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16 JULY 2010
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Editor summaries of this week's papers.
Science 16 July 2010: 254.
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A Volunteer Army for Science
Donald G. Rea and Katherine M. Nielsen
Science 16 July 2010: 257.
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- Editors' Choice**
Highlights of the recent literature.
Science 16 July 2010: 258.
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- Science Podcast**
Science 16 July 2010: 346.
The show includes sharing social responsibility with companies; genetic variants associated with kidney disease; bringing science to Washington, D.C., schools; and more.
[Summary >](#) [Full Text >](#) [Transcript >](#)
- New Products**
Science 16 July 2010: 346.
A weekly roundup of information on newly offered instrumentation, apparatus, and laboratory materials of potential interest to researchers.
[Summary >](#) [Full Text >](#) [PDF >](#)

- News of the Week**
- FORENSICS
Familial DNA Testing Scores a Win in Serial Killer Case
Greg Miller
Science 16 July 2010: 262.
A discarded piece of pizza and a relatively new method of DNA testing have helped police catch the man they suspect is the serial killer nicknamed the "Grim Sleeper," the Los Angeles police announced last week.
[Summary >](#) [Full Text >](#) [PDF >](#)
- GENETICS
Kidney Disease Is Parasite-Slaying Protein's Downside
Mitch Leslie
Science 16 July 2010: 263.
Researchers describe two Jekyll-and-Hyde genetic variations online in *Science* this week that can lead to kidney shutdown but may also fend off a microorganism that causes sleeping sickness in thousands of people in Africa.
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FEATURED JOBS

BIOSECURITY

New Biosecurity Rules to Target the Riskiest Pathogens

Yudhijit Bhattacharjee
Science 16 July 2010: 264-265.

An executive order issued by President Barack Obama earlier this month indicates that the regulations on so-called select agents may end up more streamlined and less burdensome.

[Summary](#) » [Full Text](#) » [PDF](#) »

BIOETHICS

U.S. Panel Weighs Guidelines for Synthetic Biology

Jocelyn Kaiser
Science 16 July 2010: 264-265.

Last week, the United States began the highest review to date—in the president's bioethics commission—of problems that could come out of the young field of synthetic biology. The commission will take a "deep dive" into the subject before coming back with advice by the end of this year, said the panel's co-chair.

[Summary](#) » [Full Text](#) » [PDF](#) »

STEM CELL RESEARCH

Scientists Eulogize Center—And Prepare for Stiff Competition

Elizabeth Finkel
Science 16 July 2010: 265.

The Australian government has omitted the Australian Stem Cell Centre from its 2011 budget, which will force ASCC to close next June. The move will hamper Australia's ability to compete in a hot research field, some scientists claim.

[Summary](#) » [Full Text](#) » [PDF](#) »

ANTHROPOLOGY

Probing Culture's Secrets, From Capuchins to Children

Michael Balter
Science 16 July 2010: 266-267.

At a recent meeting on how culture, usually defined as the passing on of traditions by learning from others, arises and changes, researchers probed questions such as what sparks cultural trends and how complex traditions are transmitted.

[Summary](#) » [Full Text](#) » [PDF](#) »

SCIENCEINSIDER

From the *Science* Policy Blog

Science 16 July 2010: 267.

Science Insider reported this week that in one of the final chapters of the controversy over the stolen e-mails from climate scientists, an independent panel has mostly cleared researchers at the U.K.'s University of East Anglia of scientific malfeasance, among other stories.

[Summary](#) » [Full Text](#) » [PDF](#) »

ECOLOGY

How a Little Fish Keeps Overfished Ecosystem Productive

Elizabeth Pennisi
Science 16 July 2010: 268.

Off the coast of southwest Africa, researchers have discovered that a small fish called the bearded goby feasts on jellyfish, and in doing so, helps to sustain seabirds, mammals, and larger fish in that ecosystem. In this week's issue of *Science*, they describe this fish's unusual lifestyle, which includes hiding out on the muddy sea floor in water toxic to other fish.

[Summary](#) » [Full Text](#) » [PDF](#) »

SCIENCENOW.ORG

From *Science*'s Online Daily News Site

Science 16 July 2010: 269.

