

# Bioinformatics

VOLUME 24 NUMBER 16 AUGUST 15 2008

[www.bioinformatics.oxfordjournals.org](http://www.bioinformatics.oxfordjournals.org)



## Executive Editors

Alex Bateman, *UK* Alfonso Valencia, *ES*  
 Email: [bioinformatics.editorialoffice@oxfordjournals.org](mailto:bioinformatics.editorialoffice@oxfordjournals.org)

## Associate Editors

M.Bishop, <i>UK</i> (–2009)	D.Rocke, <i>USA</i> (–2008)
I.Hofacker (–2010)	B.Rost, <i>USA</i> (–2009)
J.Dopazo, <i>Spain</i> (–2010)	A.Tramontano, <i>Italy</i> (–2010)
D.Frishman, <i>Germany</i> (–2010)	O.Troyanskaya, <i>USA</i> (–2009)
T.Ideker, <i>USA</i> (–2009)	L.Wong, <i>Singapore</i> (–2009)
T.Lengauer, <i>Germany</i> (–2009)	J.Wren, <i>USA</i> (–2008)
J.Quackenbush, <i>USA</i> (–2009)	

## Editorial Office

[bioinformatics.editorialoffice@oxfordjournals.org](mailto:bioinformatics.editorialoffice@oxfordjournals.org)

## Editorial Board

A.Brazma, <i>UK</i> (–2009)	R.Matthiesen, <i>Spain</i> (–2010)
S.Brunak, <i>Denmark</i> (–2008)	S.Miyano, <i>Japan</i> (–2009)
C.D.Bustamante, <i>USA</i> (–2008)	A.Navarro, <i>Spain</i> (–2010)
K.A.Crandall, <i>USA</i> (–2010)	C.Ouzounis, <i>UK</i> (–2009)
M.Gelfand, <i>Russia</i> (–2008)	D.Posada, <i>Spain</i> (–2010)
J.Heringa, <i>The Netherlands</i> (–2008)	N.Rajewsky, <i>USA</i> (–2009)
D.Higgins, <i>Ireland</i> (–2008)	I.Rigoutsos, <i>USA</i> (–2008)
C.Hodgman, <i>UK</i> (–2009)	G.Sherlock, <i>USA</i> (–2010)
L.Holm, <i>Finland</i> (–2009)	N.Srinivasan, <i>India</i> (–2008)
W.Huber, <i>UK</i> (–2010)	C.Stoeckert, <i>USA</i> (–2010)
L.Jensen, <i>Germany</i> (–2010)	M.Vingron, <i>Germany</i> (–2008)
P.Karp, <i>USA</i> (–2009)	G.Yona, <i>Israel</i> (–2010)
W.Li, <i>USA</i> (–2008)	M.Zhang, <i>USA</i> (–2008)

- Instructions to authors can be found at [http://www.oxfordjournals.org/bioinformatics/for\\_authors/general.html](http://www.oxfordjournals.org/bioinformatics/for_authors/general.html).
- All manuscripts must be submitted online at the journal's online submission website: <http://bioinformatics.manuscriptcentral.com>.

## OXFORD UNIVERSITY PRESS

### SUBSCRIPTIONS

A subscription to *Bioinformatics* comprises 24 issues. All prices include postage, and for subscribers outside the UK delivery is by Standard Air. *Bioinformatics* Advance Access contains papers that have recently been accepted but have not yet been included within an issue. Advance Access is updated twice a week.

#### Annual subscription rates (Volume 24, 24 Issues, 2008)

##### Institutional

Print edition and site-wide online access: £1296.00/\$2462.00/€1944.00  
 Print edition only: £1231.00/\$2339.00/€1847.00  
 Site-wide online access only: £985.00/\$1872.00/€1478.00.

##### Personal

Print edition (includes free online access): £392.00/\$745.00/€588.00  
 Please note: US\$ rate applies to US and Rest of World, except UK (£) and Europe (€).

There may be other subscription rates available, for a complete listing please visit [www.bioinformatics.oxfordjournals.org/subinfo](http://www.bioinformatics.oxfordjournals.org/subinfo).

Full prepayment, in the correct currency, is required for all orders. Orders are regarded as firm and payments are not refundable. Subscriptions are accepted and entered on a complete volume basis. Claims cannot be considered more than FOUR months after publication or date of order, whichever is later. All subscriptions in Canada are subject to GST. Subscriptions in the EU may be subject to European VAT. If registered, please supply details to avoid unnecessary charges. For subscriptions that include online versions, a proportion of the subscription price may be subject to UK VAT. Personal rate subscriptions are only available if payment is made by personal cheque or credit card and delivery is to a private address.

