

ΒΙΟΓΡΑΦΙΚΟ ΣΗΜΕΙΩΜΑ

Ιανουάριος 2024

Προσωπικά Στοιχεία

Όνομα: Κωνσταντία Λύκα
Οικογενειακή κατάσταση: Έγγαμη, ένα παιδί
Υπηκοότητα: Ελληνική

Διεύθυνση εργασίας:

Τμήμα Βιολογίας

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Επαγγελματική Εμπειρία

Τμήμα Βιολογίας, Πανεπιστήμιο Κρήτης

Καθηγήτρια, *Ιανουάριος 2024 – μέχρι σήμερα*

Αναπληρώτρια Καθηγήτρια, *Νοέμβριος 2015 – Δεκέμβριος 2023*

Μόνιμη Επίκουρη Καθηγήτρια, *Αύγουστος 2010 – Νοέμβριος 2015*

Επίκουρη Καθηγήτρια, *Νοέμβριος 2006 - Ιούλιος 2010*

Λέκτορας, *Μάρτιο 1999 – Οκτώβριος 2006*

Π.Δ. 407/80, *Σεπτέμβριος 1998-Φεβρουάριος 1999*

Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara, USA

Μεταδιδακτορική Ερευνήτρια και Λέκτορας, *Οκτώβριος 1996-Ιούνιος 1998*

Department of Mathematics, University of Tennessee, Knoxville, USA

Ερευνήτρια και Βοηθός Διδασκαλίας, *Αύγουστος 1990- Σεπτέμβριος 1996*

Ινστιτούτο Εφαρμοσμένων και Υπολογιστικών Μαθηματικών, Ερευνητικό Κέντρο Κρήτης, Ηράκλειο

Βοηθός Ερευνήτρια, *Σεπτέμβριος 1989 – Ιούνιος 1990, Ιούνιος 1985 – Ιούλιος 1987*

Σπουδές

Doctor of Philosophy (Mathematics), Δεκέμβριος 1996

Department of Mathematics, University of Tennessee, Knoxville, USA

Master of Science (Mathematics), Δεκέμβριος 1992

Department of Mathematics, University of Tennessee, Knoxville, USA

Πτυχίο Μαθηματικών, Ιούλιος 1987

Τμήμα Μαθηματικών, Πανεπιστήμιο Κρήτης

Διοικητικό Έργο στο Τμήμα Βιολογίας του ΠΚ

- Μέλος της Επιτροπής Ερευνών και Διαχείρισης του Ειδικού Λογαριασμού Κονδυλίων Έρευνας (από το Ιανουάριο 2021)
- Experimental protocol Bioethics and evaluation/authorization committee (από το 2014)
- Διευθύντρια τομέα Β (Σεπτέμβριος 2020-Αυγούστο 2021)