*Science*NOW reported this week that meerkats have their own traditions, a stimulating life may ward off cancer, and a vaccine for a deadly human pathogen may be produced by introducing genes for cold sensitivity, in addition to reporting from the Euroscience Open Forum.

[Summary](#) » [Full Text](#) » [PDF](#) »

Random Samples

Science 16 July 2010: 261.

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News Focus

EDUCATION

From the Outside Looking In

Jeffrey Mervis
Science 16 July 2010: 270-273.

A new push to get scientists into the classroom began with the best of intentions. But that's not always enough, say those involved with the D.C. public schools.

[Summary](#) » [Full Text](#) » [PDF](#) » [Podcast Interview](#) »

A Song of Science

Jeffrey Mervis
Science 16 July 2010: 270.

Thomas Nassif, a former science teacher who's now finishing his Ph.D. in behavioral neuroscience, uses a story about migrating birds to help elementary school teachers improve their content knowledge.

[Summary](#) » [Full Text](#) »

When Lightning Strikes

Jeffrey Mervis
Science 16 July 2010: 270.

Lessons about lightning, composting, and how to build battery-powered cars were among the activities at an event organized for National Lab Day, an ongoing, computer-based, nationwide effort to link teachers with local science professionals.

[Summary](#) » [Full Text](#) »

Rolling the Dice

Jeffrey Mervis
Science 16 July 2010: 270.

Retired statistician Eva Jacobs uses dice to show a sixth-grade math class that what they are learning about probability has real-world applications--and also that math can be fun.

[Summary](#) » [Full Text](#) »

 Let's Have the Kids Judge

Jeffrey Mervis
Science 16 July 2010: 270.

Kids Judge! is a science fair that goes the other way: Researchers explain their work to fourth-grade students.

[Summary](#) » [Full Text](#) »

 National Lab Day: Image Gallery

Jeffrey Mervis
Science 16 July 2010: 270.

A [slide show](#) captures some National Lab Day activities at Theodore Roosevelt High School and Bell Multicultural High School.

[Summary](#) » [Image Gallery](#) »

 ANATOMY**Confronting Anatomy's Nazi Past**

Heather Pringle
Science 16 July 2010: 274-275.

Studies are uncovering a symbiosis between the Nazi regime, which needed to dispose of executed prisoners, and anatomical institutes, which sought bodies for study.

[Summary](#) » [Full Text](#) » [PDF](#) »

 ANATOMY**The Dilemma of Pernkopf's Atlas**

Heather Pringle
Science 16 July 2010: 274-275.

A University of Vienna investigation determined in 1998 that Eduard Pernkopf's anatomy department used bodies of executed prisoners from the Gestapo and from Vienna's assize court to produce the illustrations in his *Topographical Anatomy of Man*. What should anatomists in 2010 do with an atlas that is both scientifically valuable and morally tainted? Researchers remain deeply divided.

[Summary](#) » [Full Text](#) » [PDF](#) »

Letters**Funding Should Come to Those Who Wait**

Ronald R. Swaisgood, John W. Terborgh, and Daniel T. Blumstein
Science 16 July 2010: 276.

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Brazilian Law: Full Speed in Reverse?

Jean Paul Metzger, Thomas M. Lewinsohn, Carlos A. Joly, Luciano M. Verdade, Luiz Antonio Martinelli, and Ricardo R. Rodrigues
Science 16 July 2010: 276-277.

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Corrections and Clarifications

Science 16 July 2010: 277.

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Sponsors of Traumatic Brain Injury Project

Geoffrey Manley
Science 16 July 2010: 277.

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Warming, Photoperiods, and Tree Phenology

Isabelle Chuine, Xavier Morin, and Harald Bugmann
Science 16 July 2010: 277-278.

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Response—Warming, Photoperiods, and Tree Phenology

Christian Körner and David Basler
Science 16 July 2010: 278.

[Full Text](#) » [PDF](#) »

Books et al. HISTORY OF SCIENCE**Belief, Reason, and Insight**

Steven A. Frank
Science 16 July 2010: 279-280.

Harmon weaves together the story of George Price's tormented life, his profound contributions to evolutionary theory, and sketches of others whose work also increased our understanding of game theory, group selection, and altruism.

