CURRICULUM VITAE

Prof. Dr. Rik I.L. Eggen, deputy director Eawag

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Education and degrees

2004-to date	Adjunct Professor, ETH Zürich, Switzerland.
1984-1988	Ph.D, Department of molecular biology, Wageningen Agricultural University, Wageningen, The Netherlands (Dr. rer. nat.).
1978-1984	M.Sc. in Biology (majors in molecular biology and cell biology, minor in microbiology), Nijmegen University, Nijmegen, The Netherlands.

Professional Experience

2007-to date	Deputy director, Eawag, Switzerland
2005-2007	Member of directorate, Eawag, Switzerland
2004-to date	Adjunct professor in environmental toxicology, ETH Zürich, Switzerland
2000-2007	Head department of environmental toxicology, Eawag, Switzerland
1996-2000	Head department of environmental microbiology, Eawag, Switzerland
1999-to date	Lecturer at ETH Zürich, Switzerland.
1994-to date	Senior Scientist at the Eawag, Dübendorf, Switzerland.
1992-1994	Senior Researcher and Lecturer, Department of Microbiology, Wageningen Agricultural University, Wageningen, The Netherlands.
1988-1992	Postdoctoral Fellow, Department of Microbiology, Wageningen Agricultural University, The Netherlands.
1984-1988	Research Assistant, Department of Molecular Biology, Wageningen Agricultural University, The Netherlands.

Professional Activities

2016- to date	Member of the strategic monitoring group " Water assessment" of the Swiss Environmental Protection Agency.
2017- to date	Member of the research committee of the Swiss Federal Institute of Material Sciences (EMPA)
2016- 2017	Member of the steering board of the Swiss Environmental Protection Agency for a large scale project on " Evaluation of surface waters".
2014- to date	Member of Advisory Board Tareno Waterfund AG, Basel

2013- 2017	Member international peer review panel BE-Basic Dutch Scientific program (yearly R&D budget 45 Mio Euro)
Aug 2012/Jan 2013	NL-CH exchange on innovation in the waste water sector. Member of delegation.
2012-2014	Member of the Board of the Solaqua Foundation
2011-to date	Scientific expert committee EU project EuroEcotox.
2011-2016	Member of the steering board of the Swiss Environmental Protection Agency for a large scale project on " diffuse pollution".
2010-to date	Steering group SAP4Four
2010	Invited participant, workshop on water research horizon for the development of a new water research strategy in Germany, Berlin, Germany
2009-to date	Member of the Scientific Advisory Board BLW-Agroscope
2008-to date	Vice-Chairman of the Board of GlaTec, Technology and Transfer Centre
2008-to date	Member of the Board of directors of the centre for applied ecotoxicology in Switzerland.
2008	Invited participant, workshop on gaps in pollution sciences towards the development of new research strategies in pollution sciences, University of Copenhagen, Denmark.
2007-to date	Deputy Director of Eawag.
2007-2008	Chairman Taskforce to establish the centre for applied ecotoxicology in Switzerland.
2007	Co-organizer Latsis symposium September 17-19, 2007 - Research frontiers in Environment and Sustainability, ETH Zürich, Switzerland.
2006-2017	Member of the steering board of the Swiss Environmental Protection Agency for a large scale project on " the reduction of the entrance of micropollutants in ecosystems".
2006-2008	Member of the Management Committee of the Competence Centre Environment and Sustainability (CCES) in the ETH domain.
2005-2009	Co-coordinator of the EC-funded "FaceIt" project (Total volume 4,049,011 Euro).
2005-2007	Member of the Eawag directorate.
2004-2007	Head, Research division Environmental Toxicology at the Eawag.
2004-2005	Head (ad interim) Research division Environmental Microbiology at the Eawag.
2004-2013	Vice-president competence centre for xenobiotic and environmental risk research Zürich (XERR).
2003-2005	Member strategic planning committee at the Eawag.
2002-2003	Member "Unterrichtskommission" for the development of a new curriculum at the "centre for environmental studies", ETH Zürich.
2000-2007	Member of the project management-team of the multidisciplinary Querproject "Novaquatis" at Eawag (total volume 1'260'000 SFr.).
2000-2004	Head, Research division Environmental Microbiology and Molecular Ecotoxicology at the Eawag.
1999-2004	Member Leitungsausschuss of the competence center for xenobiotic and environmental risk research Zürich (XERR).
1999-2002	Co-coordination (with Marc Suter) of Eawag participation in EC-funded "COMPREHEND" project (Total volume of 720'000 SFr.).

1999	Member of the reorganization committee at the Eawag.
1998-2004	Member of Expertgroup "Wirkungsbezogene Verfahren zur Gewässerbewertung" im Hauptausschuss II der Fachgruppe Wasserchemie, Gesellschaft für deutscher Chemiker.
1998-1999	Member Task Force for the preparation of a new phase of the Indo-Swiss Collaboration in Biotechnology (ISCB).
1997-2004	Member of the coordinationgroup Hauptausschusses II " Stoffe und Gewassergüte", Gesellschaft für deutscher Chemiker.
1997-1998	Project leader on an interdisciplinary Eawag project to diminish a crayfish *Procambarus clarkii* population in the Schübelweiher, a small lake near Zürich.
1996-2000	Head of the department of Microbiology at the Eawag.
1995-1999	Chairman Forum for Ecotoxicology at the Eawag.
1994-2008	Head research group molecular ecotoxicology at the Eawag.
1993	Chairman Organization Committee International Symposium "Microbes in Engineered Ecosystems", Wageningen, The Netherlands.
1993	Guest Editor special issue of FEMS Microbiology Reviews.
1984-1994	Leader Isotope Laboratory, Departments of Molecular Biology (1984-1988) and Microbiology (1988-1994).
1988-1994	Leader Recombinant DNA Laboratory, Department of Microbiology.

Major research area:

- Assessment and mechanistic understanding of effects of aquatic chemical pollution on environmental and human health, development of mitigation strategies.
- Environmental and human health effects of pesticide exposure.
- Development of mechanism-based effect assessment tools (biomarkers, biosensors).

Teaching activities

2017-to date	Lecturer at ETHZ: Introduction to Toxicology
2013	PEAK Course lecturer at the Eawag on: "Die Wasser Expertise".
2012-2017	Lecturer at PhD skill course, ETHZ.
2011	PEAK Course lecturer at the Eawag on: "Die Wasser Expertise der Eawag".
2008-to date	Lecturer at ETHZ: Practical course: Molecular Ecotoxicology.
2007	Lecturer at ETHZ: Practical course: Molecular Ecology and Ecotoxicology.
2007-to date	Lecturer at ETHZ: Advanced Ecotoxicology.
2002-2016	Lecturer at ETHZ: Grundlagen in der Ökotoxikologie.
2003-2006	Lecturer at ETHZ: Mechanisms in toxicology.
2002	Lecturer at COETOX (collaboration in ecotoxicology, EPFL-Eawag): endocrine disruption, mechanisms, screening methods and strategies, cases.
2001	PEAK Course co-leader and lecturer at the Eawag on: "biologische Mikroanalytik in Umweltsystemen".
2000-2006	Lecturer at ETHZ: Umweltchemie II: allgemeine Toxikologie und Ökotoxikologie.

1999-2005	Lecturer at ETHZ: Integriertes Grundpraktikum IV: Mikrobiologie.
1999-2005	Lecturer at ETHZ: Umweltmikrobiologie I.
1999/2001/2003/ 2008/2012	Lecturer at NDK course (ETH Zürich) on " Risiko und Sicherheit: chemische Stoffe und Umwelteffekte".
1998	PEAK Course co-leader and lecturer at the Eawag on: ”moderne methoden zum Nachweis von Mikroorganismen und deren Aktivität”.
1995-1996	Lecturer at Peak Courses at the Eawag on: • Die Rolle von Schwermetall für das Wachstum von Mikroorganismen,1995. • Toxicity of pollutants, 1995. • Oekotoxikologie der Metalle, 1996.
1991-1994	Lecturer of EEC/EERO-Courses (European Environmental Research Organization) on: • Introduction of genetically modified organisms into the environment: Biosafety aspects, Wageningen, The Netherlands, December 1991 and 1992 (Lectures and practical course). • Environmental Chemistry of inorganic pollutants, a course on risk assessment of metal compounds and other inorganics, Belleville-sur-Saône, France, March 1994.
1993-1994	Lecturer at the Wageningen Agricultural University, The Netherlands on regulation of microbial metabolism.
1993-1994	Supervisor problem-oriented teaching projects, department of Microbiology, Wageningen Agricultural University.
1984-1988	Practical course in molecular biology.
1989-1994	Practical course in microbiology.
1984-to date	About 30 Master students have been co-supervised during their practical training (6 to 12 month each).

