

Curriculum vitae – Michael Kalyuzhny, Nov. 4th 2019

Education

From:	To:	
2013	2019	Ph.D. in Ecology, The Hebrew University of Jerusalem (HUJ). Supervisors: Ronen Kadmon (HUJ) and Nadav Shnerb (Physics, Bar-Ilan University, BIU). Dissertation topic: "Bridging the gap between statics and dynamics in Community Ecology". Thesis submitted for review on Sep. 10, 2019.
2011	2013	M.Sc. summa cum laude in Ecology, Evolution and Behavior, HUJ. Supervisors: Ronen Kadmon (HUJ) and Nadav Shnerb (BIU). Final grade: 98.8 (3 rd in faculty), thesis topic: "What drives community dynamics?"
2008	2011	B.Sc. magna cum laude in Life Sciences, HUJ. Final grade: 95.1 , Participant in "Etgar" honor's program.

Professional and teaching experience

From:	To:	
2019	present	Postdoctoral fellow, University of Michigan, Dept. of EEB, with Annette Ostling
2013	2018	Teaching assistant, The Institute of Life Sciences, HUJ ("Introduction to Ecology and Population Biology")
2010	2013	Scientific and administrative coordinator of the project "Establishing Inter-Institutional Scientific Infrastructure for a Combined Theoretical, Experimental, and Applied Research of Biodiversity Conservation", funded by the Ministry of Science and technology.
2009	2011	Research assistant in Ronen Kadmon's lab; development and analysis of computational tools to explain and predict patterns of biodiversity

Prizes and Awards

2009 – Fellowship for B.Sc. students from the Institute of Life Sciences	\$1,100
2009 – Dean list of excellent students (awarded to top 10% of students)	
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2010 – Best M.Sc. lecture award (3 rd place), 47 th annual meeting of the Zoological Society of Israel	
2011 – Excellence scholarship for M.Sc. students for two years, Alexander Silberman Institute of Life Sciences, HUJ (awarded to 2 students out of 40)	\$10,200
2013 – Rector's prize for excellent M.Sc. students (awarded to the top 2% of students)	\$1,400
2013 – Best PhD lecture award (2 nd place), 50 th annual meeting of the Zoological Society of Israel	
2013 – Excellence scholarship for PhD students, The Advanced School of Environmental Studies, HUJ (awarded to 3 students out of dozens)	\$5,100
2014 – Travel grant, Zoological Society of Israel	\$580

2014 – Travel grant, faculty of science, HUU	\$1,500
2014 - Excellence scholarship for PhD students, The Advanced School of Environmental Studies, HUU	\$3,400
2015 – Adams Fellowship for 4 years from the Israel Academy of Sciences and Humanities (awarded to 8 students nationwide)	\$120,000
2015 – SMART prize for best research paper from the Institute of Life Sciences	\$270
2016 – List of best teaching assistants in the faculty (top 15% of teaching assistants)	
2017 – MCED Award for Innovative Contributions to Ecological Modeling, 2 nd place	
2018 – Aharon and Ephraim Katzir Study Grant (travel grant to learn new tools)	\$5,000

Publications (citations and ranking according to ISI on Sep. 10, 2019)

Steinmetz B, **Kalyuzhny M**, Shnerb NM (2019). Intra-Specific variability in fluctuating environments - mechanisms of impact on species diversity. Submitted to *Ecology*, bioRxiv preprint 767491.

Kalyuzhny M, Flather, CH, Shnerb, NM, Kadmon, R (2019). Deviations from dynamic equilibrium in ecological communities worldwide. Submitted to *Nature*, bioRxiv preprint 766790.

Kalyuzhny M (2019). Null models for community dynamics: Beware of the cyclic shift algorithm. Submitted to *Global Ecol. Biogeogr.*, bioRxiv preprint 762278.

Kalyuzhny M, Flather, CH, Shnerb, NM, Kadmon, R (2019). A framework for quantifying deviations from dynamic equilibrium theory. Submitted to *Ecol. Let.*, bioRxiv preprint 755645.

