Curriculum Vitae

Personal information

Daniel Benesh

Work experience

09/2023 – present: *Scientific officer* | Federal Office for Consumer Protection and Food Safety

09/2017 – 02/2018, 05/2019 – 09/2022: *Group leader* | Humboldt-Universität zu Berlin, Berlin, Germany

11/2013 – 01/2017: *Researcher* | University of California, Santa Barbara, USA

10/2007 – 10/2013: *Researcher* | Max Planck Institute for Evolutionary Biology, Plön, Germany

Education and training

08/2004 – 09/2007: *Master's and Doctorate* | University of Jyväskylä, Finland
Research emphasis: parasitology in aquatic animals

08/2000 – 05/2004: *Bachelor's* | University of Nebraska-Lincoln, USA
Major subject: biology
Minor subjects: philosophy and entomology

Additional information

Publications

(44) Benesh, D.P. 2023. Selection on an extreme-yet-conserved larval life-history strategy in a tapeworm. Evolution 77: 1188–1202.

(43) Benesh, D.P., Chubb, J.C., and Parker, G.A. 2022. Adaptive division of growth and development between hosts in helminths with two-host life cycles. Evolution 76: 1971-1985.

(42) Benesh, D.P., Chubb, J.C., Lafferty, K.D., and Parker, G.A. 2022. Complex life-cycles in trophically transmitted helminths: Do the benefits of increased growth and transmission outweigh generalism and complexity costs? Current Research in Parasitology & Vector-Borne Diseases: 100085.

(41) Phillips, J.A., Vargas-Soto, J.S., Pawar, S., Koprivnikar, J., Benesh, D.P., and Molnár, P.K. 2022. The effects of phylogeny, habitat and host characteristics on the thermal sensitivity of helminth development. Proceedings Royal Society B: 20211878.

(40) Benesh, D.P., Parker, G.A., and Chubb, J.C. 2021. Life-cycle complexity in helminths: what are the benefits? Evolution 75: 1936-1952.

(39) Froelick, S., Gramolini, L., and Benesh, D.P. 2021. Comparative analysis of helminth infectivity: growth in intermediate hosts increases establishment rates in the next host. Proceedings Royal Society B 288: 20210142.

(38) Benesh, D.P., Parker, G.A., Chubb, J.C., and Lafferty, K.D. 2021. Tradeoffs with growth limit host range in complex life cycle helminths. The American Naturalist 197: E40-E54.

(37) Chubb, J.C., Benesh, D.P., Parker, G.A. 2020. Ungulate helminth transmission and two evolutionary puzzles. Trends in Parasitology 36: 64-79.

(36) Benesh, D.P. 2019. Tapeworm manipulation of copepod behaviour: parasite genotype has a larger effect than host genotype. Biology Letters 15: 20190495.

(35) Erin, N., Benesh, D.P., Henrich, T., Samonte, I.E., Jakobsen, P.J., Kalbe, M. 2019. Examining the role of parasites in limiting unidirectional gene flow between lake and river sticklebacks. Journal of Animal Ecology 88: 1986-1997.

(34) Benesh, D.P. 2019. Crowding in the first intermediate host does not affect infection probability in the second host in two helminths. Journal of Helminthology 93: 172-176.

(33) Benesh, D.P., Lafferty, K., and Kuris, A. 2017. A life cycle database for parasitic acanthocephalans, cestodes, and nematodes. Ecology 98: 882.

(32) Benesh, D.P. 2016. Autonomy and integration in complex parasite life cycles. Parasitology 143: 1824-1846. (*invited review*)

(31) Benesh, D.P. and Kalbe, M. 2016. Experimental parasite community ecology: intraspecific variation in a large tapeworm affects community assembly. Journal of Animal Ecology 85: 1004–1013.

(30) Hafer, N. and Benesh, D.P. 2015. Does resource availability affect host manipulation? – an experimental test with *Schistocephalus solidus*. Parasitology Open 1: e3.

(29) Tuomainen, A., Valtonen, E.T., and Benesh, D.P. 2015. Sexual segregation of *Echinorhynchus borealis* (Acanthocephala) in the gut of burbot (*Lota lota*). Folia Parasitologica 62: 061.

(28) Benesh, D.P., Aura, R.-L., Andersin, A.-B., and Valtonen, E.T. 2015. The occurrence of *Echinorhynchus salmonis* Müller, 1784 in benthic amphipods in the Baltic Sea. Folia Parasitologica 62: 052.

(27) Aura, R.-L., Benesh, D.P., Palomäki, R., and Valtonen, E.T. 2015. The natural history of *Echinorhynchus bothniensis* Zdzitowiecki and Valtonen, 1987 (Acanthocephala) in a high Arctic lake. Folia Parasitologica 62: 051.

(26) Benesh, D.P., Chubb, J.C., and Parker, G.A. 2014. The trophic vacuum and the evolution of complex life cycles in trophically-transmitted helminths. Proceedings of the Royal Society B. 281: 20141462.

(25) Benesh, D.P., Weinreich, F., Kalbe, M., and Milinski, M. 2014. Lifetime inbreeding depression, purging, and mating system evolution in a simultaneous hermaphrodite tapeworm. Evolution 68: 1762-1774.

