

The Journal of  
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**SPECIAL ISSUE**

**BIOCHEMICAL ADAPTATION**

CONSERVATION AND INNOVATION IN THE FACE OF ENVIRONMENTAL CHANGE

GUEST EDITORS

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**Cover:** A subset of the diverse organisms used in the studies of biochemical adaptation presented in this special issue. From left to right: the Antarctic notothenioid fish *Pagothenia borchgrevinki*; the California mussel *Mytilus californianus*; the longfin inshore squid *Doryteuthis pealeii*; the porcelain crab *Petrolisthes manimaculus*; and the longjaw mudsucker *Gillichthys mirabilis*. These species inhabit a wide range of habitats, including McMurdo Sound in Antarctica (bottom left) and the central California rocky intertidal zone (bottom right), in which they maintain common biochemical abilities. The 3D structure in the middle is isocitrate dehydrogenase. Photo credits: Adam Paganini, George Somero, Brent Lockwood, Roger Halon, Stephen Sharnoff and Tzong-Hong Yang.

### EDITORIALS

- 1797** Biochemical adaptation: unity in principles, diversity in solutions  
**Podrabsky, J. E., Stillman, J. H. and Tomanek, L.**
- 1799** Celebrating the life and career (to date) of George Somero  
**Knight, K.**

### REVIEWS

- 1801** Adaptations of protein structure and function to temperature: there is more than one way to 'skin a cat'  
**Fields, P. A., Dong, Y., Meng, X. and Somero, G. N.**
- 1812** The emerging role of RNA editing in plasticity  
**Rosenthal, J. J. C.**
- 1822** The environmentally tuned transcriptomes of *Mytilus* mussels  
**Lockwood, B. L., Connor, K. M. and Gracey, A. Y.**
- 1834** Antarctic notothenioid fish: what are the future consequences of 'losses' and 'gains' acquired during long-term evolution at cold and stable temperatures?  
**Beers, J. M. and Jayasundara, N.**
- 1846** Animal ice-binding (antifreeze) proteins and glycolipids: an overview with emphasis on physiological function  
**Duman, J. G.**
- 1856** The effects of temperature on aerobic metabolism: towards a mechanistic understanding of the responses of ectotherms to a changing environment  
**Schulte, P. M.**

- 1867** Proteomic responses to environmentally induced oxidative stress  
**Tomanek, L.**
- 1880** Co-evolution of proteins and solutions: protein adaptation versus cytoprotective micromolecules and their roles in marine organisms  
**Yancey, P. H. and Siebenaller, J. F.**
- 1897** Physiological strategies during animal diapause: lessons from brine shrimp and annual killifish  
**Podrabsky, J. E. and Hand, S. C.**
- 1907** Physiological mechanisms used by fish to cope with salinity stress  
**Kültz, D.**
- 1915** Transcriptomic responses to environmental temperature in eurythermal and stenothermal fishes  
**Logan, C. A. and Buckley, B. A.**
- 1925** Considerations for the use of transcriptomics in identifying the 'genes that matter' for environmental adaptation  
**Evans, T. G.**
- 1936** Evolution of urea transporters in vertebrates: adaptation to urea's multiple roles and metabolic sources  
**LeMoine, C. M. R. and Walsh, P. J.**
- 1946** Biochemical adaptation to ocean acidification  
**Stillman, J. H. and Paganini, A. W.**
- 1956** Thermal variation, thermal extremes and the physiological performance of individuals  
**Dowd, W. W., King, F. A. and Denny, M. W.**
- 1968** Giving microbes their due – animal life in a microbially dominant world  
**McFall-Ngai, M. J.**