<u>Supervision of Ph.D students</u>

2016-to date	**Philipp Staudacher.** Determinants of effective smallholder pesticide use policies. (ETHZ/Eawag; PhD advisor).
2014-to date	**Frederik Weiss.** Determination of exposure scenarios, hazard assessment and potential mitigation options of pesticides, released in a catchment area with different agricultural systems in a Low- or Middle-Income Country. (ETHZ/Eawag; PhD advisor).
2013-2017	**Krishna Tulasi Kirla.** Zebrafish as alternative model for assessment of psychoactive substances: Understanding concordance to mammals. (UniZH; Thesis Committee).
2013- 2014	**Cornelia Fürstenberger.** Disruption of androgen metabolism, regulations and effects; involvement of steroidogenic enzymes. (UniBS; Thesis Committee).
2011-2015	**Andreas Römmelt**.” Evaluation of High Resolution Mass Spectrometry and New Acquisition Strategies for Their Application in Forensic Toxicology”. (UniZH; Thesis Committee).
2011- 2014	**Verena Grundler.** Investigation of the Toxicity of Cyanobacterial Peptides by Chemical Biology Approaches. (UniBS; Thesis Committee).

2011-2014	**Milena Madry.** Metabolite to Parent Drug Ratios of Tramadol in Hair for the Differentiation of Tramadol Intake from External Contamination. (UniZH; Thesis Committee).
2010-2014	**Muris Korkaric.** Impact of acclimation and exposure to ultraviolet radiation on the toxicity of pollutants to *Chlamydomonas reinhardtii* (ETHZ/Eawag; PhD advisor)
2008-2012	**Danielle Madureira.** Time- and Concentration-dependent response of a liver cell line to Benzo(a)pyrene exposure. (ETHZ/Eawag; Thesis Committee).
2006-2012	**Holger Nestler.** Investigations on Multiple Stressor Effects of Combined Herbicide and UV Exposure on *Clamydomonas reinhardtii* (ETHZ/Eawag; PhD advisor).
2009	**Régine Dayer.** Regulation of singlet oxygen- induced *Gpxh* expression in *Chlamydomonas reinhardtii* (ETHZ/Eawag; PhD advisor)
2009	**Mirjam Fröhlicher.** Mechanisms of action of (xeno)estrogens on the early development and differentiation of brain and gonads in zebrafish (ETHZ/Eawag; PhD advisor).
2008	**Christiane Vögeli**. Endocrine disruption: bioassay-directed fractionation of fish and human tissue samples (ETHZ/Eawag; PhD advisor).
2007	**Nathalie Vallotton.** Effect Assessment of Fluctuating Exposure of Herbicides with Different Modes of Action on Algae (ETHZ/Eawag; PhD advisor).
2006	**Ksenia Cheshenko**. Regulation of (xeno)estrogen-activated genes in zebrafish (UniBern; Thesis Committee).
2006	**Evangelia Kallivretaki**. Mechanisms of action of (xeno)estrogens on the early development and differentiation of brain and gonads in zebrafish (UniBern; Thesis Committee).
2006	**Jane Muncke**. Development of a mechanism-based, short-term test-system with zebrafish eggs for the detection of potential chronic toxicity ETHZ/Eawag; PhD advisor)
2004	**Beat Fischer**. Molecular mechanisms of singlet oxygen reponse in *Chlamydomonas reinhardtii* (ETHZ/Eawag; PhD advisor)
2003	**Barbara Rutishauser**. Analysis, development and use of in vitro tools to screen for estrogenicity in environmental samples (ETHZ/Eawag; PhD Supervisor and Thesis Committee)
2001	**Urs Leisinger**. Regulation of gene expression upon oxidative stress in *Chlamydomonas reinhardtii* (ETHZ/Eawag; supervisor and Thesis Committee)
1999	**Nina Schweigert**. Modes of toxic action and toxicity of (chloro)-catechol/copper combinations (has obtained the "Otto Jaag Price for water protection"). (ETHZ/Eawag; supervisor and Thesis Committee)
1999	**Joyce Lebbink**. Molecular characterization of the thermostability and catalytic properties of enzymes from hyperthermophiles (Wageningen University; Supervisor and Thesis Committee).
1998	**Wilfried G.B. Voorhorst**. Molecular characterization of hydrolytic enzymes from the hyperthermophilic archae (Wageningen University; Supervisor and Thesis Committee).

1993 **Jörk Nölling**. Mobile genetic elements in *Methanobacterium thermoformicicum* (Wageningen University; Supervisor and Thesis Committee).

1992 **Jan Roelof van der Meer**. Molecular mechanisms of adaptation of soil bacteria to chlorinated benzenes (Wageningen University; Supervisor and Thesis Committee).

Grants received:

1992-1996 Characterization of hydrolytic enzymes from the hyperthermophilic *Pyrococcus furiosus*. Funded by Wageningen University. **Rik I.L. Eggen** and Willem M. de Vos. [110'000 Hfl.]

1993-1996 Characterization of the glutamate dehydrogenase from the hyperthermophilic archaebacterium *Pyrococcus furiosus*. Funded by EC. **Rik I.L. Eggen** and Willem M. de Vos. [125'000 Hfl.]

1995-1999 Toxic mechanisms of mixtures of organic and inorganic compounds. Funded by Eawag. **Rik I.L. Eggen**, Hauke Harms and Jan Roelof van der Meer. [126'000 SFr.]

1998-2002 Ökotoxikologische Risikobewertung von reaktiven Chemikalien. Funded by Kompetenzverbund Risiko und Sicherheitswissenschaften . Beate Escher, René Schwarzenbach, **Rik I.L. Eggen**, Renata Behra and Karl Fent. [140'000 SFr.]

1999-2001 In vitro assessment of the estrogenicity of waste water treatment effluents, EU-COMPREHEND. Funded by EC. **Rik I.L. Eggen**. [120'000 SFr.]

1999-2003 Development and use of DNA microarrays in ecotoxicology. Funded by Emhart Glass. **Rik I.L. Eggen**. [230'000 SFr.]

2000 Development of a concept for the ecotoxicological rsik assessment of aquatic ecosystems. Funded by Eawag. **Rik I.L. Eggen**, Renata Behra, Beate Escher and Patricia Holm. [100'000 Sfr.]

2001-2006 Integrated Urban Water Management, Nutrient Recycling, and Modern Farming (Querproject Novaquatis). Funded by Eawag. Tove Larsen, Alfredo Alder, **Rik I.L. Eggen**, Max Maurer and Irene Peters. [1'260'000 SFr.]

2001 Contribution to a DNA Array Reader. Extraordinary Eawag Grant. **Rik I.L. Eggen**. [75'000 SFr.]

2001 Development of international cooperations (Cricepf). Funded by ETH council. **Rik I.L. Eggen** and Beate I. Escher. [15'600 SFr.]

2001-2004 Machbarkeitsstudie für ein neuartiges Konzept zur wirkungsbasierten ökotoxikologischen Gewässerbewertung. Funded by Eawag. **Rik I.L. Eggen**, Nina Schweigert, Renata Behra, Beate Escher and Patricia Holm. [150'000 SFr.]

2002-2004 Machbarkeitsstudie für ein neuartiges Konzept zur wirkungsbasierten ökotoxikologischen Gewässerbewertung. Funded by BUWAL. **Rik I.L. Eggen**, Nina Schweigert, Renata Behra, Beate Escher and Patricia Holm. [150'000 SFr.]

