

Curriculum Vitae Pieter Spaak

Work: Eawag
Department of Aquatic Ecology
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Place and date of birth: Sappemeer, the Netherlands, 10 December 1959
Marital status: Married with Marieke Ruinen, three daughters
Citizenship: Netherlands



Academic qualifications and training

May-June 2014 Sabbatical Institute for Biology, Bucharest, Romania.
Jan-April 2014 Sabbatical University Birmingham UK, School of Biosciences, Chair of Environmental Genomics.
July 2004/ August 2005 Sabbatical Cornell University, Ithaca New York, Department of Ecology and Evolutionary Biology
October 2000 PD (Privat Dozent) Swiss Federal Institute of Technology (ETH)- Zurich. Habilitation Thesis entitled: *Evolutionary Ecology of Daphnia*
April 1994 PhD University of Utrecht (The Netherlands). Thesis entitled: *Genetical Ecology of a Coexisting Daphnia Hybrid Species Complex*.
University: University of Groningen (The Netherlands)
1988 MA degree in biology
1987/1988 Plant ecology: Essay about the evolution of phenotypic plasticity
Plant ecology: Translation of the simulation program 'EGRAS' (ecological grassland simulator) from a mainframe computer to a IBM compatible PC
1986 Undergraduate thesis in animal ecology entitled: *'The influence of grazing on siphons on the burying depth of the bivalve Macoma balthica'*
Completion of a teaching course, which resulted in a teaching certificate in high school Biology.
1985 Undergraduate thesis in population genetics entitled: *'Gene-flow and genetic differentiation in a Plantago lanceolata population'*
Nov. 1983 Bachelor's degree in biology

Appointments held

Since 2019 Eawag, Senior Scientist, Evolutionary Ecologist at the Swiss Institute for Aquatic Science and Technology (Eawag), with a teaching assignment (Lehrauftrag) at the Swiss Federal Institute of Technology Zürich (ETH-Zürich)
2010/2018 Department head, Department Aquatic Ecology, Eawag
2010/2013 Adjunct Assistant Professor Queens University, Canada
1999/2009 Eawag, Senior Scientist, Evolutionary Ecologist at the Swiss Institute for Aquatic Science and Technology (Eawag), with a teaching assignment (Lehrauftrag) at the Swiss Federal Institute of Technology Zürich (ETH-Zürich)
1996/1999 ETH-Zürich, Oberassistent: Ecological geneticist with the Swiss Institute for Aquatic Science and Technology (Eawag)
1994/1996 Max-Planck Postdoctoral fellowship the Max-Planck-Institute for Limnology (Plön, Germany): *Maintenance of hybridization in Daphnia species complexes: ecological and genetic consequences*.
1989/1994 PhD student at the Netherlands Institute of Ecology, Centre for Limnology.
1989 Supervisor of the continuation of the project for the Institute of Nature Management which resulted in a version of the simulation program, which could be used by land-use managers.

1987 Research Assistant - Institute for Nature Management. Implementing a simulation programme to predict the development of meadow-bird populations in grassland areas.

Present position

Since 2019 Eawag, Senior Scientist, Evolutionary Ecologist at the Swiss Institute for Aquatic Science and Technology (Eawag), with a teaching assignment (Lehrauftrag) at the Swiss Federal Institute of Technology Zürich (ETH-Zürich)

Research Interest

My main research interests are questions related to the maintenance and functioning of zooplankton populations. I am especially interested in how biotic (e.g. predation, food, diseases) and abiotic (e.g. temperature, pollutants) factors as well as their interactions influence population structure and population diversity. For my studies I use a multidisciplinary approach, combining experimental work with field studies and population genetics. As main study system I use the hybrid species complex of *Daphnia galeata -longispina - cucullata* from which members can be found in a majority of the European lakes.

To study historic patterns we study the sediments (resting eggs of *Daphnia*) together with sedimentologists. Resting eggs of *Daphnia* facilitate the extraction of DNA over long time periods (hundreds of years) as well as the hatching of old eggs (up to 50 years). This gives unique possibilities to study micro evolution as a response to environmental change.

For 11 years I got interested in the role diseases play for the success of different *Daphnia* taxa (parental species and hybrids). After a successful PhD of Justyna Wolinska I had two successful projects in my lab working on genotype (host) x genotype (parasite) x environment interactions. Temperature and pollutants are the main environmental factors we study in those projects. In a SNF-DFG Lead Agency project (with Justyna Wolinska, IGB Germany) we will continue this research. Together with J. Colbourne (Birmingham) I recently sequenced the *D. galeata* genome. Furthermore we recently re-sequenced 60 *Daphnia* clones to study population genomics over time and space.

