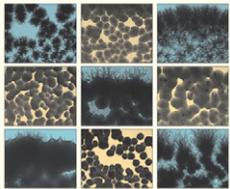


# Contents

Vol. 197 No. 3 July 2014



**Cover photo:** Each micrograph shows colonies of one wild isolate of *Saccharomyces paradoxus* growing on solid medium in a pseudohyphal/invasive morphology, characterized by feathery filament extensions, or non-invasive morphology. Pseudohyphal/invasive strains each harbor a distinct rare allele of either the yeast regulator IRA1 or its paralog IRA2, which underlie common variation and morphology and fitness traits in the *S. paradoxus* population. Artwork courtesy of Jeremy Roop. See Roop and Brem, GENETICS 195:513–525.

## PERSPECTIVES

- 795–808** **The “Domestication Syndrome” in Mammals: A Unified Explanation Based on Neural Crest Cell Behavior and Genetics**  
Wilkins, Adam S., Richard W. Wrangham, and W. Tecumseh Fitch

## COMMENTARY

- 809–811** **Variations on a Common STRUCTURE: New Algorithms for a Valuable Model**  
Novembre, John

## INVESTIGATIONS

### METHODS, TECHNOLOGY, AND RESOURCES

- 813–822** **DAIRRY-BLUP: A High-Performance Computing Approach to Genomic Prediction**  
Coninck, Arne De, Jan Fostier, Steven Maenhout, and Bernard De Baets

- 823–838** **Detecting Local Haplotype Sharing and Haplotype Association**  
Xu, Hanli and Yongtao Guan

### GENOME INTEGRITY AND TRANSMISSION

- 839–849** **Transcription-Independent Functions of an RNA Polymerase II Subunit, Rpb2, During Genome Rearrangement in the Ciliate, *Oxytricha trifallax***  
Khurana, Jaspreet S., Xing Wang, Xiao Chen, David H. Perlman, and Laura F. Landweber

- 851–863** **Bypassing the Requirement for an Essential MYST Acetyltransferase**  
Torres-Machorro, Ana Lilia and Lorraine Pillus

### GENE EXPRESSION

- 865–883** **Sex-Biased Gene Expression and Evolution of the X Chromosome in Nematodes**  
Albritton, Sarah Elizabeth, Anna-Lena Kranz, Prashant Rao, Maxwell Kramer, Christoph Dieterich, and Sevinç Ercan

### DEVELOPMENTAL AND BEHAVIORAL GENETICS

- 885–897** **Regulation of Sex Determination in Mice by a Non-coding Genomic Region**  
Arboleda, Valerie A., Alice Fleming, Hayk Barseghyan, Emmanuèle Délot, Janet S. Sinsheimer, and Eric Vilain

- 899–912** **Cognition and Hippocampal Plasticity in the Mouse Is Altered by Monosomy of a Genomic Region Implicated in Down Syndrome**  
Sahún, Ignasi, Damien Marechal, Patricia Lopes Pereira, Valérie Nalesso, Agnes Gruart, José Maria Delgado Garcia, Stylianos E. Antonarakis, Mara Dierssen, and Yann Herault

### POPULATION AND EVOLUTIONARY GENETICS

- 913–923** **How to Infer Relative Fitness from a Sample of Genomic Sequences**  
Dayarian, Adel and Boris I. Shraiman

- 925–937 **A Bayesian Approach to Inferring the Phylogenetic Structure of Communities from Metagenomic Data**  
O'Brien, John D., Xavier Didelot, Zamin Iqbal, Lucas Amenga-Etego, Bartu Ahiska, and Daniel Falush
- 939–951 **Gene-Flow in a Mosaic Hybrid Zone: Is Local Introgression Adaptive?**  
Fraisse, Christelle, Camille Roux, John J. Welch, and Nicolas Bierne
- 953–967 **The Lengths of Admixture Tracts**  
Liang, Mason and Rasmus Nielsen
- 969–979 **Chromosomal Evolution and Patterns of Introgression in *Helianthus***  
Barb, Jessica G., John E. Bowers, Sebastien Renaut, Juan I. Rey, Steven J. Knapp, Loren H. Rieseberg, and John M. Burke
- 981–990 **Fitness Is Strongly Influenced by Rare Mutations of Large Effect in a Microbial Mutation Accumulation Experiment**  
Heilbron, Karl, Macarena Toll-Riera, Mila Kojadinovic, and R. Craig MacLean
- 991–1006 **Balancing Selection in Species with Separate Sexes: Insights from Fisher's Geometric Model**  
Connallon, Tim and Andrew G. Clark
- 1007–1024 **Effect of Domestication on the Spread of the [PIN+] Prion in *Saccharomyces cerevisiae***  
Kelly, Amy C., Ben Busby, and Reed B. Wickner
- 1025–1038 **Clinal Variation at Phenology-Related Genes in Spruce: Parallel Evolution in *FTL2* and *Gigantea*?**  
Chen, Jun, Yoshiaki Tsuda, Michael Stocks, Thomas Källman, Nannan Xu, Katri Kärkkäinen, Tea Huotari, Vladimir L. Semerikov, Giovanni G. Vendramin, and Martin Lascoux
- GENETICS OF COMPLEX TRAITS
- 1039–1044 **Whole Exome Sequencing of Distant Relatives in Multiplex Families Implicates Rare Variants in Candidate Genes for Oral Clefts**  
Bureau, Alexandre, Margaret M. Parker, Ingo Ruczinski, Margaret A. Taub, Mary L. Marazita, Jeffrey C. Murray, Elisabeth Mangold, Markus M. Noethen, Kirsten U. Ludwig, Jacqueline B. Hetmanski, Joan E. Bailey-Wilson, Cheryl D. Cropp, Qing Li, Silke Szymczak, Hasan Albacha-Hejazi, Khalid Alqosayer, L. Leigh Field, Yah-Huei Wu-Chou, Kimberly F. Doheny, Hua Ling, Alan F. Scott, and Terri H. Beaty
- 1045–1049 **Improving the Power of GWAS and Avoiding Confounding from Population Stratification with PC-Select**  
Tucker, George, Alkes L. Price, and Bonnie Berger
- GENOME AND SYSTEMS BIOLOGY
- 1051–1062 **Pleiotropic Mutations Are Subject to Strong Stabilizing Selection**  
McGuigan, Katrina, Julie M. Collet, Scott L. Allen, Stephen F. Chenoweth, and Mark W. Blows