- Διευθύντρια του Μεταπτυχιακού Προγράμματος “Περιβαλλοντική Βιολογία – Διαχείριση Χερσαίων και Θαλάσσιων Βιολογικών Πόρων” (Ιούνιος 2017-Ιούλιος 2020).
- Αναπληρώτρια Διευθύντρια του Μεταπτυχιακού Προγράμματος “Περιβαλλοντική Βιολογία” (Αυγ 2020-Ιούλιος 2022).
- Μέλος της Επιτροπής Προπτυχιακών Σπουδών του Τμήματος Βιολογίας (από το Σεπτέμβριο 2014)
- Μέλος της Επιτροπής Μεταπτυχιακών Σπουδών του Τμήματος Βιολογίας (από το Σεπτέμβριο 2017)
- Μέλος της Συντονιστικής Επιτροπής του Μεταπτυχιακού Προγράμματος “Περιβαλλοντική Βιολογία – Διαχείριση Χερσαίων και Θαλάσσιων Βιολογικών Πόρων” (από το Σεπτέμβριο 2016)
- Μέλος της επιτροπής Υπολογιστικού Κέντρου και Υπολογιστικών Θεμάτων του Τμήματος Βιολογίας (από το 2008)
- Επιτροπή Λογισμικού του Παν Κρήτης (από το 2007)
- Μέλος της διαχειριστικής επιτροπής του Εργαστηρίου Επεξεργασίας Δεδομένων (Υπολογιστικό Κέντρο) της Σχολής Θετικών Επιστημών του Π.Κ. (από το 2000)
- Αναπληρώτρια Επιστημονική Υπεύθυνος του Μεταπτυχιακού Προγράμματος “Περιβαλλοντική Βιολογία – Διαχείριση Χερσαίων και Θαλάσσιων Βιολογικών Πόρων” (Σεπτέμβριος 2001-Αύγουστος 2010).
- Συμμετοχή στην Ειδική Διατμηματική Επιτροπή (Ε.Δ.Επ.) και στη Συντονιστική Επιτροπή του Μεταπτυχιακού Προγράμματος “Περιβαλλοντική Βιολογία – Διαχείριση Χερσαίων και Θαλάσσιων Βιολογικών Πόρων” (Σεπτέμβριος 2001 - Αύγουστος 2010).
- Μέλος της επιτροπής για την προετοιμασία του φακέλου αξιολόγησης του Τμήματος Βιολογίας (2007-2008).
- Μέλος της ομάδας εργασίας για τη συγγραφή και υποβολή πρότασης Ε.Π.Ε.Α.Ε.Κ. “Περιβαλλοντική Βιολογία – Διαχείριση Χερσαίων και Θαλάσσιων Βιολογικών Πόρων”- ΕΚΤ και ΕΤΠΑ (2001)
- Εκπρόσωπος του Τμήματος Βιολογίας στο έργο ΟΜΟΣΠΟΝΔΟ (πρόγραμμα Ε.Π.Ε.Α.Ε.Κ. - Ψηφιακή Βιβλιοθήκη Πανεπιστημιακού Εκπαιδευτικού υλικού) (1999).
- Συμμετοχή στην προετοιμασία ηλεκτρονικού υλικού για την προβολή του Τμήματος Βιολογίας (2002).
- Επιτροπή αξιολόγησης υποψηφίων για την επιλογή διδάσκοντα Π.Δ. 407/80 για τη διδασκαλία του μαθήματος “Πληροφορική” του εαρινού εξαμήνου 2000-2001.

Εκπαιδευτικό Έργο

- Διδασκαλία προπτυχιακών και μεταπτυχιακών μαθημάτων στο Τμήμα Βιολογίας.
- Διδασκαλία σε διεθνή μαθήματα.
- Επίβλεψη τεσσάρων (4) Διδακτορικών Διπλωμάτων.
- Επίβλεψη πέντε (6) Μεταπτυχιακών Διπλωμάτων Ειδίκευσης.
- Επίβλεψη έξι (6) Διπλωματικών Εργασιών.
- Μέλος εξεταστικών επιτροπών Μεταπτυχιακών και Διδακτορικών Διπλωμάτων.

Περιοχές Ερευνητικής Δραστηριότητας

Mathematical modeling of biological systems based on the underlying mechanisms. The overarching theme of all of my projects is the use of a unified biological theory: the Dynamic Energy Budget (DEB) theory.

- Ecophysiology and investigation of the effect of stress factors (e.g. temperature, oxygen, toxicants, pathogens) on the metabolism of animal organisms.
- Physiology of phytoplankton, including the ecophysiology of mixotrophs and their impact on marine pelagic food webs
- Quantifying relationships between underlying processes of molecular/cellular mechanisms and bio-energetics at the individual level
- Aquaculture Applications: Developing modeling tools for designing experiments in aquaculture research facilities - Virtual laboratories
- AmP (Add-my-pet) project http://www.bio.vu.nl/thb/deb/deblab/add_my_pet/index.html

