is given [14] (so Editor00a’s series should NOT be present since it has no vol. no.), a chapter in a divisible book [37], a chapter in a divisible book in a series [12], a multi-volume work as book [23], a couple of articles in a proceedings (of a conference, symposium, workshop for example) (paginated proceedings article) [3, 16], a proceedings article with all possible elements [36], an example of an enumerated proceedings article [15], an informally published work [17], a couple of preprints [6, 8], a doctoral dissertation [9], a master’s thesis: [4], an online document / world wide web resource [1, 29, 38], a

344 video game (Case 1) [28] and (Case 2) [27] and [26] and (Case 3) a patent [35], work accepted for
 345 publication [32], 'YYYYb'-test for prolific author [33] and [34]. Other cites might contain 'duplicate'
 346 DOI and URLs (some SIAM articles) [22]. Boris / Barbara Beeton: multi-volume works as books
 347 [20] and [19]. A presentation [31]. An article under review [7]. A couple of citations with DOIs:
 348 [21, 22]. Online citations: [38–40]. Artifacts: [30] and [5].

349

350 14 Acknowledgments

351 Identification of funding sources and other support, and thanks to individuals and groups that
 352 assisted in the research and the preparation of the work should be included in an acknowledgment
 353 section, which is placed just before the reference section in your document.

354 This section has a special environment:

355 `\begin{acks}`

356

357 `...`

358 `\end{acks}`

359 so that the information contained therein can be more easily collected during the article metadata
 360 extraction phase, and to ensure consistency in the spelling of the section heading.

361 Authors should not prepare this section as a numbered or unnumbered `\section`; please use the
 362 “acks” environment.

363

364 15 Appendices

365 If your work needs an appendix, add it before the “`\end{document}`” command at the conclusion
 366 of your source document.

367 Start the appendix with the “appendix” command:

368 `\appendix`

369 and note that in the appendix, sections are lettered, not numbered. This document has two appen-
 370 dices, demonstrating the section and subsection identification method.

371

372 16 Multi-language papers

373 Papers may be written in languages other than English or include titles, subtitles, keywords and
 374 abstracts in different languages (as a rule, a paper in a language other than English should include
 375 an English title and an English abstract). Use `language=...` for every language used in the paper.
 376 The last language indicated is the main language of the paper. For example, a French paper with
 377 additional titles and abstracts in English and German may start with the following command

378 `\documentclass[sigconf, language=english, language=german,`
 379 `language=french]{acmart}`

380

381 The title, subtitle, keywords and abstract will be typeset in the main language of the paper. The
 382 commands `\translatedXXX`, `XXX` begin title, subtitle and keywords, can be used to set these ele-
 383 ments in the other languages. The environment `translatedabstract` is used to set the translation
 384 of the abstract. These commands and environment have a mandatory first argument: the language
 385 of the second argument. See `sample-sigconf-i13n.tex` file for examples of their usage.

386

387 17 SIGCHI Extended Abstracts

388 The “sigchi-a” template style (available only in \LaTeX and not in Word) produces a landscape-
 389 orientation formatted article, with a wide left margin. Three environments are available for use
 390 with the “sigchi-a” template style, and produce formatted output in the margin:

391

sidebar: Place formatted text in the margin.

392

marginfigure: Place a figure in the margin.

marginable: Place a table in the margin.

Acknowledgments

To Robert, for the bagels and explaining CMYK and color spaces.

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477 A Research Methods

478 A.1 Part One

479 Lorem ipsum dolor sit amet, consectetur adipiscing elit. Morbi malesuada, quam in pulvinar varius,
 480 metus nunc fermentum urna, id sollicitudin purus odio sit amet enim. Aliquam ullamcorper eu
 481 ipsum vel mollis. Curabitur quis dictum nisl. Phasellus vel semper risus, et lacinia dolor. Integer
 482 ultricies commodo sem nec semper.

483 A.2 Part Two

484 Etiam commodo feugiat nisl pulvinar pellentesque. Etiam auctor sodales ligula, non varius nibh
 485 pulvinar semper. Suspendisse nec lectus non ipsum convallis congue hendrerit vitae sapien. Donec
 486 at laoreet eros. Vivamus non purus placerat, scelerisque diam eu, cursus ante. Etiam aliquam tortor
 487 auctor efficitur mattis.

488 B Online Resources

489 Nam id fermentum dui. Suspendisse sagittis tortor a nulla mollis, in pulvinar ex pretium. Sed
 490 interdum orci quis metus euismod, et sagittis enim maximus. Vestibulum gravida massa ut felis

491 suscipit congue. Quisque mattis elit a risus ultrices commodo venenatis eget dui. Etiam sagittis
492 eleifend elementum.

493 Nam interdum magna at lectus dignissim, ac dignissim lorem rhoncus. Maecenas eu arcu ac
494 neque placerat aliquam. Nunc pulvinar massa et mattis lacinia.

495 Received 20 February 2007; revised 12 March 2009; accepted 5 June 2009
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