Research Grants

Awarded

- The Dutch Science foundation (NWO) gave me a travel grant to visit Germany in 1991 (Plön and Munich). NWO provided me also travel grants to visit conferences in 1991 (Hungary), 1992 (Wales) and 1995 (Canada).
- A PhD project proposal, initiated and largely written by me, "Hybridization within two *Daphnia* species: which factors determine the maintenance of the hybrid?" was granted in 1991 after an internal selection by the Netherlands Institute of Ecology.
- Max Planck research fellowship (1994-1996).
- 1997-2001 Participant in European Network on Ecological Genetics, financed by the Belgium National Science Foundation with the primary goal to fund scientific exchange among scientists of the involved countries with Belgium students and scientists. Total project ca. **CHF 18.000,-** per year
- 1998 – 2001 EU project: Steering role of infochemicals for food chain function and structure (SNIFFS)1998-2001 (with H.R. Bürgi) Together with groups in Holland and Germany. Swiss part: **CHF 300.000,-** (supporting two PhD Students).
- 1998 – 2001 : J.V. Ward, C. Robinson & **P. Spaak**, Swiss Science Foundation: Habitat fragmentation of alpine streams: implications for biodiversity, genetic diversity, and freshwater conservation: **CHF 211.442,-** (supporting one PhD Student).
- 2002 –2004 Swiss Science Foundation and the German Science foundation granted the project *Biotic interactions and the maintenance of a Daphnia hybrid species complex* in which two PhD students work on both Lake Greifensee and lake Constance **CHF 131.300,-** (supporting a Swiss PhD Student)
- 2004 – 2006 Eawag, Directorate. Support Brienersee Project (several departments, my part **CHF 20.000,-**)
- 2004 – 2006 Kanton Bern, Brienersee Project, subproject *Zooplankton Growth* **CHF 200.000,-**. (supporting PhD student)

- 2006 - 2008 Eawag, “Aqua Diverse” – a framework for explaining, predicting and remediating loss of aquatic biodiversity in Switzerland. O. Seehausen, R. Müller, J. Jokela, C.T. Robinson, **P. Spaak**, C. Schubert **CHF 460'800** (for two years, **my part 20%**)
- 2007 - 2010 SNF (3100A0-116470) **P. Spaak** "Host-parasite interactions in hybridizing *Daphnia*, the role of variable environments. **CHF 260'000,--** (supporting a PhD Student and a part-time technician)
- 2007 - 2009 Eawag, “EvoChemTox” - Does pollution-induced microevolution influence biodiversity? **Piet Spaak**, Christian Stamm, Barbara Keller & Juliane Hollender **CHF 210'000,--**
- 2008 - 2012 ETH-Rat CCES: GEDIHAP (GENetic Diversity Host And Parasite) - The role of genetic diversity in host-pathogen interactions in dynamic environments, **P. Spaak**, S. Bonhoeffer, R. Eggen, O. Holdenrieder, B. Ibelings, J. Jokela, B. McDonald, D. Riegling, P. Schmid-Hempel. **CHF 1'400'000** (supporting 6 Projects in 3 Work Packages) (**my part SFr 500'000: 35%**)
- 2009- 2011 The impact of abiotic factors on hybrid *Daphnia* populations across the Alps: are pollution effects irreversible?, **P. Spaak**, J. Hollender and F. Anselmetti SNF **CHF 300'000 (my part 60%)**
- 2011-2012 Eawag “Basic characterization of chemical efflux transporters in *Daphnia* ssp. as a pre-requisite to elucidate their role in chemical defences and adaptation”. K. Schirmer and P. Spaak **CHF 60'000**
- 2011-2012 BAFU “Beurteilung des ökotoxikologischen Potenzials von Fluorezenztracern“ K. Schirmer and P. Spaak **CHF 30'000**
- 2011-2014 Lead Agency Grant (with Justyna Wolinska DE): Host - parasite interactions in hybridizing *Daphnia*, the role of variable environments: part 2. **CHF 553'237 (my part 60%)**
- 2012- 2013 The impact of abiotic factors on hybrid *Daphnia* populations across the Alps: are pollution effects irreversible? Continuation, **P. Spaak**, J. Hollender and F. Anselmetti SNF **CHF 94'558 (my part 60%)**
- 2013-2015 SNF-UEFISCDI (Romania) The impact of cyanobacterial blooms triggered by nutrient pollution on aquatic environments in the context of climate change. **P. Spaak** and C. Sandu **CHF 422'850 (my part 45%)**
- 2014_ 2017 Eawag “Sequencing the *Daphnia galeata* genome”. **P. Spaak**, K. Schirmer, J. Hollender, & J. Colbourne (University of Birmingham, UK) **CHF 35'000**
- 2015-2017 Eawag “Linking effects of chemical pollution from cells to ecosystems”, A. Zupanic, N. Schuwirth, F. Pomati and **P. Spaak**. **SFr 411'550**
- 2016-2018 Eawag “Resilience of aquatic ecosystems in the face of nutrient loading: ecological and evolutionary dimensions, a proposal for the first experiment in the new experimental ponds” **P. Spaak** (ECO), B. Matthews (ECO), J. Jokela (ECO), F. Altermatt (ECO), A. Narwani (ECO), F. Pomati (ECO), O. Seehausen (FISHEC), F. Hammes (UMIK), D. Johnson (UMIK), B. Wehrli (SURF), S. Derrer (AuA). **CHF 298'363**
- 2016 BAFU “Four exo-2 sondes for the Eawag pond experiment”. **P. Spaak**. **CHF 90'000**
- 2017-2019 Lead Agency Grant **P. Spaak** and Justyna Wolinska (IBG, DE): “Host-parasite interactions in hybridizing *Daphnia*, from correlations to experiments”: **CHF 575'536 (my part 53%)**
- 2018-2022 Project Leader of “SeeWandel”: Life in Lake Constance – the past, present and future. With 7 Project Partners and 13 Sub Projects **€ 5'700'000** www.seewandel.org

