

## BIOGRAPHICAL SKETCH

**James J. Elser**

Professor and Associate Director

School of Life Sciences

Arizona State University, Tempe, AZ 85287

j.elser@asu.edu, voice: 480-965-9747

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### Professional Preparation

**Undergraduate – 1981. B.S., Biology, University of Notre Dame.** Field of concentration: Biology. Undergraduate honors: *summa cum laude*, Phi Beta Kappa.

**Graduate – 1983. M.S. Ecology, University of Tennessee.** Graduate honors: NSF Predoctoral Fellowship.

**1990. Ph.D., Ecology, University of California-Davis.** Graduate honors: UC-Davis graduate fellowship, UC-Davis Jastro-Shields Graduate Research Scholarship, UC-Davis Distinguished Scholar Research Award.

**Postdoctoral – 1990 University of California-Davis, Davis, California**

### Appointments

**1990- present. Arizona State University, Tempe, AZ.** Assistant then Associate then Full Professor. School of Life Sciences (formerly Department of Biology)

### Publications (of 149 total) – 5 most relevant

Elser, J.J. 2006. Biological stoichiometry: a chemical bridge between ecosystem ecology and evolutionary biology. *The American Naturalist* **168**: S25-S35.

Elser, J.J., J. Watts, J.H. Schampel, and J. Farmer. 2006. Early food-webs on a trophic knife-edge? Experimental data from a modern microbialite-based ecosystem. *Ecology Letters* **9**: 295-303.

Elser, J.J., J. H. Schampel, F. Garcia-Pichel, B. Wade, V. Souza, L. Eguiarte, A. Escalante, and J. Farmer. 2005. Effects of PO<sub>4</sub> enrichment and grazing snails on microbial communities in an ecosystem with living stromatolites. *Freshwater Biol.* **50**: 1808-1825.

Elser, J.J., J. H. Schampel, M. Kyle, J. Watts, E. Carson, T. Dowling, C. Tang, and P. Roopnarine. 2005. Effects of PO<sub>4</sub> enrichment of microbial communities on hydrobiid snails in an ecosystem with living stromatolites. *Freshwater Biol.* **50**: 1826-1835.

Souza, V., L. Espinosa-Asur, A. Escalante, L.E. Eguiarte, J. Farmer, L. Forney, L. Lloret, J. M. Rodríguez Martínez, X. Soberon, R. Dirzo, and J.J. Elser. 2006. An endangered oasis of aquatic microbial biodiversity in the Chihuahuan desert *Proc. Nat. Acad. Sci. USA* **103**: 6565-6570.

### Publications – 5 other significant

Elser, J.J., K. Acharya, M. Kyle, J. Cotner, W. Makino, T. Markow, T. Watts, S. Hobbie, W. Fagan, J. Schade, and R.W. Sterner. 2003. Growth rate – stoichiometry couplings in diverse biota. *Ecology Letters* **6**: 936-943.

Elser, J.J., W.F. Fagan, R.F. Denno, D.R. Dobberfuhl, A. Folarin, A. Huberty, S. Interlandi, S.S. Kilham, E. McCauley, K.L. Schulz, E.H. Siemann, and R.W. Sterner. 2000. Nutritional constraints in terrestrial and freshwater food webs. *Nature* **408**: 578-580.

Elser, J.J., R.W. Sterner, E. Gorokhova, W.F. Fagan, T.A. Markow, J.B. Cotner, J.F. Harrison, S.E. Hobbie, G.M. Odell, L.J. Weider. 2000. Biological stoichiometry from genes to ecosystems. *Ecology Letters* **3**: 540-550.

Sterner, R. W., and J. J. Elser. 2002. *Ecological Stoichiometry: The Biology of Elements from Molecules to the Biosphere*. Princeton University Press, Princeton, NJ.

Weider, L.J., J.J. Elser, T.J. Crease, M. Mateos, T.M. Markow, and J.B. Cotner. 2005. Functional significance of ribosomal (r)DNA variation in the ecology of organisms. *Annual Review of Ecology, Evolution, and Systematics* **36**: 219-242.

### **Synergistic Activities (last five years)**

Associate Director (Research and Training Initiatives), School of Life Sciences (2005-present)  
Associate Editor, *Encyclopedia of Ecology* (Elsevier), 2006-2007  
Associate Editor, *The American Naturalist* (2000-2003), *Ecological Applications* (2001-2005),  
*Ecology Letters* (2002 – present)  
Organizer, NSF International Programs exchange, “Biocomplexity and Ecosystem Services:  
Opportunities for China-USA Collaboration, 2002-2006.  
Elected member (1996-1999), American Society of Limnology and Oceanography Board of  
Directors  
Co-organizer, annual meeting of the American Society of Limnology and Oceanography, Santa  
Fe, New Mexico, February 2007  
Undergraduate Programs Director, Department of Biology, ASU (1998-2003)

### **Thesis Advisor and Postgraduate-Scholar Sponsor**

Graduate and Postdoctoral Advisors – Dr. Bruce Kimmel (Oak Ridge National Laboratory,  
University of Tennessee), Dr Charles Goldman (University of California-Davis)

### **Advising and Mentoring**

Postdoctoral (current) – C. Acquisti (co-advised with S. Kumar), S. Hao

Postdoctoral (past) – E. Gorokhova, J. Schade, K. Acharya, F. Wolfe-Simon (co-advised with A.  
Anbar)

Graduate Students (current) – J. Watts (Ph.D.), M. McCrackin (Ph.D.)

Graduate Students (past) – J. Clasen (M.S.), D. Dobberfuhr (Ph.D.), D. Frees (M.S.), L. Gudex  
(M.S.), P. Frost (Ph.D.), N. MacKay (Ph.D.), J. Harden (M.N.S.)

Undergraduates Currently mentoring three undergraduates, of a total of 11 since 2000.

### **Collaborators (non-ASU, last 4 years)**

S. Naeem (Columbia) T. Crease (U. Guelph), W. Makino (Tohoku University), T. Andersen (U.  
Oslo), I. Loladze (Nebraska), J. Nagy (Scottsdale Community College), T. Anderson  
(Southampton), J. Urabe (Tohoku University), B. Enquist (U. Arizona), W. Fagan (U.  
Maryland), G. Agren (Swedish University of Agricultural Sciences), V. Souza (UNAM), L.  
Eguiarte (UNAM), T. Markow (U. Arizona), E. McCauley (U. Calgary), M. Smith (KU Medical  
Center), V. Smith (U. Kansas), J. Cotner (U. Minnesota), S. Hobbie (U. Minnesota), R. Sterner (U.  
Minnesota), L. Weider (U. Oklahoma), D. Hessen (U. Oslo), A. Woods (U. Texas), T. Vrede  
(Uppsala University), P. DeReuter (University of Utrecht), S.A.L.M. Kooijman (Vrije  
University), M. Boersma (Alfred Wegener Institute for Polar and Marine Research), J. Gilooly  
(U New Mexico), J. Brown (U New Mexico), G. West (Los Alamos), V. Savage (U New Mexico), W.  
Woodruff (U New Mexico), C. Martinez del Rio (U Wyoming), A. Allen (U New Mexico), J. Siefert  
(Rice)