Interactions between microbes and plants can vary widely, depending upon the context and the partners of the interaction. An Editorial on page 691 and a collection of Perspectives starting on page 742 discuss recent advances in our understanding of the biochemistry, signaling, and ecosystem dynamics that reflect how microbes and plants interact.

Illustration: Chris Bickel
REVIEW

736 Elemental Composition of the Martian Crust
H. Y. McSween Jr. et al.

BREVIA

758 A Gene Necessary for Reproductive Suppression in Termites
J. Korb et al.
Knocking out the Neofem2 gene in queen termites illicits pre-reproductive behavior in workers.

RESEARCH ARTICLE

759 Representation of Confidence Associated with a Decision by Neurons in the Parietal Cortex
R. Kiani and M. N. Shadlen
Neurons in the primate parietal cortex encode information required to make a decision and also the certainty of that choice.

REPORTS

764 Characterization of Multipartite Entanglement for One Photon Shared Among Four Optical Modes
S. B. Papp et al.
Sharing a single photon between four optical modes creates entangled states that could be used in quantum information processing.

768 N-Doping of Graphene Through Electrothermal Reactions with Ammonia
X. Wang et al.
The edges of graphene nanoribbons incorporate nitrogen atoms after heating in an atmosphere of ammonia.

772 An Experimental Design Method Leading to Chemical Turing Patterns
J. Horváth et al.
Three design criteria were used to create sustained stationary patterns in the thiourea-iodate-sulfite reaction system.

775 An Observation Linking the Origin of Plasmaspheric Hiss to Discrete Chorus Emissions
J. Bortnik et al.
The radio waves that remove energetic electrons from Earth’s radiation belts originate outside the plasmasphere.

781 UV Absorption Cross Sections of ClOOCl Are Consistent with Ozone Degradation Models
H.-Y. Chen et al.
Measurements of how well ClOOCl molecules absorb ultraviolet light support standard models of chlorine-induced ozone degradation.

784 Host Inhibition of a Bacterial Virulence Effector Triggers Immunity to Infection
V. Ntoukakis et al.
An enzyme in tomato targets bacterial virulence to change the outcome of infection from susceptibility to immunity.

787 Development of a Second-Generation Antiandrogen for Treatment of Advanced Prostate Cancer
C. Tran et al.
A drug that binds to the androgen receptor acts by disrupting its activity in the cell nucleus.

791 Basin-Scale Coherence in Phenology of Shrimps and Phytoplankton in the North Atlantic Ocean
P. Koeller et al.
Shrimp reproduction is primed by bottom temperature and not directly by cues from the spring phytoplankton bloom.

794 Apicomplexan Parasites Co-Opt Host Calpains to Facilitate Their Escape from Infected Cells
R. Chandramohanadas et al.
A host protease helps newly replicated microbial parasites escape from incubator cells.

797 Human Induced Pluripotent Stem Cells Free of Vector and Transgene Sequences
J. Yu et al.
Human induced pluripotent stem cells can be generated without integration of exogenous DNA into their genomes.

801 Benzothiazinones Kill Mycobacterium tuberculosis by Blocking Arabinan Synthesis
V. Makarov et al.
An isomerase required for cell-wall synthesis is a target for an alternative drug lead for tuberculosis treatment.

804 Mammalian Expression of Infrared Fluorescent Proteins Engineered from a Bacterial Phytochrome
X. Shu et al.
An engineered infrared fluorescent protein derived from an extremophile bacterium gives a strong signal in mammalian cells.

807 High-Throughput Sequencing of the Zebrafish Antibody Repertoire
J. A. Weinstein et al.
Sequencing of immunoglobulin messenger RNA characterizes the diversity of the antibody repertoire in individual zebrafish.

811 Movement Intention After Parietal Cortex Stimulation in Humans
M. Desmurget et al.
Stimulation of the parietal cortex causes subjects to report having moved, even in the absence of actual motor responses.
Whimper or a Bang?

New findings suggest that the sleep disorder Narcolepsy: A Case of the Body Attacking Itself?

Running Amok in the Milky Way

Hundreds of rogue black holes could be prowling the galaxy.

For Classy, a mitogen-activated protein kinase pathway is required for regenerative, but not developmental, axon outgrowth.

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Learn about current neuroscience research and explore the genetic and biochemical causes of neurologic and neurodevelopmental disorders; in Educator Sites.

NETWATCH: PharmGKB

A pharmacogenetics database integrates genetic, phenotypic, and pharmacological data; in Bioinformatics Resources.

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I. S. Levine

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