Students

A. Former PhD Students

- Sandra Lass: Effects of Fish Kairomones on the Zooplankton in an Alpine Lake (1998 – 2002)
Past Position: Post Doc (2006-2009) at the Pennsylvania State University, Centre for Infectious Disease Dynamics, 208 Mueller Lab, University Park, PA 16802, USA
Present Position: Mother, raising child
- Monika Winder: Structure and Function of an Alpine Lake Food Web (1998 – 2002)
Present Position: Associate Professor, Stockholm University, Sweden.
- Michael Monaghan: Habitat Fragmentation of Alpine Streams: Implications for Biodiversity, Genetic Diversity, and Freshwater Conservation (with C.T. Robinson) (1998 – 2002)
Present Position: Senior Scientist + Research Group Leader (Molecular Ecology and Genomics), IGB, 12587 Berlin, Germany.

- Justyna Wolinska: Biotic interactions and the maintenance of a *Daphnia* hybrid species complex (2002 - 2006)
Present Position: Research Group Leader, IGB Berlin, Germany, Professor for Aquatic Evolutionary Ecology at the Free University of Berlin
- Barbara Keller: Extent of hybridization and reproductive isolation in *Daphnia*. (2001 - 2006)
Present Position: Post Doc, with Prof. Elena Conti, Institut für Systematische Botanik und Biologische Garten, University of Zürich, Switzerland
- Christian Rellstab: Population dynamics and genetic structure of *Daphnia* in ultra-oligotrophic Lake Brienz (2003 - 2007)
Present Position: Scientist at Swiss Federal Research Institute WSL, Ecological genetics with Dr. Felix Gugerli, Birmensdorf, Switzerland
- Andreas C. Kretschmann (co-supervisor with Beate Escher and Juliane Hollender) Toxicity of diazinon in *Daphnia magna* - a mechanistic effect model based on time-resolved quantification of bioconcentration, biotransformation and enzyme inhibition (2006 - 2010)
Present Position: Assitant Professor at the Department of Plant and Environmental Sciences, University of Copenhagen, Denmark.
- Corine Schoebel: Host-parasite interactions in hybridizing *Daphnia*: The Red Queen & variable environments (2007 - 2010)
Present Position: Scientist at Swiss Federal Research Institute WSL, Biodiversity and Conservation Biology, Phytopathology with Daniel Rigling, Birmensdorf, Switzerland
- Claudia Buser: Environmental stress and infectious disease in aquatic ecosystems: Host parasite association *Daphnia galeata* and *Caullerya mesnili* (2008 - 2011)
Present Position: After a 2-years Post Doc at the lab of Mat Goddard at the University of Auckland, New Zealand back in Switzerland and looking for a job.
- Silke van den Wyngaert (second supervisor: Bas Ibelings) Host parasite association *Asterionella formosa* and *Zygorhizidium planktonicum* (2008 - 2012)
Present Position: Post Doc at IGB, Berlin, Germany
- Markus Möst (2009 - 2013) The impact of abiotic factors on hybrid *Daphnia* populations across the Alps: are pollution effects irreversible?
Present Position: Post Doc at lab of Chris Jiggins, University of Cambridge, UK
- Aurea Chiaia-Hernandez (2009 - 2013) (co-supervisor with Juliane Hollender) Temporal records of organic contaminants in lake sediments, their bioconcentration and effect on *Daphnia* resting eggs.
Present Position: Post Doc at Eawag, Department Environmental Chemistry
- Patrick Turko (2012 - 2016) Decade-scale evolution of the model organism *Daphnia*.
Present Position: since Jan 2017 looking for job
- Marie-Eve Monchamps (2013 - 2017) “The impact of cyanobacterial blooms triggered by nutrient pollution on aquatic environments in the context of climate change”. Defense 15 March 2017