2002-2005	Extraction and bioassay-directed fractionation of human and fish tissue specimens, EU-EDEN (low dose and mixture effect). Funded by EC. **Rik I.L. Eggen** and Marc Suter. [260'000 Euro]
2002-2005	Molecular mechanisms of low dose and mixture EDC, EU-EDEN. Funded by EC. Helmut Segner and **Rik I.L. Eggen**. [156'000 Euro]
2002-2005	Mechanisms of action of (xeno)estrogens on the early development and differentiation of brain and gonads in zebrafish (XEBRA). Funded by Swiss national science foundation. **Rik I.L. Eggen**, Stephan Neuhauss, Helmut Segner. [350'000 SFr.]
2002	Development of international cooperations (Cricepf). Funded by ETH council. **Rik I.L. Eggen**. [18'000 SFr.]
2003-2006	Development of a mechanism-based, short-term test system with zebrafish eggs for the detection of potential chronic toxicity. Funded by BBW-COST. Nina A. Schweigert and **Rik I.L. Eggen**. [163'000 SFr.]
2003	Support for the preparation of an EU project as coordinator. Funded by ETH council. **Rik I.L. Eggen.** [11'200 SFr.]
2003-2006	Mechanism-based risk assessment of mixtures for aquatic life with a focus on interacting chemicals. Funded by Proctor and Gamble / SETAC North Amerika. Barbara Luchsinger, Beate I. Escher and **Rik I.L. Eggen.** [30'000 $].
2004-2007	New Methods for the Ecotoxicological Hazard Assessment of Reactive Chemicals. Funded by the Swiss National Science Foundation. Beate Escher and **Rik I.L. Eggen**. [176'658 SFr.]
2004-2006	Funded by Swiss National Science Foundation. **Rik I.L. Eggen** and Marc Suter. [241'000 SFr.]
2005-2007	Wirkmechanismen-basierte Gewässerbeurteilung, Fase II. Funded by BUWAL. **Rik I.L. Eggen** and Nathalie Chèvre. [100'000 SFr.]
2005-2007	Mechanisms of action of (xeno)estrogens on the early development and differentiation of brain and gonads in zebrafish (XEBRA II). Funded by Swiss national science foundation. **Rik I.L. Eggen**, Stephan Neuhauss, Helmut Segner. [224'682 SFr.]
2005-2008	Fast Advanced Cellular and Ecosystems Information Technologies (FACEiT). Funded by EU. **Rik I.L. Eggen.** [503'874 SFr.]
2006-2008	Evaluation aquatischer Oestrogene durch passive Probenahme. Funded by Swiss National Science Foundation. Walter Giger and **Rik I.L. Eggen.** [270'000 SFr.]
2006-2007	Multiple stressor effects in Chlamydomonas reinhardtii. Competitive grant from Eawag. Marc Suter, Renata Behra and **Rik I.L. Eggen.** [210'000 SFr.]
2006-2007	Do multiple stressor effects, like the exposure to herbicides in combination with high light intensities, need to be considered in environmental risk assessment scenarios? Funded by VELUX Stiftung. **Rik I.L. Eggen** and Beat Fischer. [278'413 SFr.]
2006-2008	Function and regulation of the glutathione peroxidase homologous gene (Gpxh) in photooxidatively stressed C*hlamydomonas reinhardtii*. Funded by Swiss National Science Foundation. **Rik I.L. Eggen** and Beat B. Fischer. [167'000 SFr.]

2006	Assessment of WWTP effluents using the MolDarT assay. Funded by the Swiss Environmental Agency. **Rik I.L. Eggen**. [18'500 SFr.]
2007-2010	Genezis: Genome-wide analysis of Zebrafish sexual determination and differentiation mechanisms. Funded by Swiss National Science Foundation. **Rik I.L. Eggen**, PI. [260'000 SFr.].
2008-2011	Establishment of the centre for applied ecotoxicology in Switzerland. Funded by the Swiss government. **Rik I.L. Eggen.** [8'000'000 SFr.]
2008-2012	GEDIHAP - The role of genetic diversity in host pathogen interactions in dynamic environments. Funded by the competence center environment and sustainability of the ETH domain. **Rik I.L. Eggen**, co-applicant. [500'000 SFr.]
2009-2012	Predictive Toxicology - ProDoc - Research training programmes for doctoral students (Training module, TM). Funded by Swiss National Science Foundation. **Rik I.L. Eggen**, co-applicant. [411'936 SFr.]
2010-2012	Multiple stressor effects of predation and pollution in green algae - impact of genetic diversity**. Rik I.L. Eggen**, co-applicant. Funded by Eawag Discretionary Funds: [94'000 SFr.].
2011	Conference on Chemodynamics and Biointerfaces: Bioavailability and biological effects of chemicals in the environment, at Monte Verità, on23 - 27 October 2011 . Funded by "Fondazione Monte Verità". **Rik I.L. Eggen**, co-applicant. [24'000 SFr.]
2012-2014	Extension of Predictive Toxicology - ProDoc - Research training programmes for doctoral students (Training module, TM). Funded by Swiss National Science Foundation. **Rik I.L. Eggen**, co-applicant. [140'000 SFr.]
2012-2015	EcoImpact. Funded by Discretionary Funds, Eawag. Christian Stamm, Martin Ackermann and **Rik I.L. Eggen,** co-applicant [850'000 SFr.]
2012-2014	Forschungsprojekt "Zukunftsfähige gewässerschonende landwirt-schaftliche Produktion in der Schweiz". Funded by BLW. Christian Stamm and **Rik I.L. Eggen**, co-aplicant [299'500 SFr.]
2012-2016	Metabolism and toxicity of elicit drugs in zabrafish. PhD funded by UniZH. Thomas Krämer, Krsitin Schirmer and **Rik I.L. Eggen,** co-applicant [250'000 SFr.]

PUBLICATIONS

A: Articles in reviewed journals

1. Ab van Kammen and **Rik I.L. Eggen** (1986). The replication of cowpea mosaic virus. BioEssays 5, 261-266.
2. Ruud G. M. Luiten, **Rik I.L. Eggen**, John G. G. Schoenmakers, and Ruud N. H. Konings (1987). Spontaneous deletion mutants of bacteriophage Pf3: Mapping of signals involved in replication and assembly. DNA 6, 129-137.
3. Ab van Kammen, Joan Wellink, Rob Goldbach, **Rik I.L. Eggen** and Pieter Vos (1987). The use of full-length DNA copies in the study of the expression and replication of the RNA genome of cowpea mosaic virus. Plant Molecular Biology, 433-422..
4. Pieter Vos, Martine Jaegle, Joan Wellink, Jan Verver, **Rik I.L. Eggen**, Ab van Kammen and Rob Goldbach (1988). Infectious RNA transcripts derived from full-length DNA copies of the genomic RNAs of cowpea mosaic virus. Virology 165, 33-41.
5. **Rik I.L. Eggen**, Anita Kaan, Rob Goldbach and Ab van Kammen (1988). Cowpea mosaic virus RNA replication in crude membrane fractions from infected cowpea and *Chenopodium amaranticolor*. Journal of General Virology 69, 2711-2720.
6. Oliver C. Richards, **Rik I.L. Eggen**, Rob Goldbach and Ab van Kammen (1989). High-level synthesis of cowpea mosaic virus RNA polymerase and protease in *Escherichia coli*. Gene 78, 135-146.
7. **Rik I.L. Eggen**, Jan Verver, Joan Wellink, Anke de Jong, Rob Goldbach and Ab van Kammen (1989). Improvements of the infectivity of *in vitro* transcripts from cloned cowpea mosaic virus cDNA: impact of terminal nucleotide sequences. Virology 173, 447-455.
8. **Rik I.L. Eggen**, Jan Verver, Joan Wellink, Kees Pleij, Ab van Kammen and Rob Goldbach (1989). Analysis of sequences involved in cowpea mosaic virus RNA replication using site specific mutants. Virology 173, 456-464.
9. **Rik I.L. Eggen**, Hermie Harmsen, Ans Geerling and Willem M. de Vos (1989). Nucleotide sequence of a 16S rRNA encoding gene from the Archaebacterium *Methanothrix soehngenii*. Nucleic Acids Research 17, 9469.
10. **Rik I.L. Eggen**, Hermie Harmsen and Willem M. de Vos (1990). Organization of a ribosomal RNA gene cluster from the Archaebacterium *Methanothrix soehngenii*. Nucleic Acids Research 18, 1306.
11. **Rik I.L. Eggen**, Ans Geerling, Jennifer Watts and Willem M. de Vos (1990). Characterization of pyrolysin, a hyperthermoactive serine protease from the archaebacterium *Pyrococcus furiosus*. FEMS Microbiology Letters 71, 17-20.
12. **Rik I.L. Eggen**, Ans C.M. Geerling, Mike S.M. Jetten and Willem M. de Vos (1991). Cloning, expression and sequence analysis of the genes for carbon monoxide dehydrogenase of *Methanothrix soehngenii*. Journal of Biological Chemistry 266, 6883-6887.
13. Jan Roelof van der Meer, **Rik I.L. Eggen**, Alexander J.B. Zehnder and Willem M. de Vos (1991). Sequence analysis of the *Pseudomonas* sp. strain P51 *tcb* gene cluster, which encodes metabolism of chlorinated catechols: evidence for specialization of catechol 1,2-dioxygenases for chlorinated substrates. Journal of Bacteriology 173, 2425-2434.
14. Jan Roelof van der Meer, Adri C.J Frijters, Johan H.J. Leveau, **Rik I.L. Eggen**, Alexander J.B. Zehnder and Willem M. de Vos (1991). Characterization of the *Pseudomonas* sp. strain P51 gene *tcb*R, a LysR-type transcriptional activator of the *tcb*CDEF chlorocatechol

