BIOMETRICS AUTHOR SUBMISSION GUIDE:
SETTING UP YOUR LATEX 2$_\varepsilon$ FILES

This guide explains the use of the `biom` document class file for LATEX 2$_\varepsilon$. This document class allows authors to prepare manuscripts for submission to *Biometrics*, the final appearance and layout of which is that of a typeset article appearing in the journal. Authors should use the document class to prepare a postscript or PDF version of their papers for submission for consideration by the editors, as the *Biometrics* Central Editorial Office and Blackwell Publishing do not have access to LATEX 2$_\varepsilon$ software and therefore cannot process LATEX 2$_\varepsilon$ source files directly.

The `biom` class file is based on the `mn` style file, which in turn is based on `article` style as discussed in Lamport's LATEX manual (LATEX: *A Document Preparation System*, Addison Wesley, Reading, Mass., 1994. ISBN 0201529831).

Commands that differ from the standard LATEX interface, or that are provided in addition to the standard interface, are explained in this guide. This guide is not a substitute for a comprehensive LATEX manual itself. Authors planning to prepare their papers using LATEX are advised to use `biom.cls` as early as possible in the creation of their files so as to avoid possible conflicts that may emerge upon switching to the document class later.

Distributed with the `biom.cls` file are the LATEX source for three specimen (example) articles, `biomsample.tex` and `biomsample_bib.tex`, whose content is nonsensical but which exhibit several features of the document class; and `biomsample2.tex`, which uses the document class to typeset an actual, previously-published *Biometrics* article. Also included is the file `biomtemplate.tex`, which authors may use as a template for creating the LATEX source for their own manuscripts. The file `biomtemplate.tex` is heavily documented with comments that address many issues of convention and style. The distribution also includes a custom package, `endrotfloat.sty`, which is used by `biom.cls` when tables presented in landscape model are included in a document (see Section 2.2). Additional LATEX packages may be required to implement some features discussed in this guide. These packages are noted in the relevant sections of this guide. If these packages are not already incorporated in your local distribution of LATEX they may be obtained from the Comprehensive TEX Archive Network (CTAN) at `http://www.ctan.org/`. Finally, the distribution also includes additional files of interest to users of BiBTeX, discussed in Section 4.7.3.

1. The BIOM Document Class

The use of LATEX document classes allows a simple change of class to transform the appearance of your document. The `biom` class file preserves the standard LATEX interface such that any document that can be produced using the standard LATEX `article` class can also be produced with the `biom` class file. However, the measure (or width of text) is broader than the default for `article`, and even narrower than for the `A4` style.

It is likely that, should your article be accepted for publication, the final formatting of will change slightly from that produced when you yourself process it using `biom.cls`. For this reason, we ask that you ignore details such as slightly long lines, page stretching, or figures falling out of synchronization, because these details can be dealt with at a later stage by the publisher. Please also use symbolic references (`\ref`) in order to protect against late changes of order of sections, equations, etc.

All papers submitted to *Biometrics* should be prepared using the referee option in the `documentclass` command, as discussed in Section 2. This option produces a version of the manuscript suitable for review by editors and referees, obeying the journal convention of 1 inch margins, 25 lines per page, and 12 point type. Submitted manuscripts prepared without invoking the `referee` option will be returned to the authors for reformatting.

2. Using the BIOM Class File

If the file `biom.cls` is not already in the appropriate system directory for LATEX files, either arrange for it to be put there or copy it to your working directory. The `biom` document class is implemented as a complete class, *not* a document style option. In order to use the Biometrics document class, replace `article` by `biom` in the `\documentclass` command at the beginning of your document; that is,

`\documentclass{article}`

is replaced by

`\documentclass{biom}`

In general, the following standard document style options should *not* be used with the `biom` class file:

(1) `10pt`, `11pt`, `12pt` – unavailable;
(2) `twoside` (no associated style file) – `twoside` is the default;
(3) `fleqn`, `leqno`, `titlepage` – should not be used (`fleqn` is already incorporated into the Biometrics style);
(4) `twocolumn` – is not necessary as it is the default style.

The `biom` class file has been designed to operate with the standard version of `lfonts.tex` that is distributed as part of LATEX. Attempt to typeset the specimen or template files mentioned above. If you encounter font problems, you might investigate whether a non-standard version of `lfonts.tex` has been installed in your system.

Authors using LATEX wishing to create PDF files with smooth fonts are advised to read Adobe FaxYI Document Number 131303 by Kendall Whitehouse. Type 1 PostScript versions of the Computer Modern fonts are now freely available and are normally installed with new TEX/LATEX software.

