

TheScientist

OCTOBER 2012 | WWW.THE-SCIENTIST.COM

EXPLORING LIFE, INSPIRING INNOVATION

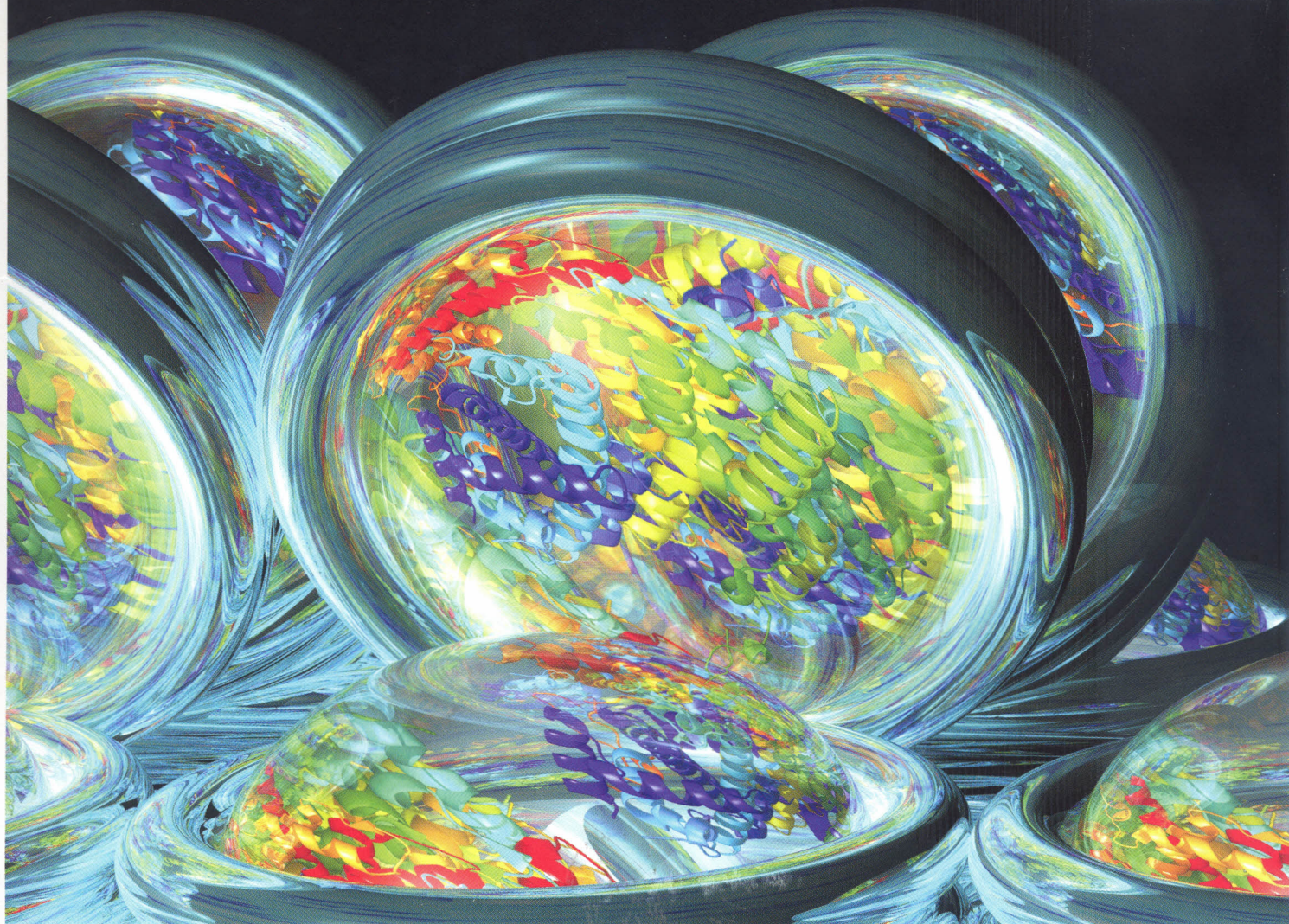
EPIGENETIC INHERITANCE

A ROLE FOR LONG NONCODING RNAS?

