A depiction of the interaction of an excess electron with the hydrogen-bonded complex NH₃...HCl, which induces formation of the ionic pair NH₄⁺Cl⁻ solvated by the excess electron. The image shows the structures of three possible systems and highlights the areas that correspond to 10%, 30%, and 50% of the excess electron. See page 936.

Illustration: Maciej Haranczyk
Sr Lattice Clock at $1 \times 10^{-16}$ Fractional Uncertainty by Remote Optical Evaluation with a Ca Clock
A. D. Ludlow et al.
Two clocks based on optical transitions in single trapped ions set 4 kilometers apart are able to keep time within a fractional error of $1 \times 10^{-16}$, better than the standard atomic clock.
10.1126/science.1153341

A Cholesterol Biosynthesis Inhibitor Blocks Staphylococcus aureus Virulence
C.-I. Liu et al.
A drug for controlling cholesterol may be useful as an antibiotic for multi-drug-resistant Staphylococcus because of unexpected structural similarities among critical proteins.
10.1126/science.1153018

A neurokinin 1 receptor antagonist as a possible therapy for alcoholism
D. T. George et al.
A drug that inhibits a neural signaling pathway linked to behavioral stress may be a useful therapy in preventing relapse in alcoholics.
10.1126/science.1153813

Generation of Pluripotent Stem Cells from Adult Mouse Liver and Stomach Cells
T. Aoi et al.
Induced pluripotent stem cells are generated by direct reprogramming of adult liver and stomach cells without retroviral integration into specific sites in the genome.
10.1126/science.1154884

Comment on "The Latitudinal Gradient in Recent Speciation and Extinction Rates of Birds and Mammals"
J. A. Tobias, J. M. Bates, S. J. Hackett, N. Seddon
Response to Comment on "The Latitudinal Gradient in Recent Speciation and Extinction Rates of Birds and Mammals"
J. T. Weir and D. Schluter

Adapting Proteostasis for Disease Intervention
W. E. Balch, R. I. Morimoto, A. Dillin, J. W. Kelly

Discovery of a Jupiter/Saturn Analog with Gravitational Microlensing
B. S. Gaudi et al.
A system of two giant planets orbiting a star has been discovered through their gravitational deflection of light from more distant stars.
>> News story p. 885

Identification of Host Proteins Required for HIV Infection Through a Functional Genomic Screen
A. L. Brass et al.
An RNAi screen identified 237 new and 38 known human proteins required for HIV infection, including ones used in Golgi transport and in viral integration and transcription.

A system of two giant planets orbiting a star has been discovered through their gravitational deflection of light from more distant stars.

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A system of two giant planets orbiting a star has been discovered through their gravitational deflection of light from more distant stars.
Reports Continued...

Physics
Spin-Dependent WIMP Limits from a Bubble Chamber
E. Behnke et al.
Experiments with a stabilized bubble chamber, consisting of a burned superheated liquid, limit the abundance of weakly interacting massive particles, a dark-matter candidate.

Chemistry
Electron-Driven Acid-Base Chemistry: Proton Transfer from Hydrogen Chloride to Ammonia
S. N. Eustis et al.
Spectroscopy and simulations show that binding an excess electron to HCl helps it fully transfer its proton to ammonia, facilitating this type of acid-base reaction in a vacuum.

Ecosystem Function
High-Throughput Synthesis of Zeolitic Imidazolate Frameworks and Application to CO2 Capture
R. Banerjee et al.
Microporous metal–organic frameworks with two types of linkers between the metal atoms in a tetrahedral lattice can take up large amounts of CO2 at ambient conditions.

GEOCHEMISTRY
Rogue Mantle Helium and Neon
F. Albarede
Anomalously high ratios of 4He to 3He in the recycled basalts under ocean islands may result from helium diffusing in from more pristine, primitive mantle.

Evolution
The Premetazoan Ancestry of Cadherins
M. Abedin and N. King
A close unicellular relative of metazoans unexpectedly contains 23 genes for a cell adhesion protein, suggesting a role for the protein in the evolution of multicellularity.

Ecology
A Global Map of Human Impact on Marine Ecosystems
B. S. Halpern et al.
A meta-analysis shows that human activities have altered virtually all ocean ecosystems, at least to some extent, documenting those areas needing the most protection.

Effects of Predator Hunting Mode on Grassland Ecosystem Function
O. J. Schmitz
An ecosystem containing actively hunting spiders shows lower plant diversity but higher primary production than one with spiders that sit and wait to ambush their prey.

Biology
Axle-Less F1-ATPase Rotates in the Correct Direction
S. Furuike et al.
A molecular rotary motor continues to rotate in the correct direction even when its shaft is deleted, leaving only the rotor head sitting on top of the shaft housing.

Germline Selection Against Severe mtDNA Mutations
W. Fan et al.
Developing mouse oocytes that harbor highly deleterious mitochondrial DNA mutations are eliminated, minimizing negative impact on population fitness.

Psychology
The Critical Importance of Retrieval for Learning
J. D. Karpicke and H. L. Roediger III
Students recalled words they had learned the previous week more effectively if they were tested repeatedly in the interim than if they spent the time studying.

Medicine
Metal Chelation and Inhibition of Bacterial Growth in Tissue Abscesses
B. D. Corbin et al.
An immune cell–derived protein binds metal ions in infected abscesses, depriving the bacteria of the essential nutrients magnesium and zinc and reducing their growth.

Genetics
A Mouse Model of Mitochondrial Disease Reveals Negative Impact on Population Fitness
M. A. Hasty et al.
Developing mouse oocytes that harbor highly deleterious mitochondrial DNA mutations are eliminated, minimizing negative impact on population fitness.

Biochemistry
Germline Selection Against Severe mtDNA Mutations
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The Tiredness of the Long-Distance Runner
Leaky calcium channels may cause muscle fatigue, and a new drug could boost performance.

I Hear You, My Monkey Brother
A region of the monkey brain responds preferentially to the voices of other monkeys.

Taking the Heat Off Coral
A natural ocean “thermostat” is counteracting the effects of climate warming.

Overcoming that phony feeling.

In Person: Finding Opportunities in a Dysfunctional Job Market
B. Allen
To find hidden value in the job market, you have to cast a wide net.

No, You’re Not an Impostor
L. Laursen
Getting over the feeling that you’re a phony takes an accurate self-appraisal.

Tooling Up: Put Some Muscle Into Your Marketing Materials
D. Jensen
Powerful writing can move your job application to the top of the pile.

From the Archives: How to Get a Job in Academia
A. Fazekas
What the hiring committee is looking for depends on the type of institution.

THE GONZO SCIENTIST:
Can Scientists Dance?
Our intrepid reporter organized the first-ever “Dance Your Ph.D.” contest to answer the question—and has video to show for it.

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