B. Present PhD Students

- Ioana Enache (2013 -) (University of Bucharest, co-supervisor with Prof. Geta Risnoveanu) “Zooplankton dynamics in eutrophic Danube delta lakes”
- Iasmina Moza (2013 -) (University of Bucharest, co-supervisor with Francesco Pomati and Prof. Carmen Postolache). “Phytoplankton dynamic and cyanobacteria blooms in eutrophic Danube delta lakes”
- Amruta Rajarajan (2018 -) “Host-parasite interactions in hybridizing *Daphnia*, from correlations to experiments”
- Linda Haltiner (2018-) Filtering competition among *Daphnia* and Quagga mussels in Lake Constance

C. Former Diploma / Master Students

- Denk, A. 1998. Population genetics investigations of *Daphnia* species and their hybrids from Plußsee. Diplom. Thesis, University of Regensburg (in German).
- Eggenschwiler, L. 1998. Genetic investigations on the temporal and spatial variation of the *Daphnia*-population in the Greifensee. Diplom. Thesis, ETH Zürich (in German).

- Barthelmes, T. 2000/2001. Patch dynamics and metapopulation structure of an alpine streams insect (Trichoptera, *Acrophylax zerberus*). (with C.T. Robinson)
- Rudis, M. 2000/2001. Changes in the *Daphnia* composition of the Greifensee during the last 100 years based of genetic analysis of resting eggs
- Engeler, L. 2003 (University of Basel) Comparison of the plankton community of high Alpine lakes in Macun and Rims (Engardin, Switzerland)
- Tellenbach, C. 2004/2005 The influence of a fungal brood parasite on life-history traits of its *Daphnia* host
- Caduff-Kinkel, M 2006 The Infectiousness of sediment from Greifensee for *Daphnia*
- Vanholsbeeck, O 2010/2011 University of Zürich “A theoretical modelling approach; the role of genetic diversity in the spread of disease and evolutionary outcome of host parasite interactions.”
- Turko, P. 2010/2011 University of Queens Canada. Joint master Project “Ecological speciation of a cryptic *Daphnia* species complex examined using the invasive predator *Bythotrephes* and the resting egg bank” supervising with S. Arnott.
- Wolf, S. 2011/2012 ETH Zürich. Semesterarbeit “Reconstructing the *Daphnia* species composition of eutrophicated North Italian Lakes”
- Targent, N. 2012 University Zürich. Semesterarbeit “The influence of the cyanobacterium *Microcystis aeruginosa* on the infection of *Daphnia longispina* with the parasite *Caullerya mesnili*”
- Baumgartner, L. 2012 Zürcher Hochschule Für Angewandte Wissenschaften, Wädenswil, Bachelor Arbeit “Invasion of *Daphnia pulicaria* in Lake Constance”.
- Targent, N. (Master) 2013/2014 - University Zürich. “Are cyanobacteria a mediator of *Caullerya mesnili* infections in *Daphnia*?”
- Gambaro, G. (Bachelor) 2013 – ETH – “Invasion of *D. pulicaria* in Greifensee: how do they manage and where do they come from?”
- Hänggi, C. (Semesterarbeit) 2016 – ETHZ- “The influence of the pesticide Diazinon on the fitness of different *Daphnia* clones”.