2.1 *Additional Document Style Options*

The following additional style options are available with the `biom` class file:

`onecolumn` – to be used *only* when two-column output is unable to accommodate long equations;
`doublespacing` – this will double-space your article by setting `\baselinestretch` to 2.
`referee` – this enables the production of a version of the manuscript suitable for review by editors and referees. **All papers submitted for publication should be prepared using this option.**
`galley` – no running heads, no attempt to align the bottom of columns.
`useAMS` – this enables the production of upright Greek characters π, μ and ∂.
`usedcolumn` – this uses the package file `dcolumn.sty` to define two new types of column alignment for use in tables.
`usenatbib` – this uses Patrick Daly's `natbib` package for cross-referencing.
`usegraphicx` – this enables the use of the `graphicx` package for inclusion of figures. Note that the standard LATEX graphics package `graphicx.sty` is required in order to use the `usegraphicx` option.

Please place any additional command definitions at the very start of the LATEX file, before the `\begin{document}`. For example, user-defined `\def` and `\newcommand` commands that define macros for technical expressions used in the manuscript should be placed here. Other author-defined macros should be kept to a minimum. Please do not include macros that are not used in the document. Also, please do not customize the Biometrics macros or class file, or redefine macros that are already in the class file, and please do not include additional definitions unless they are actually used in the paper.

2.2 *Landscaping Pages*

If a table is too wide to fit the standard measure, it may be turned, with its caption, 90 degrees. Landscape tables cannot be produced directly using the `biom` class file because TEX itself cannot turn the page, and not all device drivers provide such a facility. The following procedure can be used to produce such pages.

(1) Use the package `rotating` in your document (see the specimen and template files for examples) and change the coding from
`\begin{table}...\end{table}`

to

`\begin{sidewaystable}...\end{sidewaystable}`
environments in your document to turn your table on the appropriate page of your document. For instance, the

following code prints a page with the running head, a message half way down and the table number towards the bottom.

```
\begin{sidewaystable}
  \caption{Landscape table to go here.}
 \label{landtab}
\end{sidewaystable}
```

3. Additional Facilities

In addition to all the standard LATEX design elements, the `biom` class file includes a number of custom features. These are noted throughout this guide. Once you have used these additional `biom.cls` facilities in your document, do not process it with a standard LATEX class file.

3.1 *Titles and Author's Name(s)*

The title of the article and the author's name and affiliation (or authors' names and affiliations) are used at the beginning of the article for the main title. At the beginning of your article, the title should be generated in the usual way using the `\maketitle` command. See the specimen files and the template file for demonstration, and see the following sections for more details.

3.2 *Running Headline*

A shortened version of the title of the manuscript will be used as a running headline at the top of every odd-numbered page. Although the full manuscript title can run to several lines of text, the running headline must be a single line. Moreover, new line commands (e.g. \\) are not acceptable in a running headline. To enable you to specify a short running head, the standard `\title` command has been extended to take an optional argument to be used as the running headline. The running headlines can be produced using the following code:

```
\title[This is a Shortened Article Title]
      {This is an Example of a Rather Long and Drawn Out Full-Length
      Article Title}
```

For even-numbered pages, if you include the `\pubyear` and `\artmonth` commands, the running head will show the month and year you specify; for example:

```
\pubyear{2008}
\artmonth{December}
```

will produce *Biometrics, December 2008* on each even-numbered page.

The `\pagestyle` and `\thispagestyle` commands should not be used. Similarly, the commands `\markright` and `\markboth` should not be necessary.

3.3 *Author Names and Affiliations*

The `\author`, `\email`, and `\emailx` commands may be used in combination to produce author/affiliation displays consistent with the *Biometrics* style conventions. The `\email` command produces the email address specified with an asterisk "*" superscript, so that it may be footnoted in the author list. The `\emailx` command produces the email address with no such superscript.

The following are examples of how to create author and affiliation displays consistent with the journal conventions for several different scenarios. These examples appear in the template file and may be customized for your document.

(1) For a single authored manuscript. Use `\emailx` so that no asterisk footnoting for the email address will be produced.

```
\author{John Author\emailx{email@address.edu} \\
Department of Statistics, University of Warwick, Coventry CV4 7AL, U.K.}
```

(2) For two authors from the same institution, with both emails, use `\email` to produce the asterisk footnoting for each email address.

```
\author{John Author$^{*}$\email{author@address.edu} and
Kathy Authoress$^{**}$\email{email2@address.edu} \\
Department of Statistics, University of Warwick, Coventry CV4 7AL, U.K.}
```

(3) For exactly two authors from different institutions, both with email addresses, use `\emailx` here so that no asterisk footnoting for the email addresses is produced.

```
\author
{John Author\emailx{author@address.edu} \\
Department of Statistics, University of Warwick, Coventry CV4 7AL, U.K.
\and
Kathy Author\emailx{anotherauthor@address.edu} \\
Department of Biostatistics, University of North Carolina at Chapel Hill,
Chapel Hill, North Carolina, U.S.A.}
```

