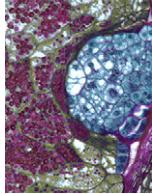


Contents

Vol. 204 No. 1 September 2016



Cover photo: False color image of a paternal-effect rough endosperm maize kernel. The embryo is blue and arrested at the globular stage. Endosperm cells are yellow with fuchsia starch granules. Unlike normal kernels, the mutant endosperm cells immediately adjacent to the embryo accumulate starch indicating a change in cell differentiation from the embryo surrounding region fate to starchy endosperm fate. See Bai *et al.* Image courtesy of Fang Bai.

CENTENNIAL

CLASSICS

- 1–2** **Sydney Brenner on the Genetics of *Caenorhabditis elegans***
Goldstein, Bob

- 3–4** **Barbara McClintock on Defining the Unstable Genome**
Halpern, Marnie E.

COMMENTARY

- 5–10** **Teaching Genetics: Past, Present, and Future**
Smith, Michelle K. and William B. Wood

PERSPECTIVES

- 11–19** **Medical Genetics and the First Studies of the Genetics of Populations in Mexico**
Barahona, Ana

INVESTIGATIONS

METHODS, TECHNOLOGY AND RESOURCES

- 21–33** **A Genomic Resource for the Development, Improvement, and Exploitation of Sorghum for Bioenergy**
Brenton, Zachary W., Elizabeth A. Cooper, Mathew T. Myers, Richard E. Boyles, Nadia Shakoor, Kelsey J. Zielinski, Bradley L. Rauh, William C. Bridges, Geoffrey P. Morris, and Stephen Kresovich

OPEN ACCESS

- 35–42** **Fast-Flowering Mini-Maize: Seed to Seed in 60 Days**
McCaw, Morgan E., Jason G. Wallace, Patrice S. Albert, Edward S. Buckler, and James A. Birchler

HIGHLIGHTED ARTICLE

STATISTICAL GENETICS AND GENOMICS

- 43–56** **Detecting Heterogeneity in Population Structure Across the Genome in Admixed Populations**

McHugh, Caitlin, Lisa Brown, and Timothy A. Thornton

HIGHLIGHTED ARTICLE

- 57–75** **A Genealogical Look at Shared Ancestry on the X Chromosome**
Buffalo, Vince, Stephen M. Mount, and Graham Coop

- 77–87** **A Statistical Guide to the Design of Deep Mutational Scanning Experiments**
Matuszewski, Sebastian, Marcel E. Hildebrandt, Ana-Hermina Ghenu, Jeffrey D. Jensen, and Claudia Bank

- 89–98** **Bayesian Inference of the Evolution of a Phenotype Distribution on a Phylogenetic Tree**
Ansari, M. Azim and Xavier Didelot
HIGHLIGHTED ARTICLE OPEN ACCESS

- 99–113** **Genetic Architecture of Domestication-Related Traits in Maize**
Xue, Shang, Peter J. Bradbury, Terry Casstevens, and James B. Holland
HIGHLIGHTED ARTICLE

GENOME INTEGRITY AND TRANSMISSION

- 115–128** **Remarkably Long-Tract Gene Conversion Induced by Fragile Site Instability in *Saccharomyces cerevisiae***
Chumki, Shahana A., Mikael K. Dunn, Thomas F. Coates, Jeanmarie D. Mishler, Ellen M. Younkin, and Anne M. Casper
HIGHLIGHTED ARTICLE

- 129–137** **Apparent Epigenetic Meiotic Double-Strand-Break Disparity in *Saccharomyces cerevisiae*: A Meta-Analysis**
Stahl, Franklin W., Maryam Binti Mohamed Rehan, Henriette M. Foss, and Rhona H. Borts
OPEN ACCESS

- 139–152** **RecBCD Enzyme “Chi Recognition” Mutants Recognize Chi Recombination Hotspots in the Right DNA Context**
Amundsen, Susan K., Jake W. Sharp, and Gerald R. Smith

GENE EXPRESSION

- 153–162** **Linking Gene Expression in the Intestine to Production of Gametes Through the Phosphate Transporter PITR-1 in *Caenorhabditis elegans***
Balklava, Zita, Navin D. Rathnakumar, Shilpa Vashist, Peter J. Schweinsberg, and Barth D. Grant
OPEN ACCESS

- 163–176** **Modulation of Circadian Gene Expression and Metabolic Compensation by the RCO-1 Corepressor of *Neurospora crassa***
Olivares-Yáñez, Consuelo, Jillian Emerson, Arminja Kettenbach, Jennifer J. Loros, Jay C. Dunlap, and Luis F. Larrondo

- 177–190** **Histone Deacetylases with Antagonistic Roles in *Saccharomyces cerevisiae* Heterochromatin Formation**
Thurtle-Schmidt, Deborah M., Anne E. Dodson, and Jasper Rine
HIGHLIGHTED ARTICLE

