NEWS & COMMENT

NAE Strives to Re-Engineer Itself

Will There Be Liebowitz v. NAE?

Black Spots Blot German Coastal Flats

1997 Budget: Legislators Get Into the Details

Chauvet Study Gets the Go-Ahead

Agencies Scramble to Measure Public Impact of Research

Auguste D. and Alzheimer's Disease

RESEARCH NEWS

Folding Proteins Caught in the Act

Selling the Immune System Short

Long Ago, a River Ran Through It

With Mirrors and Finesse, Labs Domesticate the X-ray Laser

Muscling Transplants Into Mice

Sky-High Findings Drop New Hints of Greenhouse Warming

Chromosomes Yield New Clue to Pairing in Meiosis

Helical Beams Give Particles a Whirl

HORIZONS IN AGING

NEWS

Live Long and Prosper?

A 'Big Science' Survey for the Social Sciences

Japan: Feeling the Strains of an Aging Population

New Populations of Old Add to Poor Nations' Burdens

For the Cortex, Neuron Loss May Be Less Than Thought

Searching for Drugs That Combat Alzheimer's

PERSPECTIVES

A Search for Earthquake Precursors

P. G. Silver and H. Wakita

How T Cells Count

E. V. Rothenberg

Mechanisms and Evolution of Aging

G. J. Lithgow and T. B. L. Kirkwood

REPORTS

Colossal Magnetoresistance Without Mn*/Mn** Double Exchange in the

DEPARTMENTS

THIS WEEK IN SCIENCE

EDITORIAL

Why China Needs Science... and Partners

L. Peng

LETTERS

Battling Heart Disease: J. I. Breslow; M. S. Brown and J. L. Goldstein; D. R. Labarte • Release of RHD Virus in Australia: D. O. Matson; A. W. Smith

SCIENCESCOPE

AAAS Board of Directors

Rita R. Colwell
Retiring President, Chairman
Jane Lubchenco
President
Mildred S. Dresselhaus
President-elect

Sheila Jasanoff
William A. Lester Jr.
Simon A. Levin
Marcia C. Linn
Michael J. Novacek
Anna C. Roosevelt
Jean E. Taylor
Nancy S. Wexler

William T. Golden
Treasurer
Richard S. Nicholson
Executive Officer

SCIENCE [ISSN 0036-8075] is published weekly on Friday, except the last week in December, by the American Association for the Advancement of Science, 1200 New York Avenue, NW, Washington, DC 20005. Periodicals Mail postage (publication No. 484460) paid at Washington, DC, and additional mailing offices. Copyright © 1996 by the American Association for the Advancement of Science. The title SCIENCE is a registered trademark of the AAAS. Domestic individual membership and subscription (51 issues): $102 (55% allocated to subscription). Domestic institutional subscription (51 issues): $250. Foreign postage extra: Mexico, Caribbean (surface mail) $55; other countries (air assist delivery) $90. First class, airmail, student, and emeritus rates on request. Canadian rates with GST available upon request, GST #1254 88122. Printed in the U.S.A.

Downloaded from http://science.sciencemag.org on May 29, 2017
Demographics show that populations are growing older, a situation that is putting a strain on the social and economic resources of countries around the world. The outlook for those gray populations as well as the biological and physiological causes of aging are explored in News stories (beginning on page 42), a Perspective (page 80), and Articles (beginning on page 54) in this special issue on aging. [Image taken from Gustav Klimt's *Three Ages of Woman* (1905). Scala/Art Resource]

### ARTICLES

**Longevity, Genes, and Aging**
S. M. Jazwinskas  
54

**Oxidative Stress, Caloric Restriction, and Aging**
R. S. Sohal and R. Weinindruch  
59

**Replicative Senescence: Implications for in Vivo Aging and Tumor Suppression**
J. R. Smith and O. M. Pereira-Smith  
63

**Menopause: The Aging of Multiple Pacemakers**
P. M. Wise, K. M. Krajnak, M. L. Kashon  
67

**The Aging Immune System: Primer and Prospectus**
R. A. Miller  
70

---

**Stoichiometric Pyrochlore Tl$_2$Mn$_3$O$_7$**
Direct, Nondestructive Observation of a Bose Condensate
Homogeneous Linewidths in the Optical Spectrum of a Single Gallium Arsenide Quantum Dot
D. Gammon, E. S. Snow, B. V. Shanabrook, D. S. Katzer, D. Park  
Two Calorimetrically Distinct States of Liquid Water Below 150 Kelvin
G. P. Johari, A. Hallbrucker, E. Mayer  
Helium Isotopic Evidence for a Lower Mantle Component in Depleted Archean Komatiite
D. Richard, B. Marty, M. Chaussidon, N. Arndt  
Transition Element–Like Chemistry for Potassium Under Pressure
L. J. Parker, T. Atou, J. V. Badding

---

**Detrital Zircon Link Between Headwaters and Terminus of the Upper Triassic Chinle-Dockum Paleoriver System**
**Late Proterozoic and Paleozoic Tides**
Retreat of the Moon, and Rotation of the Earth
C. P. Sonett, E. P. Kvale, A. Zakharian, M. A. Chan, T. M. Demko  
**T Cell Activation Determined by T Cell Receptor Number and Tunable Thresholds**
A. Viola and A. Lanaveccchia  
**Mapping of Catalytic Residues in the RNA Polymerase Active Center**
E. Zaychikov, E. Martin, L. Denissova, M. Kozlov, V. Markovtsov, M. Kashlev, H. Heumann, V. Nikiforov, A. Goldfarb, A. Mustaev  
**Prevention of Islet Allograft Rejection with Engineered Myoblasts Expressing FasL in Mice**
**Evidence for Physical and Functional Association Between EMB-5 and LIN-12 in Caenorhabditis elegans**
E. J. A. Hubbard, Q. Dong, I. Greenwald  
**Formation of a Transition-State Analog of the Ras GTPase Reaction by Ras-GDP, Tetrafluoroaluminate, and GTPase-Activating Proteins**
R. Mittal, M. R. Ahmadian, R. S. Goody, A. Wittinghofer  
**Centric Heterochromatin and the Efficiency of Acentromal Disjunction in Drosophila Female Meiosis**
G. H. Karpen, M.-H. Le, H. Le

---

**Miocene Deposits in the Amazonian Foreland Basin**

---

**On the Web**
Horizons in Aging
http://www.sciencemag.org/science/content/vol273/issue5271/41a.htm