

# Curriculum Vitae

## Personal Information

Full name: Daniel Patrick Benesh

Date of birth: January 9, 1982

Birthplace: Omaha, Nebraska U.S.A.

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## Education

Ph.D., Aquatic Parasitology, University of Jyväskylä, Jyväskylä, Finland, 2006-2007

M.S., Hydrobiology, University of Jyväskylä, Jyväskylä, Finland, 2004-2006

B.S., Biological Sciences, minors in Philosophy and Entomology, University of Nebraska, Lincoln, U.S.A., 2000-2004

## Research Experience

*Visiting Scholar*, Marine Science Institute, University of California, Santa Barbara, USA, 2013-present. Topic: Parasite life cycles in the food web.

*Postdoctoral Research*, Department of Evolutionary Ecology, Max Planck Institute for Evolutionary Biology, Plön, Germany, 2007-2013. Topic: Evolution of complex parasite life cycles.

*Doctoral and Master's Research*, Section of Aquatic Resources, University of Jyväskylä, Finland, 2004-2007 (advisor: E. Tellervo Valtonen). Topic: Intermediate host exploitation and larval life history strategies of acanthocephalans.

*Undergraduate Research*, School of Biological Sciences, University of Nebraska, Lincoln, U.S.A., 2002-2004 (advisor: Brent B. Nickol). Topic: The photic behavior of amphipods infected with an acanthocephalan.

## **Teaching Experience**

### *Lectures*

Jan. – Mar. 2015, University of California, Santa Barbara. Co-lectured parasitology course (thirteen 50 min. lectures).

### *Practical courses*

Each spring 2008-2012, Max Planck Institute for Evolutionary Biology. Two-week practical course. Guided students through independent research projects (40-80 hrs).

Aug. 2006, University of Jyväskylä. Field lessons in parasitology (12 hrs).

Aug. 2003 – May 2004, University of Nebraska. Teaching assistant and lab instructor for introductory genetics and molecular biology course (10-20 hrs per week).

### *Seminar courses*

Dec. 2006, University of Jyväskylä. One-week seminar on statistics and scientific writing (20 hrs)

Feb. 2006, University of Jyväskylä. Two-week seminar on the scientific method and experimental design (40 hrs)

### *Students mentored*

Friederike Weinreich, PhD, Max Planck Institute Plön

Bettina Bartels, Diplom, University of Kiel

Joanne Kitchen, MSc, University of Jyväskylä

Arto Tuomainen, MSc, University of Jyväskylä

## **Grants Received**

DFG Research Fellowship, 2013-2016 (€ 84,964)

Alfred Kordelin grant recipient (declined), 2007 (€ 8,000)

CIMO grant recipient for foreign students in Finland, 2005 (€ 8,100)

Fulbright scholar in Finland, 2004-2005 (~\$ 10,000)

UCARE grant for undergraduate research, 2003-2004

## **Awards and Accomplishments**

Master's thesis given Laudatur rating (highest rank), 2006

Best oral student presentation at meeting of Scandinavian-Baltic Society for Parasitologists, 2005

Bachelor's degree awarded with highest distinction, 2004

Mark Dresden award for oral presentation at meeting of Southwestern Association of Parasitologists, 2003

Accolades from the University of Nebraska: 4.0 high scholar (2001-2003), Regent's scholar (2000-2004), honors program (2000-2004), dean's list (2000-2004)

### **Language Skills**

English (native)

German (very good) - European Language Certificate, level B1, note 1

Finnish (basic)

### **Reviewer Experience (2007-present)**

J. Parasitol., Parasitology, Int. J. Parasitol., Exp. Parasitol., J. Helminthol., Parasit. Vec., Freshw. Biol., Invertebr. Biol., Zool., J. Evol. Biol., Am. Nat., Proc. Roy. Soc. B, Comp. Parasitol., Biol. J. Linn. Soc., J. Exp. Biol., Anim. Behav., Evolution

### **Memberships in Professional Organizations**

European Society of Evolutionary Biologists, Scandinavian-Baltic Society of Parasitologists, Phi Beta Kappa Honor Society, Golden Key Honor Society

### **Invited Seminars**

Max Planck Institute for Evolutionary Biology, Plön, Germany, 2016

University of Münster, Germany, 2016

German Centre for Integrative Biodiversity Research, Leipzig, Germany, 2016

Santa Fe Institute (workshop participant), Santa Fe, USA, 2015

Texas A&M University, College Station, USA, 2015

Tulane University, New Orleans, USA, 2014

Institute of Parasitology, České Budějovice, Czech Republic, 2013

Humboldt University, Berlin, Germany, 2013

University of Duisburg-Essen, Germany, 2013

Helmholtz Centre for Ocean Research, Kiel, Germany, 2012

Goethe-University, Frankfurt, Germany, 2011

EAWAG Federal Institute of Aquatic Science and Technology, Zürich, Switzerland, 2008

