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COVER
Human colon cancer (at lower center) identified by a colored barium x-ray shown overlaid with a representation of a genetic sequence. Genome sequence analysis of human tumors has uncovered an array of genetic alterations that help drive tumor growth—information that may lead to more effective cancer therapies. See the special section beginning on page 1539.

Image: Mehau Kulyk/Science Source

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SCIENCE PRIZE ESSAY

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J. M. Creamean et al.
Dust and biological aerosols from the Sahara and Asia can act as ice nuclei for precipitation in California’s Sierra Nevada.

1578 Multiple Instances of Ancient Balancing Selection Shared Between Humans and Chimpanzees
E. M. Leffler et al.
Genome-wide shared genetic polymorphisms between humans and chimps mostly affect host-pathogen interactions.

REPORTS

1582 Topology-Driven Magnetic Quantum Phase Transition in Topological Insulators
J. Zhang et al.
Simultaneous topological and magnetic quantum phase transitions are observed in thin films of Bi$_2$(Se$_{1−x}$Te$_x$)$_3$ doped with chromium.

1586 Ultrafast Tryptophan-to-Heme Electron Transfer in Myoglobin Revealed by UV 2D Spectroscopy
C. Consani et al.
Relaxation in a photoexcited protein by electron transfer may limit the generality of a common energy transfer–based probe.

1590 Tuning Selectivity in Propylene Epoxidation by Plasmon Mediated Photo-Switching of Cu Oxidation State
A. Marimuthu et al.
In situ visible light irradiation reverses the oxidative degradation of a copper catalyst, thereby enhancing its viability.

1593 Photoredox Activation for the Direct β-Arylation of Ketones and Aldehydes
M. T. Pinrot et al.
Two catalysts working in tandem form carbon-carbon bonds at a conventionally unreactive site.

1597 Direct Observations of the Evolution of Polar Cap Ionization Patches
Q.-H. Zhang et al.
Observations of ionospheric perturbations after a solar burst hit Earth show how a patch of ionization formed and evolved.

1600 Structure of the Integral Membrane Protein CAAX Protease Ste24p
E. E. Pryor Jr. et al.

1604 The Structural Basis of ZMPSTE24-Dependent Laminopathies
A. Quigley et al.
Structures of two transmembrane zinc proteases reveal a barrel of seven helices surrounding a large cavity.

1608 Wild Pollinators Enhance Fruit Set of Crops Regardless of Honey Bee Abundance
L. A. Garibaldi et al.
Flower visits by wild insects enhanced fruit production in crops worldwide, well beyond the effect of bees.

1611 Plant-Pollinator Interactions over 120 Years: Loss of Species, Co-Occurrence, and Function
L. A. Burkle et al.

1615 Roots and Associated Fungi Drive Long-Term Carbon Sequestration in Boreal Forest
K. E. Clemmensen et al.
Reservoirs of carbon in boreal forest soils are revisited in an island chronosequence, using modeling and molecular approaches.

1618 The Biological Underpinnings of Namib Desert Fairy Circles
N. Juergens
Termites alter local soil conditions to facilitate the growth of grasses, generating patterns in the desert.

1621 (R)-2-Hydroxylutarate Is Sufficient to Promote Leukemogenesis and Its Effects Are Reversible
J.-A. Losman et al.
A metabolite specific to certain cancers, and of therapeutic interest, exists in two forms, only one of which is oncogenic.

1625 ESCRT-III Assembly and Cytokinetic Abscission Are Induced by Tension Release in the Intercellular Bridge
J. Lafaurie-Janvore et al.
When a daughter cell lets go, the mother cell cuts it loose.
Science 339 (6127), 1487-1630.