**CONTENTS**

**IN THIS ISSUE**  
Highlighted research articles ....................... 653

**NEWS IN BRIEF**  
Important news stories affecting the community ............... 656

**NEWS IN DEPTH**  
Q&A: Stephen Friend on a Bioinformation Commons ....... 658  
PARP Inhibitors Refocus for Rebound ..................... 659  
A Deeper Look at Tumor Heterogeneity .................... 660

**RESEARCH WATCH**  
Selected highlights of recent articles of exceptional significance from the cancer literature .................. 661

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

**VIEWS**  
In The Spotlight

**RESEARCH ARTICLES**  
First-in-Human Trial of a STAT3 Decoy Oligonucleotide in Head and Neck Tumors: Implications for Cancer Therapy .......... 694  
Précis: Intratumoral injection of a STAT3 decoy oligonucleotide safely reduced target gene expression in a phase 0 clinical trial, and chemical modification may enable systemic delivery.

**DISCOVERY IN CONTEXT**  
Leveraging Multidimensional Glioblastoma Datasets to Identify Targetable Regulatory Networks .......... 676  
I. Babic and P.S. Mischel  
Commentary on Genovese et al., p. 736

**REVIEW**  
Mechanisms of BRCA1 Tumor Suppression ................. 679  
D.P. Silver and D.M. Livingston

**RESEARCH BRIEF**  
A Central Role for RAF → MEK → ERK Signaling in the Genesis of Pancreatic Ductal Adenocarcinoma ........ 685  
Précis: Pancreatic ductal adenocarcinomas harboring KRAS mutations are dependent on RAF signaling and are sensitive to MEK inhibition.

**Q&A:** Stephen Friend on a Bioinformation Commons

**PARP Inhibitors Refocus for Rebound**

**A Deeper Look at Tumor Heterogeneity**

**In The Spotlight**  
RAF/MEK Dependence of KRAS-Mutant Pancreatic Ductal Adenocarcinomas .......... 666  
A.J. Hanrahan and D.B. Solit  
Commentary on Collisson et al., p. 685

**STATe-of-the-Art Approach: Using Oligonucleotide Decoys to Target the “Undruggable”**

**Turn Off the IDO: Will Clinical Trials Be Successful?**

**First-in-Human Trial of a STAT3 Decoy Oligonucleotide in Head and Neck Tumors: Implications for Cancer Therapy**

**Intratumoral injection of a STAT3 decoy oligonucleotide safely reduced target gene expression in a phase 0 clinical trial, and chemical modification may enable systemic delivery.**
The Outgrowth of Micrometastases Is Enabled by the Formation of Filopodium-like Protrusions........... 706
T. Shibue, M.W. Brooks, M.F. Inan, F. Reinhardt, and R.A. Weinberg
Précis: The formation of integrin β1-containing protrusions mediates FAK signaling to promote metastatic cell proliferation and colonization.

IDO Is a Nodal Pathogenic Driver of Lung Cancer and Metastasis Development ................. 722
Précis: IDO orchestrates inflammation, vascularization, and immunosuppression to establish a protumorigenic environment in lung cancer and metastasis models.

microRNA Regulatory Network Inference Identifies miR-34a as a Novel Regulator of TGF-β Signaling in Glioblastoma........... 736
Précis: miR-34a functions as a subtype-specific tumor suppressor in glioblastoma through targeted inhibition of SMAD4-regulated transcription.

Correction
Correction: High Frequency of PIK3R1 and PIK3R2 Mutations in Endometrial Cancer Elucidates a Novel Mechanism for Regulation of PTEN Protein Stability ......................... 750
Sen and colleagues conducted an exploratory, first-in-human phase 0 trial that showed that intratumoral injection of a STAT3 decoy oligonucleotide during tumor resection surgery could safely reduce STAT3 target gene expression in head and neck squamous cell carcinomas (HNSCC). Modification of the STAT3 decoy by linkage or circularization of the 2 strands increased its stability in vitro, which facilitated systemic administration of the STAT3 decoy in vivo. Intravenous injection of a cyclic STAT3 decoy, but not the parental decoy, decreased STAT3 target gene expression in HNSCC xenografts and significantly suppressed tumor growth. For details, please see the article by Sen and colleagues on page 694.