Max Planck Institute for Limnology, Plön, Germany, 2006

## **Talks at Conferences**

American Society of Parasitology, Omaha, USA, 2015  
American Society of Parasitology, New Orleans, USA, 2014  
European Multicollrium of Parasitology, Cluj-Napoca, Romania, 2012  
International Symposium of Fish Parasites, Viña del Mar, Chile, 2011  
Deutsche Gesellschaft für Parasitologie, Düsseldorf, Germany, 2010  
Deutsche Ichthyoparasitologie Symposium, Germany, 2009-2013  
Scandinavian-Baltic Society of Parasitologists, Riga, Latvia, 2009 (**invited speaker**)  
Scandinavian-Baltic Society of Parasitologists, Rovaniemi, Finland, 2007  
In-house symposium, Max Planck Institute for Evolutionary Biology, Plön, Germany, 2007-2013  
Biological interactions graduate school seminar, University of Turku, Finland, 2006  
Finnish mini-symposium on parasitology, University of Jyväskylä, Finland, 2005  
Scandinavian-Baltic Society of Parasitologists, Vilnius, Lithuania, 2005  
American Voices Conference, University of Turku, Finland 2004  
Southwestern Association of Parasitologists, Lake Texoma Field Station, USA, 2003 and 2004  
University of Nebraska undergraduate research conference, Lincoln, USA, 2003

## **Posters at Conferences**

American Society of Parasitology, New Orleans, USA, 2014  
European Society for Evolutionary Biology, Tübingen, Germany, 2011  
Jacques-Monod Conference on Coevolution, Roscoff, France, 2011  
European Society for Evolutionary Biology, Turin, Italy, 2009

## **Publications**

Benesh, D.P., Lafferty, K., and Kuris, A. 2016. A life cycle database for parasitic acanthocephalans, cestodes, and nematodes. *Ecology*. In press. doi: 10.1002/ecy.1680  
Benesh, D.P. 2016. Autonomy and integration in complex parasite life cycles. *Parasitology* 143: 1824-1846. doi: <https://doi.org/10.1017/S0031182016001311> (**invited review**)  
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 (4): 1004–1013. doi: 10.1111/1365-2656.12527  
Hafer, N. and Benesh, D.P. 2015. Does resource availability affect host manipulation? – an experimental test with *Schistocephalus solidus*. *Parasitology Open* 1: e3. doi: <http://dx.doi.org/10.1017/pao.2015.3>

- 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. doi: 10.14411/fp.2015.061.
- 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. doi: 10.14411/fp.2015.052
- 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. doi: 10.14411/fp.2015.051
- 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. doi: 10.1098/rspb.2014.1462
- 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 (6): 1762-1774. doi: 10.1111/evo.12388
- Weinreich, F., Kalbe, M., and Benesh, D.P. 2014. Making the *in vitro* breeding of *Schistocephalus solidus* more flexible. *Experimental Parasitology* 139: 1-5. doi: 10.1016/j.exppara.2014.02.002
- Andreou, D. and Benesh, D.P. 2014. Copulation order, density cues, and variance in fertilization success in a cestode. *Parasitology* 141 (7): 934-939. doi:10.1017/S0031182014000043
- Benesh, D.P. 2013. Parental effects on the larval performance of a tapeworm in its copepod first host. *Journal of Evolutionary Biology* 26 (8): 1625-1633. doi: 10.1111/jeb.12165
- 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. doi: 10.1186/1756-3305-6-33
- 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 (1): 39-51. doi: 10.1086/668592
- 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 (1): 129-135. doi:10.1017/S0031182012001266
- 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. doi:10.1186/1756-3305-5-90

- 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. doi: 10.1111/j.1600-0706.2011.19925.x
- 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. doi:10.1111/j.1558-5646.2011.01301.x
- 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. doi:10.1017/S0031182011000370
- Benesh, D.P. 2010. What are the evolutionary constraints on larval growth in a tropically-transmitted parasite? *Oecologia* 162: 599-608. doi: 10.1007/s00442-009-1507-6.
- Benesh, D.P. 2010. Developmental inflexibility of larval tapeworms in response to resource variation. *International Journal for Parasitology* 40 (4): 487-497. doi: 10.1016/j.ijpara.2009.10.001
- Benesh, D.P., Seppälä, O., and Valtonen, E.T. 2009. Acanthocephalan size and sex affect the modification of intermediate host coloration. *Parasitology* 136 (8): 847-854. doi: 10.1017/S0031182009006180
- 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 (4): 699-707. doi: 10.1111/j.1420-9101.2009.01704.x
- 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 (2): 219-230. doi: 10.1017/S0031182008005271
- 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. doi: 10.1098/rspb.2008.0152.
- Benesh, D.P., Valtonen, E.T., and Seppälä, O. 2008. Multidimentionality and intra-individual variation in host manipulation by an acanthocephalan. *Parasitology* 135 (5): 617-626. doi: 10.1017/S0031182008004216
- 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 (2): 542-545. doi: 10.1645/GE-1380.1

- 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 (6): 425-434.
- 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 (4). 735-741. doi: 10.1645/GE-1093R.1
- Benesh, D.P. and Valtonen, E.T. 2007. Proximate factors affecting the larval life history of *Acanthocephalus lucii* (Acanthocephala). *Journal of Parasitology* 93 (4). 742-749. doi: 10.1645/GE-1094R.1
- Benesh, D.P. and Valtonen, E.T. 2007. Sexual differences in larval life history traits of acanthocephalan cystacanths. *International Journal for Parasitology* 37 (2): 191-198. doi:10.1016/j.ijpara.2006.10.002
- Benesh, D.P., Hasu, T., Suomalainen, L.R., Valtonen, E.T., and Tirola, M. 2006. Reliability of mtDNA in an acanthocephalan: the problem of pseudogenes. *International Journal for Parasitology* 36 (2): 247-254. doi:10.1016/j.ijpara.2005.09.008
- 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 (4): 731-736. doi: 10.1645/GE-440R.1