DUSAN MISEVIC

Frontiers in Life Science
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EDUCATION AND RESEARCH

2015 – present	Scientific coordinator, Frontiers in Life Science bachelor program, University Paris Descartes
2009 – 2014	Post-doctoral researcher, INSERM, Paris, France, with Dr. François Taddei
2006 – 2009	Post-doctoral researcher, ETH Zurich, Switzerland, with Dr. Sebastian Bonhoeffer
2000 – 2006	Ph.D. in Zoology, concentration in Ecology, Evolutionary Biology and Behavior (EEBB), GPA 4.0/4.0, advisors Dr. Richard Lenski and Dr. Charles Ofria, Michigan State University (MSU), East Lansing MI, USA
1995 – 1998	Dual Bachelor of Science degree in Mathematics and Biology, California Institute of Technology (Caltech), Pasadena, CA, USA,
1994 – 1995	Bennington College, Bennington, VT, USA
1994 – 1995	College of Mathematics, Belgrade University, Belgrade, Yugoslavia
1990 – 1994	Mathematical Gymnasium (High School), Belgrade, Yugoslavia

PUBLICATIONS

2015

Misevic, D., Frenoy, A., Lindner, A. B., Taddei, F. Shape matters: lifecycle of cooperative patches promotes cooperation in bulky populations. *Evolution* 69(3) 788-802.

Dimitriu, T., Misevic, D., Lindner, A. B., Taddei, F. Mobile genetic elements are involved in bacterial sociality. *Mobile Genetic Elements*. 5(1) 7-11.

2014

Dimitriu, T., Lotton, C., Bénard-Capelle, J., Misevic, D., Brown, S. P., Lindner, A. B., Taddei, F. Genetic information transfer promotes cooperation in bacteria. *Proceedings of the National Academy of Sciences*. 11(30) 11103–11108.

Frénoy A., Taddei F., Misevic D. Constrained Genetic Architecture Promotes Cooperation (mini review) 23-24 in H. Sayama, J. Rieffel, S. Risi, R. Doursat and H. Lipson, eds. *Artificial Life 14: Proceedings of the Fourteenth International Conference on the Synthesis and Simulation of Living Systems*. MIT Press, Cambridge, Massachusetts.

2013

Frénoy A., Taddei F., Misevic D. Genetic architecture promotes the evolution and maintenance of cooperation. *PLoS Computational Biology*, 9(11): e1003339.

Misevic D., Frénoy A., Taddei F. *In silico* evolution of transferable genetic elements. 200-207 in P. Liò, O. Miglino, G. Nicosia, S. Nolfi and M. Pavone, eds. *Advances in Artificial Life, ECAL 2013: Proceedings of the twelfth European Conference on the Synthesis and Simulation of Living Systems*. MIT Press, Cambridge, Massachusetts.

2012

Misevic D., Frénoy A., Parsons D. P., Taddei F. Effects of public good properties on the evolution of cooperation. 218-225 in C. Adami, D. M. Bryson, C. Ofria, and R. Pennock, eds.

Artificial Life 13: Proceedings of the Thirteenth International Conference on the Simulation and Synthesis of Living Systems. MIT Press, Cambridge, Massachusetts.

Frénoy A., Taddei F., Misevic D. Robustness and evolvability of cooperation Pp. 53-58 in C. Adami, D. M. Bryson, C. Ofria, and R. Pennock, eds. *Artificial Life 13: Proceedings of the Thirteenth International Conference on the Simulation and Synthesis of Living Systems*. MIT Press, Cambridge, Massachusetts.

2011 Misevic D., Ofria C., Lenski R. Digital sex: causes and consequences. Pp 532-533 (mini review) In Tom Lenaerts, Mario Giacobini, Hugues Bersini, Paul Bourgine, Marco Dorigo and René Doursat eds. *Advances in Artificial Life, ECAL 2011: Proceedings of the eleventh European Conference on the Synthesis and Simulation of Living Systems*. MIT Press, Cambridge, Massachusetts.

2010 Misevic, D., Ofria, C. & Lenski, R. E. Experiments with digital organisms on the origin and maintenance of sex in changing environments. Journal of Heredity, 101 (Supplement 1) S46-S54.

2009 Misevic, D., Kouyos, R., Bonhoeffer, S. Predicting evolution of sex on complex fitness landscapes. *PLoS Computational Biology*, 4(9):e1000510.