Kalyuzhny M, Haran T, Hawlena D (2019). Observation resolution critically influences movement-based foraging indices. *Sci. rep.* 9:13636 (citations: 0, Journal IF: 4.01, ranking: 15/69 in Multidisciplinary Sciences).

Halperin T*, **Kalyuzhny M***, Hawlena D (2018). How to use (and not to use) movement-based indices for quantifying foraging behaviour. *Methods Ecol. Evol.* 9(4): 1088-1096 (citations: 0, Journal IF: 7.1, ranking: 9/164 in Ecology).

Kalyuzhny M, Shnerb NM (2017). Dissimilarity-Overlap analysis of community dynamics: opportunities and pitfalls. *Methods Ecol. Evol.* 8(12): 1764-1773 (citations: 2, Journal IF: 7.1, ranking: 9/164 in Ecology).

Kalyuzhny M, Kadmon R, Shnerb NM (2015). A neutral theory with environmental stochasticity explains static and dynamic properties of ecological communities. *Ecol. Let.* 18: 572-580 (citations: 33, Journal IF: 8.7, ranking: 7/164 in Ecology)

Kalyuzhny M*, Seri E*, Chocron R, Flather CH, Kadmon R, Shnerb NM (2014) Niche versus neutrality – a dynamical analysis. *Am. Nat.* 184(4): 439-446 (citations: 41, Journal IF: 3.86, ranking: 35/164 in Ecology).

Kalyuzhny M*, Schreiber Y*, Chocron R, Flather CH, Kadmon R, Kessler DA, Shnerb NM (2014) Temporal fluctuation scaling in populations and communities. *Ecology* 95:1701–1709 (citations: 30, Journal IF: 4.29, ranking: 27/164 in Ecology).

Allouche O, **Kalyuzhny M**, Moreno-Rueda G, Pizarro M, Kadmon R (2013) Reply to Carnicer et al.: Environmental heterogeneity reduces breeding bird richness in Catalonia by increasing extinction rates. *Proc. Natl. Acad. Sci. USA* 110(31): (citations: 4, Journal IF: 9.58, ranking: 7/69 in Multidisciplinary Sciences).

Allouche O, **Kalyuzhny M**, Moreno-Rueda G, Pizarro M, Kadmon R (2013) Reply to Hortal et al.: Patterns of bird distribution in Spain support the area–heterogeneity tradeoff. *Proc. Natl. Acad. Sci. USA* 110(24): E2151-E2152 (citations: 3, Journal IF: 9.58, ranking: 7/69 in Multidisciplinary Sciences).

Allouche O*, **Kalyuzhny M***, Moreno-Rueda G, Pizarro M, Kadmon R (2012) Area-heterogeneity tradeoff and the diversity of ecological communities. *Proc. Natl. Acad. Sci. USA* 109(43):17495–17500 (citations: 118, Journal IF: 9.58, ranking: 7/69 in Multidisciplinary Sciences).

* - equal contribution

Participation in conferences and presentations

2010 - "Niche Theory, Elevation Range, and Mountain Biodiversity: A Combined Theoretical and Empirical Study". Talk, the 2nd International GMBA-DIVERSITAS conference

2010 – "The unexpected effects of habitat heterogeneity on biodiversity". Talk, the 47th annual meeting of the Zoological Society of Israel; **3rd place best MSc talk**

2012 – "A macroecological approach to population dynamics, or is there a balance to nature?" Talk, the 40th annual conference of The Israel Society of Ecology & Environmental Sciences

2013 – "A macroecological approach to an ancient question: Is there a balance to nature?" talk, the 50th annual meeting of the Zoological Society of Israel

2014 – "A macroecological approach to population stability in monitoring programs", presentation for the scientific committee of the National Parks Authority

