

Curriculum Vitae and Publications of Dr. Ingrid Chorus

May 2016

Curriculum vitae

Since 2008	Head of Division <i>Drinking-Water and Swimming-Pool Hygiene</i> of the Federal Environmental Agency of Germany
1992 – 2008	Head of Section <i>Drinking-water Resources and Treatment</i> of the Federal Environment Agency of Germany
1991 – 1992	Senior research scientist at the Institute for Water-, Soil- and Air Hygiene of the Federal Health Agency of Germany
1987 – 1991	Research scientist in the DFG-funded Project “algal-borne taste-and odour substances” at the Institut for Water-, Soil- and Air Hygiene
1981 – 1987	Research scientist at the Free University of Berlin; Faculty of Biology: university teaching contracts; Environmental research contracts for the state of Berlin and for the Federal Environment Agency
Education	1959-1972: Monte Sano Elementary School, Huntsville, Alabama and John-F-Kennedy Highschool, Berlin 1972-1982: Free University, Berlin, Biology. Dissertation on „ <i>Production, respiration, assimilation and net production efficiency of Daphnia longispina from Heiligensee</i> “ (Prof. Tilzer, Technical University Berlin) in the context of the “Ecosystem Study Heiligensee”

Memberships in scientific societies:

- WSA (*Water Science Alliance; member of the leading board*)
- SIL (*Societas Internationalis Limnologiae*)
- DGL (German Limnological Society)

Research fields

Risk-based approaches to managing drinking-water and water used for recreation; resource management and lake restoration; cyanobacterial toxins; algal metabolites; elimination of pathogens and substances through underground filtration

Management for policy development and research

Leading a department which undertakes research and uses the results to develop concepts for managing drinking-water and swimming pools to control microbial and chemical pollution, to advise policy development and to derive guidance for practitioners

Policy development for the WHO Guidelines for Drinking-water Quality and for Safe Recreational Water Environments

2004 – 2012: Member of the German Research Foundation’s Review Board for Water Research which oversees the process of peer review of project proposals

Language skills

English and German as mother tongues; French on a level sufficient for a rudimentary technical discussion

Publications since 2000

Books and Documents edited:

- Rickert B; Chorus I; Schmoll O 2006: Protecting Surface waters for Health: Managing the Quality of Drinking-water Sources. WHO Drinking-water Quality Series, submitted
- Dieter, H, Mendel, B, Krüger, W, Chorus, I (eds.) 2014: Trinkwasser Aktuell. Erich Schmidt Verlag, Berlin
- Chorus, I. (ed.) 2012: Current approaches to Cyanotoxin risk assessment, risk management and regulations in different countries. Federal Environment Agency (Umweltbundesamt), Dessau. 147 pp. <http://www.uba.de/uba-info-medien-e/4390.html>.
- Schmoll O; Howard G; Chilton J; Chorus, I 2006: Protecting Groundwater for Health: Managing the Quality of Drinking-water Sources. WHO Drinking-water Quality Series, IWA Publishing, London 678 pp.
- Chorus I 2001: Cyanotoxins: Occurrence, Causes, Consequences. Springer Publishers Heidelb. 357 pp.
- Chorus I; Bartram J 1999: Toxic Cyanobacteria in Water: A Guide to Public Health Significance, Monitoring and Management. Published on behalf of WHO by E&FN Spon/Chapman & Hall, London, 416 pp.

a) Peer-reviewed journals:

2015

- Baumgarten, C.; Rechenberg, J.; Richter, S.; Chorus, I.; Vigelahn, L.; Schmoll, O. (2014): Wassersparen in Privathaushalten: sinnvoll, ausgereizt, übertrieben?: Fakten, Hintergründe, Empfehlungen. Stand: September 2014.-Dessau-Roßlau -41 S
- Rigosi, A.; P. Hanson; D. P. Hamilton; M. Hipsey; J. A. Rusak; J. Bois; K. Sparber; I. Chorus; A. J. Watkinson; B. Qin; B. Kim and J. D. Brookes (2015): Determining the probability of cyanobacterial blooms: the application of Bayesian networks in multiple lake systems. Ecological Applications. 25 (1), S. 186-199
- Fastner, J.; Abella, S.; Litt, A.; Morabito, G.; Vörös, L.; Pálffy, K.; Straile, D.; Kümmerlin, R.; Matthews, D.; Phillips, M.G.; Chorus, I. (2015): Combating cyanobacterial proliferation by avoiding or treating inflows with high P load-experiences from eight case studies. Aquat Ecol., DOI 10.1007/s10452-015-9558-8, Springer, S. 1-17

2014

- Frohnert, A.; S. Apelt; S. Klitzke; I. Chorus; R. Szewzyk; H.-C. Selinka (2014): Transport and removal of viruses in saturated sand columns under oxic and anoxic conditions – Potential implications for groundwater protection. International Journal of Hygiene and Environmental Health, 217, S. 861-870
- K. Preußel; I. Chorus and J. Fastner (2014): Nitrogen Limitation Promotes Accumulation and Suppresses Release of Cylindrospermopsins in Cells of *Aphanizomenon* Sp. Toxins, 6, 2932-2947

Bas W. Ibelings, Lorraine C. