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.

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758 A Gene Necessary for Reproductive Suppression in Termites
J. Korb et al.
Knocking out the Neoefem2 gene in queen termites illicits pre-reproductive behavior in workers.

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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.

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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
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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
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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.

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.
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Greater Transportation Energy and GHG Offsets from Bioelectricity Than Ethanol
J. E. Campbell et al.

Electric vehicles powered by electricity made from biofuels are more efficient than vehicles fueled by bioethanol.
10.1126/science.1168885
>> Science Podcast

Large-Area Synthesis of High-Quality and Uniform Graphene Films on Copper Foils
X. Li et al.

Predominantly single-layer graphene films grow in a self-limited manner on copper and can be transferred to other substrates.
10.1126/science.1171245

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H. Elsaesser et al.

Interleukin-21 produced by CD4+ T cells helps CD8+ T cells control viral infection in a mouse model.
10.1126/science.1174182

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Addition and subtraction are encoded in the same part of the brain that is responsible for eye movements and spatial attention.
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Fluorescent False Neurotransmitters Visualize Dopamine Release from Individual Presynaptic Terminals
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Optical tracking of neurotransmitter release in the brain reveals multiple synaptic populations that depend on brain activity.
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RESEARCH ARTICLE: Complexity in Transcription Control at the Activation Domain–Mediator Interface
M. A. Balamut et al.

Transcriptional activation kinetics vary in different cell types, in part because related transcription factors make alternative mediator interactions.

PERSPECTIVE: Nitric Oxide Links Mitochondrial Fission to Alzheimer’s Disease
B. Westermann

Amyloid β–induced nitrosylation of a GTPase involved in mitochondrial fission is neurotoxic.

PERSPECTIVE: Fragile Axons Forge the Path to Gene Discovery — A MAP Kinase Pathway Regulates Axon Regeneration
G. S. O’Brien and A. Sagasti

In Caenorhabditis elegans, a mitogen-activated protein kinase pathway is required for regenerative, but not developmental, axon outgrowth.

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