(24) Weinreich, F., Kalbe, M., and Benesh, D.P. 2014. Making the *in vitro* breeding of *Schistocephalus solidus* more flexible. Experimental Parasitology 139: 1-5.

(23) Andreou, D. and Benesh, D.P. 2014. Copulation order, density cues, and variance in fertilization success in a cestode. Parasitology 141: 934-939.

(22) Benesh, D.P. 2013. Parental effects on the larval performance of a tapeworm in its copepod first host. Journal of Evolutionary Biology 26: 1625-1633.

(21) Henrich, T., Benesh, D.P., and Kalbe, M. 2013. Hybridization between two cestode species and its consequences for intermediate host range. Parasites & Vectors 6: 33.

(20) Benesh, D.P., Chubb, J.C., and Parker, G.A. 2013. Complex life cycles: why refrain from growth before reproduction in the adult niche? The American Naturalist 181: 39-51.

(19) Weinreich, F., Benesh, D.P., and Milinski, M. 2013. Suppression of predation on the intermediate host by two trophically-transmitted parasites when uninfective. Parasitology 140: 129-135.

(18) Benesh, D.P. and Hafer, N. 2012. Growth and ontogeny of the tapeworm *Schistocephalus solidus* in its copepod first host affects performance in its stickleback second intermediate host. Parasites & Vectors 5: 90.

(17) Benesh, D.P., Weinreich, F., and Kalbe, M. 2012. The relationship between larval size and fitness in the tapeworm *Schistocephalus solidus*: bigger is better? Oikos 121: 1391-1399.

(16) Benesh, D.P., Chubb, J.C., and Parker, G.A. 2011. Exploitation of the same trophic link favors convergence of larval life history strategies in complex life cycle helminths. Evolution 65: 2286-2299.

(15) Benesh, D.P. 2011. Intensity-dependent host mortality: what can it tell us about larval growth strategies in complex life cycle helminths? Parasitology 138: 913-925.

(14) Benesh, D.P. 2010. What are the evolutionary constraints on larval growth in a trophically-transmitted parasite? Oecologia 162: 599-608.

(13) Benesh, D.P. 2010. Developmental inflexibility of larval tapeworms in response to resource variation. International Journal for Parasitology 40: 487-497.

(12) Benesh, D.P., Seppälä, O., and Valtonen, E.T. 2009. Acanthocephalan size and sex affect the modification of intermediate host coloration. Parasitology 136: 847-854.

(11) Hasu, T., Benesh, D.P., and Valtonen, E.T. 2009. Differences in parasite susceptibility and cost of resistance in naturally exposed and unexposed host populations. Journal of Evolutionary Biology 22: 699-707.

(10) Benesh, D.P., Hasu, T., Seppälä, O., and Valtonen, E.T. 2009. Seasonal changes in host phenotype manipulation by an acanthocephalan: time to be transmitted? Parasitology 136: 219-230.

(9) Seppälä, O., Valtonen, E.T., and Benesh, D.P. 2008. Host manipulation by parasites in the world of dead-end predators: adaptation to enhance transmission? Proceedings of the Royal Society B 275: 1611-1615.

(8) Benesh, D.P., Valtonen, E.T., and Seppälä, O. 2008. Multidimensionality and intra-individual variation in host manipulation by an acanthocephalan. Parasitology 135: 617-626.

(7) Benesh, D.P., Kitchen, J., Pulkkinen, K., Hakala, I., and Valtonen, E.T. 2008. The effect of *Echinorhynchus borealis* (Acanthocephala) infection on the anti-predator behavior of a benthic amphipod. Journal of Parasitology 94: 542-545.

(6) Benesh, D.P., Valtonen, E.T., and Jormalainen, V. 2007. Reduced survival associated with precopulatory mate guarding in male *Asellus aquaticus* (Isopoda). Annales Zoologici Fennici 44: 425-434.

(5) Benesh, D.P. and Valtonen, E.T. 2007. Effects of *Acanthocephalus lucii* (Acanthocephala) on intermediate host survival and growth: implications for exploitation strategies. Journal of Parasitology 93: 735-741.

(4) Benesh, D.P. and Valtonen, E.T. 2007. Proximate factors affecting the larval life history of *Acanthocephalus lucii* (Acanthocephala). Journal of Parasitology 93: 742-749.

(3) Benesh, D.P. and Valtonen, E.T. 2007. Sexual differences in larval life history traits of acanthocephalan cystacanths. International Journal for Parasitology 37: 191-198.

(2) Benesh, D.P., Hasu, T., Suomalainen, L.R., Valtonen, E.T., and Tiirola, M. 2006. Reliability of mtDNA in an acanthocephalan: the problem of pseudogenes. International Journal for Parasitology 36: 247-254.

(1) Benesh, D.P., Duclos, L.M., and Nickol, B.B. 2005. Behavioral response of amphipods harboring *Corynosoma constrictum* (Acanthocephala) to various components of light. Journal of Parasitology 91: 731-736.

Projects

Memberships

Other Relevant Information

Skills and expertise

Biology: establishing maximum residue limits and withdrawal periods for veterinary drugs, residue depletion and metabolism studies, parasitology, genetics, ethology, fish husbandry

Statistics: general and generalized linear models (e.g. ANOVA, linear and logistic regression), mixed models, non-linear (PK) models, meta-analysis, imputation

Programming: R, python