oxidative operon, and analysis of the regulatory region. Journal of Bacteriology 173, 3700-3708.
15. **Rik I.L. Eggen**, Alex B.P. Boshoven, Ans C.M. Geerling and Willem M. de Vos (1991). Cloning, sequence analysis and functional expression of the acetyl-CoA synthetase gene from *Methanothrix soehngenii* in *Escherichia coli*. Journal of Bacteriology 173, 6383-6389.
16. **Rik I.L. Eggen**, Ans C.M. Geerling, Piet W.J. de Groot, Wolfgang Ludwig and Willem M. de Vos (1992). Methanogenic bacterium Gö1: an acetoclastic methanogen that is closely related to *Methanosarcina frisia*. System. Appl. Microbiol. 15, 582-586.
17. Jörk Nölling, Freek J.M. van Eeden, **Rik I.L. Eggen** and Willem M. de Vos (1992). Modular organization of related Archaeal plasmids encoding different restriction-modification systems in *Methanobacterium thermoformicicum*. Nucl. Acids Res. 20, 6501-6507.
18. **Rik I.L. Eggen**, Kerstin Waldkötter, Ans C.M. Geerling, Garabed Antranikian and Willem M. de Vos (1993). The glutamate dehydrogenase-encoding gene of the hyperthermophilic archaeon *Pyrococcus furiosus*: sequence, transcription and analysis of the deduced amino acids. Gene 132, 143-148.
19. **Rik I.L. Eggen** and Willem M. de Vos (1994). Molecular and comparative analysis of the hyperthermostable *Pyrococcus furiosus* glutamate dehydrogenase and its gene. Biocatalysis 8, 131-141.
20. Maria Briglia, **Rik I.L. Eggen**, Dirk J. van Elsas and Willem M. de Vos (1994). Phylogenetic evidence for transfer of pentachlorophenol-mineralizing *Rhodococcus chlorophenolicus* strain PCP-1^T to the genus *Mycobacterium*. Int. J. Syst. Bacteriol. 44, 494-498.
21. **Rik I.L. Eggen** (1994). Regulated gene expression in methanogens. FEMS Microbiology Reviews 15, 251-260.
22. Joyce H.G. Lebbink, **Rik I.L. Eggen**, Ans C.M. Geerling, Valerio Consalvi, Roberta Chiaraluce, Roberto Scandurra and Willem M. de Vos (1995). Exchange of domains of glutamate dehydrogenase from the hyperthermophilic archaeon *Pyrococcus furiosus* and the mesophilic *Clostridium difficile*: Effects on catalysis, thermoactivity and stability. Protein Engineering 8, 1283-1290.
23. Wilfried Voorhorst, **Rik I.L. Eggen**, Evert J. Luesink and Willem M. de Vos (1995). Characterization of the *celB* gene coding for ◎-glucosidase from the hyperthermophilic *Pyrococcus furiosus* and its expression and mutation analysis in *Escherichia coli*. J. Bacteriol. 177, 7105-7111.
24. **Rik I.L. Eggen**, Richard van Kranenburg, Aldwin J.M. Vriesema, Ans C.M. Geerling, Mark F.J.M. Verhagen, Wilfred R. Hagen and Willem M. de Vos (1996). Carbon monoxide dehydrogenase from *Methanosarcina frisia* Gö1: characterization of the enzyme and the regulated expression of two operon-like *cdh* gene clusters. J. Biol. Chem. 271, 14256-14263.
25. M. Briglia, **Rik I.L. Eggen**, W.M. de Vos, and J.D. van Elsas (1996). Rapid and sensitive method for the detection of *Mycobacterium chlorophenolicum* PCP-1 in soil based on 16S rRNA gene-targeted PCR. Appl. Environm. Microbiol. 62, 1478-1480.
26. Wilfried G.B. Voorhorst, **Rik I.L. Eggen**, Ans C.M. Geerling, Christ Platteeuw, Roland J. Siezen and Willem M. de Vos (1996). Isolation and characterization of the hyperthermostable serine protease, pyrolysin, and its gene from the hyperthermophilic archaeon *Pyrococcus furiosus*. J. Biol. Chem. 271, 20426-20431.
27. Remco Kort, Wolfgang Liebl, Bernard Labedan, Patrick Forterre, **Rik I.L. Eggen** and Willem M. de Vos (1997). Glutamate dehydrogenase from the hyperthermophilic

bacterium *Thermotoga maritima*: Molecular characterization and phylogenetic implications. Extremophiles 1, 52-60.
28. B.I. Escher, R. Behra, **Rik I.L. Eggen** and K. Fent, (1997). Molecular mechanisms in ecotoxicology: an interplay between environmental chemistry and biology. Chimia 12, 915 - 921.
29. M. Power, J. van der Meer, R. Tchelet, T. Egli, and **Rik I.L. Eggen**. (1998). Biochemical and genetic methods can contribute to assessments of toxicological risks and bioremediation strategies. J. Microbiol. Meth.32, 107 - 119.
30. Sebastián Méndez-Alvarez and **Rik I.L. Eggen** (1998). A rapid microwave method to extract plasmid DNA from *S.cerevisiae* suitable for *E. coli* transformation. Biotechnology Techniques 12, 605–606.
31. Nina Schweigert, Shimshon Belkin, Phaik Leong-Morgenthaler, Alexander J.B. Zehnder and **Rik I.L. Eggen** (1999). Combinations of Chlorocatechols and heavy metals cause DNA degradation in vitro but must not result in increased mutation rates in vivo. Environmental and Molecular Mutagenesis 33, 202-210.
32. Sebastian Mendez-Alvarez, Urs Leisinger and **Rik I.L. Eggen** (1999). Adaptive responses in *Chlamydomonas reinhardtii*. International Microbiology 2, 15-22.
33. Urs Leisinger, Karin Rüfenacht, Alexander J.B. Zehnder and **Rik I.L. Eggen** (1999). Structure of a glutathione peroxidase homologous gene involved in the oxidative stress response in *Chlamydomonas reinhardtii*. Plant Science 149, 139-149.
34. Sebastian Mendez-Alvarez, Karin Rüfenacht and **Rik I.L. Eggen** (2000). The oxidative stress sensitive *yap1* null strain of *Saccharomyces cerevisiae* becomes resistant due to increased carotenoid levels upon the introduction of the *Chlamydomonas reinhardtii* cDNA, coding for the 60S ribosomal protein L10a. Biochem. Biophys. Res. Comm. 267, 953-959.
35. Nina Schweigert, Juan L. Acero, Urs von Gunten, Silvio Canonica, Alexander J.B. Zehnder and **Rik I.L. Eggen** (2000). DNA degradation by the mixture of copper and catechol is caused by DNA-copper-hydroxo complexes, probably DNA-Cu(I)OOH. Environmental and Molecular Mutagenesis 36, 5-12.
36. Nina Schweigert, René W. Hunziker, Beate I.Escher and **Rik I.L. Eggen** (2001). The acute toxicity of (chloro-)catechols and (chloro-)catechol/copper combinations in *Escherichia coli* corresponds to their membrane toxicity in vitro. Environmental Toxicology and Chemistry 20, 239-247.
37. Nina Schweigert, Alexander J.B. Zehnder and **Rik I.L. Eggen** (2001). Chemical properties of catechols and their molecular modes of toxic action in cells, from microorganisms to mammals. Environmental Microbiology 3, 81-91.
38. Urs Leisinger, Karin Rüfenacht, Beat Fischer, Manuel Pesaro, Arik Spengler, Alexander, J.B. Zehnder and **Rik I.L. Eggen** (2001). The glutathione peroxidase homologous gene from *Chlamydomonas reinhardtii* is transcriptionally upregulated by singlet oxygen. Plant Mol. Biol. 46, 395-408.
39. Tove Larsen, Alfredo Alder, **Rik I.L. Eggen**, Max Maurer, Jane Muncke and Irene Peters (2001). Re-engineering the toilet. Environmental Science and Technology, 193A – 197A.
40. Beate I. Escher, **Rik I.L. Eggen**, Ulrich Schreiber, Zachariah Schreiber, Erika Vye, Bianca Wisner and René P. Schwarzenbach (2002). Baseline toxicity (narcosis) of organic chemicals determined by in vitro membrane potential measurements in energy transducing membranes. Environmental Science and Technology 36, 1971-1979.

