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COVER

Adult sockeye salmon (weight ~2.5 kg; length ~60 cm) migrating to spawning grounds in the Adams River, British Columbia, Canada. Sockeye salmon populations in the Fraser River, British Columbia, are physiologically adapted to their specific upriver migration conditions. In a Report on page 109, Eliason *et al.* suggest that cardiac adaptations help protect one salmon population from cardiac collapse at high temperatures.

Photo: Robert Polo; robpolo.photography@gmail.com

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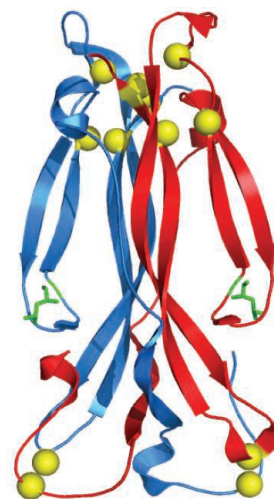
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Environmental conditions encountered during migration shape cardiorespiratory physiology in sockeye salmon.

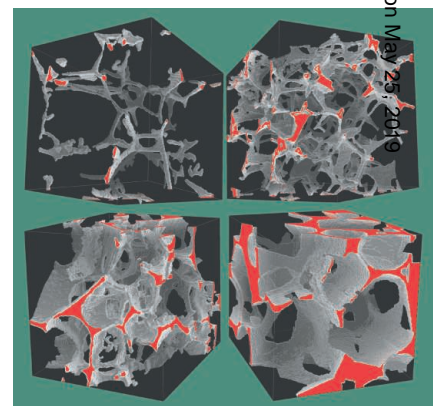
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Saturn's Curiously Corrugated C Ring

M. M. Hedman et al.

10.1126/science.1202238

The Impact of Comet Shoemaker-Levy 9 Sends Ripples Through the Rings of Jupiter

M. R. Showalter et al.

Spacecraft observations show that Saturn's and Jupiter's rings preserve records of recent interplanetary debris collisions.

10.1126/science.1202241

Topological Phase Transition and Texture Inversion in a Tunable Topological Insulator

S.-Y. Xu et al.

Two types of bulk insulator are realized in the same family of compounds through chemical doping.

10.1126/science.1201607

Protein Tyrosine Kinase Wee1B Is Essential for Metaphase II Exit in Mouse Oocytes

J. S. Oh et al.

Cyclin degradation is not the only mechanism that controls the exit of mouse oocytes from meiosis.

10.1126/science.1199211

Proteoglycan-Specific Molecular Switch for RPTP σ Clustering and Neuronal Extension

C. H. Coles et al.

One receptor binds two different types of proteoglycan at the same site but with divergent outcomes.

10.1126/science.1200840

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Damping Down Fear With Cortisol

The stress hormone enhances therapy to treat a phobia of heights.

<http://scim.ag/less-fear>

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A new DNA test aims to detect when the body rejects a transplanted organ.

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Spinning the Sun's Rays Into Fuel

Artificial leaf makes fuel production possible wherever there's water.

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The Signal Transduction Knowledge Environment

29 March issue: <http://scim.ag/ss29Mar2011>

EDITORIAL GUIDE: Focus Issue—Rendering

Resistance Futile

E. M. Adler and N. R. Gough

Understanding the pathways that mediate drug resistance is key to developing new cancer therapies.

RESEARCH ARTICLE: Amplification of the Driving Oncogene, *KRAS* or *BRAF*, Underpins Acquired Resistance to MEK1/2 Inhibitors in Colorectal Cancer Cells

A. S. Little et al.

PERSPECTIVE: Resistance to MEK Inhibitors—Should We Co-Target Upstream?

P. I. Poulidakos and D. B. Solit

Amplification of an upstream kinase in a three-kinase module confers resistance to cancer drugs that target a downstream kinase.

RESEARCH ARTICLE: c-MYC Suppresses BIN1 to Release Poly(ADP-ribose) Polymerase 1—A Mechanism by Which Cancer Cells Acquire Cisplatin Resistance

S. Pyndiah et al.

PERSPECTIVE: MYC, PARP1, and Chemoresistance—BIN There, Done That?

S. Ganesan

c-MYC promotes cisplatin resistance by enabling the increased activity of a DNA repair enzyme.

RESEARCH ARTICLE: Global Phosphoproteomics Reveals Crosstalk Between Bcr-Abl and Negative Feedback Mechanisms Controlling Src Signaling

L. Rubbi et al.

PODCAST

T. G. Graeber and A. M. VanHook

Negative feedback fails to limit Src family kinase activity in the presence of Bcr-Abl, an oncoprotein that drives leukemia.

SCIENCE CAREERS

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Experimental Error: Achieving Immortality

A. Ruben

How can we ensure that future students will read our names when, many years from now, they open their science textbooks on their iPad 15s?

<http://scim.ag/jointhepantheon>

Slipping Humor Into Scientific Presentations

E. Pain

Humor can be an added bonus in scientific talks, provided you know when and how to use it.

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Integrating Medicine and Science

30 March issue: <http://scim.ag/stm033011>

COMMENTARY: The Precompetitive Space—Time to Move the Yardsticks

T. Norman et al.

A recent meeting of minds set into motion an open-access initiative designed to achieve proof of clinical mechanism for selected disease targets.

PERSPECTIVE: Human Pluripotent Stem Cells—Decoding the Naïve State

W. Li and S. Ding

Human stem cells exist in functionally distinct states that must be deciphered before these versatile reagents can be used to transform medicine.

RESEARCH ARTICLE: A MEK Inhibitor Abrogates Myeloproliferative Disease in *Kras* Mutant Mice

N. Lyubynska et al.

Inhibiting the Raf/MEK/ERK pathway reverses the harmful effects of oncogenic *Kras* on hematopoietic differentiation, suggesting a strategy for treating myeloproliferative neoplasms.

RESEARCH ARTICLE: Use of Mutant-Specific Ion Channel Characteristics for Risk Stratification of Long QT Syndrome Patients

C. Jons et al.

Mutations that slow the opening of potassium channels in the heart can predict risk for long QT syndrome, a heart arrhythmia that can cause sudden death.

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