**Janine Rüegg, Ph.D.**

**Curriculum Vitae**

Research Associate

**CIRM** - Centre interdisciplinaire de recherche sur la montagne
(Interdisciplinary Center for Mountain Research)
**UNIL | Université de Lausanne**

Mailing address:

UNIL – Site de Sion

Chemin de l’Institut 18

CH-1967 Bramois, Switzerland

Tel: + 41 27 205 7304

Mobile: + 41 79 549 6484

Email: janine.ruegg@unil.ch or jrueegg@gmail.com

Research interests

stream and river ecology, scale and scaling, environmental context, food web ecology, ecosystem ecology, resource subsidies, animal ecosystem engineering, ecosystem metabolism, anthropogenic and climate stressors on aquatic ecosystems, invasive species.

Qualifications

I am a trained and experienced ecologist conducting interdisciplinary, collaborative research on a variety of topics often considered only independently such as food web ecology and ecosystem science. My research methods include field and experimental studies and the use of models to discern mechanisms governing ecological processes. I am also a trained teacher and interested in in educating and mentoring students in ecology and the scientific method, so they may apply the ecological concepts to the world surrounding them.

Education

***Ph.D. in Biological Sciences*, University of Notre Dame (USA)**, 2011. **Dissertation Research**: Responses of stream biofilm to Pacific salmon (*Oncorhynchus* spp.) spawners: The role of environmental context and scale

***Teacher’s degree (Lehramt)*, ETH Zürich**, 2006. **Subject**: Higher Education in Biology (comparable to MS in Education).

***Diploma (MSc.) in Biology*, ETH Zürich**, 2003. **Major**: Systematics and Ecology

Academic positions

2018 –

2015 – 2018

2012 – 2014

2006 – 2011

2006 – 2008

2005 – 2006

2005

2004

2000 – 2004

Postdoctoral Research Associate, University of Lausanne

Research Scientist, SNF Ambizione Grant, Stream Biofilm and Ecosystem Research, Ecosystem Research (SBER), Ecole Polytechnique Federal de Lausanne (EPFL, Switzerland)

Postdoctoral Research Associate, Kansas State University (USA)

Graduate Teaching Assistant, University of Notre Dame (USA)

Graduate Research Assistant, University of Notre Dame (USA)

Teaching Assistant in Limnology, EAWAG/ETH Zürich

Research Associate on the European Union project tempQsim, EAWAG Dübendorf

Research Assistant in Plant Ecology, ETH Zürich

Teaching Assistant in Plant Ecology, ETH Zürich

Teaching Experience

2011

2010 – 2011

2008 – 2010

2007

2006

2005 –2006

2000 – 2004

*Guest Lecturer* Summer Scholars Program, University of Notre Dame (USA)

Stream Ecology lecture, Dunes field excursion

*Guest Lecturer* Biostatistics, University of Notre Dame

Multiple Linear Regressions

*Laboratory Coordinator* Biostatistics Laboratory, University of Notre Dame (USA)

Organisation of material for teaching assistants of five sections, improvements of teaching materials, exam grading, support professor with final grade decisions

*Teaching Assistant* Biostatistics Laboratory, University of Notre Dame (USA)

Leading of Exercise section (20-25 students), grading of exercises, guiding independent student projects, grading exams

*Teaching Assistant* Introductory Biology Laboratory, University of Notre Dame (USA)

Guiding student project development, implementation of projects, and grading of final reports

*Teaching Assistant* Aquatic Ecology Laboratory, University of Notre Dame (USA)

Guiding laboratory analyses, support students in writing scientific reports

*Course Coordinator and Guest Lecturer* Limnology Laboratory, EAWAG Dübendorf/ETH Zürich

Organizing graduate student assistants, preparing teaching materials, teaching select courses

*Teaching Assistant* in Botany, ETH Zürich

Leading excursions, teaching the use of identification keys, pre-diploma co-examiner (2004 only)

Publications

**Summary:** I have published 26 peer reviewed scientific publications that have been collectively cited over 568 times, with a current H-index of 13. My complete publication record may also be viewed at Google Scholar and Research Gate

<https://scholar.google.ch/citations?user=REeSJhgAAAAJ&hl=en&oi=ao>

<https://www.researchgate.net/profile/Janine_Rueegg>



From «Web of Science» Thompson Reuters

*Submitted*

Currier, C.M., D.T. Chaloner, **J. Rüegg**, S.D. Tiegs, D. D’Amore, and G.A. Lamberti. Beyond nitrogen and phosphorus subsidies: The potential of Pacific salmon (*Oncorhynchus* spp.) as vectors of micronutrients. Submitted to Ecology.

