

The Name of the Title Is Hope

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A clear and well-documented L^AT_EX 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, Use, This, Code, Put, the, Correct, Terms, for, Your, Paper

ACM Reference Format:

Ben Trovato, G.K.M. Tobin, Lars Thørväld, 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/XXXXXX.XXXXXXX>

1 Introduction

ACM’s consolidated article template, introduced in 2017, provides a consistent L^AT_EX style for use across ACM publications, and incorporates accessibility and metadata-extraction functionality necessary for future Digital Library endeavors. Numerous ACM and SIG-specific L^AT_EX 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/XXXXXX.XXXXXXX>

50 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
 51 author’s own version, with *very* few changes to the source.
 52

53 2 Template Overview

54 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,
 55 a two-page SIGGRAPH Emerging Technologies abstract, a “camera-ready” journal article, a
 56 SIGCHI Extended Abstract, and more — all by selecting the appropriate *template style* and *template
 57 parameters*.

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

60 2.1 Template Styles

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

64 \documentclass[STYLE]{acmart}

65 Journals use one of three template styles. All but three ACM journals use the `acmsmall` template
 66 style:
 67

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

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

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

75 2.2 Template Parameters

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

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

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

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

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

87 3 Modifications

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

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

99 4 Typefaces

100 The “acmart” document class requires the use of the “Libertine” typeface family. Your \TeX installation
101 should include this set of packages. Please do not substitute other typefaces. The “lmodern”
102 and “ltimes” packages should not be used, as they will override the built-in typeface families.
103

104 5 Title Information

105 The title of your work should use capital letters appropriately - <https://capitalizemytitle.com/> has
106 useful rules for capitalization. Use the `title` command to define the title of your work. If your
107 work has a subtitle, define it with the `subtitle` command. Do not insert line breaks in your title.
108

109 If your title is lengthy, you must define a short version to be used in the page headers, to prevent
110 overlapping text. The `title` command has a “short title” parameter:
111

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

112 6 Authors and Affiliations

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

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

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

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

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

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

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

131 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.

133 Note that authors’ addresses are mandatory for journal articles.

135 7 Rights Information

136 Authors of any work published by ACM will need to complete a rights form. Depending on the kind
137 of work, and the rights management choice made by the author, this may be copyright transfer,
138 permission, license, or an OA (open access) agreement.
139

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

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

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

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

8 CCS Concepts and User-Defined Keywords

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

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

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

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

9 Sectioning Commands

Your work should use standard *L^AT_EX* sectioning commands: \section, \subsection, \subsubsection, \paragraph, and \ subparagraph. The sectioning levels up to \subsubsection should be numbered; do not remove the numbering from the commands.

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

Below are examples of sectioning commands.

9.1 Subsection

This is a subsection.

9.1.1 Subsubsection

This is a subsubsection.

Paragraph. This is a paragraph.

Subparagraph This is a subparagraph.

10 Tables

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

Table captions are placed *above* the table.

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

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

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

197 Table 1. Frequency of Special Characters
198

199	Non-English or Math	Frequency	Comments
200	\emptyset	1 in 1,000	For Swedish names
201	π	1 in 5	Common in math
202	\$	4 in 5	Used in business
203	Ψ_1^2	1 in 40,000	Unexplained usage
204			

205 Table 2. Some Typical Commands
206
207

209	Command	A Number	Comments
210	\author	100	Author
211	\table	300	For tables
212	\table*	400	For wider tables
213			

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

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

222 11 Math Equations

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

226 11.1 Inline (In-text) Equations

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

234 11.2 Display Equations

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

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

$$243 \quad \lim_{n \rightarrow \infty} x = 0 \quad (1)$$

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

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

250 and follow it with another numbered equation:
 251

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

252 just to demonstrate L^AT_EX's able handling of numbering.
 253

254 12 Figures

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



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

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

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

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

307 308 12.1 The “Teaser Figure”

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

```
312 \begin{teaserfigure}
313   \includegraphics[width=\textwidth]{sampleteaser}
314   \caption{figure caption}
315   \Description{figure description}
316 \end{teaserfigure}
```

318 13 Citations and Bibliographies

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

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

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

327 where “`bibfile`” is the name, without the “`.bib`” suffix, of the Bib \TeX file.

328 Citations and references are numbered by default. A small number of ACM publications have
 329 citations and references formatted in the “author year” style; for these exceptions, please include
 330 this command in the **preamble** (before the command “`\begin{document}`”) of your \LaTeX source:
 331

```
332 \citestyle{acmauthoryear}
```

333 Some examples. A paginated journal article [2], an enumerated journal article [11], a reference
 334 to an entire issue [10], a monograph (whole book) [24], a monograph/whole book in a series (see
 335 2a in spec. document) [18], a divisible-book such as an anthology or compilation [13] followed
 336 by the same example, however we only output the series if the volume number is given [14] (so
 337 Editor00a's series should NOT be present since it has no vol. no.), a chapter in a divisible book [37],
 338 a chapter in a divisible book in a series [12], a multi-volume work as book [23], a couple of articles
 339 in a proceedings (of a conference, symposium, workshop for example) (paginated proceedings
 340 article) [3, 16], a proceedings article with all possible elements [36], an example of an enumerated
 341 proceedings article [15], an informally published work [17], a couple of preprints [6, 8], a doctoral
 342 dissertation [9], a master's thesis: [4], an online document / world wide web resource [1, 29, 38], a
 343

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 \end{acks}
```

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

360 Authors should not prepare this section as a numbered or unnumbered \section; please use the
 361 "acks" environment.

363 15 Appendices

364 If your work needs an appendix, add it before the "\end{document}" command at the conclusion
 365 of your source document.

366 Start the appendix with the "appendix" command:

```
367 \appendix
```

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

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

386 17 SIGCHI Extended Abstracts

388 The "sigchi-a" template style (available only in L^AT_EX 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

393 **marginfigure:** Place a figure in the margin.

394 **margintable:** Place a table in the margin.

395

396 Acknowledgments

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

398

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400

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A Research Methods

A.1 Part One

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

A.2 Part Two

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

B Online Resources

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

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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