D. Present Diploma / Master Students

- Haängii, C. (Master) 2017. Population Genomics of 43 re-sequenced *Daphnia* clones hatched from a 60 year sediment time period.
- Haltiner, L. (Master) 2017-2018 University of Zürich – “Linking between population- and individual based demographic models in *Daphnia* growth rate calculations”

E. External PhD committees

- Giebel, Johanna, 2012 – 2015 University of München. PD Justyna Wolinska: “The role of hybridization in the colonization of newly opened habitats”
- Jakub Russek, 2012 - 2015 University of München. PD Justyna Wolinska: “New SNPs markers for species identification in the *Daphnia longispina* complex”.
- Metzger, César, 2011 – 2014 University of Basel. Prof. Dieter Ebert: “Resistance to the bacterial parasite *Pasteuria ramosa* in *Daphnia*” (external referee)

Editorial Activities

- Co-editor (with A. Brancelj and L. De Meester) of the proceedings of the 4th international conference on Cladocera, Postojna, Slovenia, August 8-15, 1996. *Hydrobiologia*, (1997, vol 360).
- Co-editor (with E. van Donk and M. Boersma) of a special volume of *Hydrobiologia* (2003, vol 491) with the title: “Recent developments in fundamental and applied plankton research”.
- Editor of the proceedings of the 7th international conference on Cladocera, Herzberg Switzerland, Sept 2005 published in *Hydrobiologia* volume 594, 2007.
- I reviewed manuscripts for *Hydrobiologia*, *Limnology and Oceanography*, *Archiv für Hydrobiologie*, *Aquatic Ecology*, *Aquatic Science*, *Plankton Research*, *Ecological Applications*, *Ecology*, *The Biological Journal of the Linnean Society*, *Evolution*, *Canadian Journal of Fisheries and Aquatic Sciences*, *Freshwater Biology* and *The European Journal for Evolutionary Biology*.
- Editorial board of *Journal of Plankton Research* (2008-2010)

- Co-editor (with H.J. Dumont, J. Havel and R. Gulati) of a special volume of *Hydrobiologia* (2011, vol 668) with the title: “*A passion for Plankton: a tribute to the life of Stanley Dodson*”.
- Associate Editor of *Aquatic Ecology* (since 2008-2009)
- Co-Editor (with M. Manca) of the proceedings of the 9th international conference on Cladocera, Verbania Italy, Oktober 2011. *Hydrobiologia* volume 715, 2013.
- Co-Editor (with A. Petrusek) of the proceedings of the 10th international conference on Cladocera, Lednice Czech Republic, Oktober 2014. *Hydrobiologia*
- Associate Editor of *Hydrobiologia* (since 2008)
- Editor in Chief of *Aquatic Ecology* (2009-2018)
- Associate Editor of *Limnology and Oceanography* (since 2019)

Professional Societies & Committees

- European Society for Evolutionary Biology, member
- Netherlands Society for Aquatic Ecology, member
- SIL, International Association of Theoretical and Applied Limnology, national representative
- ASLO, Association for the Sciences of Limnology and Oceanography, member
- SGHL, Schweizer Gesellschaft für Hydrologie und Limnologie, member

Service/Consulting

- Committee to advise the directorate about genetic engineering at Eawag, member (1998-1999)
- Institutional Biosafety Officer of Eawag, development of a Biosafety concept for the Eawag (with V. Küng) (2000-2004)
- Reviewer of nature conservation projects (VLINA) for the Flemish ministry for Nature Conservation (1996-2000)
- Reviewer of the Swiss, Belgium, German, Czech and English science foundation
- External reviewer of the Deutsche Bundesstiftung Umwelt: Promotionsstipendienprogramm
- Head of the Library task-force at Eawag, duties: (1999-2004)
 - Developing and implementing a joint library of Eawag and EMPA in their new common building
 - Implementation of access to electronic journals at the Eawag
 - Organization of “Scanproject” in which we make the full text of all Eawag publications (~3200) internally available online.
 - After the appointment of the Librarian my main tasks is to discuss and determine with him the strategy the library should follow in the future.
- Bibliometry advisor of Eawag, supporting Eawag staff and Directorate in bibliometric issues (contacts with ISI and ETH-council) 2005-2012
- Eawag safety officer (2005-2009)
- Scientific Board of next 8th Symposium for European Freshwater Sciences (SEFS) 2013 in Münster, Germany
- Scientific Board and organization committee of next 9th Symposium for European Freshwater Sciences (SEFS) 2015 in Geneva, Switzerland
- Plankton Ecology Group, November 20-24 2015, Guangzhou, China
- Scientific Board meeting of the 7th International Conference: “Water & Fish”, June, 10 - 12, 2015, University of Belgrade,, Serbia
- International Scientific Board SIL 2016 meeting Torino, Italy: 31 July- 5 August, <http://www.sil2016.it>