*Published (Peer-reviewed)*

1. Song, C., W.K. Dodds, **J. Rüegg**, A. Argerich, C.L. Baker, W.B. Bowden, M.M. Douglas, K.J. Farrell, M.B. Flinn, E.A. Garcia, A.M. Helton, T.K. Harms, S. Jia, J.B. Jones, L.E. Koenig, J.S. Kominoski, W.H. McDowell, D. McMaster, S.P. Parker, A.D. Rosemond, C.M. Ruffing, K.R. Sheehan, M.T. Trentman, M.R. Whiles, W.M. Wollheim, and F. Ballantyne IV. Warming induces asymmetric convergence of stream metabolic balance. Nature Geosciences 11: 415–420.
2. Farrell, K.J., A.D. Rosemond, J.S. Kominoski. S.M. Bonjour, **J. Rüegg**, L.E. Koenig, C.L. Baker, M.T. Trentman, T.K. Harms, and W.H. McDowell. Variation in detrital resource stoichiometry signals differential carbon to nutrient limitation for stream consumers across biomes. Ecosystems 1-16 https://doi.org/10.1007/s10021-018-0247-z.
3. Koenig, L.E., C. Song, W.M. Wollheim, **J. Rüegg**, and W.H. McDowell. 2017. Nitrification increases nitrogen export from a tropical river network. Freshwater Science 36: 698-712.
4. Siders, A.C., D.M. Larson, **J. Rüegg**, and W.K. Dodds. 2017. Probing whole-stream metabolism: influence of spatial heterogeneity on rate estimates. Freshwater Biology 62: 711-723.
5. Song, C., W.K. Dodds, M.T. Trentman, **J. Rüegg**, and F. Ballantyne IV. 2016. Methods of approximation influences stream metabolism estimates. Limnology and Oceanography: Methods 14: 557-567.
6. **Rüegg, J.**, W.K. Dodds, M.D. Daniels, K.R. Sheehan, C.L. Baker, W.B. Bowden, K.J. Farrell, M.B. Flinn, T.K. Harms, J.B. Jones, L.E. Koenig, J.S. Kominoski, W.H. McDowell, S.P. Parker, A.D. Rosemond, M.T. Trentman, M.R. Whiles and W.M. Wollheim. 2016. Multi-scale comparison of geomorphic heterogeneity in stream networks across diverse biomes. Landscape Ecology 31: 119-136.
7. **Rüegg, J.**, J.J. Eichmiller, N. Mladenov and W.K. Dodds. 2015. Dissolved organic carbon concentration and flux in prairie streams: spatial and temporal patterns and processes from long-term data. Biogeochemistry 125: 393-408.
8. **Rüegg, J.**, Brant, D. Larson, M. Trentman and W.K. Dodds. 2015. A portable, modular, self-contained recirculating chamber to measure benthic processes under controlled water velocity. Freshwater Science 34: 831-844.
9. Trentman, M.T, W.K. Dodds, J.S. Fencl, K. Gerber, J. Guarneri, S. Hitchman, Z. Peterson and **J. Rüegg**. 2015. Quantifying ambient nutrient uptake and functional relationships of uptake versus concentration in streams: a comparison of stable isotope, pulse, and plateau approaches. Biogeochemistry 125: 65-79.
10. Bobeldyk, A.M., **J. Rüegg** and G.A. Lamberti. 2015. Freshwater hotspots of biological invasion are a function of species-pathway interactions. Hydrobiologia 746:363-373.
11. **Rüegg, J.**, C. Gries, B. Bond-Lamberty, G.J. Bowen, B.S. Felzer, N.E. McIntyre, P.A. Soranno, K.L. Vanderbilt, and K.C. Weathers. 2014. Completing the data life cycle: using information management in macrosystems ecology research. Frontiers in Ecology and the Environment 12:24-30.
12. Goring, S.J., K.C. Weathers, W.K. Dodds, P.A. Soranno, L.C. Sweet, K.S. Cheruvelil, J.S. Kominoski, **J. Rüegg**, A.M. Thirn and R.M. Utz. 2014. Improving the culture of interdisciplinary collaboration in ecology by expanding measrues of success. Frontiers in Ecology and the Environment 12:39-47.
13. **Rüegg, J.**, D.T. Chaloner, S.D. Tiegs and G.A. Lamberti. 2014. Habitat influences Pacific salmon (Oncorhynchus spp.) tissue decomposition in riparian and stream ecosystems. Aquatic Sciences 76:623-632.
14. Levi, P.S., J.L. Tank, **J. Rüegg**, D.J. Janetski, S.D. Tiegs, D.T. Chaloner and G.A. Lamberti. 2013. Whole-stream metabolism responds to spawning Pacific salmon in their native and introduced ranges. Ecosystems 16:269-283
15. Reisinger, A.J., D.T. Chaloner, **J. Rüegg**, S.D. Tiegs and G.A. Lamberti. 2013. The effect of migrating salmon on the isotopic composition of biota differs among Southeast Alaska streams. Freshwater Biology 58:938-950.
16. Levi, P.S., J.L. Tank, S.D. Tiegs, **J. Rüegg**, D.T. Chaloner and G.A. Lamberti. 2012. Does timber harvest influence the dynamics of marine-derived nutrients in Southeast Alaska streams? A reply to C.R. Jackson and D.J. Martin. CJFAS 69:1898-1901.
17. Langhans, S.D., U. Richard, **J. Rüegg**, U. Uehlinger, P. Edwards, M. Doering and K. Tockner. 2012. Environmental heterogeneity affects input, storage, and transformation of course particulate organic matter in a floodplain mosaic. Aquatic Sciences 75:335-348.
18. Choate, D.M., C.M. Prather, M.J. Michel, A.K. Baldridge, M.A. Barnes, D. Hoekman, C.J. Patrick, **J. Rüegg** and T.A. Crowl. 2012. Integrating theoretical components: a graphical model for graduate students and researchers. BioScience 62:594-602.
19. **Rüegg, J.**, D.T. Chaloner, P.S. Levi, J.L. Tank, S.D. Tiegs and G.A. Lamberti. 2012. Environmental variability and the ecological effects of spawning Pacific salmon on stream biofilm. Freshwater Biology 57:129-142.
20. Levi, P.S., J.L. Tank, S.D. Tiegs, **J. Rüegg**, D.T. Chaloner and G.A. Lamberti. 2011. Does timber harvest influence the dynamics of marine-derived nutrients in southeast Alaska streams? CJFAS 68:1316-1329.
21. Tiegs, S.D., P.S. Levi, **J. Rüegg**, D.T. Chaloner, J.L. Tank and G.A. Lamberti. 2011. Ecological effects of live salmon exceed those of carcasses during an annual spawning migration. Ecosystems 14:598-614.
22. **Rüegg, J.**, S.D. Tiegs, D.T. Chaloner, P.S. Levi, J.L. Tank and G.A. Lamberti. 2011. Salmon subsidies alleviate nutrient limitation of benthic biofilms in southeast Alaska streams. CJFAS 68:277-287.
23. D’Amore, D.V., N.S. Bonzey, J. Berkowitz, **J. Rüegg** and S. Bridgham. 2011. Holocene soil-geomorphic surfaces influence the role of salmon-derived nutrients in the coastal temperate rainforest of Southeast Alaska. Geomorphology 126:377-386.
24. Tiegs, S.D., E.Y. Campbell, P.S. Levi, **J. Rüegg**, M.E. Benbow, D.T. Chaloner, R.W. Merritt, J.L. Tank and G.A. Lamberti. 2009. Separating physical disturbance and nutrient enrichment caused by Pacific salmon in stream ecosystems. Freshwater Biology 54:1864-1875.
25. Tiegs, S.D., D.T. Chaloner, P. Levi, **J. Rüegg**, J.L. Tank and G.A. Lamberti. 2008. Timber harvest transforms ecological roles of salmon in Southeast Alaska rain forest streams. Ecological Applications 18:4-11.
26. **Rüegg, J.**, and C. T. Robinson. 2004. Comparison of macroinvertebrate assemblages of permanent and temporary streams in an Alpine floodplain, Switzerland. Archiv für Hydrobiologie 161: 489–510.