1. D.L. DeAngelis, K.A. Rose, L.B. Crowder, E.A. Marschall, and **D. Lika**. 1993. Fish Cohort Dynamics: Application of Complementary Modeling Approaches. *The American Naturalist*, 142 (4): 604-622
2. T.G. Hallam, G.A. Canziani, and **K. Lika**. 1996. On the Relationships Between Bioassays and Dynamics in Chemically Stressed, Aquatic Population Models. *Ecologia Austral*, 6: 45-54
3. T.G. Hallam, E.T. Funasaki, **K. Lika**, and H.L. Lee. 1997. Utilities and Indicators of Stress Dynamics in Physiologically Structured Population Models. *Environmental Modeling and Assessment*, 2: 1-6
4. T.G. Hallam and **K. Lika**. 1997. Modeling the Effects of Toxicants on a Fish Population in a Spatially Heterogeneous Environment: I. Behavior of the Unstressed, Spatial Model. *Nonlinear Analysis, Theory, Methods & Applications*, 30(3): 1699-1707
5. **K. Lika** and T.G. Hallam. 1997. Modeling the Effects of Toxicants on a Fish Population in a Spatially Heterogeneous Environment: II. Lethal Effects. *Nonlinear Analysis, Theory, Methods & Applications*, 30(3): 1709-1719
6. **K. Lika** and T.G. Hallam. 1999. Traveling Wave Solutions of a Nonlinear Reaction-Advection Equation. *Journal of Mathematical Biology*, 38: 346-358
7. **K. Lika** and R.M. Nisbet. 2000. A Dynamic Energy Budget Model based on Partitioning of Net Production. *Journal of Mathematical Biology*, 41:361-386
8. R.M. Nisbet, E.B. Muller, **K. Lika** and S.A.L.M. Kooijman. 2000. From molecules to ecosystem through dynamic energy budget models. *Journal of Animal Ecology*, 69: 913-926
9. K.A. Triantis, M. Mylonas, **K. Lika** and K. Vardinogiannis. 2003. A model for species area-habitat relationship. *Journal of Biogeography*, 30: 19-27
10. **K. Lika** and S.A.L.M. Kooijman. 2003. Life history implications of allocation to growth versus reproduction in Dynamic Energy Budgets. *Bulletin of Mathematical Biology*, 65: 809-834
11. **K. Lika** and N. Papandroulakis. 2005. Modeling feeding processes: a test of a new model for sea bream (*Sparus aurata* L.) larvae. *Canadian Journal of Fisheries and Aquatic Sciences*, 62: 425-435
12. I.A. Papadakis, K. Kotzabasis and **K. Lika**. 2005. A cell-based model for the photo- and CO₂ – acclimation of the photosynthetic apparatus. *Biochimica et Biophysica Acta-Bioenergetics*, 1708: 250-261
13. K.A. Triantis, M. Mylonas, **K. Lika** and K. Vardinogiannis. 2005. Species richness, habitat diversity and area: A case study based on land snails in Skyros archipelago (Aegean Sea, Greece). *Journal of Biogeography*, 32: 1727-1735
14. K.A. Triantis, K. Vardinogiannis, E. Tsolaki, I. Botsaris, **K. Lika** and M. Mylonas. 2006. Re-approaching small island effect., *Journal of Biogeography*. 33 (5): 914–923
15. **K. Lika** and I. A. Papadakis. 2009. Modeling the biodegradation of phenolic compounds by microalgae. *Journal of Sea Research* 62: 135–146
16. V. Freitas, J.F.M.F. Cardoso, **K. Lika**, M. A. Peck, J. Campos, S.A.L.M. Kooijman, H.W. van der Veer. 2010. Temperature tolerance and energetics: a Dynamic Energy Budget-based comparison of North Atlantic marine species. *Philosophical Transactions of the Royal Society B* . 365: 3553–3565
17. A. Palialexis, S. Georgakarakos, I. Karakassis, **K. Lika**, V. D. Valavanis. 2011. Prediction of marine species distribution from presence-absence acoustic data: comparing the fitting efficiency and the predictive capacity of conventional and novel distribution models. *Hydrobiologia*. 670:241–266
18. A. Palialexis, S. Georgakarakos, I. Karakassis, **K. Lika**, V. D. Valavanis. 2011. Fish distribution predictions from different points of view: comparing associative neural networks, geostatistics and regression models. *Hydrobiologia*, 670:165–188
19. **K. Lika**, M. R. Kearney, V. Freitas, H. W. v. d. Veer, J. v. d. Meer, J. W. M. Wijsman, L. Pecquerie and S. A. L. M. Kooijman. 2011. The 'covariation method' for estimating the parameters of the standard Dynamic Energy Budget model I: philosophy and approach. *Journal of Sea Research*. 66:270–277
20. **K. Lika**, M. R. Kearney and S. A. L. M. Kooijman. 2011. The 'covariation method' for estimating the parameters of the standard Dynamic Energy Budget model II: properties and preliminary patterns. *Journal of Sea Research*, 66:278–288