[Summary](#) » [Full Text](#) » [PDF](#) »

 Books Received

Science 16 July 2010: 279.

A [listing of books received](#) at *Science* during the week ended 09 July 2010.

[Summary](#) »

 HISTORY OF SCIENCE**Imagination in Chemistry**

Peter J. Ramberg
Science 16 July 2010: 280-281.

Through a consideration of the efforts of 19th-century chemists to understand the unseen world of molecules and atoms, Rocke explores the role of the visual imagination in scientific research.

[Summary](#) » [Full Text](#) » [PDF](#) »

Education Forum

GRADUATE EDUCATION

Performance-Based Data in the Study of STEM Ph.D. Education

David F. Feldon, Michelle A. Maher, and Briana E. Timmerman

Science 16 July 2010: 282-283.

Performance-based assessments of student skill development can help inform decisions about improving graduate education.

[Summary](#) » [Full Text](#) » [PDF](#) » [Podcast Interview](#) »

Perspectives

MOLECULAR BIOLOGY

Hiding in Plain Sight

Miriam I. Rosenberg and Claude Desplan

Science 16 July 2010: 284-285.

Small peptides encoded by a so-called long noncoding RNA play an active role in regulating gene expression.

[Summary](#) » [Full Text](#) » [PDF](#) »

BIOCHEMISTRY

Reengineering Enzymes

Stefan Lutz

Science 16 July 2010: 285-287.

First-principles design and directed evolution expand the role of enzymes in chemical synthesis.

[Summary](#) » [Full Text](#) » [PDF](#) »

ECONOMICS

Consumers Who Care

Stefano DellaVigna

Science 16 July 2010: 287-288.

Can consumers and businesses benefit from socially responsible pricing?

[Summary](#) » [Full Text](#) » [PDF](#) »

BIOGEOCHEMISTRY

The Ongoing Mystery of Sea-Floor Methane

Marc Alperin and Tori Hoehler

Science 16 July 2010: 288-289.

Our understanding of a major methane sink is based on studies of quiescent sediments and dynamic seeps. But do the same processes operate in both environments?

[Summary](#) » [Full Text](#) » [PDF](#) »

OCEAN SCIENCE

When Still Waters Ran Deep

Thorsten Kiefer

Science 16 July 2010: 290-291.

Near the end of the last ice age, the Pacific appears to have played a bigger role in forming deep ocean waters than it does today.

[Summary](#) » [Full Text](#) » [PDF](#) »

MEDICINE

Sickle Cell Disease at 100 Years

Stuart H. Orkin and Douglas R. Higgs

Science 16 July 2010: 291-292.

Effective strategies to treat sickle cell disease could involve manipulating the type of hemoglobin produced in patients.

[Summary](#) » [Full Text](#) » [PDF](#) »

Brevia

Chromosome Size Differences May Affect Meiosis and Genome Size

John Wang, Pei-Jiun Chen, George J. Wang, and Laurent Keller

Science 16 July 2010: 293.

Deletions and insertions affect chromosome segregation in the worm *Caenorhabditis elegans*.

[Abstract](#) » [Full Text](#) » [PDF](#) » [Supporting Online Material](#) »

Research Article

Staphylococcus aureus Nonribosomal Peptide Secondary Metabolites Regulate Virulence

Morgan A. Wyatt, Wenliang Wang, Christelle M. Roux, Federico C. Beasley, David E. Heinrichs, Paul M. Dunman, and Nathan A. Magarvey

Science 16 July 2010: 294-296.

Published online 3 June 2010 [DOI: 10.1126/science.1188888] (in *Science Express Research Articles*)

Dipeptides produced by a major bacterial pathogen are essential for successful infection.

[Abstract](#) » [Full Text](#) » [PDF](#) » [Supporting Online Material](#) »

Reports

Observation of the Magnon Hall Effect

Y. Onose, T. Ideue, H. Katsura, Y. Shiomi, N. Nagaosa, and Y. Tokura

Science 16 July 2010: 297-299.

Spin excitations in an insulating ferromagnet exhibit an anomalous thermal Hall effect.

