

JASON R. NEUSWANGER

South Fork Research
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EDUCATION

- 2014 Ph.D. in Biological Sciences
University of Alaska Fairbanks (UAF)
- Dissertation: "New 3-D video methods reveal novel territorial drift-feeding behaviors that help explain environmental correlates of Chena River Chinook salmon productivity"
- Advisors: Prof. Mark Wipfli (mark.wipfli@uaf.edu), Prof. Amanda Rosenberger (rosenbergera@missouri.edu), Prof. Nicholas Hughes (deceased)
- 2006 B.A. in Mathematics (concentration: Mathematical Biology)
Cornell University, Ithaca, NY

PROFESSIONAL POSITIONS

- 2017-2018 Quantitative Fish Ecologist
South Fork Research
- 2014-2017 Postdoctoral Researcher
University of Georgia, Warnell School of Forestry and Natural Resources
DriftModelProject.org

GRANTS

- 2014-2017 Co-wrote, "Development and testing of mechanistic fitness-based models to predict habitat choice, behavior, and recruitment of juvenile Chinook salmon in the Arctic-Yukon-Kuskokwim region." Funded by the North Pacific Research Board for \$495,282.
- 2012-2013 UAF Dissertation Fellowship (\$13,500)
- 2012 UAF Institute of Arctic Biology Summer Fellowship (\$10,000)

PUBLICATIONS

1. Grossman, G.D., Orth, D., and **Neuswanger, J.R.** 2016. Innovative approaches to fisheries education. *Fisheries* 42(8): 450-457.
2. **Neuswanger, J.R.**, Wipfli, M.S., Rosenberger, A.E., and Hughes, N.F. 2016. Measuring fish and their physical habitats: Versatile 2-D and 3-D video techniques with user-friendly software. *Canadian Journal of Fisheries and Aquatic Sciences* 73(12): 1861-1873.
3. Vayndorf, E., Scerbak, C., Hunter, S., **Neuswanger, J.R.**, Toth, M., Parker, A., Neri, C., Driscoll, M.A., and Taylor, B.E. 2016. Morphological remodeling of *C. elegans* neurons during aging is modified by compromised protein homeostasis. *Nature Publishing Journals Aging and Mechanisms of Disease* 2: 16001. (*Contributed to data analysis for neurobiology colleagues.*)
4. **Neuswanger, J.R.**, Wipfli, M.S., Evenson, M.J., Hughes, N.F., and Rosenberger, A.E. 2015. Association of high summer stream discharge with poor recruitment of stream-type Chinook salmon in two Yukon drainage rivers in Alaska. *Canadian Journal of Fisheries and Aquatic Sciences* 72(8): 1125-1137.
5. Rosenberger, A.E., Dunham, J.B., **Neuswanger, J.R.**, and Railsback, S.F. 2015. An integrated analysis of observation and models provides insight to rainbow trout *Oncorhynchus mykiss* response to wildfire-related disturbance. *Freshwater Science* 34(4): 1571-1584.
6. **Neuswanger, J.R.**, Wipfli, M. S., Rosenberger, A. E., and Hughes, N. F. 2014. Mechanisms of drift-feeding behavior in juvenile Chinook salmon and the role of inedible debris in a clear-water Alaskan stream. *Environmental Biology of Fishes* 97(5): 489-503.

MANUSCRIPTS IN REVIEW OR REVISION

1. **Neuswanger, J.R.**, Rosenberger, A.E., Wipfli, M.S., and Hughes, N.F. Territories within schools: the dynamic competition of drift-feeding juvenile Chinook salmon in 3-dimensional space. (*In revision; manuscript available upon request.*)
2. Donofrio, E., Simon, T., **Neuswanger, J.R.**, and Grossman, G.D. Velocity, prey capture, and microhabitat selection in juvenile Chinook Salmon (*Oncorhynchus tshawytscha*). *In review.*

SOFTWARE

Neuswanger, J.R. VidSync: An open-source Mac application for 3-D video analysis. Vidsync.org. Adopted by other researchers in Alaska, California, Missouri, Oregon, Utah, Washington, Argentina, Australia, Brazil, Denmark, Mexico, New Zealand, and Seychelles.

HONORS

2012	Best Student Paper, American Fisheries Society (AFS) 142 nd Annual Meeting
2012	Best Student Paper, Midnight Sun Science Symposium
2011	Best Student Paper, Alaska AFS Annual Meeting
2010	Best Student Paper, Alaska AFS Annual Meeting
2009	Best Student Paper, Alaska AFS Annual Meeting

TEACHING EXPERIENCE

Teaching Assistant

2012	Biology and Society
2011	Natural History of Alaska
2009	Natural History of Alaska
2008	Aquatic Entomology

Guest Lecturer

Drift Foraging (twice), Prey Intake, Foraging Theory, Salmon (twice), Stoneflies

PUBLIC OUTREACH

Troutnut.com, which I built in 2003, merges fly fishing techniques with aquatic entomology, including 4,300+ macro photographs to help scientists, teachers, and the public understand and educate others about aquatic life. These photographs appear in magazines, books, apps, websites, and a BioScience cover. About 1,275 people visit Troutnut.com daily.

Invited public lectures: Trout Unlimited (Ithaca, NY and Fairbanks, AK), Midnight Sun Flycasters (Fairbanks, AK), Chena River Watershed Summit (Fairbanks, AK).

