

Nucleic Acids Research

SUBMITTING TO THE WEB SERVER ISSUE

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Contents

Nucleic Acids Research devotes a single issue in July to papers describing web-based software resources of value to the biological community. The Web Server Issue contains:

- papers describing software programs that run on the web and perform **useful computations on DNA, RNA and protein sequences or structures; network and pathway analysis; biological text mining; analysis of microarray data, next generation sequencing data, and metagenomics data; and innovative visualizations.**
- a summary of web servers produced by Francis Ouellette and his colleagues at the Ontario Institute for Cancer Research.

New for 2010

The 2010 Web Server Issue will inaugurate **new sections** for **Web Services** and **stand-alone programs for high-throughput data analysis.**

Web Services. This section will include short papers describing websites that implement useful web services, that is, multiple task, automated analyses that are accessed programmatically rather than through manual interaction with a web server. To be considered, a website must:

- Implement a large collection of web services. These services may be for general bioinformatics use, or focused on a single data domain, such as microarray data.
- Provide a help page which contains a comprehensive list of the web services available along with a clear description and the access url of each.
- Provide a template program in perl, or another commonly used programming language, that can be run to access several of the web services and parse the output data. The goal is to give the user (and the reviewers) a working template for web services access. Ideally, the program should be easily modifiable so that it can be used for all of the web services available.
- Provide a prominent link to the template program on the home page.

High-Throughput Data Analysis. This section will include papers describing stand-alone (non-web server) programs that analyze very high volume experimental data (typically in excess of 10 Mb), such as that produced by the new sequencing technologies. To be considered, a program must:

- Operate through a well-designed graphical user interface, similar to that of a web browser, which can be used to access the local data, select the parameters, run the program, and store and view the results.
- Include extensive help information.
- Run properly on a computer which is not connected to the internet (since many laboratory computers holding sensitive data may be off the internet to satisfy legal requirements).
- Run properly on at least two of the three common operating systems (Linux, Mac, and PC).
- Be self-installing, that is, have a well tested, "one click"-type installation.

Authors are encouraged to be innovative. Instead of a stand-alone program, a web server program that downloads, self installs, and works locally in conjunction with a command line program will also be considered.

Submission

Authors wishing to submit manuscripts for the 2010 Web Server Issue **MUST** read and follow these instructions. See also the [editorial from the 2009 issue](#).

- Authors must contact Dr. Gary Benson at narwbsrv@bu.edu to check the suitability of their proposed submission by **31 December, 2009** at the latest. A maximum one page summary should be submitted for this purpose. Proposals sent in before 30 November 2009 will not be reviewed until after that date.
- The **WEB SERVER MUST BE FUNCTIONAL** on the date of the proposal submission. Access to the server must be through a web browser. Non-server application programs will only be considered for high-throughput data (see above).
- The website **MUST** include a simple mechanism to try out sample data provided by the authors, for example, a button for automatic loading of the data.
- The website **MUST** contain help pages or a tutorial with links to sample output that performs interactively in the same way as real output.
- The output **MUST** be primarily web-based and viewable on the website. Use of browser plugins for data visualization is encouraged.
- If the website is not able to return results immediately, it **MUST** provide a web link to the results, at the time of data submission, which the user can then bookmark and access at a later time. Ideally, this link will report the status of the job (queued, running, or finished). Do not assume that users will provide an email address for results notification.
- The one page summary **MUST** contain, at the top, the following affirmative statement. "This website is free and open to all users and there is no login requirement."
- The one page summary **MUST** include the website address; website name; and the names, affiliations, and email addresses of all authors.
- The one page summary **MUST** provide descriptions of the input data, the output, and the processing method; complete citations for previous publications of the method or the web server; and two to four keywords. Additionally, authors must indicate how long the server has been running, the number of inputs analyzed during testing, and an estimate of the number of individuals outside of the authors' group who have been involved in the testing.

- The one page summary **MUST** include a notification if this is an update from a previous publication in the Web Server issue, and in that case, include an estimate of the number of users and the number of citations.
- **IF THE WEB SERVER IS PREDICTIVE**, authors must include, within the summary, details on validation of predictions from new data not used in training. N-fold cross validation studies will not be considered sufficient. Details should include size and composition of the validation data set (number of positive and negative cases), and several measures of predictive performance, including sensitivity, specificity, and precision.

Note that servers that provide an interface into a single database will not normally be considered for this issue, but instead should be described as part of an article devoted to the database and submitted for consideration in the annual Database Issue.

For web servers, or essentially similar web servers, that have been the subject of a previous publication, including publication in journals other than NAR, there is a **minimum two-year interval before re-publication** in the Web Server Issue.

Authors should restrict themselves to a **maximum of three proposals**.

