

Contents

Vol. 188 No. 4 August 2011



Cover photo: A “living fossil,” the spotted gar diverged from the lineage of teleost fish (constituting half of all vertebrate species) before the teleost genome duplication. With its genome organized remarkably similar to that of a human, the gar provides an outgroup for connecting medical models of zebrafish and medaka to the human genome. Here, an adult spotted gar, an inhabitant of a Louisiana bayou. (Photo: Solomon David). See Amores et al. (pp. 799–808).

PERSPECTIVES

- 761–771** **Is Life Law-Like?**
Weiss, Kenneth M. and Anne V. Buchanan

REVIEW

- 773–782** **Genome Engineering With Zinc-Finger Nucleases**
Carroll, Dana

COMMENTARY

- 783–785** **Fixation when N and s Vary: Classic Approaches Give Elegant New Results**
Wahl, L. M.

INVESTIGATIONS

GENOME INTEGRITY AND TRANSMISSION

- 787–797** **Trex2 Enables Spontaneous Sister Chromatid Exchanges Without Facilitating DNA Double-Strand Break Repair**
Dumitrache, Lavinia C., Lingchuan Hu, Mi Young Son, Han Li, Austin Wesevich, Ralph Scully, Jeremy Stark, and Paul Hasty
- 799–808** **Genome Evolution and Meiotic Maps by Massively Parallel DNA Sequencing: Spotted Gar, an Outgroup for the Teleost Genome Duplication**
Amores, Angel, Julian Catchen, Allyse Ferrara, Quenton Fontenot, and John H. Postlethwait

GENE EXPRESSION

- 809–822** **Regulation of Conidiation by Light in *Aspergillus nidulans***
Ruger-Herreros, Carmen, Julio Rodríguez-Romero, Raul Fernández-Barranco, María Olmedo, Reinhard Fischer, Luis M. Corrochano, and David Canovas
- 823–834** **Inhibition of RNA Interference and Modulation of Transposable Element Expression by Cell Death in *Drosophila***
Xie, Weiwu, Chengzhi Liang, and James A. Birchler
- 835–846** **Insight Into the Mechanism of Nucleosome Reorganization From Histone Mutants That Suppress Defects in the FACT Histone Chaperone**
McCullough, Laura, Robert Rawlins, Aileen Olsen, Hua Xin, David J. Stillman, and Tim Formosa

CELLULAR GENETICS

- 847–858** **Spatial Regulation of *lag-2* Transcription During Vulval Precursor Cell Fate Patterning in *Caenorhabditis elegans***
Zhang, Xinyong and Iva Greenwald
- 859–870** **The Rho1 GTPase Acts Together With a Vacuolar Glutathione S-Conjugate Transporter to Protect Yeast Cells From Oxidative Stress**
Lee, Mid Eum, Komudi Singh, Jamie Snider, Archana Shenoy, Christian M. Paumi, Igor Stagljar, and Hay-Oak Park

- 871–882** **Cell Polarity in *Saccharomyces cerevisiae* Depends on Proper Localization of the Bud9 Landmark Protein by the EKC/KEOPS Complex**
Kato, Yu, Hiroshi Kawasaki, Yoshifumi Ohyama, Takashi Morishita, Hiroshi Iwasaki, Tetsuro Kokubo, and Hisashi Hirano
- 883–896** **Anterior–Posterior Axis Specification in *Drosophila* Oocytes: Identification of Novel *bicoid* and *oskar* mRNA Localization Factors**
Chang, Chin-Wen, Dmitry Nashchekin, Lucy Wheatley, Uwe Irion, Katja Dahlgaard, Tessa G. Montague, Jacqueline Hall, and Daniel St. Johnston
- DEVELOPMENT AND BEHAVIORAL GENETICS
- 897–905** **Hox and a Newly Identified E2F Co-repress Cell Death in *Caenorhabditis elegans***
Winn, Jennifer, Monique Carter, Leon Avery, and Scott Cameron
- POPULATION AND EVOLUTIONARY GENETICS
- 907–913** **A Unified Treatment of the Probability of Fixation when Population Size and the Strength of Selection Change Over Time**
Waxman, D.
- 915–930** **On the Fixation Process of a Beneficial Mutation in a Variable Environment**
Uecker, Hildegard and Joachim Hermisson
- 931–940** **Inference of Site Frequency Spectra From High-Throughput Sequence Data: Quantification of Selection on Nonsynonymous and Synonymous Sites in Humans**
Keightley, Peter D. and Daniel L. Halligan
- 941–952** **Local Selection Across a Latitudinal Gradient Shapes Nucleotide Diversity in Balsam Poplar, *Populus balsamifera* L**
Keller, Stephen R, Nicholas Levsen, Pär K. Ingvarsson, Matthew S. Olson, and Peter Tiffin
- 953–973** **The Relation Between Reproductive Value and Genetic Contribution**
Barton, Nicholas H. and Alison M. Etheridge
- 975–996** **Genetic Draft and Quasi-Neutrality in Large Facultatively Sexual Populations**
Neher, R. A. and B. I. Shraiman
- 997–1014** **The Balance Between Mutators and Nonmutators in Asexual Populations**
Desai, Michael M. and Daniel S. Fisher
- NOTES**
- GENETICS OF COMPLEX TRAITS
- 1015–1017** **Genome-Wide Epigenetic Perturbation Jump-Starts Patterns of Heritable Variation Found in Nature**
Roux, Fabrice, Maria Colomé-Tatché, Cécile Edelist, René Wardenaar, Philippe Guerche, Frédéric Hospital, Vincent Colot, Ritsert C. Jansen, and Frank Johannes
- 1019–1022** **Novel Genetic Selection System for Quantitative Trait Loci of Quality Protein Maize**
Wu, Yongrui and Joachim Messing
- CORRIGENDUM**
- 1023** **Destabilizing Interactions Among *[PSI⁺]* and *[PIN⁺]* Yeast Prion Variants**
Bradley, Michael E. and Susan W. Liebman