[Abstract](#) » [Full Text](#) » [PDF](#) » [Supporting Online Material](#) »

Single-Crystal X-ray Structure of 1,3-Dimethylcyclobutadiene by Confinement in a Crystalline Matrix

Yves-Marie Legrand, Arie van der Lee, and Mihail Barboiu

Science 16 July 2010: 299-302.

A normally unstable hydrocarbon has been trapped and structurally characterized within a host crystal.

[Abstract](#) » [Full Text](#) » [PDF](#) » [Supporting Online Material](#) »

Disordering of an Organic Overlayer on a Metal Surface Upon Cooling

A. Schöll, L. Kilian, Y. Zou, J. Ziroff, S. Hame, F. Reinert, E. Umbach, and R. H. Fink
Science 16 July 2010: 303-305.

Strengthening of the bond of an organic molecule to a silver surface upon cooling disrupts intermolecular ordering.

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Biocatalytic Asymmetric Synthesis of Chiral Amines from Ketones Applied to Sitagliptin Manufacture

Christopher K. Savile, Jacob M. Janey, Emily C. Mundorff, Jeffrey C. Moore, Sarena Tam, William R. Jarvis, Jeffrey C. Colbeck, Anke Krebber, Fred J. Fleitz, Jos Brands, Paul N. Devine, Gjalb W. Huisman, and Gregory J. Hughes
Science 16 July 2010: 305-309.

Published online 17 June 2010 [DOI: 10.1126/science.1188934] (in *Science Express Reports*)

An engineered enzyme offers substantial efficiency advantages in the production-scale synthesis of a drug.

[Abstract](#) » [Full Text](#) » [PDF](#) » [Supporting Online Material](#) »

Computational Design of an Enzyme Catalyst for a Stereoselective Bimolecular Diels-Alder Reaction

Justin B. Siegel, Alexandre Zanghellini, Helena M. Lovick, Gert Kiss, Abigail R. Lambert, Jennifer L. St. Clair, Jasmine L. Gallaher, Donald Hilvert, Michael H. Gelb, Barry L. Stoddard, Kendall N. Houk, Forrest E. Michael, and David Baker
Science 16 July 2010: 309-313.

Synthetic enzymes catalyze a carbon-carbon bond-forming reaction with high stereoselectivity and substrate specificity.

[Abstract](#) » [Full Text](#) » [PDF](#) » [Supporting Online Material](#) »

Meniscus-Confined Three-Dimensional Electrodeposition for Direct Writing of Wire Bonds

Jie Hu and Min-Feng Yu
Science 16 July 2010: 313-316.

A micropipette helps guide the electrodeposition of copper and platinum wires for electronics connections.

[Abstract](#) » [Full Text](#) » [PDF](#) » [Supporting Online Material](#) »

Cenozoic Tectonics of Western North America Controlled by Evolving Width of Farallon Slab

W. P. Schellart, D. R. Stegman, R. J. Farrington, J. Freeman, and L. Moresi
Science 16 July 2010: 316-319.

The width of a descending slab is the primary control on the dynamics of subduction.

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Simulated Rapid Warming of Abyssal North Pacific Waters

Shuhei Masuda, Toshiyuki Awaji, Nozomi Sugiura, John Philip Matthews, Takahiro Toyoda, Yoshimi Kawai, Toshimasa Doi, Shinya Kouketsu, Hiromichi Igarashi, Katsuro Katsumata, Hiroshi Uchida, Takeshi Kawano, and Masao Fukasawa
Science 16 July 2010: 319-322.

Published online 24 June 2010 [DOI: 10.1126/science.1188703] (in *Science Express Reports*)

Computer simulations suggest a possible reason for the warming of North Pacific bottom water during the past four decades.

[Abstract](#) » [Full Text](#) » [PDF](#) » [Supporting Online Material](#) »

Ocean Warming Slows Coral Growth in the Central Red Sea

Neal E. Cantin, Anne L. Cohen, Kristopher B. Karnauskas, Ann M. Tarrant, and Daniel C. McCorkle
Science 16 July 2010: 322-325.

Rising summertime sea surface temperatures are slowing the rate of growth of healthy corals in the Red Sea.