2008 Clune J., Misevic D., Ofria C., Lenski R. E., Elena S. F., Sanjuán R. Evolution fails to optimize mutation rates for long-term adaptation on rugged fitness landscapes. *PLoS Computational Biology*, 4(9), e1000187.

2006 Misevic, D., Ofria, C. & Lenski, R. E. Evolution of genetic architecture in sexual and asexual digital organisms. *Proceedings of the Royal Society London, Series B*. 273, 457-464.

2004 Misevic, D., Ofria, C. & Lenski, R. E. Sexual reproduction and Muller's ratchet in digital organisms. p. 340-345 in J. Pollack, M. Bedau, P. Husbands, T. Ikegami, and R. A. Watson, eds. *Artificial Life IX: Proceedings of the Ninth International Conference on the Simulation and Synthesis of Living Systems*. MIT Press, Cambridge, Massachusetts.

SELECTED PRESENTATIONS

2015 **Lifecycle of cooperative patches and the evolution of cooperation**
Mathematical Models in Ecology and Evolution conference, Paris, France

Evolution du sexe: plus le pourquoi que le comment (invited talk)
Sexe et Genre: de la Biologie à la Sociologie, Ecole Thématique Interdisciplinaire d'Echanges et de Formation en Biologie du CNRS, Villers- Sur-Mer, France

2014 ***In silico* evolution of transferable genetic elements**
ALife 14, New York, NY, USA

Sex and cooperation in digital communities (invited talk)
34ème Séminaire de la Société Francophone de Biologie Théorique, Saint Flour, France

2013 ***In silico* evolution of transferable genetic elements**
ECAL 2013, Taormina, Italy

Experimental evolution: *in silico* and *in vitro*
Petnica Science Center, Petnica, Serbia

2012 **Effects of public good properties on the evolution of cooperation**
ALife 13, East Lansing, MI, USA

Dynamics of public good cooperation
University Pierre and Marie Curie, Paris, France

Shape matters: dynamics of public good and the evolution of cooperation
Second Symposium of Population and Evolutionary genetics, Belgrade, Serbia

2011 **Digital sex in changing environments**
ECAL 2011, Paris, France

2010 **LabSurfing: New platform for exchange of scientific resources**
WISER-U (World-wide interaction for science education and research in university) Summer, Beijing, China

Death of cooperation
AXA-Paris Descartes Chair on Longevity meeting, Newcastle, UK

Digital approaches to evolution
École normale supérieure, Paris, France

2009 **Sex and evolution: the how and the why**
Science Festival, Belgrade, Serbia

Cooperation and recombination
European Society for Evolutionary Biology, Turin, Italy

Predicting evolution of sex on complex fitness landscapes
Evolution of Sex & Recombination: In Theory & in Practice, Iowa City, IA, USA

2008 **Studying the evolution of sex in complex systems**
Institute for Complex Systems, Paris, France

Evolution of sex: causes and consequences
TaMaRa seminar, University Paris Renes Descartes, France

Sex as information transfer
Center for Research and Interdisciplinarity, Paris, France

2007 **Epistatic interactions in populations of digital organisms**
Biology without Borders Conference, Trento, Italy

Measuring epistasis: population v. physiological approach
Plant Sciences Institute Symposium, Iowa State University, Ames, IA, USA

2006 **Digital sex: causes and consequences of recombination**
EEBB seminar, Michigan State University

Sex, modularity and robustness in digital organisms
DARPA Fitness Landscapes Workshop, Berkeley, CA, USA

2004 **Modularity and epistasis**
Experimental Evolution Workshop, Friburg, Switzerland

Evolution of sex – answers from digital evolution
Guest lecture, CSE 491 Selected topics in Computer Science: Digital Evolution and Biocomplexity, Michigan State University

Genetic architecture in sexual and asexual digital organisms
Evolution Conference, Fort Collins, CO, USA

2003 **Evolution of sex in digital organisms**
Sexual Selection, Speciation, and Evolution of Sex Conference, Leiden, Netherlands

Experimental evolution with digital organisms
Invited seminar, University of Belgrade, Belgrade, Yugoslavia

2001 **Evolution of mutation rates**
Microbial Population Biology Gordon Conference, Williams College, Williamstown, MA, USA

LANGUAGES, COMPUTER SKILLS

Serbian, English (bi-lingual), working knowledge French, basic Russian

C/C++, Python, HTML, LaTeX, Matlab, Mathematica, R, Flash

Module implementation, code maintenance and debugging for two large computational biology software projects, Aevol http://aevol.fr and Avida http://avida.devosoft.org