(4) For three or more authors from same institution with all emails displayed and footnoted using asterisks, use `\email` as follows

```
\author{John Author$^*$\email{author@address.edu},
Jane Author$^{**}$\email{jane@address.edu}, and
Dick Author$^{***}$\email{dick@address.edu} \\
Department of Statistics, University of Warwick, Coventry CV4 7AL, U.K}
```

(5) For three or more authors from same institution with one corresponding email displayed, use `\email`.

```
\author{John Author$^*$\email{author@address.edu},
Jane Author, and Dick Author \\
Department of Statistics, University of Warwick, Coventry CV4 7AL, U.K}
```

(6) For three or more authors, with at least two different institutions and more than one email displayed, use `\email` as follows

```
\author{John Author$^{1,*}$\email{author@address.edu},
Kathy Author$^{2,**}$\email{anotherauthor@address.edu}, and
Wilma Flinstone$^{3,***}$\email{wilma@bedrock.edu} \\
$^{1}$Department of Statistics, University of Warwick, Coventry CV4 7AL, U.K \\
$^{2}$Department of Biostatistics, University of North Carolina at
Chapel Hill, Chapel Hill, North Carolina, U.S.A. \\
$^{3}$Department of Geology, University of Bedrock, Bedrock, Kansas, U.S.A.}
```

(7) For three or more authors with at least two different institutions and only one email displayed, use `\email`.

```
\author{John Author$^{1,*}$\email{author@address.edu},
Wilma Flinstone$^{2}$, and Barney Rubble$^{2}$ \\
$^{1}$Department of Statistics, University of Warwick, Coventry CV4 7AL, U.K \\
$^{2}$Department of Geology, University of Bedrock, Bedrock, Kansas, U.S.A.}
```

Note that, in all of these examples, you must create the footnotes manually. If your configuration of authors, affiliations, and email addresses is not demonstrated explicitly above, please review recent issues of *Biometrics* to find an instance of your configuration, and, using the examples above to assist you, make sure that your display is consistent with the convention shown in the journal for your configuration.

3.4 *Abstracts and Key Words*

The abstract should be enclosed within an `abstract` environment, followed immediately by the key words, presented in alphabetical order, enclosed in a `keywords` environment. For example:

```
\begin{abstract}
 This guide is for authors who are preparing papers for
 \textit{Biometrics}, published by the International Biometric
 Society}, using the \LaTeXe\ document preparation system and the {\tt
```

```
 biom} class file.
\end{abstract}
\begin{keywords}
\verb"biom.cls"\; Class files; \LaTeXe\,; Sample text; User guide.
\end{keywords}

\maketitle

\section{Introduction}
```

The headings "Summary:" and "Key words:" are created automatically, and the key words are followed by vertical space. For example,

```
\begin{abstract}
  :
\end{abstract}

\begin{keywords}
  :
\end{keywords}

\maketitle

\section{Introduction}
```

4. Some Guidelines for Using Standard Facilities

The following notes may help you achieve the best effects with the `biom` class file.

4.1 *Sections*

LATEX 2ε provides four levels of section headings, and they are all defined in the `biom` class file:

```
\section
\subsection
\subsubsection
\paragraph
```

However, the use of `\subsubsection` and `\paragraph` headings is generally discouraged. In the `\section` and `\subsection` headings, the first letter of each major word (except for articles, conjunctions, etc.) should be capitalized.

Section numbers are automatically generated for section, subsection, subsubsection and paragraph headings, and headings are displayed in the typeface consistent with the journal style for that type of heading.

4.2 *Lists*

The `biom` class file provides unnumbered lists using the `description` environment for example,

First unnumbered item has no label and is indented from the left margin if it wraps to a second line, which in this
  example it definitely does
Second unnumbered item.
Third unnumbered item which has no label

was produced by:

```
\begin{description}
 \item First unnumbered item...
 \item Second unnumbered item.
 \item Third unnumbered item which has no label
\end{description}
```

The `biom` class file also provides bullet/itemize lists using the `itemize` environment for example,

- First unnumbered item has no label and is indented from the left margin if it wraps to a second line, which in this example it definitely does
- Second unnumbered item.
- Third unnumbered item which has no label and is indented from the left margin.

was produced by:

```
\begin{itemize}
  \item First unnumbered item which has no label and is indented from the left margin which has no label.
  \item Second unnumbered item.
  \item Third unnumbered item which has no label and is indented from the left margin.
\end{itemize}
```

Numbered lists is also provided in `biom` class file using the `enumerate` environment for example,

(1) The attenuated and diluted stellar radiation. The attenuated and diluted stellar radiation;
(2) Scattered radiation, and
(3) Reradiation from other grains.

was produced by:

```
\begin{enumerate}
  \item The attenuated and diluted stellar radiation. The attenuated and diluted stellar radiation;
  \item Scattered radiation, and
  \item Reradiation from other grains.
\end{enumerate}
```

