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COVER

A frontal view of the fly brain (blue) showing two groups of dopamine-producing neurons pseudocolored green and magenta. The magenta neurons are engineered to express a light-sensitive protein. Optical signals (symbolized by a magenta beam of light) can selectively report and control the activity of these cells. Miesenböck (page 395) reviews the emerging field of optogenetics in a special section on advances in neuroscience methods starting on page 385.

Confocal images: Adam Claridge-Chang; photomontage: Robert Roorda and Gero Miesenböck

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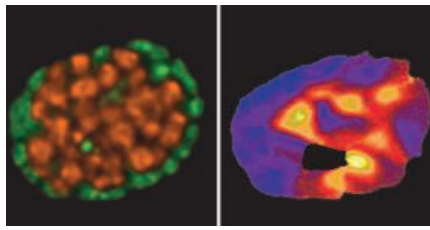

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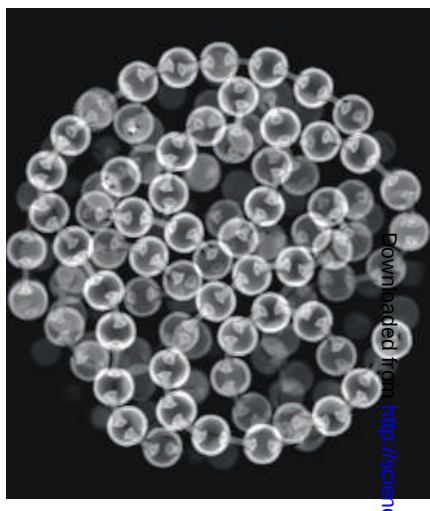

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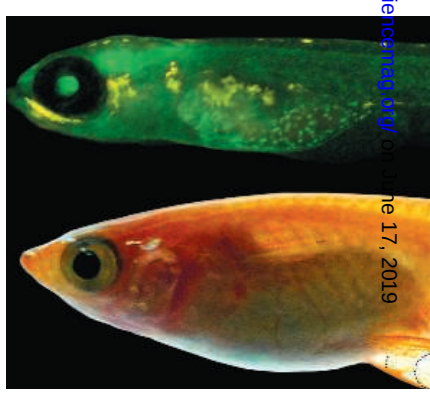

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SCIENCEONLINE

SCIENCEXPRESS
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Global Observations of the Interstellar Interaction from the Interstellar Boundary Explorer (IBEX)
D. J. McComas et al.
10.1126/science.1180906
>> Science *Podcast*

Width and Variation of the ENA Flux Ribbon Observed by the Interstellar Boundary Explorer
S. A. Fuselier et al.
10.1126/science.1180981

Structures and Spectral Variations of the Outer Heliosphere in IBEX Energetic Neutral Atom Maps
H. O. Funsten et al.
10.1126/science.1180927

Comparison of Interstellar Boundary Explorer Observations with 3D Global Heliospheric Models
N. A. Schwadron et al.
Observations by the Interstellar Boundary Explorer have revealed surprising features in the interaction between the heliosphere and the interstellar medium.
10.1126/science.1180986

Direct Observations of Interstellar H, He, and O by the Interstellar Boundary Explorer
E. Möbius et al.
Detection of H, He, and O flowing into the heliosphere from the interstellar medium tells us about our local interstellar environment.
10.1126/science.1180971

Imaging the Interaction of the Heliosphere with the Interstellar Medium from Saturn with Cassini
S. M. Krimigis et al.
Observations by Cassini show that some of the features revealed by IBEX extend to high energies.
10.1126/science.1181079
>> *News story p. 350*

PTPσ Is a Receptor for Chondroitin Sulfate Proteoglycan, an Inhibitor of Neural Regeneration
Y. Shen et al.
Mouse neurons that lack a receptor for inhibitory proteoglycans show improved regeneration.
10.1126/science.1178310

The Crystal Structure of the Ribosome Bound to EF-Tu and Aminoacyl-tRNA
T. M. Schmeing et al.
10.1126/science.1179700
>> Science *Podcast*

The Structure of the Ribosome with Elongation Factor G Trapped in the Posttranslocational State
Y.-G. Gao et al.
Crystal structures of the ribosome bound to elongation factors provide insights into translocation and decoding.
10.1126/science.1179709
>> Science *Podcast*

Leaps in Translational Elongation
A. Liljas
10.1126/science.1181511
>> *News story p. 346*

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Physics? It's All the Same to Birds and Babies
Rooks can grasp a basic physical principle, but how smart does that make them?

How We Lost Our Diversity
Human ancestors survived two genetic bottlenecks as they spread out of Africa.

Monkey Moms Have Madonna Moments
Rhesus macaques oogle their babies just like human mothers do.

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RESEARCH ARTICLE: MicroRNAs Differentially Regulated by Akt Isoforms Control EMT and Stem Cell Renewal in Cancer Cells
D. Iliopoulos et al.
Akt-dependent induction of a metastatic phenotype may depend on the balance of Akt1 and Akt2.

RESEARCH ARTICLE: Act1, a U-box E3 Ubiquitin Ligase for IL-17 Signaling
C. Liu et al.

PERSPECTIVE: IL-17 Receptor Signaling—Ubiquitin Gets In On the Act
S. D. Levin
The adaptor protein Act1 functions as a ubiquitin ligase to mediate interleukin-17 receptor–dependent activation of nuclear factor-κB.

RESEARCH ARTICLE: Chemical Genetics Identifies c-Src as an Activator of Primitive Ectoderm Formation in Murine Embryonic Stem Cells
M. A. Meyn III and T. E. Smithgall

PODCAST
M. A. Meyn III and A. M. VanHook
Kinases engineered for inhibitor resistance reveal a unique role for c-Src in embryonic stem cell differentiation.

SCIENCECAREERS
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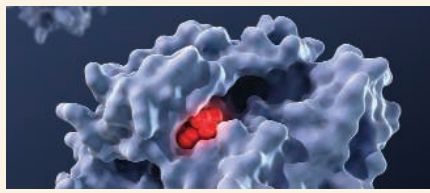
Perspective: Three Crucial Questions When Applying to M.D.-Ph.D. Programs
L. F. Brass
Here are key factors to consider when deciding if an M.D.-Ph.D. is right for you.

Finding Your Way Into Policy Careers in Europe
E. Pain
Getting a policy job in Europe requires choosing a beat and finding your way in.

Tooling Up: Focus Your Industry CV
D. Jensen
Small changes in your CV can yield big rewards.



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Engineering inhibitor-resistant kinases.

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RESEARCH: Dopamine Gene Therapy for Parkinson's Disease in a Nonhuman Primate Without Associated Dyskinesia
B. Jarraya et al.

PERSPECTIVE: Gene Therapy for Dopamine Replacement in Parkinson's Disease
A. Björklund et al.
Delivery of the synthetic enzymes for dopamine to Parkinsonian monkeys in a single vector ameliorates disease symptoms.

PERSPECTIVE: Arvid Carlsson, An Early Pioneer in Translational Medicine
J. K. Andersen
Carlsson discovered the L-dopa treatment for Parkinson's.

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