## IN THIS ISSUE
Highlighted research articles .......................... 131

## NEWS IN BRIEF
Important news stories affecting the community .................. 136

## NEWS IN DEPTH
Q&A: Muin Khoury on Cancer Epidemiology ............ 140

## RESEARCH WATCH
Selected highlights of recent articles of exceptional significance from the cancer literature ........ 141

## ONLINE
For more News and Research Watch, visit Cancer Discovery online at http://CDnews.aacrjournals.org.

## VIEWS
In The Spotlight
Navigating the Challenge of Tumor Heterogeneity in Cancer Therapy .................. 146
C. Fedele, R.W. Tothill, and G.A. McArthur
See article, p. 166

EMT Twists the Road to PI3K ... 149
M.J. Niederst and C.H. Benes
See article, p. 186

MYCxing It Up with FGFR1 in Squamous Cell Lung Cancer .... 152
W. Lockwood and K. Politi
See article, p. 246

## REVIEW
Radiogenomics: Using Genetics to Identify Cancer Patients at Risk for Development of Adverse Effects Following Radiotherapy .................. 155
S.L. Kerns, H. Ostrer, and B.S. Rosenstein

## RESEARCH BRIEFS
Addressing Genetic Tumor Heterogeneity through Computationally Predictive Combination Therapy .............. 166
B. Zhao, J.R. Pritchard, D.A. Lauffenburger, and M.T. Hemann
Précis: Computational modeling enables design and optimization of chemotherapeutic drug combinations that minimize tumor cell subpopulation outgrowth in heterogeneous tumors.

See commentary, p. 146

Tolerance of Whole-Genome Doubling Propagates Chromosomal Instability and Accelerates Cancer Genome Evolution ............ 175
Précis: Genome doubling is an early event in colorectal cancer development that is associated with an increased tolerance for chromosomal instability and poor prognosis.

Epithelial-to-Mesenchymal Transition Rewires the Molecular Path to PI3K-Dependent Proliferation .................. 186
M.B. Salt, S. Bandyopadhyay, and F. McCormick
Précis: EMT removes an autocrine ERBB3 loop in NSCLC, leading to a reduction in proliferation that can be rescued by restoring PI3K signaling through divergent mechanisms.

See commentary, p. 149

MEK-Dependent Negative Feedback Underlies BCR-ABL-Mediated Oncogene Addiction .................. 200
Précis: BCR-ABL activates a MEK-dependent negative feedback pathway that persistently inhibits growth factor receptor signaling and leads to apoptotic commitment upon BCR-ABL inhibition.

### RESEARCH ARTICLES

Addressing Genetic Tumor Heterogeneity through Computationally Predictive Combination Therapy
B. Zhao, J.R. Pritchard, D.A. Lauffenburger, and M.T. Hemann

Précis: Computational modeling enables design and optimization of chemotherapeutic drug combinations that minimize tumor cell subpopulation outgrowth in heterogeneous tumors.

See commentary, p. 146

Tolerance of Whole-Genome Doubling Propagates Chromosomal Instability and Accelerates Cancer Genome Evolution

Précis: Genome doubling is an early event in colorectal cancer development that is associated with an increased tolerance for chromosomal instability and poor prognosis.

Epithelial-to-Mesenchymal Transition Rewires the Molecular Path to PI3K-Dependent Proliferation
M.B. Salt, S. Bandyopadhyay, and F. McCormick

Précis: EMT removes an autocrine ERBB3 loop in NSCLC, leading to a reduction in proliferation that can be rescued by restoring PI3K signaling through divergent mechanisms.

See commentary, p. 149

MEK-Dependent Negative Feedback Underlies BCR-ABL-Mediated Oncogene Addiction

Précis: BCR-ABL activates a MEK-dependent negative feedback pathway that persistently inhibits growth factor receptor signaling and leads to apoptotic commitment upon BCR-ABL inhibition.
Patients with triple-negative breast cancer who do not experience a pathologic complete response following neoadjuvant chemotherapy have a poor prognosis due to a high rate of recurrence of metastatic disease. Balko and colleagues performed genomic analyses of residual triple-negative breast cancers after neoadjuvant chemotherapy to identify potential targets for adjuvant therapy and found that over 90% of residual triple-negative breast cancers harbored an actionable alteration in a targetable pathway. Molecular profiling of residual triple-negative breast cancers after neoadjuvant chemotherapy could thus potentially guide the use of adjuvant targeted therapies aimed at preventing disease recurrence. For details, please see the article by Balko and colleagues on page 232.