Note here the the standard form of the `enumerate` environment has been replaced by a style consistent with the *Biometrics* convention for numbered lists. The following example shows how to obtain the standard form:

1. The attenuated and diluted stellar radiation;
2. Scattered radiation, and
3. Reradiation from other grains.

was produced by:

```
\begin{enumerate}
  \item[1.] The attenuated and diluted stellar radiation;
  \item[2.] Scattered radiation, and
  \item[3.] Reradiation from other grains.
\end{enumerate}
```

4.3 *Figures*

The `biom` class file will cope with most positioning of your figures in the final version of your manuscript when it is prepared using the default journal two-column, single-spaced format. You should place figures close to (but usually after) the points in the text where they are first referenced. When the `referee` option is used, all figures will be displayed at the end of the document, but you should nonetheless place them as for the final version. Although you are preparing an article for submission using the `referee` option, viewing your article in the default, two-column format will show you whether or not your figures are being placed correctly.

You should not normally use the optional positional qualifiers on the `figure` environment that would override these decisions. See `http://www.blackwellpublishing.com/bauthor/illustration.asp` for details regarding submission guidelines for securing print-quality of artwork. Figure captions should be *below* the figure itself, therefore the `\caption` command should appear after the figure or space left for an illustration. For example, Figure 1 is produced using the following commands:
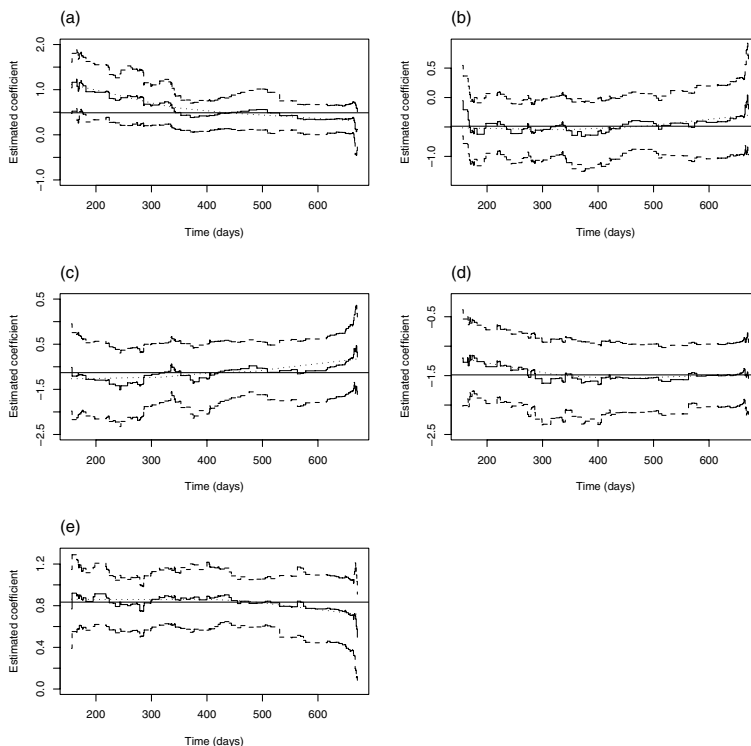
```
\begin{figure}
\centerline{%
```

Figure 1. An example figure caption.

```
\includegraphics[width=50mm]{art/biom_621_f1.eps}}
  %% to include a figure, or to leave a blank space
 \caption{An example figure caption.}
 \label{sample-figure}
\end{figure}
```

Here, because this document has only one column, the figure spans the entire width. However, when using the document class with the default two-column option, figures created using `\begin{figure}`...`\end{figure}` will appear in a single column. In order to create a figure that spans across both columns, as is often the case in the journal, you should instead use `\begin{figure*}`...`\end{figure*}`. When your document is processed using the `referee` option, all figures will appear across the entire page, regardless of which environment was specified.

Cross-referencing of figures, tables, and numbered, displayed equations using the `\label` and `\ref` commands is strongly encouraged. For example, in referencing Figure 1 above, we used `For example, Figure~\ref{sample-figure} is produced using...`

4.4 *Tables*

The `biom` class file will cope with most positioning of your tables as well, and, you should place them as with figures near where you would like them to appear. Again, with the `referee` option, they will be moved automatically to the end of the document. You should not normally use the optional positional qualifiers on the `table` environment that would override these decisions. Table captions should be at the top, therefore the `\caption` command should appear *above* the body of the table.

Commands to redefine quantities such as `\arraystretch` should be omitted in general. For example, Table 1 is produced using the following commands. Note that `\rmn` will produce a roman character in math mode. There are also `\bld` and `\itl`, which produce bold face and text italic in math mode.

```
\begin{table}
 \caption{Radio-band beaming model parameters.}  \label{symbols}
```

Table 1
Radio-band beaming model parameters.

