

May 20, 2011

Dear Professor Kristin Swanson:

I am responding to your ad at Science Careers website for a research position for mathematical modeling of brain tumor disease progression .

As you may note from my CV, I have an extensive experience in Mathematical Biology. Though I have not modeled cancer per se, I am extremely fast at learning new biology and excel at parsimoniously capturing biology with mathematics.

I am a lead author of only a few publications but they either have been relatively highly cited or highlighted in Nature and Science.

Simon Levin, Yang Kuang, and James Elser can provide references if you find my candidacy of any interest to your lab. I will be happy to provide any additional information. I am looking forward hearing from you.

Kind regards,

Irakli Loladze, Ph.D.

<http://sites.google.com/site/loladze/>

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Curriculum Vitae

Irakli Loladze

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PROFESSIONAL PREPARATION

Princeton University '01-'03, Postdoc, Mathematical Modeling in Biology, Ecology, and Environmental Sciences. Advisor: Simon Levin

Arizona State University, MA '96, PhD, '01, Mathematical Biology and Applied Mathematics, Advisor: Yang Kuang

Tbilisi State University, Georgia, Diploma with Honors (B.A., sama cuma lade) '93, Applied Mathematics & Computer Science

EMPLOYMENT

Ohio State University, '06 Mathematical Biosciences Institute, long-term visitor

University of Nebraska – Lincoln, '03-'09 Mathematics Department, faculty

Princeton Environmental Institute, '03, lecturer

Princeton University, Ecology & Evolutionary Biology, '01-'02, research associate

FUNDED GRANTS

- Co-PI: UMB Research for Undergraduates in Theoretical Ecology (RUTE), NSF 0531920, \$1,250,000, **2006-2011**
- Co-PI: "Amazonian Fishes - Innovation in Biodiversity Research, Training and Public Education," Strategic Research Cluster Grants, 2007-2008, \$76,500
- PI: Nebraska EPSCoR First Award Grant, 2005-2006 \$49,903
- PI: Faculty Seed-Money Grant, UNL Research Council, 2005 \$9,941
- Co-PI: Mathematical Methods for Biology and Medicine, 2004 \$24,400
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SELECTED PEER-REVIEWED PUBLICATIONS

- Loladze, I. and Elser J.J. (2011) The origins of the Redfield nitrogen-to-phosphorus ratio are in an optimal protein:rRNA ratio, *Ecology Letters* [PDF](#) (highlighted in *Science*, [Editor's Choice](#))
- Deng, B. and Loladze, I. (2007) Competitive Coexistence in Stoichiometric Chaos, *Chaos*, 17(3) [PDF](#)
- Loladze, I., Y. Kuang, J. J. Elser & W.F. Fagan (2004) Competition and Stoichiometry: Coexistence of Two Predators on One Prey, *Theoretical Population Biology* 65:1-15. [PDF](#)
- Loladze, I. (2002) Rising CO₂ and human nutrition: Toward globally imbalanced plant stoichiometry? *Trends in Ecology and Evolution*, 17, 457-461 (featured in *Nature*, *New Scientist*, *National Geographic*, and *Die Welt*) [PDF](#)
- Loladze, I., Kuang, Y. and Elser, J.J. (2000) Stoichiometry in Producer-Grazer Systems: Linking Energy Flow with Element Cycling. *Bulletin of Mathematical Biology* 62, 1137-1162

(in the top 10 most cited BMB papers since 1999) [PDF](#)

SELECTED INVITED TALKS

- “Elevated CO₂ diminishes the levels of macro- and micro-elements in crops and wild plants,” *The First Global Conference on Biofortification*, Washington, DC, Nov 2010
- “[Ocean's 16: Dynamical, evolutionary and molecular origins of Redfield ratio N:P=16 in oceans](#),” *Swinburne University of Technology*, Melbourne, Australia, Jul 2009
- *Dynamical systems in Biology and Medicine*, The 7th AIMS International Conference on Dynamical Systems, Differential Equations and Applications, Arlington, TX, May 2008
- “[Elevated CO₂ effects of plant stoichiometry and "hidden hunger" disorder](#)” *The Society for Integrative and Comparative Biology (SIMB) Meeting*, Phoenix, Jan 2007

TEACHING

- Extensive experience teaching classes ranging from 12 students to 140 students: College Algebra, Calculus & Multivariable Calculus, Differential Equations, and Matrix Algebra
- Supervising teams of undergraduate and graduate students for research projects in Biomathematics
- Innovative teaching methods centered on ‘active learning’ and implementation of online tools in the classroom: Wolfram Alfa, interactive Java and Flash applets, iOS apps, Blackboard
- A high percentage of students passing exams and common finals
- “*Recognition Award for Contributions to Students*,” The Parents Association and the Teaching Council of the UNL Award, 2006, 2007, 2008

Additional Professional Development in Teaching Mathematics:

- Institute of Advanced Studies / Park City Mathematics Institute, *Education: Mathematical Knowledge for Teaching*, Summer ‘07
- Fellow of Project *New Experiences in Teaching (NExT)*, ‘04-‘05
- Fellow of *Preparing Future Faculty (PFF)*, Arizona State University, ‘98-‘00

Refereeing manuscripts & grant applications for:

Bulletin of Mathematical Biology, Global Change Biology, Oikos, NSF, Theoretical Population Biology, NOAA, Journal of Biological Dynamics, Journal of Theoretical Biology, Journal of Mathematical Analysis and Applications

- US citizen; languages: English, Georgian, Russian

List of References for Irakli Loladze

Simon Levin

George M. Moffett Professor of Biology

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Yang Kuang

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James Elser

Regents' Professor & Parents Association Professor

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