RESEARCH ARTICLE

152  Association of the Autoimmune Disease Scleroderma with an Immunologic Response to Cancer  
C. G. Joseph et al.  
The immune system’s response to a mutant protein produced by an incipient cancer may help to explain an autoimmune disease.  
>> Perspective p. 147

REPORTS

157  Giant Spin Oscillations in an Ultracold Fermi Sea  
J. S. Krauser et al.  
Long-lived oscillations of the internal state of a trapped fermionic potassium-40 gas occur within a single spatial mode.

160  Performing Mathematical Operations with Metamaterials  
A. Silva et al.  
An approach is described whereby metamaterials can be designed to perform a suite of mathematical functions.  
>> Perspective p. 144

163  Heteroepitaxial Growth of Two-Dimensional Hexagonal Boron Nitride Templated by Graphene Edges  
L. Liu et al.  
The orientation of a growing boron nitride film is determined by its graphene template and not the underlying substrate.

167  Self-Accelerating CO Sorption in a Soft Nanoporous Crystal  
H. Sato et al.  
A soft nanoporous crystalline solid exhibits self-accelerating, selective carbon monoxide adsorption.

171  Transient Water Vapor at Europa’s South Pole  
L. Roth et al.  
Hubble Space Telescope images of Jupiter’s moon Europa reveal emission consistent with transient water vapor plumes.  
>> Perspective p. 148

174  Strong Sensitivity of Pine Island Ice-Shelf Melting to Climatic Variability  
P. Dutrieux et al.  
Colder surface ocean waters decreased the rate of melting under the Pine Island Glacier ice shelf in 2012.

178  A Spatial Accommodation by Neighboring Cells Is Required for Organ Initiation in Arabidopsis  
J. E. M. Vermeer et al.  
Localized disruption of surrounding plant cell walls paves the way for lateral root development.

183  Bacterial Vesicles in Marine Ecosystems  
S. J. Biller et al.  
The abundant marine cyanobacterium Prochlorococcus sheds membrane vesicles that may contribute to carbon budgets.  
>> Perspective p. 143; Science Podcast

186  Progenitor Outgrowth from the Niche in Drosophila Trachea Is Guided by FGF from Decaying Branches  
F. Chen and M. A. Krasnow  
Progenitor cells in flies form new trachea by following an embryonic inducer reactivated in decaying branches.

189  Mutational Analysis Reveals the Origin and Therapy-Driven Evolution of Recurrent Glioma  
B. E. Johnson et al.  
Primary brain tumors and their recurrences can exhibit vastly different mutational profiles.

193  Single-Cell RNA-Seq Reveals Dynamic, Random Monoallelic Gene Expression in Mammalian Cells  
Q. Deng et al.  
Independent allele transcription generates fluctuations in the single-cell transcriptome.

197  Modular Organization of Axial Microcircuits in Zebrafish  
M. W. Bagnall and D. L. McLean  
Larval zebrafish show more refined muscle control than expected.

200  Apical Abscission Alters Cell Polarity and Dismantles the Primary Cilium During Neurogenesis  
R. M. Das and K. G. Storey  
During vertebrate neuronal development, the apical membrane is shed, allowing further differentiation.  
>> Perspective p. 146

204  Internalization of Salmonella by Macrophages Induces Formation of Nonreplicating Persisters  
S. Helaine et al.  
Upon internalization, intracellular Salmonella choose between replication or a form of quiescence known as persistence.