Class	γ_1	γ_2	$\langle \gamma \rangle$	G	f	θ_{c}
BL Lacs	5	36	7	-4.0	1.0×10^{-2}	$10°$
FSRQs	5	40	11	-2.3	0.5×10^{-2}	$14°$

```
{\begin{tabular*}{\columnwidth}{@{}l@{\extracolsep{\fill}}c@{\extracolsep{\fill}}c
@{\extracolsep{\fill}}c@{\extracolsep{\fill}}c@{\extracolsep{\fill}}c@{\extracolsep{\fill}}c@{}}
\Hline Class & $\gamma _1$ & $\gamma _2$ & $\langle \gamma \rangle$ &
$G$ & $f$ & $\theta _{\rmn{c}}$ \\ \hline BL Lacs &5 & 36 & 7 &
$-4.0$ & $1.0\times 10^{-2}$ & 10$^\circ$ \\ FSRQs & 5 & 40 & 11 &
$-2.3$ & $0.5\times 10^{-2}$ & 14$^\circ$ \\ \hline \end{tabular*}}
\bigskip
\end{table}
```

As with figures, cross-referencing of tables is encouraged. For example, we would reference Table 1 using `Table~\ref{symbols}`.

Also as with figures, you may wish to process your document with the default two-column option to determine whether or not tables may need to be exteneded over two columns in the journal version of the paper. If you have a table that is to extend over two columns, you need to use `table*` instead of `table`, as for figures.

4.5 *Typesetting Mathematics*

4.5.1 *Displayed mathematics.*   The `biom` class file will set displayed mathematics centered in the width of a column in the final version of a manuscript, provided that you use the LATEX 2$_\varepsilon$ standard of open and closed square brackets as delimiters.
The equation

$$\sum_{i=1}^{p} \lambda_i = \text{trace}(\mathbf{S})$$

was typeset using the `biom` class file with the commands

```
\[
 \sum_{i=1}^p \lambda_i = \rmn{trace} (\mathbfss{S})
\]
```

Displayed equations should not be numbered unless they are referenced in the text. For such referenced equations, cross-referencing is encouraged. For example,

```
\begin{equation}
(n-1)^{-1} \sum^n_{i=1} (X_i - \overline{X})^2.
\label{eq:samplevar}
\end{equation}
Equation~(\ref{eq:samplevar}) gives the formula for sample variance.
```

4.5.2 *Long / two column equations.*   The `biom` class file provide the option to code long equations in the paper; i.e., equations that would be very difficult to display in a single column in the final version of a manuscript. To code the long equation, following coding should be followed:

```
\begin{longequation}
\left(\begin{array}{cc}%
[\tau_i(D-\alpha_iW]^{-1}+(\eta_0I+\eta_1W)[\tau_2(D-\alpha_2W)]^{-1}(\eta_0I+\eta_1W)&
(\eta_0I+\eta_1W)[\tau_2(D-\alpha_2W)]^{-1}\\
{[}]\tau_2(D-\alpha_2W)]^{-1}(\eta_0I+\eta_1W)&[\tau_2(D-\alpha_2W)]^{-1}
\end{array}
\right).
```

```
\label{eq:samplelongeqn}
\end{longequation}
```

As with regular displayed equations, long equations that are referenced in the text should be cross-referenced using the `\label` and `\ref` commands. Use of the `longequation` environment should only be reserved for very unusual circumstances where it would be impossible for an expression to be displayed in one column broken over several lines. Most *Biometrics* papers will not use this feature. You may wish to examine recent issues of the journal for examples where a `longequation` was necessary and for example of how they may be avoided in many instances.

In case of long equations, the equation is spread to the adjoining column to enhance readability. To separate the text in the columns from the equation, two horizontal rules are drawn above and below the equation. The space between these two rules is variable and is inserted on the basis of the hight of the equation, e.g. 3pc, 4pc, 5pc, ... To align long equations within two horizontal rules in other column (as per the *Biometrics* style), the `biom` class file provides the option `\eqnbreaktop{...}`. In `\eqnbreaktop{...}` the approx height of the long equation should be given, for example, if the height of the long equation is `5pc` then the value coded in `\eqnbreaktop` should be `\eqnbreaktop{5pc}`.

4.5.3 *Bold math italic / bold symbols.* To get bold math italic you should use `\bmath`, e.g.

```
\[
  d(\bmath{s_{t_u}}) = \langle [RM(\bmath{X_y}
  + \bmath{s_t}) - RM(\bmath{x_y})]^2 \rangle
\]
```

to produce:

$$d(\boldsymbol{s_{t_u}}) = \langle [RM(\boldsymbol{X_y} + \boldsymbol{s_t}) - RM(\boldsymbol{x_y})]^2 \rangle$$

Thus, scriptstyle and scriptscriptstyle sizes will take care of themselves.

