

BIOGRAPHICAL SKETCH

Inna M. Sokolova, Ph.D.

Professor

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
St. Petersburg State University, St. Petersburg, Russia	B.Sc.Honors	1991	Biology/Zoology
Zoological Institute of Russian Academy of Sciences	Ph.D.	1997	Zoology
Alfred-Wegener-Institute, Bremerhaven, Germany and Alexander von Humboldt Foundation, Germany	Post-doc	2001	Physiology
University of Guelph, Guelph, Canada	Post-doc	2002	Molecular ecology and population genetics

A. Positions and Selected Honors (in chronological order)

Time	Position	Name and place of the Institution
1991 – 1993	Research trainee	White Sea Biological Station, Zoological Institute of Russian Academy of Sciences, St. Petersburg, Russia
1993 – 1996	Ph.D. student	As above
1996 – 1997	Junior research faculty	As above
1997 – 2001	Research faculty	As above
1999 –2001	Post-doctoral fellow	Alfred-Wegener-Institute for Polar and Marine Research, Bremerhaven, Germany
2001 – 2002	Senior post-doctoral fellow	Dept. of Zoology, University of Guelph, Guelph, Canada
2002 - 2008	Assistant Professor	Biology Dept., University of North Carolina at Charlotte, USA
2008-2011	Associate Professor	As above
2011-present	Professor	As above

- 2007-present Contributing Editor for *Marine Ecology Progress Series*.
- 2011-present Editorial Board Member for *Comparative Biochemistry and Physiology*
- 2010-present Member of the Review Editorial Board for *Frontiers in Aquatic Physiology*
- 2008-present Grant review panelist for the National Science Foundation (2008, 2009, 2010) and the U.S. Environmental Protection Agency (2007, 2008)
- 2006 Feodor Lynen/Alexander von Humboldt Research Travel Award (Germany)
- 2004 Award of the Ecological Society of America for outstanding achievements in mentoring students and the outstanding efforts to diversify the field of ecology.
- 2000 Award of the Academician V.E.Sokolov Foundation (Russian Academy of Sciences) for outstanding young researchers in the field of ecology
- 1999-2001 Alexander von Humboldt International Research Fellowship (Germany)
- 1998 Award of the European Marine Biology Society (EMBS) for the 3rd best presentation at the EMBS annual meeting
- 1995-1996 Post-graduate Student Awards from the International Science Foundation
- 1995 International Award of the Otto Kinne Foundation (Germany) for outstanding young ecologists
- 1995 Promising Young Scientist Award of the General Biology Division of Russian Academy of Sciences
- 1991 A.V.Dogel Undergraduate Student Award of the Leningrad (St. Petersburg) Society of Naturalists (Russia) for excellence in research and studies

B. Selected peer-reviewed publications from 2007; out of total of 60 peer-reviewed publications and 8 non-peer-reviewed/invited book chapters (*h index*=16; 381 citations excluding self-citations, average 6.17 citations per paper, 17.97 per year). * indicates a student co-author

1. Cherkasov A.S.*, Grewal S.*, Sokolova I.M. 2007. Combined effects of temperature and cadmium exposure on haemocyte apoptosis and cadmium accumulation in the eastern oyster *Crassostrea virginica* (Gmelin). *Journal of Thermal Biology* 32 (3): 162-170.

2. Cherkasov A.S.*, Overton, R.A. Jr*, Sokolov E.P., **Sokolova I.M.** 2007. Temperature-dependent effects of cadmium and purine nucleotides on mitochondrial aconitase from a marine ectotherm, *Crassostrea virginica*: a role of temperature in oxidative stress and allosteric enzyme regulation. ***Journal of Experimental Biology*** 210: 46-55. Featured on "Inside JEB"
<http://jeb.biologists.org/cgi/reprint/210/1/ii>
3. **Sokolova I.M.**, Lannig G. 2008. Interactive effects of metal pollution and temperature on metabolism in aquatic ectotherms: Implications of global climate change. ***Climate Research*** 37: 181-201. (invited review).
4. Ivanina A.V.*, Habinck E.*, **Sokolova I.M.** 2008. Differential sensitivity to cadmium of key mitochondrial enzymes in the eastern oyster, *Crassostrea virginica* Gmelin (Bivalvia: Ostreidae). ***Comparative Biochemistry and Physiology C*** 148: 72-79.
<http://dx.doi.org/10.1016/j.cbpc.2008.03.009>
5. Ivanina A.V.*, **Sokolova I.M.** 2008. Effects of cadmium exposure on expression and activity of P-glycoprotein in eastern oysters, *Crassostrea virginica* Gmelin. ***Aquatic Toxicology*** 88:19-28.
<http://dx.doi.org/10.1016/j.aquatox.2008.02.014>
6. Ivanina A.V.*, **Sokolova I.M.**, Sukhotin A.A. 2008. Oxidative stress and expression of chaperones in aging mollusks. ***Comparative Biochemistry and Physiology A*** 150: 53-61.
<http://dx.doi.org/10.1016/j.cbpb.2008.01.005>
7. Lannig G., Bock C., Cherkasov A.*, Pörtner H.O., **Sokolova I.M.** 2008. Cadmium-dependent oxygen limitation affects temperature tolerance in eastern oysters (*Crassostrea virginica* Gmelin). ***American Journal of Physiology - Regulatory, Integrative and Comparative Physiology*** 294:1338-1346.
<http://ajpregu.physiology.org/cgi/reprint/294/4/R1338>
8. Ivanina A.V.*, Cherkasov A.S.*, **Sokolova I.M.** 2008. Effects of cadmium on cellular protein and glutathione synthesis and expression of stress proteins in eastern oysters, *Crassostrea virginica* Gmelin. ***Journal of Experimental Biology*** 211: 577-586.
<http://jeb.biologists.org/cgi/reprint/211/4/577>
9. Sanni B.*, Williams K.*, Sokolov E.P., **Sokolova I.M.** 2008. Effects of acclimation temperature and cadmium exposure on mitochondrial aconitase and LON protease from a model marine ectotherm, *Crassostrea virginica*. ***Comparative Biochemistry and Physiology C*** 147: 101 - 112.
<http://dx.doi.org/10.1016/j.cbpc.2007.08.005>
10. **Sokolova I.M.** 2009. Apoptosis in molluscan immune defense. ***Invertebrate Survival Journal*** 6: 49-58 (invited review). Open Access: <http://www.isj.unimo.it/articoli/ISJ183.pdf>
11. Kern B., Ivanina A.V.*, Piontkivska H., Sokolov E.P., **Sokolova I.M.** 2009. Molecular characterization and expression of a novel homolog of uncoupling protein 5 (UCP5) from the eastern oyster *Crassostrea virginica* (Gmelin) (Bivalvia: Ostreidae). ***Comparative Biochemistry and Physiology D*** 4: 121-127.
12. Ivanina A.I.*, Taylor C.*, **Sokolova I.M.** 2009. Effects of elevated temperature and cadmium exposure on stress protein response in eastern oysters *Crassostrea virginica* (Gmelin). ***Aquatic Toxicology*** 91: 245-254.
13. Kurochkin I.O.*, Ivanina A.V.*, Eilers S.*, Downs C.A., May L.A., **Sokolova I.M.** 2009. Cadmium affects metabolic responses to prolonged anoxia and reoxygenation in eastern oysters *Crassostrea virginica*. ***American Journal of Physiology - Regulatory, Integrative and Comparative Physiology*** 297: R1262-R1272.
14. Granovitch A.I., Yagunova E.B.*, Maximovich A.N.*, **Sokolova I.M.** (2009). Elevated female fecundity as a possible compensatory mechanism in response to trematode infestation in populations of *Littorina saxatilis* (Olivi). ***International Journal of Parasitology*** 39: 1011-1019.
15. Froelich B.*, Ringwood A.H., **Sokolova I.M.**, Oliver J.D. (2009). Uptake and depuration of the C- and E-genotypes of *Vibrio vulnificus* by the Eastern Oyster (*Crassostrea virginica*). ***Environmental Microbiology Reports*** 2: 112 - 115.
16. Ivanina A.V.*, Eilers S.*, Kurochkin I.O.*, Chung J.S., Techa S.*, Piontkivska H., Sokolov E.P., **Sokolova I.M.** 2010. Effects of cadmium exposure and intermittent anoxia on nitric oxide metabolism in eastern oysters *Crassostrea virginica*. ***Journal of Experimental Biology*** 213, 433-444.
17. Cherkasov A. S., Taylor C., **Sokolova I.M.** 2010. Seasonal variation in mitochondrial responses to cadmium and temperature in eastern oysters *Crassostrea virginica* (Gmelin) from different latitudes. ***Aquatic Toxicology*** 97(1): 68-78.