Present Activities

- Member of “Fachbereich See” der IGKB, International Water Protection commission for Lake Constance (since 2008)
- Eawag IT safety officer (2005- present)
- Member Building commissions: Forum Chriesbach (2004-2005), New Office Building (2006-2007), New Lab building (2009-2010), New experimental Hall “Aquatikum” (2010 - 2015), experimental ponds (2013 - 2015), replacement building “Pavillon” (2015 -)

- Member of COL (Commission for Oceanography and Limnology)
- Spokesman of Eawag in issues related to Re-oligothrophication of lakes (2012-)
- SIL national representative (2016 -)

International collaborations

In my evolutionary ecological work on *Daphnia* I have worked together with Dr. L. De Meester in Leuven (Belgium) and with Dr. M. Boersma and Dr. L. Weider, Director of Research, Biological Station, The University of Oklahoma. All European collaborators in both research projects (e.g. Dr. Weider, Dr. Boersma, Dr. De Meester and Dr. Spaak) were selected as members of the European Network on Ecological Genetics (Belgium National Science Foundation). The EU project SNIFFS (1999-2001) was an extension of the existing collaboration with the Max Planck Institute in Plön and the collaboration with the Centre for Limnology in Nieuwersluis.

Collaborations on molecular techniques and molecular ecology of *Daphnia* exist with Klaus Schwenk (University of Frankfurt, Germany) and John Colbourne (University of Birmingham, UK). In our hybridization project I worked together with Dieter Ebert (role of parasites) and Karl Otto Rothhaupt (Konstanz) (food quality and invertebrate predators). For my studies on *Daphnia* in sediments I collaborated with Marina Manca (Pallanza, Italy), Hans Bernd Stich (Langenargen, Germany) and Nelson Hairston (Cornell University, USA). I am finishing a project with the Institute for Biology in Bucharest, Romania (2013-2016) to reconstruct cyanobacteria populations from environmental DNA in sediments. Nelson Hairston (July - December 2007, September – December 2013) and Jennifer Fox (July 2008 - January 2009) spent their sabbatical in my lab. Recently I started a project with John Colbourne in which we sequenced the *Daphnia galeata* genome. In this project I also collaborate with Dieter Ebert in Basel, who works on the *D. longispina* genome. Since both species hybridize with each other we expect that assembly and annotation becomes easier when we share our results.

My work on *Daphnia* parasites is done in close collaboration with Justyna Wolinska (IGB, Berlin, Germany). With her I submitted a SNF-DFG Lead Agency Grant “Host–parasite interactions in hybridizing *Daphnia*, from correlations to experiments”, which is pending. In this project we want to use the new Eawag infrastructure (36 ponds of 15 m³) to study experimentally the factors that might facilitate *Daphnia* hybridisation and parasite infection.

Workshops organized / Invited Talks / Miscellanea

Workshops and Symposia

- **March 2000, Infochemical workshop**, participants from University of Konstanz, University of Hamburg, max-Planck Institute for Limnology in Plön, Netherlands Institute of Ecology, University of Wageningen (Netherlands) and from the Eawag.
- **June 2000, Informal workshop**, participants from the Limnological Institute of the University of Konstanz and the Limnology Department of Eawag to define common research lines.
- **Symposium: Lake Sediments: Archives of Environmental Change and Evolution**, at the yearly meeting of the Swiss Academy for Science (SANW) in 2001 at Yverdon-les-Bains 17 till 20 October 2001. I was member of the organisation committee and organiser of this symposium.
- **7th International Symposium on Cladocera 2005**, I organized this conference (140 participants, 18 countries) from 3-9 September 2005 at Herzberg, Switzerland.
- Co organizer **Resurrection-Ecology Symposium** With N.G Hairston Jr and W. C Kerfoot Sept 2009, Herzberg Switzerland
- Co organizer **9th International Symposium on Cladocera 2011**, I co organized this conference with Marina Manca (Pallanza) 2-7 Oktober 2011 Verbania Intra

Invited lectures

March 1996, Laboratory of Ecology and Aquaculture, Catholic University of Leuven, Belgium: Dr. L. De Meester and Prof. F. Ollevier.