4.5.4 *Bold greek.* Upper and lowercase Greek characters are available in all typesizes.

You can then use these definitions in math mode, as you would normal Greek characters:

```
\[
  \bmath{\alpha_{\mu}} = \bmath\Theta \alpha.
\]
```

will produce

$$\boldsymbol{\alpha_\mu} = \boldsymbol{\Theta}\alpha.$$

4.5.5 *Upright greek characters.* If you prefer upright Greek characters, you can obtain them if you have access to the American Mathematical Society Euler fonts (version 2.0), but you may not have these. In this case, you will have to use the normal math italic symbols. If you would like the symbols to appear as upright in the final version of the paper (should it be published), you can signal this to the typesetter and make it easier by using the macros `\upi`, `\umu` and `\upartial` etc. in your text to indicate the need for upright characters, together with the `useAMS` global option: (`\documentclass[useAMS]{biom}`). Characters π, μ and ∂ will appear upright only on systems that have the Euler roman fonts (`eurm`*xx*); characters $\leq$ and $\geq$ appear slanted only on systems that have the AMS series A fonts (`msam`*xx*). On systems that do not have these fonts, the standard forms of the characters appear in the printout; however, they should be correct in the final typeset paper if the correct LATEX commands have been used.

4.6 *Acknowledgements and Supplementary Material*

Immediately following the end of the main body of the paper, the `\backmatter` command should be issued. This will ensure that subsequent formatting of section headings is consistent with the style in *Biometrics* articles. Two optional sections may be placed following this command, preceding the bibliography (discussed in the next section).

An optional Acknowledgements section may be included. Authors may wish to thank or acknowledge the contributions of specific individuals who are not named as authors on the paper, or they may wish to cite a grant that supported the research being reported in the article.

Following an Acknowledgements section, if any, a Supplementary Materials section should be included if the paper makes reference to any web-based supplementary material, such as Web Appendices, Web Tables, or Web Figures. See `Information for Authors` at `http://www.tibs.org/biometrics` for more information.

The following gives an example of how these elements should be included:

```
\backmatter

\section*{Acknowledgements}

The authors wish to thank...

\section*{Supplementary Material}

Web Appendix A, referenced in Section~\ref{s:two}, is available under
the Paper Information link at the \textit{Biometrics} website
\texttt{http:www.tibs.org/biometrics}.
```

See the template file for an example of the specification of these sections.

<div align="center">

4.7 References

</div>

References to published literature should be quoted in the text by author and date, e.g., Draine (1978) or (Begelman, Blandford, and Rees, 1984). Where more than one reference is cited having the same author(s) and date, the letters a,b,c,. . . should follow the date, e.g., Smith (1988a), Smith (1988b), etc. For papers with exactly three authors, the first time the paper is cited, all author names should be used, e.g., Begelman, Blandford, and Rees (1984), and subsequent citations should use "et al.," e.g., Begelman et al. (1984). For papers with more than three authors, the first author name plus "et al." should always be used. In the bibliography list, all authors should be retained.

A recent version of *Biometrics* should be used as a guide for the style of making citations to literature in the text. See also the template file.

We discuss three ways for authors to create the reference list and citations in the text.