CELLULAR GENETICS

- 191–203** **Axonopathy in the Central Nervous System Is the Hallmark of Mice with a Novel Intragenic Null Mutation of *Dystonin***
Seehusen, Frauke, Kirsten Kiel, Stefano Jottini, Peter Wohlsein, Andre Habierski, Katharina Seibel, Tanja Vogel, Henning Urlaub, Martin Kollmar, Wolfgang Baumgärtner, and Ulrike Teichmann

- 205–220 **Control of Formin Distribution and Actin Cable Assembly by the E3 Ubiquitin Ligases Dma1 and Dma2**
Juanes, M. Angeles and Simonetta Piatti
- DEVELOPMENTAL AND BEHAVIORAL GENETICS
- 221–231 **Parent-of-Origin-Effect *rough endosperm* Mutants in Maize**
Bai, Fang, Mary Daliberti, Alyssa Bagadion, Miaoyun Xu, Yubing Li, John Baier, Chi-Wah Tseung, Matthew M. S. Evans, and A. Mark Settles
- 233–248 **Maternal Gametophyte Effects on Seed Development in Maize**
Chettoor, Antony M., Allison R. Phillips, Clayton T. Coker, Brian Dilkes, and Matthew M. S. Evans
- OPEN ACCESS**
- POPULATION AND EVOLUTIONARY GENETICS
- 249–257 **Empirical Bayes Estimation of Coalescence Times from Nucleotide Sequence Data**
King, Leandra and John Wakeley
- 259–265 **Selection on Inversion Breakpoints Favors Proximity to Pairing Sensitive Sites in *Drosophila melanogaster***
Corbett-Detig, Russell B.
- 267–285 **The Evolutionary Fates of a Large Segmental Duplication in Mouse**
Morgan, Andrew P., J. Matthew Holt, Rachel C. McMullan, Timothy A. Bell, Amelia M.-F. Clayshulte, John P. Didion, Liran Yadgary, David Thybert, Duncan T. Odom, Paul Flieck, Leonard McMillan, and Fernando Pardo-Manuel de Villena
- 287–301 **Genomics of Natural Populations: How Differentially Expressed Genes Shape the Evolution of Chromosomal Inversions in *Drosophila pseudoobscura***
Fuller, Zachary L., Gwilym D. Haynes, Stephen Richards, and Stephen W. Schaeffer
- OPEN ACCESS**
- 303–314 **Fine-Scale Human Population Structure in Southern Africa Reflects Ecogeographic Boundaries**
Uren, Caitlin, Minju Kim, Alicia R. Martin, Dean Bobo, Christopher R. Gignoux, Paul D. van Helden, Marlo Möller, Eileen G. Hoal, and Brenna M. Henn
- HIGHLIGHTED ARTICLE**
- 315–325 **The Interplay of Temperature and Genotype on Patterns of Alternative Splicing in *Drosophila melanogaster***
Jakšić, Ana Marija and Christian Schlötterer
- OPEN ACCESS**
- GENETICS OF COMPLEX TRAITS
- 327–336 **Novel Innate Immune Genes Regulating the Macrophage Response to Gram Positive Bacteria**
Alper, Scott, Laura A. Warg, Lesly De Arras, Brenna R. Flatley, Elizabeth J. Davidson, Jenni Adams, Keith Smith, Christine L. Wohlford-Lenane, Paul B. McCray, Jr., Brent S. Pedersen, David A. Schwartz, and Ivana V. Yang
- 337–353 **Effector-Triggered Immune Response in *Arabidopsis thaliana* Is a Quantitative Trait**
Iakovidis, Michail, Paulo J. P. L. Teixeira, Moises Exposito-Alonso, Matthew G. Cowper, Theresa F. Law, Qingli Liu, Minh Chau Vu, Troy Minh Dang, Jason A. Corwin, Detlef Weigel, Jeffery L. Dangl, and Sarah R. Grant
- OPEN ACCESS**

GENOME AND SYSTEMS BIOLOGY

- 355–369** **Untangling the Contributions of Sex-Specific Gene Regulation and X-Chromosome Dosage to Sex-Biased Gene Expression in *Caenorhabditis elegans***
Kramer, Maxwell, Prashant Rao, and Sevinc Ercan

- 371–383** **The Genetic Basis of Natural Variation in *Caenorhabditis elegans* Telomere Length**

Cook, Daniel E., Stefan Zdraljevic, Robyn E. Tanny, Beomseok Seo, David D. Riccardi, Luke M. Noble, Matthew V. Rockman, Mark J. Alkema, Christian Braendle, Jan E. Kammenga, John Wang, Leonid Kruglyak, Marie-Anne Félix, Junho Lee, and Erik C. Andersen

HIGHLIGHTED ARTICLE OPEN ACCESS

CORRIGENDUM

- 385** **Retinal Axon Guidance Requires Integration of Eya and the Jak/Stat Pathway into Phosphotyrosine-Based Signaling Circuitries in *Drosophila***
Hoi, Charlene S. L., Wenjun Xiong, and Ilaria Rebay