TEACHING AND WORK EXPERIENCE

2014	Teacher for undergraduate *Modeling in Biology* course École normale supérieure, Paris, France
2011 – present	Teacher for undergraduate *Scientific methodology* course Center for Research and Interdisciplinarity, University Paris Descartes, Paris, France
2009 – present	Teacher for Master's *Biology Refresher* course Center for Research and Interdisciplinarity, University Paris Descartes, Paris, France
2007	Teaching assistant for 701-1418-00L *Modeling in Population and Evolutionary Biology* ETH Zurich, Zurich, Switzerland
2002	Teaching assistant for BS 110 *Organisms and Populations* Michigan State University, East Lansing, MI, USA
2001	Teaching assistant for ZOL 343 *Advanced Genetics Laboratory* Michigan State University, East Lansing, MI, USA
1998 – 2000	System administrator, Information Technology Services Computation and Neural Systems Department, Caltech, Pasadena, CA, USA
1992 – 1994	Teaching assistant, coordinator, student project supervisors Seminars in Mathematics, Computer science, Psychology Petnica Science Center, Petnica, Serbia

STUDENT SUPERVISION

Post-doc	currently supervising one postdoctoral researcher
PhD	co-advised one PhD student, Antoine Frènoy, currently doing a postdoc at ETH Zurich.
Master	supervised 11 master students during their 3-6 month internships
Undergraduate	supervised 3 undergraduate students during their 1-12 week internships

HONORS AND AWARDS

2012	Best paper award, Collective dynamics track, Artificial Life 13 conference in East Lansing, MI
2010	Best group collaboration and audience award, ConSol project at WISER-U Summer Conference
2008	Research featured on the cover page of PLoS Computational Biology
2005	Research featured in the *Discover* magazine cover story, Zimmer, C. "Testing Darwin"
2005	MSU Ecology, Evolutionary Biology and Behavior Program Student Speaker Award, opportunity to present research at the program's invited speaker seminar series
2004	Best paper award at the Artificial Life IX conference in Boston, MA
2004	Invitation to publish in a special issue of American Midland Naturalist, based on the talk at the Midwestern Ecology and Evolution Conference in South Bend

JOURNALS REVIEWED FOR

Journal of the Royal Society Interface, PLoS Computational Biology, PLoS One, Scientific Reports, Journal of Theoretical Biology, Journal of Heredity

GRANTS AND FUNDING

2011 – 2015	COOPINFO – Experimental evolution of cooperation and information exchange The French National Research Agency (ANR) (lead project researcher and project manager, 580,000€ was awarded to François Taddei)
2005	Graduate Fellowship from MSU Ecology, Evolutionary Biology and Behavior Program
2001	Graduate Fellowship from MSU Center for Biological Modeling

SERVICES AND ACTIVITIES

2015	Symposium Chair, “Evolutionary ecology of cooperation: Theory and experiment", at the European Society for Evolutionary Biology Meeting, Lausanne, Switzerland.
2013 – present	Program Committee member, European Conferences on Artificial Life
2012 – present	Program Committee member, ALife International Conferences on the Simulation and Synthesis of Living Systems
2010 – present	Board member of ConSol, organization for peacebuilding in war-affected, segregated communities using interdisciplinary, non-formal, interactive science education tools
2010 – present	Member of Paris Montagne, association making science research and education more attractive and accessible to high school students
2010 – 2011	Media relations team volunteer for CouchSurfing.org, the world’s largest hospitality network with over two million members; CouchSurfing member since 2006, CouchSurfing ambassador 2007-2009.
2009 – present	Student club advisor, Center for Research and Interdisciplinarity, Paris
2005	Zoology Department representative to the MSU Graduate Student Council
2004 – 2006	Vice president, MSU Men’s Glee Club Choir
2003 – 2004	President of MSU Evolutionary Biology, and Behavior Program student colloquium
2003 – 2004	Student representative on the MSU Zoology Department Graduate Committee
1995 – present	Participation in performance arts, Caltech Chamber Singers, Theater Arts at Caltech, and MSU Men’s Glee Club, Mel’men choir Paris
	Sports, including downhill skiing, hiking, swimming and extreme sports (bungee jumping, sky diving, hang gliding)
	Literature, cinema, travel and politics