BREVIA

1657 Plants Integrate Information About Nutrients and Neighbors
J. F. Cahill Jr. et al.
Plant root growth is modified in the presence of within-species competition and uneven local resource distributions.

RESEARCH ARTICLES

1658 Delay in Photoemission
M. Schultze et al.
Ultrafast metrology reveals a 20-attosecond delay between photoemission from different electronic orbitals in neon atoms.

1662 Reconstituting Organ-Level Lung Functions on a Chip
D. Huh et al.
Endothelial and epithelial cells grown in a microfluidics apparatus mimic the alveolar-capillary interface of the lung.

REPORTS

1668 4D Electron Tomography
O.-H. Kwon and A. H. Zewail
Nanotube vibrations are visualized in three dimensions by varying the incident angle of an ultrashort electron probe burst.

1673 Measurement of the Instantaneous Velocity of a Brownian Particle
T. Li et al.
An optically trapped silica bead in solution is used to probe assumptions underlying statistical theories of Brownian motion.

1676 Glass Transition Dynamics and Surface Layer Mobility in Unentangled Polystyrene Films
Z. Yang et al.
Thin films of short, unentangled polystyrene chains possess a highly mobile surface layer.

1679 The Palladium-Catalyzed Trifluoromethylation of Aryl Chlorides
E. J. Cho et al.
Careful catalyst tuning enables addition of trifluoromethyl groups to many intermediates in pharmaceutical and agrochemical synthesis.

1682 Detection of Hydrated Silicates in Crustal Outcrops in the Northern Plains of Mars
J. Carter et al.
The extent of the alteration of the crust of Mars by liquid water is greater than previously estimated.

1686 Hydrogen Isotopes Preclude Marine Hydrate CH₄ Emissions at the Onset of Dansgaard-Oeschger Events
M. Bock et al.
Catastrophic destabilization of marine methane clathrates did not trigger rapid warming episodes 39,000 and 35,000 years ago.

1689 ATP-Binding Cassette Transporters and HDL Suppress Hematopoietic Stem Cell Proliferation
L. Yvan-Charvet et al.
Pathways that reduce cholesterol in atherosclerosis also suppress increased immune cell numbers associated with the disease.

1694 A Novel miRNA Processing Pathway Independent of Dicer Requires Argonaute2 Catalytic Activity
D. Cifuentes et al.
The unusual secondary structure of a precursor microRNA determines its noncanonical processing.

1700 A Generalization of Hamilton’s Rule for the Evolution of Microbial Cooperation
J. Smith et al.
A rule for the evolution of cooperation in microbes shows how bacteria resist cheaters.

1703 c-di-AMP Secreted by Intracellular Listeria monocytogenes Activates a Host Type I Interferon Response
J. J. Woodward et al.
Within the host cell, a small secondary signaling molecule from a pathogen triggers a pathway of innate immunity.

1705 Reversible Microbial Colonization of Germ-Free Mice Reveals the Dynamics of IgA Immune Responses
S. Hoffmeier et al.
Immunoglobulin responses against nonpathogenic bacteria in the gut are specific for the resident microbial flora.

1709 Transition to Addiction Is Associated with a Persistent Impairment in Synaptic Plasticity
F. Kasanetz et al.
Loss of glutamate receptor–dependent synaptic plasticity in the brain is associated with the transition to cocaine addiction.

1712 Incidental Haptic Sensations Influence Social Judgments and Decisions
J. M. Ackerman et al.
A seat-of-the-pants impression (tactile sensation influencing decisions) is a reality and not just a metaphor.