June 1997, Department of Behavioural Ecology, Zoological Institute, University of Bern, Switzerland, Dr. Theo C. M. Bakker

- June 1997, Symposium 'Facing new challenges in aquatic ecology: application of molecular biological techniques' Amsterdam, Holland: Molecular techniques in aquatic ecology: Old wine in new skins? (with K. Schwenk)
- April 1999, Institute for Limnology of the Austrian Academy of Sciences, Gaisberg, Mondsee Austria: Dr. T Weisse
- Juni 1999, Limnological Institute Konstanz: Prof. K. O. Rothaupt
- November 2000, Zoological Institute University of Zürich, Dr. J. Bushkirk
- September 2002, "Auswirkungen der Klimaerwärmung auf aquatische Ökosysteme" vom 15.-17.09.2002 in Berlin. Dr. R. Adrian and Dr. D. Straile: Climate Change: Population Fragmentation of Alpine Stream Insects, population genetic consequences. (with C.T. Robinson).
- September 2002, Biocomplexity Symposium at the University of Michigan, Ann Arbor organized by W.C. Kerfoot: How Well Does a Resting Egg Bank Reflect Its Corresponding Pelagic Population? (with B. Keller)
- March 2003, University of Montreal, Canada, Prof. B. Pinell-Alloul: Resting eggs of *Daphnia*, their role in a hybrid species complex (with B. Keller).
- March 2003, Cornell University USA, Prof. N. Hairston Jr.: Evolutionary ecology of hybridizing *Daphnia*.
- September 2003, IGB Berlin, Germany, PD. Dr. R. Adrian: Evolutionary ecology of hybridizing *Daphnia*.
- October 2003, DGL Meeting Köln, Germany: Possible consequences of climate change: Population fragmentation of alpine stream insects Keynote Lecture (with M. Monaghan & C. T. Robinson)
- October 2003, Diapause in Aquatic Invertebrates, Pallanza, Italy: Diapause in a *Daphnia* hybrid species complex (Invited Speaker, together with B. Keller).
- April 2004, Nationalpark Zernetz: Überlebensstrategien von Wasserflöhen in Bergseen: Störfaktor Mensch (with L. Engeler and M. Winder).
- July 2004, University of Frankfurt, Dr. K. Schwenk: The co-existence of hybrid and parental *Daphnia* in lakes: the role of sexual reproduction and parasites. (with B. Keller and J. Wolinska)
- October 2004, University of Madison, USA Prof. S. Dodson: The co-existence of hybrid and parental *Daphnia* in lakes: the role of sexual reproduction and parasites. (with B. Keller and J. Wolinska)
- November 2004, Cornell University, USA, Prof. N. Hairston: The Co-Existence of Hybrid and Parental *Daphnia* in Lakes: The Role of Sexual Reproduction and Parasites
- December 2004 Dartmouth College, USA, Prof. J. Gilbert: Evolutionary Ecology of Hybridizing *Daphnia*: The Role of Parasites and Sex
- February 2005, University of Wisconsin, Milwaukee, Dept. Biological Sciences, Prof. R. Strickler: Evolutionary Ecology of Hybridizing *Daphnia*: The Role of Parasites and Sex
- February 2005, The University of Oklahoma, Department of Zoology, Prof. L. Weider: Evolutionary Ecology of Hybridizing *Daphnia*: The Role of Parasites and Sex
- February 2005, Missouri State University, Department of Biology, Springfield, Prof. J. Havel: Evolutionary Ecology of Hybridizing *Daphnia*: The Role of Parasites and Sex
- June 2006, ASLO Conference Victoria, session "The Role of genetic Diversity in changing Environments": The coexistence of hybrid and parental *Daphnia* – The role of parasites
- November 2007, Department of Biology, Indiana University, Bloomington, USA: "The effect of anthropogenic change on hybridizing *Daphnia*: evidence from resting egg banks"
- February 2008, CNR Institute for Ecosystem Studies Pallanza, Dr. M. Manca "The effect of anthropogenic change on hybridizing *Daphnia*: evidence from resting egg banks"
- March 2008, Cornell University, USA, Prof. N. Hairston: "The effect of anthropogenic change on hybridizing *Daphnia*: evidence from resting egg banks"
- October 2008, 8th International Symposium on Cladocera, Aguascalientes, Mexico, "Ecotoxicology and microevolutionary processes in *Daphnia*"
- January 2009, University of Munich, "Factors explaining the distribution of a *Daphnia* hybrid species complex in peri-alpine lakes over space and time"
- February 2009, University of Basel, "Factors explaining the distribution of a *Daphnia* hybrid species complex in peri-alpine lakes over space and time"
- May 2009, University of Leuven, Belgium, "Factors explaining the distribution of a *Daphnia* hybrid species complex in peri-alpine lakes over space and time."

