



Cover: Biomimetic shark skin has been fabricated using additive manufacturing (3D printing) to produce a skin-like membrane with rigid shark-like denticles attached to a flexible substrate. Wen et al. (pp. 1656–1666) tested the hydrodynamic function of this biomimetic shark skin under dynamic conditions that mimic that of swimming sharks. This composite cover image shows a scanning electron micrograph of the 3D-printed flexible skin membrane with attached denticles and a superimposed Galapagos shark, *Carcharhinus galapagensis* (Family Carcharhinidae). Image credit: J. C. Weaver and L. Friesen.

INSIDE JEB

- 1637** Elephant seals' CO as high as heavy human smokers'; Simulated shark skin boosts swimming; Varroa mites do not suppress honey bee immunity; Silkmoths alternate optomotor response

CLASSICS

- 1640** Krogh 1929 or 'The Krogh Principle'
Lindstedt, S.

COMMENTARY

- 1642** The evolution of endothermy is explained by thyroid hormone-mediated responses to cold in early vertebrates
Little, A. G. and Seebacher, F.

SHORT COMMUNICATIONS

- 1649** Fueling the engine: induction of AMP-activated protein kinase in trout skeletal muscle by swimming
Magnoni, L. J., Palstra, A. P. and Planas, J. V.

- 1653** Production of all female progeny: evidence for the presence of the male sex determination factor on the Y chromosome
Shukla, J. N. and Palli, S. R.

RESEARCH ARTICLES

- 1656** Biomimetic shark skin: design, fabrication and hydrodynamic function
Wen, L., Weaver, J. C. and Lauder, G. V.

- 1667** Tight junction protein gene expression patterns and changes in transcript abundance during development of model fish gill epithelia
Kolosov, D., Chasiotis, H. and Kelly, S. P.

- 1682** Baseline hearing abilities and variability in wild beluga whales (*Delphinapterus leucas*)
Castellote, M., Mooney, T. A., Quakenbush, L., Hobbs, R., Goertz, C. and Gaglione, E.

- 1692** An acquired distaste: sugar discrimination by the larval parasitoid *Microplitis croceipes* (Hymenoptera: Braconidae) is affected by prior sugar exposure
Makatiani, J. K., Le, H. K., Olson, D. M., Wäckers, F. L. and Takasu, K.

- 1701** Olfactory foraging in temperate waters: sensitivity to dimethylsulfide of shearwaters in the Atlantic Ocean and Mediterranean Sea
Dell'Ariccia, G., Célérier, A., Gabirot, M., Palmas, P., Massa, B. and Bonadonna, F.

- 1710** Immunogene and viral transcript dynamics during parasitic *Varroa destructor* mite infection of developing honey bee (*Apis mellifera*) pupae
Kuster, R. D., Bonchristiani, H. F. and Rueppell, O.

- 1719** Artemin, a diapause-specific chaperone, contributes to the stress tolerance of *Artemia franciscana* cysts and influences their release from females
King, A. M., Toxopeus, J. and MacRae, T. H.

- 1725** Mode of action of a *Drosophila* FMRFamide in inducing muscle contraction
Milakovic, M., Ormerod, K. G., Klose, M. K. and Mercier, A. J.

- 1737** Octopaminergic modulation of the visual flight speed regulator of *Drosophila*
van Breugel, F., Suver, M. P. and Dickinson, M. H.

- 1745** A new potassium ion current induced by stimulation of M_2 cholinoreceptors in fish atrial myocytes
Abramochkin, D. V., Tapilina, S. V. and Vornanen, M.

- 1752** Elevated carboxyhemoglobin in a marine mammal, the northern elephant seal
Tift, M. S., Ponganis, P. J. and Crocker, D. E.

- 1758** Claudin-6, -10d and -10e contribute to seawater acclimation in the euryhaline puffer fish *Tetraodon nigroviridis*
Bui, P. and Kelly, S. P.

- 1768** Intra- and interspecific challenges modulate cortisol but not androgen levels in a year-round territorial damselfish
Ros, A. F. H., Vullioud, P., Bruintjes, R., Vallat, A. and Bshary, R.

- 1775** Load-induced changes in bone stiffness and cancellous and cortical bone mass following tibial compression diminish with age in female mice
Main, R. P., Lynch, M. E. and van der Meulen, M. C. H.

- 1784** Reduction of blood oxygen levels enhances postprandial cardiac hypertrophy in Burmese python (*Python bivittatus*)
Slay, C. E., Enok, S., Hicks, J. W. and Wang, T.

- 1790** The olfactory neuron AWC promotes avoidance of normally palatable food following chronic dietary restriction
Olofsson, B.

- 1799** The role of the olfactory recess in olfactory airflow
Eiting, T. P., Smith, T. D., Perot, J. B. and Dumont, E. R.

- 1804** The limits of applicability of the sound exposure level (SEL) metric to temporal threshold shifts (TTS) in beluga whales, *Delphinapterus leucas*
Popov, V. V., Supin, A. Ya., Rozhnov, V. V., Nechaev, D. I. and Sysueva, E. V.

- 1811** Dynamic use of optic flow during pheromone tracking by the male silkmoth, *Bombyx mori*
Pansopha, P., Ando, N. and Kanzaki, R.

- 1821** Unique function of a chemosensory protein in the proboscis of two *Helicoverpa* species
Liu, Y.-L., Guo, H., Huang, L.-Q., Pelosi, P. and Wang, C.-Z.

CORRESPONDENCE

- 1827** The importance of accurate CO_2 dosing and measurement in ocean acidification studies
Moran, D.

- 1828** Response to 'The importance of accurate CO_2 dosing and measurement in ocean acidification studies'
Munday, P. L., Watson, S.-A., Chung, W.-S., Marshall, N. J. and Nilsson, G. E.

CORRECTIONS

- 1830** Molt regulation in green and red color morphs of the crab *Carcinus maenas*: gene expression of molt-inhibiting hormone signaling components
Abuhagr, A. M., Blindert, J. L., Nimitkul, S., Zander, I. A., LaBere, S. M., Chang, S. A., MacLea, K. S., Chang, E. S. and Mykles, D. L.

- 1831** Impulsive ankle push-off powers leg swing in human walking
Lipfert, S., Günther, M., Renjewski, D. and Seyfarth, A.