21. V. Freitas, **K. Lika**, J. IJ. Witte, H.W. van der Veer. 2011. Food conditions of the sand goby *Pomatoschistus minutus* in shallow waters: an analysis in the context of Dynamic Energy Budget theory. *Journal of Sea Research*, 66:440–446
22. **K. Lika** and S.A.L.M. Kooijman. 2011. The comparative topology of energy allocation in budget models. *Journal of Sea Research*, 66:281–291
23. I.A. Papadakis, K. Kotzabasis and **K. Lika**. 2012. Modeling the dynamic modulation of light energy in photosynthetic algae. *Journal of Theoretical Biology*, 300:254–26
24. N. Papandroulakis, **K. Lika**, T.S. Kristiansen, F. Oppedal, P. Divanach and M. Pavlidis. 2012. Behaviour of European sea bass, *Dicentrarchus labrax* L., in cages - impact of early life rearing conditions and management. *Aquaculture Research*, 45: 1545-1558
25. S.A.L.M. Kooijman and **K. Lika**. 2014. Resource allocation to reproduction in animals. *Biological Reviews*, 89: 849-859
26. **K. Lika**, S.A.L.M. Kooijman and N. Papandroulakis. 2014. Metabolic acceleration in mediterranean perciformes. *Journal of Sea Research*, 94:37-46.
27. **K. Lika**, S. Augustine, L. Pecquerie and S.A.L.M. Kooijman. 2014. The bijection from data to parameter space with the standard deb model quantifies the supply-demand spectrum. *Journal of Theoretical Biology*, 354:35-47
28. S. A. L. M. Kooijman and **K. Lika**. 2014. Comparative energetics of the 5 fish classes on the basis of dynamic energy budgets. *Journal of Sea Research*, 94: 19-28
29. A. Rinaldi, V. Montalto, **K. Lika**, K. Sanfilippo, M. Manganaro and G. Sarà. 2014. Estimation of dynamic energy budget parameters for the mediterranean tootcarp (*Aphanius fasciatus*). *Journal of Sea Research*, 94: 65-70
30. **K. Lika**, M. Pavlidis, N. Mitrizakis, A. Samaras and N. Papandroulakis. 2015. Do experimental units of different scale affect the biological performance of European sea bass larvae (*Dicentrarchus labrax*)? *Journal of Fish Biology*, 86:1271-1285
31. A. Samaras, M. Pavlidis, **K. Lika**, A. Theodoridi and N. Papandroulakis. 2015. Scale matters: performance of European sea bass, *Dicentrarchus labrax*, L. (1758), reared in cages of different volumes. *Aquaculture Research*, 1-16, doi:10.1111/are.12942
32. S. Augustine, **K. Lika**, and S.A.L.M. Kooijman. 2017. Comment on the ecophysiology of the Greenland shark, *Somniosus microcephalus*. *Polar Biology*, DOI 10.1007/s00300-017-2154-8
33. L. Pecquerie and **K. Lika**. 2017. Is reproduction limiting growth? Comment on “Physics of metabolic organization” by Marko Jusup et al. *Phys Life Rev.*, 20:75-77. doi: 10.1016/j.plrev.2017.01.026
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35. **K. Lika**, S. Augustine, and S.A.L.M. Kooijman. 2018. Body size as emergent property of metabolism. *Journal of Sea Research*, doi.org/10.1016/j.seares.2018.04.005
36. S. Augustine, **K. Lika**, and S.A.L.M. Kooijman. 2018. Altricial-precocial spectra in animal kingdom. *Journal of Sea Research*, doi.org/10.1016/j.seares.2018.03.006
37. O. Stavrakidis-Zachou, N. Papandroulakis, **K. Lika**. 2018. A DEB model for European sea bass (*Dicentrarchus labrax*): parameterisation and application in aquaculture. *Journal of Sea Research*, doi.org/10.1016/j.seares.2018.05.008
38. C.A. Murphy, R.M. Nisbet, P. Antczak, N. Garcia-Reyero, A. Gergs, **K. Lika**, T. Mathews, E.B. Muller, D. Nacci, A. Peace, C.H. Remien, I.R. Schultz, L.M. Stevenson, K.H. Watanabe. 2018. Incorporating sub-organismal processes into dynamic energy budget models for ecological risk assessment. *Integrated Environmental Assessment and Management* (IEAM), doi.org/10.1002/ieam.4063
39. S. Augustine, **K. Lika**, and S.A.L.M. Kooijman. 2018. Why big-bodied animal species cannot evolve a waste-to-hurry strategy. *Journal of Sea Research*, <https://doi.org/10.1016/j.seares.2018.06.002>
40. A. Samaras, N. Papandroulakis, K. Lika, M. Pavlidis. 2018. Water temperature modifies the acute stress response of European sea bass, *Dicentrarchus labrax* L. (1758). *Journal of Thermal Biology*, 78 (2018) 84–91
41. C.M. Marques, **K. Lika**, S. Augustine, L. Pecquerie and S.A.L.M. Kooijman. 2018. Fitting multiple models to multiple data sets. *Journal of Sea Research*, <https://doi.org/10.1016/j.seares.2018.07.004>