September 2009, Polish Hydrobiological Society Meeting, Lublin, “Factors explaining the distribution of a *Daphnia* hybrid species complex in peri-alpine lakes over space and time. Is Gliwicz one of these factors?”

September 2009, Resurrection Ecology Symposium, “Limitations ‘n’ Potentials”

April 2010, Eawag Kastanienbaum, “The coexistence of hybrid and parental *Daphnia* – The role of parasites”

June 2010, ASLO summer meeting in Santa Fe USA, “The influence of a pesticide (diazinon) on *Daphnia*-parasite interactions”

June 2010, Eawag Info tag, “Umwelteinflüsse und Planktodynamik: *Wasserflöhe als Modellorganismen*“

September 2010, Rotary Club Wetzikon, “Für immer schlafen? Wasserflöhe im Boden vom See”

November 2010, Langenargen, Institut für Seenforschung, 90th Anniversary, Festvortrag, „Umwelteinflüsse und Planktodynamik: Forschung an Modellorganismen jetzt und in der Zukunft“

February 2011, Sixth International Symposium on "Eco-Evolutionary Dynamics". Leuven Belgium, „The coexistence of hybrid and parental *Daphnia* – The role of parasites“

March 2012, IGB Berlin, “*Daphnia* hybridization in peri-alpine lakes over space and time.”

April 2012, University of Bern, “*Daphnia* hybridization in peri-alpine lakes over space and time.”

September 2012, German Zoological Society meeting, Konstanz, “*Daphnia* populations in (ultra) oligotrophic lakes?”

November 2012, University of Basel, “How aquatic ecosystems are altered by nutrient limitation: The example of Lake Briez”

December 2012, Eawag Kastanienbaum Seminar Series, , “How aquatic ecosystems are altered by nutrient limitation: The example of Lake Briez”

December 2012 Institute for Biology, Bucharest, “Investigating the impact of cyanobacterial blooms on aquatic ecosystems”

March 2013 Greifensee Stiftung (öffentlichen Jahresversammlung), Fällanden „Vom Netz zum Laserstrahl Hightech in der Greifensee Forschung“

June 2013 University of Munich, Master Seminar Series: „*Daphnia* hybridization in peri-alpine lakes over space and time”.

Juli 2013 Rotary Club Forch: „Vom Netz zum Laserstrahl Hightech in der Greifensee Forschung“

October 2013 Naturforschenden Gesellschaft Schaffhausen: „Ökosysteme unter Druck: der Einfluss von Nährstoffen in Gewässern“.

November 2013 University of Innsbruck, Austria: “How aquatic ecosystems are altered by nutrient limitation: the example of Lake Brienzz”

February 2014 Wasser Netzwerk Lunz: Key-note speaker at the Austrian 2014 SIL Meeting

June 2016 International Conference “Water and Fish”, Belgrade, Serbia: “*Daphnia* hybridization in peri-alpine lakes over space and time”.

June 2015 Yearly conference of the Swiss Cantonal Water representatives: “Cercl’eau”, Murten: “Eutrophierung und Reoligotrophierung in Schweizer Seen: die Folgen für das Plankton“.

September 2015 Annual Meeting of SETAC-German Language Branch, Zürich: “Cyanobakterien und *Daphnia*-Parasiten Epidemien”

November 2015 Meeting of the SIL Plankton Ecology Group, Guangzhou, China: “Causes and consequences of parasite epidemics in a *Daphnia* hybrid species complex: the role of cyanobacteria”.

May 2016 University of Groningen, Causes and consequences of parasite epidemics in a *Daphnia* hybrid species complex: the role of cyanobacteria

July 2016 IGB Berlin, Causes and consequences of parasite epidemics in a *Daphnia* hybrid species complex: the role of cyanobacteria

Miscellanea

- Member of a PhD examining committee, Klaus Schwenk, University Utrecht, The Netherlands
- External referee of the PhD Thesis of Joost Vanoverbeke: Clones, sex and resting eggs: temporal habitat selection and the genetic structure of cyclical parthenogenetic *Daphnia* populations, catholic University of Leuven, Belgium, 2001
- External referee of the PhD Thesis Silvia Markova: A molecular study of diversity in European water fleas *Daphnia pulicaria*, Department of Ecology, Charles University, Viničná 7, CZ-128 44, Prague 2, Czech Republic, September 2006

- External referee of the PhD of Thomas Zumbrunn: *Daphnia* metacommunity dynamics, the roles of inbreeding, parasitism, competition, and dispersal. Philosophisch-Naturwissenschaftlichen Fakultät der Universität Basel. June 2009