41. Nina Schweigert, **Rik I.L. Eggen**, Beate I. Escher, Patricia Burkhardt-Holm and Renata Behra (2002). Ecotoxicological assessment of surface waters: a modular approach integrating in vitro methods. ALTEX 19, supp1: 30-37.
42. **Rik I.L. Eggen** and Helmut Segner (2003). The potential of mechanism-based bioanalytical tools in ecotoxicological exposure and effect assessment. Analytical and Bioanalytical Chemistry 377, 386-396.
43. **Rik I.L. Eggen**[1*], Bengt-Erik Bengtsson[2], C.T. Bowmer[3], Anton A.M. Gerritsen[4], Michel Gibert[5], Kjetil Hylland[6], Andrew C. Johnson[7], Pim Leonards[8], Tarja Nakari[9], Leif Norrgren[10], John P. Sumpter[11], Marc J.-F. Suter[1], Anders Svenson[12] and Alan D. Pickering[13] (2003). Search for the evidence of endocrine disruption in the aquatic environment; lessons to be learned from joint biological and chemical monitoring in the European project COMPREHEND. Pure and applied chemistry 75, 2445-2450.
44. **Rik I.L. Eggen**, Renata Behra, Beate I. Escher, Patricia Holm, Nina Schweigert (2004). Challenges in ecotoxicology. Feature article for Env. Sci. and Technol. 38, 59A-64A.
45. Aerni, H.-R. , Kobler, B., Rutishauser, B., Wettstein, F., Fischer, R., Hungerbühler, A., Marazuela, D., Schönenberger, R., Giger, W., Peter, A., Suter, M.J.-F., and **Rik I.L. Eggen** (2004). Combined biological and chemical assessment of estrogenic activities in wastewater treatment plant effluents. Analytical and Bioanalytical Chemistry 378, 688-696.
46. Barbara V. Rutishauser, Maija Pesonen, Beate I. Escher, Gabriele E. Ackermann, Hans-ruedi Aerni, Marc J.F. Suter and **Rik I.L. Eggen** (2004). Comparative Analysis of estrogenic activity in sewage treatment plant effluents involving three in vitro assays and chemical analysis of steroids. Environmental Toxicology and Chemistry 23, 857-864.
47. Beat B. Fischer, Anja Krieger-Liszkay, and **Rik I.L. Eggen** (2004). The photosensitizers Neutral Red (Type I) and Rose Bengal (Type II) Cause Light-dependent Toxicity in *Chlamydomonas reinhardtii* and Induce the *Gpxh* Gene via Increased Singlet Oxygen Formation. Env. Sci. and Technol. 38, 6307-6313.
48. H.K. Ledford, I. Baroli, J.W. Shin, B.B. Fischer, **Rik I.L. Eggen,** K.K. Niyogi, (2004). Comparative profiling of lipid-soluble antioxidants and transcripts reveals two phases of photo-oxidative stress in a xanthophyll-deficient mutant of *Chlamydomonas reinhardtii*. Molecular Genetics and Genomics 272, 470-479.
49. Beat B. Fischer, Anja Liszkay-Krieger and **Rik I.L. Eggen** (2005). Oxidative stress induced by the photosensitizers neutral red (type I) or rose bengal (type II) in the light causes different molecular responses in *Chlamydomonas reinhardtii*. Plant Science 168, 747-759.
50. Beate I. Escher, **Rik I.L. Eggen,** Nadine Bramaz, Manuela Richter (2005). In-vitro Assessment of Modes of Toxic Action of Pharmaceuticals in Aquatic Life. Environmental Science and Technology 39, 3090-3100.
51. Victor, J. Nesatyy, Barbara V. Rutishauser, **Rik I.L. Eggen** and Marc J.-F. Suter (2005). Identification of the estrogen receptor Cd-binding sites by chemical modification. The Analyst 130, 1-12.
52. Beat Fischer, **Rik I.L. Eggen**, Achim Trebst and Anja Krieger-Liszkay (2005). The glutathione peroxidase homologous gene *Gpxh* in *Chlamydomonas reinhardtii* is upregulated by singlet oxygen in photosystem II upon photoinhibition. Planta 223, 583-590.
53. Evangelia Kallivretaki, **Rik I.L. Eggen**, Stephan Neuhauss, Martin Alberti, Ulf Kausch, Helmut Segner (2006). Aromatase in Zebrafish: A potential target for endocrine disrupting chemicals. Marine Environmental Research 62, 187-190.

54. Andrei L. Brioukhanov, Alexander I. Netrusov and **Rik I.L. Eggen** (2006). The catalase and superoxide dismutase genes are transcriptionally upregulated upon oxidative stress in the strict anaerobic archaeon *Methanosarcina barkeri*. Microbiology 152, 1671 - 1677.
55. Monika Andersson and **Rik I.L. Eggen** (2006). Transcription of the Latent TGFβ-binding protein (LTBP-3) gene is controlled by estrogen receptor α in fish cells; cross-talk between growth factors and the endocrine system. Toxicology in vitro 20, 417-425.
56. Jane I. Muncke and **Rik I.L. Eggen** (2006). Vitellogenin 1 mRNA as an early molecular biomarker in developing zebrafish. Environmental Toxicology and Chemistry 25, 2734-2741.
57. Kathrin Brombacher, Beat B. Fischer, Karin Rüfenacht and **Rik I.L. Eggen** (2006). The role of Yap1p and Skn7p-mediated oxidative stress response in the defense of *Saccharomyces cerevisiae* against singlet oxygen. Yeast 23, 741-750.
58. Beat B. Fischer, Manuela Wiesendanger and **Rik I.L. Eggen** (2006). Growth condition dependent sensitivity, photodamage and stress response of *Chlamydomonas reinhardtii*. Plant and Cell Physiology 48, 1135-1145.
59. **Rik I.L. Eggen** and Marc J.-F. Suter (2007). Analytical Chemistry and Ecotoxicology - Tasks, Needs and trends. J. Toxicol. & Env. Health 70, 724-726.
60. Jane Muncke, Marion Junghans and **Rik I.L. Eggen** (2007). Testing estrogenicity of known and novel (xeno-)estrogens in the MolDarT using developing zebrafish (*Danio rerio*). Environmental Toxicology 22, 185-193.
61. K. Cheshenko, F. Brion, Y. Le Page, F. Pakdel, O. Kah, H. Segner, and **Rik I.L. Eggen** (2007). Expression of zebrafish aromatase *cyp19a* and *cyp19b* genes in response to the ligands of estrogen receptor and aryl hydrocarbon receptor. Toxicological sciences 96, 255-267.
62. Beat B. Fischer, Régine Dayer, Manuela Wiesendanger and **Rik I.L. Eggen** (2007). Independent regulation of the GPXH gene expression by primary and secondary effects of high light stress in Chlamydomonas reinhardtii. Physiologia Plantarum 130, 195-206.
63. Beat B. Fischer, Anja Krieger-Liszkay, Eva Hideg, Iva Snyrychova, Manuela Wiesendanger, **Rik I.L. Eggen** (2007). Role of singlet oxygen in chloroplast to nucleus retrograde signaling in *Chlamydomonas reinhardtii*. FEBS Letters 581, 5555-5560.
64. Evangelia Kallivretaki, **Rik I.L. Eggen**, Stephan C.F. Neuhauss, Olivier Kah, and Helmut Segner (2007). The zebrafish, brain-specific, aromatase *cyp19a2* is neither expressed nor distributed in a sexually dimorphic manner during sexual differentiation. Developmental Dynamics 236, 3155-3166.
65. K. Cheshenko, F. Pakdel, H. Segner, O. Kah, **Rik I.L. Eggen** (2008). Interference of endocrine disrupting chemicals with aromatase CYP19 expression or activity, and consequences for reproduction of teleost fish. General and Comparative Endocrinology 155, 31-62.
66. Nathalie Vallotton, **Rik I.L. Eggen**, Beate I. Escher, Jérome Krayenbühl, Nathalie Chèvre (2008). Effect of pulse herbicidal exposure on Scenedesmus vacuolatus: a comparison of two photosystem II inhibitors. Environmental Toxicology and Chemistry 27, 1399-1407.
67. Daniel Bernet, Anja Liedtke, David Bittner, **Rik I.L. Eggen**, Sibylle Kipfer, Christoph Küng, Carlo R. Largiader, Marc J. - F. Suter, Thomas Wahli, Helmut Segner (2008). Gonadal Malformations in Whitefish from Lake Thun: Defining the Case and Evaluating the Role of EDCs. Chimia 62, 383-388.
68. Etienne L. M. Vermeirssen, **Rik I.L. Eggen**, Beate I. Escher, Marc J.-F. Suter (2008). Estrogens in Swiss Rivers and Effluents - Sampling Matters. Chimia 62, 389-394.