The current year and two previous years' issues are available from Oxford University Press and [www.periodicals.com/oxford.html](http://www.periodicals.com/oxford.html). Previous volumes can be obtained from the Periodicals Service Company, 11 Main Street, Germantown, NY 12526, USA. Email: [psc@periodicals.com](mailto:psc@periodicals.com). Tel: +1 (518) 537 4700. Fax: +1 (518) 537 5899.

**For further information, please contact:** Journals Customer Service Department, Oxford University Press, Great Clarendon Street, Oxford OX2 6DP, UK. Email: [jnls.cust.serv@oxfordjournals.org](mailto:jnls.cust.serv@oxfordjournals.org). Tel (and answerphone outside normal working hours): +44 (0)1865 353907. Fax: +44 (0)1865 353485. **In the US, please contact:** Journals Customer Service Department, Oxford University Press, 2001 Evans Road, Cary, NC 27513, USA. Email: [jnlororders@oxfordjournals.org](mailto:jnlororders@oxfordjournals.org). Tel (and answerphone outside normal working hours): 800 852 7323 (toll-free in USA/Canada). Fax: 919 677 1714. **In Japan, please contact:** Journals Customer Services, Oxford University Press, 4-5-10-8F Shiba, Minato-ku Tokyo 108-8386 Japan. Email: [oujnl@po.ijnet.or.jp](mailto:oujnl@po.ijnet.or.jp). Tel: (03) 5444 5858. Fax: (03) 3454 2929.

**Methods of payment.** (i) Cheque (payable to Oxford University Press, to Oxford University Press, Cashiers Office, Great Clarendon Street, Oxford OX2 6DP, UK) in GB£ Sterling (drawn on a UK bank), US\$ Dollars (drawn on a US bank), or EU€ Euros. (ii) Bank transfer to Barclays Bank Plc, Oxford Group Office, Oxford (bank sort code 20-65-18) (UK), overseas only Swift code BARC GB 22 (GB£ Sterling to account no.

70299332, IBAN GB89BARC20651870299332; US\$ Dollars to account no. 66014600, IBAN GB27BARC20651866014600; EU€ Euros to account no. 78923655, IBAN GB16BARC20651878923655). (iii) Credit card (Mastercard, Visa, Switch or American Express).

*Bioinformatics* is published fortnightly by Oxford University Press, Oxford, UK. Annual subscription price is £1296.00/\$2462.00/€1944.00. *Bioinformatics* is distributed by Mercury International, 365 Blair Road, Avenel, NJ 07001, USA. Periodicals postage paid at Rahway, NJ and at additional entry points.

US Postmaster: send address changes to *Bioinformatics* (1367-4803), c/o Mercury International, 365 Blair Road, Avenel, NJ 07001, USA.

### SUPPLEMENTS, REPRINTS AND CORPORATE SALES

For requests from industry and companies regarding supplements, bulk article reprints, sponsored subscriptions, translation opportunities for previously published material, and corporate online opportunities, please email [special.sales@oxfordjournals.org](mailto:special.sales@oxfordjournals.org), fax +44 (0)1865 353774 or visit [www.oxfordjournals.org/jnls/sales](http://www.oxfordjournals.org/jnls/sales).

### PERMISSIONS

For information on how to request permissions to reproduce articles/information from this journal, please visit [www.oxfordjournals.org/jnls/permissions](http://www.oxfordjournals.org/jnls/permissions).

### ADVERTISING

Advertising, inserts and artwork enquiries should be addressed to Advertising and Special Sales, Oxford Journals, Oxford University Press, Great Clarendon Street, Oxford OX2 6DP, UK. Tel: +44 (0)1865 354767; Email: [jnlsadvertising@oxfordjournals.org](mailto:jnlsadvertising@oxfordjournals.org).

### DISCLAIMER

Statements of fact and opinion in the articles in *Bioinformatics* are those of the respective authors and contributors and not of *Bioinformatics* or Oxford University Press. Neither Oxford University Press nor *Bioinformatics* make any representation, express or implied, in respect of the accuracy of the material in this journal and cannot accept any legal responsibility or liability for any errors or omissions that may be made. The reader should make his/her own evaluation as to the appropriateness or otherwise of any experimental technique described.

© Bioinformatics 2008.

All rights reserved; no part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise without prior written permission of the Publishers, or a licence permitting restricted copying issued in the UK by the Copyright Licensing Agency Ltd, 90 Tottenham Court Road, London W1P 9HE, or in the USA by the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923. Typeset by Cepha Imaging Pvt. Ltd., Bangalore, India. Printed by C.O.S. Printers Pte Ltd, Singapore.