Manuscripts

For proposals given approval, the manuscript submission deadline will be 3 weeks after the date of the approval email or **31 January 2010**, whichever is later. (Authors are encouraged to be patient. Proposal reviews take up most of January.)

- Authors should submit their manuscript electronically through ScholarOne Manuscripts (<http://mc.manuscriptcentral.com/nar>). In case of difficulty, queries should be addressed to nar@soton.ac.uk
- The manuscript **MUST** be uploaded as a .doc, .rtf, or .tex file. It must **NOT** be uploaded as a .pdf file.
- At the time of manuscript submission authors **MUST** include a cover letter listing other websites that do similar or identical computations, along with their URLs.
- Authors must supply the names, institutes and email addresses of **six suggested referees**. They should be scientists working independently (i.e. not a recent collaborator) who have relevant expertise or who would be likely users of the web server.
- Authors should try to use the name(s) of the software as the first word(s) in the title of the article and should include within the abstract a valid URL from which the software can be accessed. *NAR* is available in full-text form on the web (<http://nar.oxfordjournals.org>), and each article will contain a hotlink to its web server URL.
- The manuscript should include a description of the software including the required input, the range of computations it can perform and examples of the output returned to the user. Submissions should typically be 4-5 printed journal pages in length, but authors are urged to be succinct in their writing, given the tight page constraints of this special issue.
- Manuscripts that contain only a cursory description of the web server and are instead mainly devoted to use of the server for some particular data analysis are not appropriate.
- Manuscripts that provide a first description of a new algorithmic method are generally inappropriate for the Web Server issue and should be submitted instead for consideration as a Computational Biology paper.

- The online version of the Web Server Issue will afford authors the opportunity to provide readers with supplementary data if appropriate. Such material could include a description of the mathematics behind an algorithm used by the web server or a tutorial describing how the software should be used if it is non-intuitive. A recommended way to organize any supplementary data is to include, within the main text of the printed article, a short table of its contents (one line per item). Each topic could then be expanded as appropriate within the supplement. Authors are encouraged to be innovative in their use of such supplementary data, taking advantage of the fact that electronic material, unlike printed material, need not be static. All supplementary data must be available at the time of submission, for editorial review, and the final material will be archived on the *NAR* web site.
- The software must be completely functional and have been extensively tested at the time of submission. Reviewers should not be expected to debug the software and significant problems that should have been picked up during testing will be grounds for rejection.
- References must be in the correct journal format and should be cited in the text by sequential number only, in order of appearance, and listed numerically in the References section. Manuscripts 'submitted' or 'in preparation', URLs, unpublished results and personal communications should not be cited. Please note that references include the full titles of each paper. For more specific information, please consult the *NAR* web site.
- The home page for the software should not be used as a figure in the article unless an explanation of the page is required. A more appropriate figure would include the result of a typical computation.
- Authors whose native language is not English are encouraged to ask a native English speaker to check the text prior to submission.
- For more specific information, please consult the general Instructions to Authors.

To help authors evaluate their manuscripts, **the instructions to reviewers** are included below:

When reviewing papers for the 2010 *NAR* Web Server Issue, please be aware of the following points:

- The purpose of this software issue is to provide a single location where potential users of web-based software can find out what is available and what the software actually does.
- While originality is not necessarily an issue, if software with similar functionality is available from other sources then there must be something new in this contribution.
- A key consideration on acceptability will be whether the software described in the manuscript is useful and whether it actually works over the web as described. It is important that the package be tested thoroughly, preferably on at least two commonly used web browsers to make sure that it works as advertised and has an interface that is user-friendly.
- The software should provide analysis of wide interest. A program that is relevant to only a few individuals is unlikely to make it into the issue.
- Some web servers are predictive. In this case the manuscript must provide evidence of validation independent of any training data. Details should include size and composition of the validation data set (number of positive and negative cases), and several measures of predictive performance, such as sensitivity, specificity, precision, and any others that are appropriate.

- The software may have been described in an earlier publication. In this case, the paper should include the appropriate reference(s) and should contain a description of what is new and different. In such cases, brevity is essential.
- The author has stated that the website is free and open to all and that there is no login requirement. Please notify me in your review if this is not the case.
- Constructive comments that will lead to an improved manuscript or an improved piece of software on the web will be the most helpful. Most manuscripts describing a server that is significantly different from anything else available will be acceptable eventually, unless the piece of software does not work, gives erroneous results, or is simply of no practical use.

Schedule

The Web Server Issue receives several hundred proposals and manuscripts. Due to the crush around deadlines, authors should be patient about responses from the editor. Reply to proposals will typically be made by the end of January. Reviews of manuscripts should be received by late March.

For further information please contact Dr Gary Benson at narwbsrv@bu.edu.