69. Anja Liedtke, Jane Muncke, Karin Rüfenacht, **Rik I.L. Eggen** (2008). Molecular Multi-effect Screening of Environmental Pollutants Using the MolDarT. Environmental Toxicology 23, 59-67.
70. Nathalie Vallotton, Daya Moser, **Rik I.L. Eggen**, Marion Junghans, Nathalie Chèvre (2008). S-metolachlor pulse exposure on the alga *Scenedesmus vacuolatus*: Effects during exposure and the subsequent recovery. Chemosphere 73, 395-400.
71. Régine Dayer, Beat B. Fischer, **Rik I.L. Eggen**, Stéphane D. Lemaire (2008). The peroxiredoxin and glutathione peroxidase families in *Clamydomonas reinhardtii.* Genetics 179, 41-57.
72. Nathalie Vallotton, **Rik I.L. Eggen**, Nathalie Chèvre (2009). Effect of Sequential Isoproturon Pulse Exposure on *Scenedesmus vacuolatus.* Arch Environ Contam Toxicol (Springer) 56, 442-449.
73. Mirjam Froehlicher, Anja Liedtke, Ksenia Groh, Hernán López-Schier, Stephan C.F. Neuhauss, Helmut Segner and **Rik I.L. Eggen** (2009). Estrogen receptor subtype β2 is involved in neuromast development in zebrafish (*Danio rerio*) larvae. Developmental Biology 330, 32-43.
74. Anja Liedtke, René Schönenberger, **Rik I.L. Eggen**, Marc J.-F. Suter (2009). Internal exposure of whitefish (*Coregonus spec*) to estrogens. Aquatic Toxicology 93, 158-165.
75. Mirjam Froehlicher, Anja Liedtke, Ksenia Groh, Stephan Neuhauss, Helmut Segner and **Rik I.L. Eggen** (2009). Zebrafish (*Danio rerio*) neuromast: promising biological endpoint linking functional and toxicological studies. Aquatic Toxicology 95, 307-319.
76. Tove A. Larsen, Alfredo A. Alder, **Rik I.L. Eggen**, Max Maurer, Judit Lienert (2009). Source separation: will we see a paradigm shift in wastewater handling? Environ. Sci. & Technol. 43, 6121-6125.
77. Beat B. Fischer, Régine Dayer, Yvonne Schwarzenbach, Stéphane D. Lemaire, **Rik I.L. Eggen** (2009). Function and regulation of the glutathione peroxidase homologous gene GPXH/GPX5 in Chlamydomonas reinhardtii. Plant Molecular Biology 71 (6), 569-583.
78. Beat Fischer, Karin Rüfenacht, Kerstin Dannenhauer, Manuela Wiesendanger and **Rik I.L. Eggen** (2010). Multiple stressor effects of high light irradiance and photosynthetic herbicides on growth and survival of the green alga Chlamydomonas reinhardtii. Environmental Toxicology and Chemistry 29 (10), 2211-2219.
79. Tove A. Larsen, Max Maurer, **Rik I.L. Eggen**, Wouter Pronk, Judit Lienert (2010). Decision support in urban water management based on generic scenarios: The example of No-Mix technology. Journal of Environmental Management, 91 (12), 2676-2687.
80. Jelle Reinen, Marc J.-F. Suter, Anja Christiane Vögeli, M.F. Fernandez, Hannu Kiviranta, **Rik I.L. Eggen**, and Nico P. E. Vermeulen (2010). Endocrine disrupting chemicals - Linking internal exposure to vitellogenin levels and ovotestis in *Abramis brama* from Dutch surface waters. Environmental Toxicology and Pharmacology 30 (2010), 209-223.
81. Beat Fischer, **Rik I.L. Eggen** and Krishna K. Niyogi (2010). Characterization of singlet oxygen-accumulating mutants isolated in a screen for altered oxidative stress response in *Chlamidomonas reinhardtii*. Plant Molecular Biology 10:279.
82. Ksenia J. Groh, Victor J. Nesatyy, Helmut Segner, **Rik I.L. Eggen** and Marc J.-F. Suter (2011). Global proteomics analysis of testis and ovary in adult zebrafish (Danio rerio). Fish Physiol Biochem (2011) 37:619-647.
83. Holger Nestler, Ksenia J. Groh, René Schönenberger, Renata Behra, Kristin Schirmer, **Rik I.L. Eggen**, Marc J. Suter (2012). Multiple-endpoint assay provides a detailed

mechanistic view of responses to herbicide exposure in *Chlamydomonas reinhardtii*". Aquatic Toxicology 110-111 (2012), 214-224.

84. Beat B. Fischer, Heidi K Ledford , Setsuko Wakao , ShihYau Grace Huang , David Casero , Matteo Pellegrini , Sabeeha S. Merchant , Andreas Koller , **Rik I.L Eggen** , Krishna K. Niyogi (2012). Singlet Oxygen resistant 1 links reactive electrophile signaling to singlet oxygen acclimation in Chlamidomonas *reinhardtii*. Porc. Natl. Acad. Sci. USA, 109 (20); E1302-E1311.
85. Holger Nestler, Ksenia J. Groh, René Schönenberger, **Rik I.L. Eggen**, Marc J.-F. Suter (2012). Linking Proteome responses with physiological effects and biochemical effects in herbicide-exposed *Chlamydomonas reinhardtii*. Journal of Proteomics 75 (17), 5370-5385.
86. Beat B. Fischer, Severin Roffler, **Rik I.L. Eggen** (2012). Multiple stressor effects of predation by rotifers and herbicide-pollution on different *Chlamydomonas* strains and potential impacts on population dynamics. Environmental Toxicology and Chemistry 2012, Dec;31 (12): 2832-2840
87. Beat B. Fischer, Francesco Pomati, **Rik I.L. Eggen** (2013). The toxicity of chemical pollutants in dynamic natural systems: The challenge of integrating environmental factors and biological complexity. Science of the Total Environment 449, 253-259.
88. Ksenia J. Groh, Rene Schönenberger, Helmut Segner, **Rik I.L. Eggen**, Marc Suter (2013). Analysis of protein expression in zebrafish during gonad differentiation by targeted proteomics. General and Comparative Endocrinology 193, 210-220.
89. Stefan Scholz, **Rik I.L. Eggen**, Albertinka Murk, Kristin Schirmer, Katrin Tanneberger, Graham Whale, James Wheeler, (et all, 40 Co-Authors) (2013). A European perspective of alternatives to animal experiments for environmental risk assessment. Commentary for Regulatory Toxicology and Pharmacology 67, 506-530.
90. Beat B. Fischer, Marek Kwiatkowski, Martin Ackermann, Jasmin Krismer, Severin Roffler, Marc Suter, **Rik I.L. Eggen**, Blake Matthews (2014). Phenotypic plasticity influences the eco-evolutionary dynamics of a predator-prey system. ESA Ecology 95 (11), 3080-3092.
91. **Rik I.L. Eggen**, Juliane Hollender, Adriano Joss, Michael Schärer and Christian Stamm (2014) Reducing the Discharge of Micropollutants in the Aquatic Environment: The Benefits of Upgrading Wastewater Treatment. Environ. Sci. Technol. 48, 7683-7689.
92. Muris Korkaric, Renata Behra, Beat B. Fischer, Marion Junghans, **Rik I.L. Eggen** (2014) Multiple stressor effects in *Chlamydomonas reinhardtii* – towards understanding mechanisms of interaction between effects of ultraviolet radiation and chemical pollutants. Aquatic Toxicology 162, 18-28. (Selected editors choice).
93. Christian Stamm, **Rik I.L. Eggen**, Janet Hering, Juliane Hollender, Adriano Joss and Michael Schärer (2015) Micropollutant removal from wastewater: Facts and decision-making despite uncertainty. Environ. Sci. Technol. 49 (11), 6374–6375.
94. Muris Korkaric, Mao Xiao, Renata Behra, **Rik I.L. Eggen** (2015) Acclimation of *Chlamydomonas reinhardtii* to ultraviolet radiation and its impact on chemical toxicity. Aquatic Toxicology, 167, 209-219.
95. Carolina di Paolo, Ksenia J. Groh, Markus Zenneg, Etienne Vermeirssen, Albertinka Murk, **Rik I.L. Eggen**, Henner Hollert, Inge Werner, Kristin Schirmer (2015). Early life exposure to PCB126 results in delayed mortality and growth impairment in the zebrafish larvae. Aquatic Toxicology, 168-178.
96. Francis Burdon, Marta Reyes, Alfredo Alder, Adriano Joss, Christoph Ort, Katja Räsänen, Jukka Jokela, **Rik I.L. Eggen**, Christian Stamm (2016). Environmental context

and magnitude of disturbance influence trait-mediated community responses to wastewater pollution in streams. Ecology and Evolution. Volume 6, Issue 12, 3923–3939.

