NEWS & COMMENT

The Genome Program's Conscience 488
ELSI's Cystic Fibrosis Experiment 489
Research 'Summit' Ponders Health 491
Funding Shortfall 492
A 'Reforestation Plan' for Biomedical Research
Wayward Grizzlies Spark Debate 493
Livermore Settles Audit for $2.7 Million 493
Treaty Draft Raises Scientific Hackles 494
NASA Slices Biology Program on Station 495
Planets Galore, But No Place Like Home 495

RESEARCH NEWS

Coming to Grips With Genes and Risk 496
Susceptibility Genes: Pointing a Way to Prevention? 497
Ice Rhythms: Core Reveals a Plethora of Climate Cycles 499
Mutant Mice and Worms Help Solve Mysteries of Olfaction 500
Investigators Detail HIV's Fatal Handshake 502

GENOME ISSUE

POLICY FORUMS

Genomic Sequence Information Should Be Released Immediately and Freely in the Public Domain 533
D. R. Bentley
Should Non-Peer-Reviewed Raw DNA Sequence Data Release Be Forced on the Scientific Community? 534
M. D. Adams and J. C. Venter

PERSPECTIVES

Linker Histones, DNA's Protein Custodians, Gain New Respect 503
To Send Data, Physicists Resort to Quantum Voodoo 504

DEPARTMENTS

THIS WEEK IN SCIENCE 473
EDITORIAL 479
Landing on the Genome
J. Weissenbach
LETTERS 481

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 G. Linn
Michael J. Novacek
Anna C. Roosevelt
Jean E. Taylor
Nancy S. Wexler
William T. Golden
Treasurer
Richard S. Nicholson
Executive Officer

Earth's Carrying Capacity: P. E. Waggner

SCIENCECOPE 487
RANDOM SAMPLES 507
BOOK REVIEWS 521
Science and Dissent in Post-Mao China, reviewed by M. Goldman • Comparative Vertebrate Neuroanatomy, E. G. Jones • Particle Physics, P. Forman • Vignette • Browsings
AAAS NEWS & NOTES 637
PRODUCTS & MATERIALS 641

504
Quantum communications
503 & 614
Nucleosome architecture

SCIENCE • VOL. 274 • 25 OCTOBER 1996
Map makers during the Age of Exploration opened up new worlds, literally and in terms of new ideas and possibilities. Similarly, mapping of the human genome and the genomes of model organisms is opening up new dimensions in our understanding and potentiating a global view of life. A special section beginning on page 533, related News, Editorial, and Reports, a transcript map (page 547) of the human genome, and a Web feature highlight views of this rapidly developing area. [Illustration: Tracy Keaton-Drew, Washington, DC]

The New Genomics: Global Views of Biology
E. S. Lander

ARTICLES
A Gene Map of the Human Genome
G. D. Schuler et al.
Life with 6000 Genes
A. Goffeau et al.

THE GENOME MAPS 1996

RESEARCH ARTICLE
Molecular Evidence for Deep Precambrian Divergences Among Metazoan Phyla
G. A. Wray, J. S. Levinton, L. H. Shapiro

REPORTS
Far-Infrared Emission Spectra of Selected Gas-Phase PAHs: Spectroscopic Fingerprints
K. Zhang, B. Guo, P. Colarusso, P. F. Bernath
Optical Control of Photogenerated Ion Pair Lifetimes: An Approach to a Molecular Switch
M. P. Debreceny, W. A. Svec, M. R. Wasielewski
Interlayer Tunneling Models of Cuprate Superconductivity: Implications of a Recent Experiment
A. J. Leggett
Evidence for Charge-Flux Duality near the Quantum Hall Liquid-to-Insulator Transition
D. Shahrar, D. C. Tsui, M. Shayegan, E. Shimshoni, S. L. Sondhi
Seismic Evidence for a Low-Velocity Zone in the Upper Crust Beneath Vesuvius
A. Zolfo, P. Gasparini, J. Virieux, H. le Meur, G. de Natale, G. Biella, E. Boschi, P. Capuano, R. de Franco, P. dell'Aversana, R. de Matteis et al.
Presynaptic Calcium Current Modulation by a Metabotropic Glutamate Receptor
T. Takahashi, I. D. Forysthe, T. Tsujimoto, M. Barnes-Davies, K. Onodera

Identification of an Asymmetrically Localized Sensor Histidine Kinase Responsible for Temporally and Spatially Regulated Transcription
J. A. Wingrove and J. W. Gober

Evidence for Cell-Surface Association Between Fusin and the CD4-gp120 Complex in Human Cell Lines

Tat-SF1: Cofactor for Stimulation of Transcriptional Elongation by HIV-1 Tat
Q. Zhou and P. A. Sharp

Accessing Genetic Information with High-Density DNA Arrays
M. Chee, R. Yang, E. Hubbell, A. Berno, X. C. Huang, D. Stern, J. Winkler, D. J. Lockhart, M. S. Morris, S. P. A. Fodor

An Asymmetric Model for the Nucleosome: A Binding Site for Linker Histones Inside the DNA Gyres
D. Fris, B. Bartholomew, J. Persinger, J. Hayes, G. Arents, E. N. Moudrianakis, A. P. Wolfe

Enhanced Dissociation of HLA-DR-Bound Peptides in the Presence of HLA-DM
D. A. Weber, B. D. Evavold, F. E. Jensen

Genetic Discrimination: Perspectives of Consumers
E. V. Lapham, C. Kozma, J. O. Weiss

Kap104p: A Karyopherin Involved in the Nuclear Transport of Messenger RNA Binding Proteins
J. D. Aitchison, G. Blobel, M. P. Rout

On the Web
Have you ever wanted to play with a genome? B. R. Jasny et al.

TECHNICAL COMMENTS
Optical Triggers of Protein Folding
C.-K. Chan, J. Hofrichter, W. A. Eaton; J. R. Winkler and H. B. Gray

Complementary DNA for 12-Kilodalton B Cell Growth Factor: Misassigned