



Cover: Human running is energetically costly, yet only 10% of the energy is used to propel the body forward. Simpson et al. (jeb202895) demonstrate that connecting the feet of a runner with a spring, as shown, improves running economy by 6.4%. The spring reduces the energy required to swing the legs back and forth, allowing the runner to take shorter, faster strides and therefore more efficiently redirect the center of mass. These results highlight the importance of considering both joint dynamics and adaptive strategies of the user when designing systems that couple human and machine. Photo credit: Cara Welker and Cole Simpson.

INSIDE JEB

Zebrafish parents pass on resistance to oil spills
Knight, K.
jeb212290

Mussels cope best when the going gets hot fast
Knight, K.
jeb212019

Springy ankle tether saves runners' legs
Knight, K.
jeb212001

Healing sponges use TGF- β like we do
Knight, K.
jeb211300

OUTSIDE JEB

Unborn wasps fumigate their dinner
Rozen, D. E.
jeb192997

Singing seals imitate human speech
Ravignani, A.
jeb208447

Sun and wind cues guide dung-rolling beetles across the savannah
Mantica, G.
jeb193003

Pain insensitivity: subtle changes make a huge difference
Ruhr, I.
jeb192989

Andean birds with slow metabolism live longer
Joyce, W.
jeb193011

CONVERSATION

Early-career researchers: an interview with Sharlene Santana
jeb210815

RESEARCH ARTICLES

Social dominance, but not parasite load, affects sperm quality and sperm redox status in house sparrows
Losdat, S., Rojas Mora, A., Bellut, C., Chargé, R., Falchi, V., Glauser, G., Vallat, A. and Helfenstein, F.
jeb200675

Deciphering the effect of food availability, growth and host condition on disease susceptibility in a marine invertebrate
Pernet, F., Tamayo, D., Fuhrmann, M. and Petton, B.
jeb210534

Timing manipulations reveal the lack of a causal link across timing of annual-cycle stages in a long-distance migrant
Tomotani, B. M., de la Hera, I., Lange, C. Y. M. J. G., van Lith, B., Meddle, S. L., Both, C. and Visser, M. E.
jeb201467

microRNA-29b knocks down collagen type I production in cultured rainbow trout (*Oncorhynchus mykiss*) cardiac fibroblasts
Johnston, E. F., Cadonic, I. G., Craig, P. M. and Gillis, T. E.
jeb202788

Properties of predictive gain modulation in a dragonfly visual neuron
Fabian, J. M., Dunbier, J. R., O'Carroll, D. C. and Wiederman, S. D.
jeb207316

Shell damage leads to enhanced memory formation in *Lymnaea*
Swinton, E., Swinton, C. and Lukowiak, K.
jeb207571

Region-specific changes in *Mus musculus* brain size and cell composition under chronic nutrient restriction
Barbeito-Andrés, J., Castro-Fonseca, E., Qiu, L. R., Bernal, V., Lent, R., Henkelman, M., Lukowiak, K., Gleiser, P. M., Hallgrimsson, B. and Gonzalez, P. N.
jeb204651

Hemodynamic responses to warming in euryhaline rainbow trout: implications of the osmo-respiratory compromise
Morgenroth, D., Ekström, A., Hjelmstedt, P., Gräns, A., Axelsson, M. and Sandblom, E.
jeb207522

Parental stressor exposure simultaneously conveys both adaptive and maladaptive larval phenotypes through epigenetic inheritance in the zebrafish (*Danio rerio*)
Bautista, N. M. and Burggren, W. W.
jeb208918

Not that hot after all: no limits to heat dissipation in lactating mice selected for high or low BMR
Sadowska, J., Gębczyński, A. K., Lewoc, M. and Konarzewski, M.
jeb204669

Fine-tuning of seasonal timing of breeding is regulated downstream in the underlying neuro-endocrine system in a small songbird
Verhagen, I., Laine, V. N., Mateman, A. C., Pijl, A., de Wit, R., van Lith, B., Kamphuis, W., Viitaniemi, H. M., Williams, T. D., Caro, S. P., Meddle, S. L., Gienapp, P., van Oers, K. and Visser, M. E.
jeb202481

Impact of heating rate on cardiac thermal tolerance in the California mussel, *Mytilus californianus*

Moyen, N. E., Somero, G. N. and Denny, M. W.

jeb203166

Connecting the legs with a spring improves human running economy

Simpson, C. S., Welker, C. G., Uhlrich, S. D., Sketch, S. M., Jackson, R. W., Delp, S. L., Collins, S. H., Selinger, J. C. and Hawkes, E. W.

jeb202895

Ontogenetic scaling of pelvic limb muscles, tendons and locomotor economy in the ostrich (*Struthio camelus*)

Channon, S. B., Young, I. S., Cordner, B. and Swann, N.

jeb182741

The interaction between suction feeding performance and prey escape response determines feeding success in larval fish

Sommerfeld, N. and Holzman, R.

jeb204834

Mitochondrial genotype influences the response to cold stress in the European green crab, *Carcinus maenas*

Coyle, A. F., Voss, E. R., Tepolt, C. K. and Carlon, D. B.

jeb203521

Color discrimination thresholds in a cichlid fish: *Metriacroma benetos*

Escobar-Camacho, D., Taylor, M. A., Cheney, K. L., Green, N. F., Marshall, N. J. and Carleton, K. L.

jeb201160

Effects of load mass and size on cooperative transport in ants over multiple transport challenges

McCreery, H. F., Bilek, J., Nagpal, R. and Breed, M. D.

jeb206821

Insights into the evolution of metazoan regenerative mechanisms: roles of TGF superfamily members in tissue regeneration of the marine sponge *Chondrosia reniformis*

Pozzolini, M., Gallus, L., Ghignone, S., Ferrando, S., Candiani, S., Bozzo, M., Bertolino, M., Costa, G., Bavestrello, G. and Scarfi, S.

jeb207894