42. E. Livanou, A. Lagaria, S. Psarra, K. Lika. 2018. A DEB-based approach of modeling dissolved organic matter release by phytoplankton. *Journal of Sea Research*, doi.org/10.1016/j.seares.2018.07.016
43. O. Stavrakidis-Zachou, N. Papandroulakis, A. Sturm, P. Anastasiadis, F. Wätzold, **K. Lika**. 2019. Towards a computer-based Decision Support System for aquaculture stakeholders in Greece in the context of climate change. *International Journal of Sustainable Agricultural Management and Informatics*, In press.
44. E. Muller, **K. Lika**, R. Nisbet, I. Schultz, J. Casas, A. Gergs, C. Murphy, D. Nacci, K. Watanabe. 2019. *Regulation of Reproductive Processes with Dynamic Energy Budgets Functional Ecology*, 33:819-832, doi: 10.1111/1365-2435.13298
45. E. Livanou, A. Lagaria, I. Santi, M. Mandalakis, A. Pavlidou, **K. Lika**, S. Psarra. 2019. Pigmented and heterotrophic nanoflagellates: Abundance and grazing on prokaryotic picoplankton in the ultra-oligotrophic Eastern Mediterranean Sea. *Deep-Sea Research Part II*, 164, 100-111. <https://doi.org/10.1016/j.dsr2.2019.04.007>
46. S.A.L.M. Kooijman, **K. Lika**, S. Augustine, N. Marn, B.W. Kooi. 2020. The Energetic basis of population growth in animal Kingdom. *Ecological Modelling*, <https://doi.org/10.1016/j.ecolmodel.2020.109055>
47. E. Livanou, K. Barsakis, S. Psarra, K. Lika. 2020. Modelling the nutritional strategies in mixotrophic nanoflagellates. *Ecological Modelling*, <https://doi.org/10.1016/j.ecolmodel.2020.109053>
48. **K. Lika**, S. Augustine, S.A.L.M. Kooijman. 2020. The use of augmented loss functions for estimating Dynamic Energy Budget parameters. *Ecological Modelling*, <https://doi.org/10.1016/j.ecolmodel.2020.109110>
49. S. Augustine, **K. Lika**, S.A.L.M. Kooijman. 2020. Comparing lossfunctions and interval estimates for survival data. *Ecological Modelling*, [10.1016/j.ecolmodel.2020.109077](https://doi.org/10.1016/j.ecolmodel.2020.109077)
50. O. Stavrakidis-Zachou, **K. Lika**, P. Anastasiadis, N. Papandroulakis. 2021. Projecting climate change impacts on Mediterranean finfish production: A case study in Greece. *Climatic Change* 165:67, doi.org/10.1007/s10584-021-03096-y
51. O. Stavrakidis-Zachou, A. Sturm, **K. Lika**, Frank Wätzold N. Papandroulakis. 2021. ClimeGreAq: A software-based DSS for the climate change adaptation of Greek aquaculture. *Environmental Modelling and Software*. 143:105121, <https://doi.org/10.1016/j.envsoft.2021.105121>
52. E. Livanou, A. Oikonomou, S. Psarra, **K. Lika**. 2021. The role of mixotrophic nanoflagellates in the Eastern Mediterranean microbial food web. *Marine Ecology Progress Series*. 672:15-32.. <https://doi.org/10.3354/meps13782>
