The Ginza area of Tokyo in 2006. By 2030 the number of urban dwellers will have exploded to 4.8 billion people, roughly 60 percent of the projected world population, whereas only 13 percent lived in cities in 1900. The special section beginning on page 739 includes News stories, Reviews, and Perspectives that explore the ramifications of urban transformation.

Photo: Getty Images

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PLANT SCIENCE
TOPLESS Mediates Auxin-Dependent Transcriptional Repression During Arabidopsis Embryogenesis
H. Szemenyei, M. Hannon, J. A. Long
A transcriptional co-repressor is part of the protein complex that inhibits developmental gene activation in Arabidopsis until the growth hormone auxin triggers its degradation.
10.1126/science.1151461

NEUROSCIENCE
Synaptic Protein Degradation Underlies Destabilization of Retrieved Fear Memory
S.-H. Lee et al.
Upon recollection, mouse memories of fearful situations become labile, as postsynaptic proteins are degraded by proteosomes and are then reconsolidated via protein synthesis.
10.1126/science.1150541
just before it collides with a nickel braking in hybrid cars.

J. M. Donelan

Electricity During Walking with Minimal User Effort

BIOPHYSICS

Complexity, extending to three trophic levels.

Food webs that contain either Brussels sprouts or a wild Brassica relative have surprisingly large differences in structure and complexity, extending to three trophic levels.

CLIMATE CHANGE

The Spatial Pattern and Mechanisms of Heat-Content Change in the North Atlantic M. S. Lozier et al.

Warming and cooling in different parts of the North Atlantic since 1950 reflects variable atmospheric circulation, complicating understanding of anthropogenic changes.

ECOLOGY

Direct and Indirect Effects of Resource Quality on Food Web Structure T. Bukovinszky, F. J. F. van Veen, Y. Jongema, M. Dicke

Food webs that contain either Brussels sprouts or a wild Brassica relative have surprisingly large differences in structure and complexity, extending to three trophic levels.

BIOPHYSICS

Biomechanical Energy Harvesting: Generating Electricity During Walking with Minimal User Effort J. M. Donelan et al.

A knee-mounted device can generate several watts of power at the end of each leg swing in a process similar to regenerative braking in hybrid cars.
Team Uncovers New Evidence of Recent Human Evolution
Adaptation to disparate environments resulted in mutations related to obesity and diabetes.

Don’t It Make Your Brown Eyes Blue?
Researchers locate genetic change that leads to baby blues, and it’s not where they expected.

Move Over Beavers, Here Come Salmon
The big fish don’t just swim upstream—they shape the stream.

Exosomes spread inflammatory signals.

Perspective: Novel Roles for the NF-κB Signaling Pathway in Regulating Neuronal Function
M. C. Boersma and M. K. Meffert
Components of the NF-κB pathway may use multiple mechanisms to influence synaptic plasticity, learning, and memory.

Perspective: Exosomes Secreted by Bacterially Infected Macrophages Are Proinflammatory
H. C. O’Neill and B. J. C. Quah
The release of bacterial components in vesicles secreted by infected macrophages helps promote inflammation.

Special Feature: Mentoring
E. Pain
What makes mentoring relationships successful?

A Gift That Keeps On Giving
S. Webb
An industry mentor helped physicist Joan Hoffmann navigate graduate school and launch her career.

Mentoring Opposites
C. Wald
A mentor and student turned their differences into strengths as they became scientific collaborators.

From the Archives: The Commandments of Cover Letter Creation
P. Fiske
A good cover letter highlights your qualifications and guides readers through the most important parts of your work history.

Download the 8 February Science Podcast to hear about greenhouse emissions from biofuel-dedicated land, the 2009 U.S. science budget, good mentoring relationships, reproducing in cities, and more.

www.sciencemag.org/about/podcast.dtl

An accompaniment to this week’s special section exploring the benefits and challenges of urbanization.

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