97. Christian Stamm, Katja Räsänen, Frank Burdon, Florian Altermatt, Jukka Jokela, Adriano Joss, Martin Ackermann, **Rik I.L. Eggen** (2016). Unraveling the impacts of micropollutants in aquatic ecosystems: cross-disciplinary studies at the interface of large-scale ecology. Advances in Ecological Research, Vol. 55, 183-223.
98. Hélène Mottaz, Rene Schönenberger, Stephan Fischer, **Rik I.L. Eggen**, Kristin Schirmer, Ksenia J. Groh (2017). Dose-dependent effects of morphine on lipopolysaccharide (LPS)-induced inflammation, and involvement of multixenobiotic resistance (MXR) transporters in LPS efflux in teleost fish. Environmental Pollution 221, 105-115.
99. Krishna Tulasi Kirla, Ksenia J. Groh, Andrea E. Steuer, Michael Poetzsch, Rakesh Kumar Banote, Julita Stadnicka-Michalak, **Rik I.L. Eggen**, Kristin Schirmer, Thomas Kraemer (2016). Zebrafish larvae are insensitive to stimulation by cocaine: importance of exposure route and toxicokinetics. Toxicological Sciences. Toxicological Sciences, 1–11.
100. Krishna Tulasi Kirla, Ksenia J. Groh, Michael Poetzsch, Rakesh Kumar Banote, Julita Stadnicka-Michalak, **Rik I.L. Eggen**, Kristin Schirmer, Thomas Kraemer (2018). Importance of toxicokinetics to assess the utility of zebrafish larvae as model for psychoactive drug screening using meta-chlorophenylpiperazine (mCPP) as example. Frontiers in Pharmacology 9, 1-12.
101. Samuel Fuhrimann, Mirko S. Winkler, Philipp Staudacher, Frederik Weiss, Christian Stamm**, Rik I.L. Eggen**, Christian H. Lindh, Jose A. Menezes-Filho, Joseph M. Baker, Fernando Ramírez, Randall Gutiérrez, Ana M. Mora (2018). Exposure to pesticides and health effects in farm owners and workers from conventional and organic agricultural farms in Costa Rica: a study protocol. JMIR Research Proposal Journal. Accepted for publication.

B: Book chapters, proceedings

1. **Rik I.L. Eggen** and Ab van Kammen (1988). RNA replication in comoviruses. In: RNA genetics, volume I, RNA-directed virus replication. Eds: Domingo, Holland and Ahlquist. CRC Press, Boca Raton FL, pp 49-70.
2. **Rik I.L. Eggen**, Jan Verver, Pieter Vos, Joan Wellink, Ab van Kammmen and Rob Goldbach (1989). Genes and sequences involved in the replication of the cowpea mosaic virus RNAs. Molecular Biology of Plant-Pathogen Interactions, Alan R. Liss, Inc. pp 141-152.
3. Rob Goldbach, **Rik I.L. Eggen**, Cees de Jager, Ab van Kammen, Jan van Lent, Geertje Rezelman and Joan Wellink (1989). Genetic organisation, evolution and expression of plant viral RNA genomes. Proceedings NATO conference "Recognition and response in Plant-Virus interactions" R.S. Frases ed.
4. **Rik I.L. Eggen** and Willem M. de Vos (1993). Molecular biology of the acetoclastic methanogen *Methanothrix soehngenii*. In: The molecular biology and genetics of anaerobic bacteria (M. Seebald, Ed.) Chapter 4, pp 54-63. Springer-Verlag, New York.
5. Andreas Frutiger, Sybille Borner, Theresa Büsser, **Rik I.L. Eggen**, Rudolf Müller, Stephan Müller and Hans R. Wasmer (1999). How to control unwanted *Procambarus clarkii*-populations in Central Europe. Freshwater Crayfish 12, 714-726.

6. Jules R. Kemadjou Njiwa, Marc J-F Suter, **Rik I.L. Eggen** (2008). Zebrafish embryo toxicity assays, book chapter in Handbook of Hydrocarbon and Lipid Microbiology, 4481-4489.
7. Robert Kase, **Rik I.L. Eggen,** Marion Junghans, Juliane Hollender, Christian Götz (2011). Assessment of Micropollutants from Municipal Wastewater- Combination of Exposure and Ecotoxicological Effect Data for Switzerland, Waste Water - Evaluation and Management, Fernando Sebastián García Einschlag (Ed.), ISBN: 978-953-307-233-3, InTech.

C: Articles in non-reviewed journals

1. **Rik I.L. Eggen** (1989). Genes and sequences involved in the replication of cowpea mosaic virus RNAs. Ph.D. Thesis, Wageningen, The Netherlands.
2. **Rik I.L. Eggen** and T. Mason, (1995). Auch Mikroorganismen leiden unter Umweltverschmutzung. Eawag Jahresbericht, 40-41.
3. S. Borner, T. Büsser, **Rik I.L. Eggen,** K. Fent, A. Frutiger, T. Lichtensteiger, R. Müller, S. Müller, A. Peter, and H. Wasmer, (1997). *Procambarus clarkii* (Roter Sumpfkrebs) im Schübelweiher bei Küssnacht; Ökologische Situationsanalyse und Vorschläge zur Bekämpfung. Eawag Report, 27 pages.
4. S. Borner, T. Büsser, **Rik I.L. Eggen**, A. Frutiger, R. Müller, S. Müller, A. Peter, and H. Wasmer, (1998). Die Bekämpfung des roten Sumpfkrebses (*Procambarus clarkii*) im Schübelweiher und Rumensee (Kanton Zürich); Auswertung der Massnahmen 1997. Eawag Report, 22 pages.
5. Renata Behra and **Rik I.L. Eggen** (1998). Immer mehr Probleme mit Kupfer. VGL Information 3, 18.
6. Jan Roelof van der Meer, Kornelia Zepp and **Rik I.L. Eggen** (1998). Modern methods for the detection of microorganisms and their activity, Bioworld 5, 3-98.
7. Laura Sigg, Renata Behra, Markus Boller, **Rik I.L. Eggen**, Werner Meier, Barbara Sulzberger und Hanbin Xue (1999). Bedeutung der Einträge von Kupfer in die Gewässer. Eawag News 46D, 9-11.
8. L. Sigg, R. Behra, M. Boller, **Rik I.L. Eggen**, W. Meier, B. Sulzberger und H. Xue (1999). Die Bedeutung von Kupfer in Gewässern. Schweizer Ingenieur und Architekt 19, 396-398.
9. **Rik I.L. Eggen** (2001). Moderne biologische Analyse; Potenzial, Entwicklung und Anwendung. Gas Wasser Abwasser (GWA) 3, 167-171.
10. Tove Larsen, Alfredo Alder, **Rik I.L. Eggen**, Max Maurer, Jane Muncke, Irene Peters (2001). Testlauf im Kraftwerk 1; Bitte nehmen Sie Platz! Die koevolution des umweltbewussten Menschen und des intelligenten WCs findet im Kraftwerk1 in Zürich statt. Magazin UniZürich 1 – Bulletin ETHZ 281, 47-49.
11. Tove Larsen, Alfredo Alder, **Rik I.L. Eggen**, Max Maurer, Jane Muncke, Irene Peters (2001). Trenn-WC auf dem Prüfstand – Das Projekt NOVAQUATIS. Eawag Jahresbericht 2000, 7 – 11.
12. Marc J.-F. Suter, Hans-Rudolf Aerni, Monika Andersson-Lendahl, **Rik I.L. Eggen**, Karl Fent, Walter Giger, Bernd Kobler, Armin Peter, Barbara Rutishauser, René Schönenberger, Felix Wettstein (2001). Umwelthormone und hormonell wirkende Umweltchemikalien - EU-Projekt Comprehend. Eawag Jahresbericht 2000, 24 – 25.