*Doctoral thesis*

**Rüegg, J.** 2011. Responses of stream biofilm to Pacific salmon (Oncorhynchus spp.) spawners: The role of environmental context and scale. Doctoral thesis, University of Notre Dame, 206 pp.

*Technical reports*

**Rüegg, J.** 2003. Macun Monitoring Manual. Swiss National Park Research, A commission of the Swiss Academy of Sciences.

*Manuscripts in Preparation*

**Rüegg, J.**, K.B. Gido, K.J. Farrell, M.B. Flinn, A. Argerich, E. Garcia, A.D. Rosemond, B. Penaluna, C. Song, M.R. whiles, C.L. Baker, W.B. Bowden, M. Douglas, T.K. Harms, J.B. Jones, L. E. Koenig, J.S. Kominoski, W.H. McDowell, S.S. Parker, M.T. Trentman, and W.M. Wollheim. Aquatic consumer biomass, richness, and trophic composition depends on stream network position and biome. Planned submission, May 2019, Diversity and Distributions.

**Rüegg, J.**, C. Conn, E. Anderson, T.I. Battin, E.S. Bernhardt, M. Boix Canadell1, S. Bonjour, J. Hosen, N. Marzolf, and C.B. Yackulic. Thinking like a fish: linking basal metabolism and consumer dynamics in rivers at fine temporal scales. Planned submission, May 2019 in Limnology and Oceanography Letters (part of a special issue).

Farrell, K.J., A.D. Rosemond, **J. Rüegg**, and J.S. Kominoski. Relative importance of physical and biological drivers of metabolism in a forested stream network. Planned submission, July 2019 in Freshwater Biology.

**Rüegg, J.**, M.T. Trentman, W.K. Dodds, K.B. Gido, D.M. Larson, C.L. Baker, K.J. Farrell, L.E. Koenig, K.R. Sheehan, and C. Song. Ecosystem structural and functional responses to consumer manipulations spatial scale and metric dependent. Planned submission, July 2019.

Presentations

*Invited Seminars*

2017

2016

2015

2012

2011

University of Fribourg. Better understanding stream ecological processes through scale considerations.

Southern Illinois University (USA). Better understanding stream ecological processes through scale considerations.

Environmental Engineering Seminar Series (EESS), EPFL. Better understanding stream ecological processes through scale considerations.

Center of Ecology, Evolution and Biogeochemistry (CEEB), EAWAG Kastanienbaum. Better understanding stream ecological processes through scale considerations.

Ecology and Evolutionary Biology (EEB) Seminar Series, Kansas State University (USA). Responses of benthic biofilm to Pacific salmon (Oncorhynchus spp.) spawners: The role of environmental context and scale.

Smithsonian Environmental Research Center (USA). Responses of benthic biofilm to Pacific salmon (Oncorhynchus spp.) spawners: The role of environmental context and scale.

*First Author Presentations at Professional Meetings (last five years)*

2018

2017

2016

2015

2014

**Rüegg, J.**, and T. J. Battin. Winter baseflow critical for stream food web productivity in Alpine streams. Annual meeting of the Society of Freshwater Sciences, Detroit, MI, USA:

**Rüegg, J.**, and T. J. Battin. Water source rather than basal resource variability drives food web patterns in Alpine streams. Symposium for European Freshwater Sciences, Olomouc, CZ.

**Rüegg, J.**, and T. J. Battin. Glacial-melt overrides longitudinal patterns in basal resources and food webs of Alpine streams. Annual meeting of the Society of Freshwater Sciences, Raleigh, NC, USA.

**Rüegg, J.**, A. Argerich, and B. Penaluna. Understanding the extent of food web alterations on aquatic ecosystem structure and function requires careful consideration of scale. Annual meeting of the Society of Freshwater Sciences, Sacramento, CA, USA.

**Rüegg, J.**, K. R. Sheehan, C. L. Baker, W. B. Bowden, M. D. Daniels. W. K. Dodds, K. J. Farrell, M. B. Flinn, K. B. Gido, T. K. Harms, J. B. Jones, L. E. Koenig, J. S. Kominoski, W. H. McDowell, S. P. Parker, A. D. Rosemond, M. T. Trentman, M. R. Whiles, and W. M. Wollheim. 2015. Baselfow patterns of geomorphic heterogeneity in stream networks across biomes. Annual meeting of the Society of Freshwater Sciences, Milwaukee, WI, USA.

**Rüegg, J.**, M. Trentman, D. M. Larson, K. B. Gido and W. K. Dodds. Macro-consumer effects on streams: structure, function and scale. Joint Aquatic Sciences Meeting, Portland, OR, USA.

Grants and Awards

2015

2010

2009

2008

Ambizione, Swiss National Science Foundation (CHF 504,000; salary, equipment, and research funds)

Outstanding Student Teacher Award, Kaneb Teaching Center, University of Notre Dame

Bayer Fellowship, University of Notre Dame (1 semester stipend, ~$19,000)

NABS President’s Award ($1000; research and travel funds)

Extra Courses and Training

2006

2005

Geographic Information Science and Technology course, ETH Zürich (Switzerland)

Ecological modelling course, WSL Birmensdorf (Switzerland)

Professional Society Membership

Society for Freshwater Science

Professional Service

*Peer-review*

Journals: Aquatic Ecology, Aquatic Biology, Freshwater Biology, Freshwater Science, Ecological Monograph, Ecology, Hydrobiologia

*Student mentoring*

Supervision, guidance, and project development for undergraduate researchers; informal advising of graduate students

*Professional Societies*

Merchandise committee, Graduate Resources Committee, North American Benthological Society (2009-2011)

International Cooperation Committee, Society for Freshwater Science (2017-ongoing, co-chair since 2018)

Languages

German: fluent (Swiss German native language)

English: fluent (8+ years in the USA)

French: B2.2

Professional References

Prof. Dr. Walter K. Dodds

Kansas State University

USA

wkdodds@ksu.edu

Prof. Dr. Gary A. Lamberti

University of Notre Dame

USA

glambert@nd.edu

PD Dr. Christopher T. Robinson

EAWAG

Switzerland

christopher.robinson@eawag.ch

Prof. Tom I. Battin

EPFL

Switzerland

tom.battin@epfl.ch