4.7.1 *"Do-it-yourself" references and citations.*   One way to create the reference list is to type it yourself. Here is an example using the `thebibliography` environment; see also the template file. See the next section for more on the formatting used below.

```
\begin{thebibliography}{}
  \bibitem[\protect\citeauthoryear{Butcher}{1992}]{bu}
    Butcher, J. (1992). Proper multivariate conditional autoregressive models for spatial data
    analysis. {\it Biometrics} {\bf 196,} 173.
  \bibitem[\protect\citeauthoryear{Blanco}{1991}]{bl}
    Blanco, P. (1991). {\it NIFT\/} 2nd edition. Boca Raton, Florida: Chapman and Hall.
  \bibitem[\protect\citeauthoryear{Brown and Jones}%
    {1989}]{bj} Brown, A. B. and Jones, C. D. (1989).  {\it National Sangget Academy}, 2nd edition.
Hoboken, New Jersey: Wiley.
  \bibitem[\protect\citeauthoryear{Edelson}{1987}]{eda}
    Edelson, R. A. (1987). Using counts to simultaneously estimate
abundance and detection probabilities in a salamander community. {\it
Herpetologica} {\bf 60,} 468--478.
  \bibitem[\protect\citeauthoryear{Edelson}{1987}]{edb}
  Edelson, R. A. (1988). Using counts to simultaneously estimate
abundance and detection probabilities in a salamander community. {\it
Herpetologica} {\bf 61,} 520--532.
  \bibitem[\protect\citeauthoryear{Knuth}{1998}]{kn}
    Knuth, D. E. (1998). The \TeX\ book. Addison-Wesley, Reading, MA.
  \bibitem[\protect\citeauthoryear{Kopka and Daly}{1999}]{kd}
    Kopka, H. and Daly, P. W. (1999). A Guide to \LaTeX, 3rd edn. Addison-Wesley, Harlow.
  \bibitem[\protect\citeauthoryear{Lamport}{1986}]{laa}
    Lamport, L. (1986). \LaTeX: A Document Preparation System. Addison--Wesley, New York.
  \bibitem[\protect\citeauthoryear{Lamport}{1986}]{lab}
    Lamport, L. (1992). \LaTeX: A Document Preparation System. Addison--Wesley, New York.
  \bibitem[\protect\citeauthoryear{Mirabel and Sanders}%
```

```
    {1989}]{ms} Mirabel, I. F. and Sanders, D. B. (1989). Topics
in Stochastic Process.  New York: Academic  Press.
  \bibitem[\protect\citeauthoryear{Misner et al.}%
    {1973}]{mtw} Misner, C. W., Thorne, K. S., and Wheeler J. A. (1973). A comparison of smoothing
techniques for CD4 data measured with error in a time-dependent Cox
proportional hazards model. {\it Statistics in Medecine} {\bf 17,} 2061--2077.
  \bibitem[\protect\citeauthoryear{Stella and Campana}%
    {1991}]{sc} Stella, L. and Campana, S. (1991).  Testing hypotheses in the functional linear
model. {\it Scandinavian Journal of Statistics} {\bf 30,} 241--251.
\end{thebibliography}
```

This code produces the following.

References

Butcher, J. (1992). Proper multivariate conditional autoregressive models for spatial data analysis. *Biometrics* **196,** 173.

Blanco, P. (1991). *NIFT* 2nd edition. Boca Raton, Florida: Chapman and Hall.

Brown, A. B. and Jones, C. D. (1989). *National Sangget Academy*, 2nd edition. Hoboken, New Jersey: Wiley.

Edelson, R. A. (1987). Using counts to simultaneously estimate abundance and detection probabilities in a salamander community. *Herpetologica* **60,** 468–478.

Edelson, R. A. (1988). Using counts to simultaneously estimate abundance and detection probabilities in a salamander community. *Herpetologica* **61,** 520–532.

Knuth, D. E. (1998). The TEXbook. Addison-Wesley, Reading, MA.

Kopka, H. and Daly, P. W. (1999). A Guide to LATEX, 3rd edn. Addison-Wesley, Harlow.

Lamport, L. (1986). LATEX: A Document Preparation System. Addison–Wesley, New York.

Lamport, L. (1992). LATEX: A Document Preparation System. Addison–Wesley, New York.

Mirabel, I. F. and Sanders, D. B. (1989). Topics in Stochanstic Process. New York: Academic Press.

Misner, C. W., Thorne, K. S., and Wheeler J. A. (1973). A comparison of smoothing techniques for CD4 data measured with error in a time-dependent Cox proportional hazards model. *Statistics in Medicine* **17,** 2061–2077.

Stella, L. and Campana, S. (1991). Testing hypotheses in the functional linear model. *Scandinavian Journal of Statistics* **30,** 241–251.

In this case, the author is responsible for typing the citations to references in the list directly into the text. For example, `These models are discussed by Butcher (1992).`

4.7.2 *Use of* `natbib`.   If the `usenatbib` global option is specified, Patrick Daly's `natbib` package will be used for for cross-referencing (i.e., creating citations in the text). (Note that Patrick Daly's package `natbib` is required in order to use the `usenatbib` option and can be obtained as discussed at the beginning of this guide).

Here, the author should create the bibliography using the `thebibliography` environment, as in the last section. That is, items in the reference list must be of the form

`\bibitem[\protect\citeauthoryear{`*author_names*`}{`*year*`}]{`*key*`}`

Text of reference ...

for one-, two- and multi-author papers, or

`\bibitem[\protect\citeauthoryear{`*three_author_names*`}{`*first_author_etal*`}{`*year*`}]{`*key*`}`

Text of reference ..., for three-author papers. See the specimen files for demonstration.

The advantage of using `natbib` is that citations may then be created automatically as follows. If the `usenatbib` option is specified, citations in the text should be in one of the following forms (or one of the additional forms documented within `natbib` itself).

- `\citet{`*key*`}` produces text citations, e.g., Jones et al. (1990),
- `\citep{`*key*`}` produces citations in parentheses, e.g., (Jones et al., 1990)

For three-author papers, a full author list can be forced by putting a * just before the {. To add notes within the citation, use the form `\citep[`*pre_reference_text*`][`*post_reference_text*`]{`*key*`}` (note that either of *pre_reference_text* and *post_reference_text* can be blank).