53. O. Stavrakidis-Zachou, **K. Lika**, A. Tsalafouta, M. Pavlidis, A.H. Mohamed, N. Papandroulakis. 2021. Thermal tolerance, metabolic scope and performance of meagre, *Argyrosomus regius*, reared under high water temperatures, *Journal of Thermal Biology*. 100:103063. <https://doi.org/10.1016/j.jtherbio.2021.103063>
54. S.A.L.M. Kooijman, **K. Lika**, S. Augustine and N. Marn. 2021. Multidimensional scaling for animal traits in the context of dynamic energy budget theory. *Conserv Physiol* 9(1): coab086. doi:10.1093/conphys/coab086
55. O. Stavrakidis-Zachou, **K. Lika**, M. Pavlidis, A.H. Mohamed, N. Papandroulakis. 2022. Metabolic scope, performance and tolerance of juvenile European sea bass *Dicentrarchus labrax* upon acclimation to high temperatures. *PLOS ONE* 7(8):e0272510. | <https://doi.org/10.1371/journal.pone.0272510>
56. **K. Lika**, S. Augustine, S.A.L.M. Kooijman. 2022. The comparative energetics of the ray-finned fish in an evolutionary context. *Conserv Physiol* 10(1):coac039. doi:10.1093/conphys/coac039.
57. S. Augustine, **K. Lika**, S.A.L.M. Kooijman. 2022. The comparative energetics of the chondrichthyans reveals universal links between respiration, reproduction and lifespan. *J. Sea Res.* 185:102228. <https://doi.org/10.1016/j.seares.2022.102228>
58. N. Marn, **K. Lika**, S. Augustine, B. Goussen, M. Ebeling, D. Heckmann, A. Gergs. 2022. Energetic basis for bird ontogeny and egg-laying applied to the bobwhite quail. *Conserv Physiol* 10(1): coac063. doi:10.1093/conphys/coac063.
59. T. J. Firkus, **K. Lika***, N. Dean, C. A. Murphy. 2023. The consequences of sea lamprey parasitism on lake trout energy budgets. *Conserv Physiol* 11(1):coad006. doi:10.1093/conphys/coad006
60. O. Stavrakidis-Zachou, Papandroulakis, **K. Lika**, 2023. A bioenergetics approach to modelling tolerance limits under acute thermal stress in farmed finfish. *Frontiers Marine Sciences*. 10:1173358. doi: 10.3389/fmars.2023.1173358

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Book chapter

1. J. Val, F. Villa, **K. Lika**, and C. Boe. 1997. Nonlinear Models of Structured Populations: Dynamic Consequences of Stage Structure and Discrete Sampling Compared. In *Structured Population Models in Marine, Freshwater, and Terrestrial Systems* by S. Tuljapurkar and H. Caswell (eds). Chapman & Hall, pp. 587-613.
2. C.A. Murphy, R.M. Nisbet, P. Antczak, N. Garcia-Reyero, A. Gergs, K. Lika, T. Mathews, E.B. Muller, D. Nacci, A. Peace, C.H. Remien, I.R. Schultz, K.H. Watanabe. 2017. Linking Adverse Outcome Pathways to Dynamic Energy Budgets: A conceptual model, In N. Garcia-Reyero and C.A. Murphy (eds) *A Systems Biology Approach to Advancing Adverse Outcome Pathways for Risk Assessment*. Springer, 401 pp.