[Abstract](#) » [Full Text](#) » [PDF](#) » [Supporting Online Material](#) »

Shared Social Responsibility: A Field Experiment in Pay-What-You-Want Pricing and Charitable Giving

Ayelet Gneezy, Uri Gneezy, Leif D. Nelson, and Amber Brown
Science 16 July 2010: 325-327.

Exchanging goods for money ends up benefiting buyers, sellers, and charities.

[Abstract](#) » [Full Text](#) » [PDF](#) » [Supporting Online Material](#) »

The Structure of *cbb*₃ Cytochrome Oxidase Provides Insights into Proton Pumping

Sabine Buschmann, Eberhard Warkentin, Hao Xie, Julian D. Langer, Ulrich Ermeler, and Hartmut Michel
Science 16 July 2010: 327-330.

Published online 24 June 2010 [DOI: 10.1126/science.1187303] (in *Science Express Reports*)

The third class of heme-copper oxidases reveals new structural solutions to achieve redox-driven proton translocation.

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Asymmetric Density Dependence Shapes Species Abundances in a Tropical Tree Community

Liza S. Comita, Helene C. Muller-Landau, Salomón Aguilar, and Stephen P. Hubbell
Science 16 July 2010: 330-332.

Published online 24 June 2010 [DOI: 10.1126/science.1190772] (in *Science Express Reports*)

Seedling survival in a tropical forest shows that species abundance is related to a species' sensitivity to conspecific neighbors.

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Trophic Structure and Community Stability in an Overfished Ecosystem

Anne C. Utne-Palm, Anne G. V. Salvanes, Bronwen Currie, Stein Kaartvedt, Göran E. Nilsson, Victoria A. Braithwaite, Jonathan A. W. Stecyk, Matthias Hundt, Megan van der Bank, Bradley Flynn, Guro K. Sandvik, Thor A. Klevjer, Andrew K. Sweetman, Volker Brüchert, Karin Pittman, Kathleen R. Peard, Ida G. Lunde, Ronnaug A. U. Strandabø, and Mark J. Gibbons
Science 16 July 2010: 333-336.

An endemic goby exploits jellyfish and microbial biomass, partially restoring the food chain in the Benguela ecosystem.

[Abstract](#) » [Full Text](#) » [PDF](#) » [Supporting Online Material](#) »

Small Peptides Switch the Transcriptional Activity of Shavenbaby During *Drosophila* Embryogenesis

T. Kondo, S. Plaza, J. Zanet, E. Benrabah, P. Valenti, Y. Hashimoto, S. Kobayashi, F. Payre, and Y. Kageyama
Science 16 July 2010: 336-339.

A conserved locus in insects encodes four small peptides that shift a transcription factor from repressor into activator.

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- Hedgehog Signaling Regulates Segment Formation in the Annelid *Platynereis***
Nicolas Dray, Kristin Tessmar-Raible, Martine Le Gouar, Laura Vibert, Foteini Christodoulou, Katharina Schipany, Aurélien Guillou, Juliane Zantke, Heidi Snyman, Julien Béhague, Michel Vervoort, Detlev Arendt, and Guillaume Balavoine
Science 16 July 2010: 339-342.
The processes that pattern body segmentation in annelids and arthropods both require the same signaling mechanism.
[Abstract »](#) [Full Text »](#) [PDF »](#) [Supporting Online Material »](#)

- Chemoattraction to Dimethylsulfoniopropionate Throughout the Marine Microbial Food Web**
Justin R. Seymour, Rafel Simó, Tanvir Ahmed, and Roman Stocker
Science 16 July 2010: 342-345.
A microfluidics device reveals a common response of bacterial plankton to sulfur compounds emitted by marine algae.
[Abstract »](#) [Full Text »](#) [PDF »](#) [Supporting Online Material »](#)

Technical Comments

- Comment on "Observational and Model Evidence for Positive Low-Level Cloud Feedback"**
Anthony J. Broccoli and Stephen A. Klein
Science 16 July 2010: 277.
[Abstract »](#) [Full Text »](#) [PDF »](#) [Supporting Online Material »](#)
- Response to Comment on "Observational and Model Evidence for Positive Low-Level Cloud Feedback"**
Amy C. Clement, Robert Burgman, and Joel R. Norris
Science 16 July 2010: 277.
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