18. Hughes F.M., Foster B., Grewal S., **Sokolova I.M.** 2010. Apoptosis as a host defense mechanism in *Crassostrea virginica* and its modulation by *Perkinsus marinus*. *Fish and Shellfish Immunology* 29(2):247-257.
19. Ivanina A.V.*, Sokolov E.P., **Sokolova I.M.** 2010. Effects of cadmium on anaerobic energy metabolism and mRNA expression during air exposure and recovery of an intertidal mollusk *Crassostrea virginica*. *Aquatic Toxicology* 99:330-342.
20. Lannig G., Eilers S., Pörtner H.O., **Sokolova I.M.**, Bock C. 2010. Impact of ocean acidification on energy metabolism of oyster, *Crassostrea gigas* – Changes in metabolic pathways and thermal response. *Marine Drugs* 8(8), 2318-2339.
21. Beniash E., Ivanina A.*, Lieb N.S.*, Kurochkin I.*, **Sokolova I.M.** 2010. Elevated levels of carbon dioxide affect metabolism and shell formation in oysters *Crassostrea virginica* (Gmelin). *Marine Ecology Progress Series* 419:95-108.
22. Kurochkin I.O.*, Eitzkorn M., Buchwalter D., Leamy L. and **Sokolova I.M.** 2011. Top-down control analysis of the cadmium effects on molluscan mitochondria and the role of oxidative stress in cadmium-induced mitochondrial dysfunction. *American Journal of Physiology - Regulatory, Integrative and Comparative Physiology* 300:R21-R31.
23. Ivanina A.V.*, Froelich B.*, Williams T.*, Sokolov E.P., Oliver J.D., **Sokolova I.M.** 2011. Interactive effects of cadmium and hypoxia on metabolic responses and bacterial loads of eastern oysters *Crassostrea virginica* Gmelin. *Chemosphere* 82(3): 377-89.
24. Chapman R.W., Mancina A., Beal M., Veloso A., Rathburn C., Blair A., Holland A.F., Warr G.W., Didinato G., **Sokolova I.M.**, Wirth E., Sanger D. 2011. The transcriptomic responses of the eastern oyster, *Crassostrea virginica*, to environmental conditions. *Molecular Ecology* 20: 1431–1449.
25. Piontkivska H., Chung J.-S., Ivanina A.V.*, Sokolov E.P., Techa S.*, **Sokolova I.M.** 2011. Molecular characterization and mRNA expression of two key enzymes of hypoxia-sensing pathways in eastern oysters *Crassostrea virginica* (Gmelin): Hypoxia-inducible factor 1 α (HIF-1 α) and HIF-prolyl hydroxylase 2 (PHD2). *Comparative Biochemistry and Physiology D: Genomics and Proteomics* 6: 103-114.
26. Foster B.*, Grewal S.*, Graves O., Hughes F.M. Jr, **Sokolova I.M.** 2011. Copper exposure affects hemocyte apoptosis and *Perkinsus marinus* infection in eastern oysters *Crassostrea virginica* (Gmelin). *Fish and Shellfish Immunology* 31:341-349.
27. **Sokolova I.M.** 2011. Surviving thermal extremes: Temperature adaptations in animals. *Nature Education Knowledge* (in press).
28. **Sokolova I.M.** 2011. Metabolic arrest as an adaptation to extreme stress in molluscs. *Nature Education Knowledge* (in press).

C. Recent Research Support. Overall external research support in 2002-2011: ~\$1,500,000 as principal investigator and ~\$2,750,000 as a co-principal investigator from a variety of federal and state agencies

Active grants:

- 1) National Science Foundation; Project: “Collaborative research: LiT: Effects of Temperature and Elevated CO₂ Levels on Biomineralization and Metabolic Physiology of Marine Bivalves”, \$596,358, 05/01/2010 – 04/30/2013
- 2) National Science Foundation; Project: “LiT: Interactive effects of multiple environmental stressors on mitochondrial metabolism and bioenergetics in a model marine ectotherm, *Crassostrea virginica*”, \$250,000, 8/01/2009 – 07/31/2011
- 3) Civilian Research and Development Foundation of the U.S., Climate Change and Energy Competition; Project: “Multidisciplinary Climate Change Competition: Does the change in the thermal regime of the environment lead to a decrease in competitive abilities of endemic Baikal species against potential invaders?”; \$93,000, 03/01/2010 - 02/29/2012
- 4) National Science Foundation; Project: “MRI: Acquisition of an Analytical Transmission Electron Microscope System for Multidisciplinary Research and Education at UNC Charlotte”, \$563,899 (co-PI), 07/10/08-01/24/11
- 5) UNC Charlotte Faculty Research Grant; Project: “Effects of ocean acidification on metal uptake and toxicity in marine mollusks”, \$6,000, 5/30/10-1/1/11