OBAMA'S SCIENCE
REPORT CARD

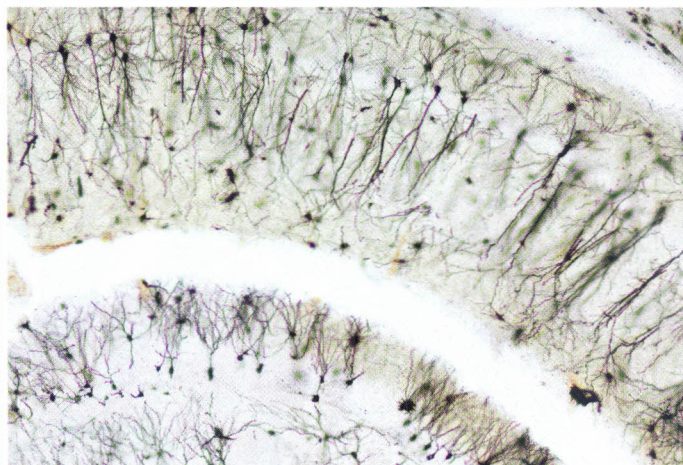
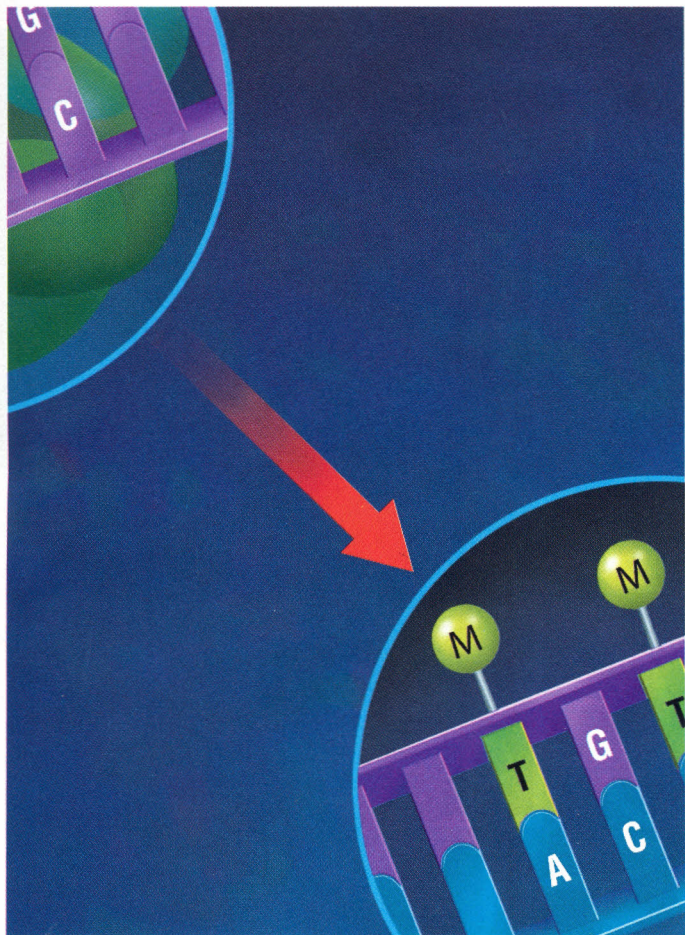
ADVANCES IN
DYNAMIC IMAGING

LABBY MULTIMEDIA
AWARDS



Contents

THE SCIENTIST | WWW.THE-SCIENTIST.COM | VOLUME 26 NUMBER 10



Features

29

Lamarck and the Missing Lnc

Epigenetic changes accrued over an organism's lifetime may leave a permanent heritable mark on the genome, through the help of long noncoding RNAs.

BY KEVIN V. MORRIS

34

Obama's Science Report Card

A look at what the President achieved during his first term in the areas of health, space science, energy, environment, and science education

BY THE SCIENTIST STAFF

42

Pixel Perfect

Presenting the best life science images and videos of 2012

BY THE SCIENTIST STAFF

ON THE COVER: © LAGUNA DESIGN/PHOTO RESEARCHERS, INC.

Department Contents



15

10 FROM THE EDITOR
Mission: Possible
 Cooperation, not competition,
 is the way forward.
 BY MARY BETH ABERLIN

15 NOTEBOOK
**Death Match; The Science of
 Stowaways; Like Father, Like Son;
 Home Cookin'**

23 CRITIC AT LARGE
Science and Democracy
 Researchers and conscientious
 citizens must unite against the
 partisan rancor in American politics
 and restore the role of scientific
 information in policymaking.
 BY LEWIS M. BRANSCOMB AND
 ANDREW A. ROSENBERG

26 CRITIC AT LARGE
Medicines for the World
 A global R&D treaty could boost
 innovation and improve the health
 of the world's poor—and rich.
 BY SUERIE MOON & ELLEN 'T HOEN

28 MODUS OPERANDI
Live-Action Networks
 Mass spec plus novel software equals
 dynamic views into the chemical
 lives of microbes.
 BY RUTH WILLIAMS

50 THE LITERATURE
**Gap closure by epithelial cells;
 drug hypersensitivity and HLA type;
 male/female brain differences**

52 PROFILE
(Re)Programming Director
 Unwilling to accept the finality of
 terminal differentiation, Helen Blau
 has honed techniques that showcase
 the flexibility of cells to adopt
 different identities.
 BY KAREN HOPKIN

55 SCIENTIST TO WATCH
Tiago Branco
 BY HAYLEY DUNNING

56 LAB TOOLS
The Sharper Image
 Advances in light microscopy allow
 the mapping of cell migration during
 embryogenesis and capture dynamic
 processes at the cellular level.
 BY JEFFREY M. PERKEL

59 LAB TOOLS
"Alive" and In Focus
 Imaging viruses in action
 BY SARAH WEBB

62 CAREERS
So You Want to Write a Book?
 Advice on authoring a textbook,
 popular nonfiction, or even a novel
 BY JEF AKST

66 READING FRAMES
True Colors
 The biological and social
 ramifications of skin pigmentation
 are too often ignored by scientists,
 teachers, and the general public.
 BY NINA G. JABLONSKI

CAPSULE REVIEWS
 BY ANNIE GOTTLIEB

84 FOUNDATIONS
Gone Missing, circa 1892
 BY HAYLEY DUNNING

IN EVERY ISSUE

9 CONTRIBUTORS
12 SPEAKING OF SCIENCE
71 THE GUIDE
80 RECRUITMENT



52



84