We recommend that authors use `natbib` as their standard cross-referencing package, because of the flexibility in citation style that it provides.

4.7.3 *Use of* `BiBTeX`. Authors may also use BibTeX to create the reference list and to make citations. We assume that authors choosing this route are already familiar with the use of BibTeX. Thus, we only review the main idea.

In order to use BibTeX, you must have a `.bib` file containing the database for your bibliography, and a `.bst` file, which is a "bibliography style" file that produces the reference list according to the conventions incorporated in the file. Included with the distribution is a `.bst` file, `biometrics.bst`, that will ensure that your list of references is placed in the journal style. This `.bst` file should be used to ensure that the journal convention are followed.

BibTeX uses your style-independent bibliography database `.bib` file to produce a list of references, in a customizable style, from citations in a LaTeX document. LATEX 2ε writes information about the citations and which `.bib` files to use in the `.aux` file. BibTeX reads this file and outputs a `.bbl` file containing LATEX 2ε commands to produce the reference list (like those typed manually in the previous sections). One must compile the document again to incorporate the reference list in the document. In particular, the steps are:

(1) Include the '`.bst` file' and '`.bbl` file' in your document using the commands `\bibliographystyle{biometrics}` and `\bibliography{biblio}` at the position in the file where the references are to appear (see the file `biometrics_bib.tex` for a demonstration).
(2) Process your document using LATEX (e.g., issue the command `latex` filename.tex in a Unix or Linux environment) to update the filename.aux file
(3) Process your document using BibTeX to generate the `.bbl` file (e.g., issue the command `bibtex` filename)
(4) Re-process your document using LATEX (e.g., reissue `latex` filename.tex) to incorporate the `.bbl` in the document
(5) Process one more time using LATEX (e.g., `latex` filename.tex) to generate the cross-references with the generated bibliography.

We recommend using `natbib` concurrently with BibTeX to generate the citations in the text using the citation commands given in the last section. This is illustrated in the specimen file `biomsample_bib.tex`.

5. APPENDICES

The appendices in this guide were generated by typing:

```
\appendix
\section{}
\subsection{For Authors}
      :
\section{}
\subsection{For Editors}
```

Thereafter, every `\section` command will generate a new appendix. Equations will be numbered as, e.g., Equations (A.1). Tables and figures in Appendices are strongly discouraged; if these do appear, they will be numbered without an appendix prefix, sequentially following tables and figures appearing in the main body of the text. For example,

```
\begin{equation}
n^{-1} \sum^n_{i=1} (X_i - \overline{X})^2.
\label{eq:mle}
\end{equation}
In (\ref{eq:mle}), $n-1$ has been replaced by $n$.
```

will produce "In (A.1),..."

Table 1

Authors' notes.

`\title[optional short title]{long title}`	short title used in running head
`\author[optional short author(s)]{long author(s)}`	short author(s) used in running head
`\newauthor`	starts a new line in the author environment
`\begin{abstract}...\end{abstract}`	for abstract on titlepage
`\begin{keywords}...\end{keywords}`	for keywords on titlepage
`\nokeywords`	if there are no keywords on titlepage
`\begin{figure*}...\end{figure*}`	for a double spanning figure in two-column mode
`\begin{table*}...\end{table*}`	for a double spanning table in two-column mode
`\plate{Opposite p.~812, MNRAS, {\bf 261}}`	used with `\thispagestyle{plate}` for plate pages
`\contcaption{}`	for continuation figure and table captions
`\bmath{math text}`	Bold math italic / symbols.
`\textbfit{text}`, `\mathbfit{text}`	Bold text italic (defined in the preamble of `mnsample.tex`).
`\textbfss{text}`, `\mathbfss{text}`	Bold text sans serif (defined in the preamble of `mnsample.tex`).

Table 2

Editors' notes.

`\pagerange{000--000}`	for catchline, note use of en-rule
`\pagerange{L00--L00}`	for letters option, used in catchline
`\volume{000}`	volume number, for catchline
`\pubyear{0000}`	publication year, for catchline
`\journal`	replace the whole catchline at one go
`[doublespacing]`	documentstyle option for doublespacing
`[galley]`	documentstyle option for running to galley
`[landscape]`	documentstyle option for landscape illustrations
`[letters]`	documentstyle option, for short communications (adds L to folios)
`[onecolumn]`	documentstyle option for one-column
`[referee]`	documentstyle option for 12pt type, 25 lines/page
`\bsp`	typesets the final phrase 'This paper has been typeset from a TEX/LATEX file prepared by the author.'

APPENDIX

For Authors

Table 1 is a list of design macros which are unique to the Biometrics class and style files. The list displays each macro's name and description.

APPENDIX

For Editors

The additional features shown in Table 2 may be used for production purposes. The most commonly used of these is `\bsp`, which produces the 'This paper ...' statement. This should be placed at the end of the document.