



Cover: Box jellyfish have a surprisingly elaborate set of eyes. The tiny Caribbean box jellyfish *Tripedalia cystophora* uses its eyes for navigating its mangrove swamp habitat. It is attracted to areas where prey gathers, avoids collision with obstacles and can find its way back to the mangroves when washed out. The study by Petie et. al. (pp. 2809–2815) shows how this box jellyfish adjusts its swimming mechanics in response to light stimuli. When steering, the animal changes the contraction synchrony of the bell and the direction of the water jet. Photo credit: Jan Bielecki.

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Research Articles

- **Petie, R., Garm, A. and Nilsson, D.-E.** Visual control of steering in the box jellyfish *Tripedalia cystophora*. 2809–2815
- Jõgar, K., Kuusik, A., Ploomi, A., Metspalu, L., Williams, I., Hiisaar, K., Kivimägi, I., Mänd, M., Tasa, T. and Luik, A.** Oxygen convective uptakes in gas exchange cycles in early diapause pupae of *Pieris brassicae*. 2816–2822
- Price, E. R., Bauchinger, U., Zajac, D. M., Cerasale, D. J., McFarlan, J. T., Gerson, A. R., McWilliams, S. R. and Guglielmo, C. G.** Migration- and exercise-induced changes to flight muscle size in migratory birds and association with *IGF1* and *myostatin* mRNA expression. 2823–2831
- Mou, X. L., Liu, Y. P. and Sun, M.** Wing motion measurement and aerodynamics of hovering true hoverflies. 2832–2844
- Bühlmann, C., Cheng, K. and Wehner, R.** Vector-based and landmark-guided navigation in desert ants inhabiting landmark-free and landmark-rich environments. 2845–2853
- **Sato, K., Shiomi, K., Marshall, G., Kooyman, G. L. and Ponganis, P. J.** Stroke rates and diving air volumes of emperor penguins: implications for dive performance. 2854–2863
- Menda, G., Bar, H. Y., Arthur, B. J., Rivlin, P. K., Wyttenbach, R. A., Strawderman, R. L. and Hoy, R. R.** Classical conditioning through auditory stimuli in *Drosophila*: methods and models. 2864–2870
- Stumpff, F., Georgi, M.-I., Mundhenk, L., Rabbani, I., Fromm, M., Martens, H. and Günzel, D.** Sheep rumen and omasum primary cultures and source epithelia: barrier function aligns with expression of tight junction proteins. 2871–2882
- Reilly, B. D., Cramp, R. L., Wilson, J. M., Campbell, H. A. and Franklin, C. E.** Branchial osmoregulation in the euryhaline bull shark, *Carcharhinus leucas*: a molecular analysis of ion transporters. 2883–2895
- James, R. S., Tallis, J. A., Seebacher, F. and Storey, K.** Daily torpor reduces mass and changes stress and power output of soleus and EDL muscles in the Djungarian hamster, *Phodopus sungorus*. 2896–2902
- Vázquez-Medina, J. P., Soñanez-Organis, J. G., Burns, J. M., Zenteno-Savín, T. and Ortiz, R. M.** Antioxidant capacity develops with maturation in the deep-diving hooded seal. 2903–2910
- **Mangiamele, L. A. and Burmeister, S. S.** Auditory selectivity for acoustic features that confer species recognition in the túngara frog. 2911–2918
- Zhao, Z.-J.** Milk energy output in Swiss mice throughout the first, second, third and fourth lactation events. 2919–2926
- Cook, D. G., Wells, R. M. G. and Herbert, N. A.** Anaemia adjusts the aerobic physiology of snapper (*Pagrus auratus*) and modulates hypoxia avoidance behaviour during oxygen choice presentations. 2927–2934
- Rosenblum, H. G., Long, J. H., Jr and Porter, M. E.** Sink and swim: kinematic evidence for lifting-body mechanisms in negatively buoyant electric rays *Narcine brasiliensis*. 2935–2948
- Lehmann, F.-O., Gorb, S., Nasir, N. and Schützner, P.** Elastic deformation and energy loss of flapping fly wings. 2949–2961
- Stoyek, M. R., Smith, F. M. and Croll, R. P.** Effects of altered ambient pressure on the volume and distribution of gas within the swimbladder of the adult zebrafish, *Danio rerio*. 2962–2972
- Aoki, K., Watanabe, Y. Y., Crocker, D. E., Robinson, P. W., Biuw, M., Costa, D. P., Miyazaki, N., Fedak, M. A. and Miller, P. J. O.** Northern elephant seals adjust gliding and stroking patterns with changes in buoyancy: validation of at-sea metrics of body density. 2973–2987
- Opell, B. D., Karinshak, S. E. and Sigler, M. A.** Humidity affects the extensibility of an orb-weaving spider's viscous thread droplets. 2988–2993

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