2014 – "A generalized Neutral theory explains static and dynamic properties of ecological communities", talk, the 51th annual meeting of the Zoological Society of Israel; **2rd place best PhD talk**

2015 – "A neutral theory with random environment explains static and dynamic properties of ecological communities", talk, the 43th annual conference of The Israel Society of Ecology & Environmental Sciences

2016 – "Explaining community statics and dynamics using a neutral model with environmental stochasticity", talk, the 1st annual meeting for Plant Ecology in Israel

2017 – “Environmental fluctuations in a neutral framework explain community statics and dynamics”, talk, 2017 Ecological Society of America Annual Meeting

2017 – “Dynamics of species richness and composition – testing the dynamic equilibrium theory”, talk, the 54th annual meeting of the Zoological Society of Israel

2018 – “Is the dynamics of real ecological communities consistent with the Dynamic Equilibrium theory?”, talk, Stochastic models in ecology and evolutionary biology

2018 – “The dynamic equilibrium theory of community assembly: Testing predictions with observed richness and composition time series”, talk, 2018 Ecological Society of America Annual Meeting

2018 – “How functional diversity affects the temporal stability of species richness?”, talk, the 55th annual meeting of the Zoological Society of Israel

2019 – “Testing Dynamic Equilibrium theory using richness and composition time series”, talk, the 4th Israeli plant ecology conference

Other professional experience, education and service

"Mada Baktana" outreach project - scientific lectures primarily for high school students nationwide, in schools representing much of Israel's cultural diversity (including Arab schools, Jewish religious schools, low-income area schools), the European Researchers Night and more - over 2000 students and 40 lectures in 2014-2019.

Mentoring two gifted high-school students in the "Alpha" program for a year and a half, each pursuing an independent modeling research project

2014 Complex Systems Summer School at Santa Fe Institute (5 weeks)

Organizing committee of the conference "Ecology – from basic science to conservation", Students conference of the department of Ecology, Evolution and Behavior, HUI, 2013

Organizing committee of the conference "Why and how much should we protect the environment?", conference of the Advanced school of environmental studies, HUI, 2014

Service as reviewer

Proceedings of the Royal Society Series B, Ecography, Global Ecology and Biogeography, Journal of Theoretical Biology, the American Naturalist, Ecology Letters, Ecology, Czech Science Foundation, Nature Scientific Reports, Oikos, Nature Communications, Journal of Animal Ecology, PeerJ, Conservation Biology, Proceedings of the Royal Society Interface, Plant and Soil, PLOS One, Ecological Complexity.

Overall: 42 manuscripts and research proposals

Publons profile: <https://publons.com/author/1184068/michael-kalyuzhny#profile>

Selected examples of media coverage

Am. Nat. paper on niche vs. neutrality:

Galileo (Hebrew) -

<http://timeout.co.il/%D7%92%D7%9C%D7%99%D7%9C%D7%99%D7%90%D7%95/%D7%90%D7%99%D7%9B%D7%95%D7%AA-%D7%94%D7%A1%D7%91%D7%99%D7%91%D7%94/%D7%94%D7%99%D7%9E%D7%95%D7%A8-%D7%9E%D7%A1%D7%95%D7%9B%D7%9F>

American Society of Naturalists - <http://www.amnat.org/an/newpapers/OctKalyuzhny.html>

PNAS paper on the area-heterogeneity trade-off:

ScienceDaily - <http://www.sciencedaily.com/releases/2012/12/121230143021.htm>

Haaretz - <http://www.haaretz.com/news/features/israeli-spanish-ecologists-suggest-new-approach-for-saving-species-from-extinction.premium-1.490216>

Ecology Letters paper on the extension of neutral theory:

Quanta magazine - <https://www.quantamagazine.org/a-timely-fix-for-a-grand-theory-of-nature-20160311/>

Adams Fellowship:

Jerusalem post - <https://www.jpost.com/Business-and-Innovation/Health-and-Science/Leading-Israeli-doctoral-students-win-Adams-fellowships-403364>