SERVICE AS A PEER REVIEWER

Environmental Biology of Fishes (4 papers)
Canadian Journal of Fisheries and Aquatic Sciences (2 papers)
Ecological Modelling (1 paper)
Hydrobiologia (2 papers)
Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative (2 grants)

MEMBERSHIPS

2007—	American Fisheries Society
2003—	Trout Unlimited

ORAL PRESENTATIONS

Invited Talks and Seminars

1. **Neuswanger, J.R.** 3-D studies of feeding behavior linking fitness and habitat in Alaskan stream salmonids. University of Alaska Fairbanks. Fairbanks, AK, March 2, 2016.
2. **Neuswanger, J.R.** 3-D video methods give unique insight to the behaviors of juvenile Chinook salmon and mechanism for population-level trends in central Alaska. University of Missouri. Columbia, MO, November 14, 2014.
3. **Neuswanger, J.R.,** Wipfli, M.S., Rosenberger, A.E., Evenson, M.J., and Hughes, N.F. This isn't Flatland: salmon and the third dimension of animal behavior. UAF Undergraduate Research & Scholar Activities Research Showcase Seminar. Fairbanks, AK, November 7, 2012.
4. **Neuswanger, J.R.,** Wipfli, M.S., Evenson, M.J., and Hughes, N.F. Flow-induced variability in the stock-recruitment relationships of two Interior Alaskan rivers, and related ecological mechanisms. Chinook Salmon Synthesis Workshop of the Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative. Anchorage, AK, May 2, 2012.
5. **Neuswanger, J.R.,** Hughes, N.F., Wipfli, M.S., Kelly, L.H., and Rosenberger, A.E. Intra-school competition and drift-feeding behavior in wild juvenile Chinook salmon. Fisheries Research Institute of Slovenia. Ljubljana, Slovenia, May 31, 2010.
6. **Neuswanger, J.R.,** Hughes, N.F., Wipfli, M.S., Kelly, L.H., and Rosenberger, A.E. Intra-school competition and drift-feeding behavior in wild juvenile Chinook salmon. Ferskvandcentret (Freshwater Center). Silkeborg, Denmark, May 28, 2010.
7. **Neuswanger, J.R.,** Hughes, N.F., Wipfli, M.S., Kelly, L.H., and Rosenberger, A.E. Intra-school competition and drift-feeding behavior in wild juvenile Chinook salmon. Karlstad University. Karlstad, Sweden, May 26, 2010.

Contributed Conference Talks

1. **Neuswanger, J.R.** and Grossman, G.D. A new mechanistic model of drift feeding based on cognitive limits on visual information processing. Alaska AFS Annual Meeting. Homer, AK, November 5, 2015.
2. **Neuswanger, J.R.** and Grossman, G.D. A new mechanistic model of drift feeding based on cognitive limits on visual information processing. American Fisheries Society 145th Annual Meeting. Portland, OR, August 20, 2015.
3. **Neuswanger, J.R.** and Grossman, G.D. A new mechanistic model of drift feeding based on cognitive limits on visual information processing. Advances in the Population Ecology of Stream Salmonids IV. Girona, Spain, May 29, 2015.

4. **Neuswanger, J.R.**, Hughes, N.F., Wipfli, M.S., and Rosenberger, A.E. 3-D territoriality and shadow competition within schools of juvenile Chinook salmon. Alaska AFS Annual Meeting. Fairbanks, AK, October 10, 2013.
5. **Neuswanger, J.R.**, Wipfli, M.S., Evenson, M.J., and Hughes, N.F. Flow-induced variability in the stock-recruitment relationships of two Interior Alaskan rivers, and related ecological mechanisms. Alaska AFS Annual Meeting. Kodiak, AK, October 24, 2012.
6. **Neuswanger, J.R.**, Hughes, N.F., Wipfli, M.S., and Rosenberger, A.E. 3-D territoriality and shadow competition within schools of juvenile Chinook salmon. American Fisheries Society 142nd Annual Meeting. St Paul, MN, August 21, 2012.
7. **Neuswanger, J.R.**, Hughes, N.F., Wipfli, M.S., and Rosenberger, A.E. The importance of drifting debris for drift-feeding juvenile Chinook salmon. Midnight Sun Science Symposium. Fairbanks, AK, March 30, 2012.
8. **Neuswanger, J.R.**, Hughes, N.F., Wipfli, M.S., and Rosenberger, A.E. The importance of drifting debris for drift-feeding juvenile Chinook salmon. Alaska AFS Annual Meeting. Girdwood, AK, November 17, 2011.
9. **Neuswanger, J.R.**, Hughes, N.F., Wipfli, M.S., and Rosenberger, A.E. The importance of drifting debris for drift-feeding juvenile Chinook salmon. American Fisheries Society 141st Annual Meeting. Seattle, WA, September 5, 2011.
10. **Neuswanger, J.R.**, Hughes, N.F., Wipfli, M.S., Kelly, L.H., and Rosenberger, A.E. Intra-school competition and drift-feeding behavior in wild juvenile Chinook salmon. Alaska AFS Annual Meeting. Juneau, AK, November 5, 2010.
11. **Neuswanger, J.R.**, Hughes, N.F., Wipfli, M.S., Kelly, L.H., and Rosenberger, A.E. Intra-school competition and drift-feeding behavior in wild juvenile Chinook salmon. Advances in the Population Ecology of Stream Salmonids III. Lueca, Spain, May 20, 2010.
12. **Neuswanger, J.R.**, Hughes, N.F., Wipfli, M.S., Kelly, L.H., and Rosenberger, A.E. Improved 3-D video analysis methods, with applications to wild juvenile Chinook salmon foraging behavior. Alaska AFS Annual Meeting. Fairbanks, AK, November 4, 2009.
13. **Neuswanger, J.R.**, Hughes, N.F., Wipfli, M.S., Kelly, L.H., and Rosenberger, A.E. Improved 3-D video analysis methods, with applications to wild juvenile Chinook salmon foraging behavior. American Fisheries Society 139th Annual Meeting. Nashville, TN, September 3, 2009.