13. **Rik I.L. Eggen**, Beat Fischer, Urs Leisinger, Karin Rüfenacht, Katrin Weilenmann (2001). Sauerstoffstress: Singulett-Suaerstoff-induzierte zelluläre Reaktionen. Eawag Jahresbericht 2000, 46 – 47.
14. Schweigert, N., Behra, R., **Rik I.L. Eggen,** Escher, B. and Holm, P. (2001). Wie können Schadstoffeinflüsse auf Fliessgewässer nachgewiesen werden? Eawag News 51d, 10 – 12.
15. **Rik I.L. Eggen** (2001). Biologische Tracer in der Ökotoxikologie. Eawag News 52d, 8 - 9.
16. Nina Schweigert, **Rik I.L. Eggen**, Beate i. Escher, Patricia Burkhardt-Holm, Renata Behra (2001). Methoden zur Untersuchung und Beurteilung der Fliessgewässer in der Schweiz; Vorschläge zur Vorgehensweise im Modul Ökotoxikologie. Bericht Eawag.
17. Nina Schweigert, **Rik I.L. Eggen**, Beate Escher, Patricia Holm und Renata Behra (2002). Wie kann Ökotoxikologie einen Beitrag zum Fischnetz liefern. Fischnetz info 8, 9-11.
18. M. Suter, H. Aerni, B. Kobler, P. Faller, BV Rutishauser, FE Wettstein, P. Burkhardt-Holm, R. Fischer, W. Giger, A. Hungerbühler, A. Peter, R. Schönenberger, **Rik I.L. Eggen** (2002). The combination of biological and chemical analysis for the determination of estrogenicity in Swiss wastewater treatment plant effluents. CEAC Jahresbericht.
19. Marc J.-F. Suter, H.-R. Aerni, B. Kobler, B. Rutishauser, F. Wettstein, R. Fischer, A. Hungerbühler, M.D. Marazuela, R. Schönenberger, **Rik I.L. Eggen**, W. Giger und A. Peter (2002). Wie wirkt die Pille auf den Fisch? Eawag News 53d, 24-25.
20. Beate Escher, Erika Vye, **Rik I.L. Eggen** (2002). Nicht-Zieleffekte von Pharmaka in der aquatischen Umwelt: Basistoxizität und additives Zusammenwirken mit anderen Umweltschadstoffen. Eawag Jahresbericht 2001, 32-33.
21. M. Suter, H.-R. Aerni, B. Rutishauser, F. Wettstein, R. Fischer, A. Hungerbühler, M.D. Marazuela, R. Schönenberger, **Rik I.L. Eggen**, W. Giger und A. Peter (2002). Hormonaktive Verbindungen in schweizerischen Gewässern - Ergebnisse des EU-Projekts COMPREHEND. Fischnetz-Info 4, 13- 15.
22. **Rik I.L. Eggen** (2003). Biologische Tracer in der Ökotoxikologie. Der Gartenbau 22, 12-13.
23. **Rik I.L. Eggen** (2003). Vom Ökosystem zum Molekül zum Ökosystem. Eawag News 56d, Editorial.
24. Beat Fischer and **Rik I.L. Eggen** (2003). Abwehrgene als Schadstoffindikatoren; Von der Grundlagenforschung zur Anwendung. Eawag News 56d, 15 – 17.
25. Beat Fischer und **Rik I.L. Eggen** (2003). Abwehrgene als Sensoren. BioWorld 6, 14-15.
26. Beat B. Fischer und **Rik I.L. Eggen** (2005). Genetische Abwehrreaktion der Grünalge *Chlamydomonas reinhardtii* auf photooxidativen Stress. Eawag Jahresbericht 2004.
27. Marc J-F Suter, Adrian A Ammann, **Rik I.L. Eggen**, Anja Liedtke Victor Nesatyy, René Schönenberger, Etiënne LM Vermeirssen, A Christiane Vögeli (2006). Endocrine Disrupting Compounds in the Aquatic Environment. Eawag Jahresbericht 2005.
28. Marc J-F Suter, Adrian A Ammann, **Rik I.L. Eggen**, Anja Liedtke Victor Nesatyy, René Schönenberger, Etiënne LM Vermeirssen, A Christiane Vögeli (2005). Endocrine Disrupting Compounds in the Aquatic Environment. Annual report of the center of excellence in analytical chemistry 2005.
29. Beate Escher, **Rik I.L. Eggen**, Marion Junghans, Anja Liedtke, Marc Suter, Christiane Vögeli, Etienne Vermeirssen (2006). Relevant für die Toxizität ist die Schadstoffkonzentration am Wirkort im Lebewesen. Eawag Jahresbericht 2005.
30. **Rik I.L. Eggen** (2008). Zebrabärbling - die aquatische Maus. Eawag News 64d, Editorial.
31. **Rik I.L. Eggen** (2008). Rolle der Östrogene in der Organogenese. Eawag News 64d, 16-17.

32. Nathalie Vallotton, **Rik I.L. Eggen**, Nathalie Chèvre (2008). Cours d'eau et herbicides: Effets de concentrations fluctuantes sur les organismes aquatiques. GWA 10, 787 - 795.
33. Marion Junghans, Nathalie Chèvre, Carolina di Paolo, **Rik I.L. Eggen,** René Gälli, Vincent Gregorio, Andreas Häner, Nadzeya Homazava, Chiara Perazzolo, Robert Kase (2011). Aquatic Risks of Plant Protection Products: A Comparison of Different Hazard Assessment Strategies for Surface Waters in Switzerland. Study on behalf of the Swiss Federal Office for the Environment.
34. Frederik Weiss, Christian Zurbrügg, **Rik I.L. Eggen** (2014). Anthropogenic chemical pollutants in low-and middle-income countries. Sandec News, 2014, 15, p. 25, Eawag Switzerland.
35. Marion Junghans, Inge Werner, Christian Stamm, **Rik I.L. Eggen**, Andri Bryner (2014). Ökotoxikologische Beurteilung von Pflanzenschutzmittelkonzentrationen in Oberflächengewässern: Was unterscheidet Überwachungswerte(EQS) von Zulassungswerten (RAC)? Fact Sheet, September 2014, Eawag Switzerland.
36. Marion Junghans, Inge Werner, Christian Stamm, **Rik I.L. Eggen**, Andri Bryner (2014). Häufige Fragen zum Thema Pflanzenschutzmittel in Gewässern. Fact Sheet, September 2014, Eawag Switzerland.
37. **Rik I.L. Eggen**, Christian Stamm (2014). Pflanzenschutzmittel in Oberflächengewässern - aktuelles Thema mit viel Erklärungsbedarf. Aqua & Gas, Nr. 11/2014, Page 80-82.
38. Christian Stamm, Frank Burdon, Stephan Fischer, Cornelia Kienle, Nicole Munz, Ahmed Tlili, Florian Altermatt, Renata Behra, Helmut Bürgmann, Adriano Joss, Katja Räsanen, **Rik Eggen** (2017) Einfluss von Mikroverunreinigungen; Lebensgemeinschaften in Fliessgewässern – Ergebnisse aus dem Projekt EcoImpact. Aqua und Gas 6, 90-95.

D. Articles in the pipeline

1. Cresten Mansfeldt, Kristy Deiner, Elvira Mächler, Kathrin Fenner, **Rik I.L. Eggen**, Christian Stamm, Urs Schönenberger, Jean-Claude Walser, Florian Altermatt (2018). Community DNA profiles demonstrate the influence of treated wastewater effluent on water column bacterial composition in headwaters of the Rhine River. ES&T Submitted.
2. Manu Tamminen, Jennifer Spaak, Ahmed Tlili, **Rik I.L. Eggen**, Christian Stamm, Katja Räsänen (2017). Biofilm community diversity in wastewater impacted streams: insight from next generation sequencing. Femsec submitted.
3. Burdon, F.J., Munz, N.A., Reyes, M., Singer, H., Focks, A., Joss, A., Räsänen, K., Altermatt, F., Jokela, J., **Eggen, R.I.L**. & Stamm, C. (2018) Agriculture versus wastewater pollution as drivers of macroinvertebrate community structure in streams. Submission mid September 2018.
4. Francis Burdon, Yaohui Bai, Marta Reyes, Philipp Staudacher, Simon Mangold, Heinz Singer, Katja Räsänen, Adriano Joss, S. Tiegs, Jukka Jokela, **Rik.I.L. Eggen** and Christian Stamm (2018) Wastewater input alters stream microbial communities and ecosystem processes. In preparation, submission planned until spring 2019.

D. Book chapters in the pipeline

none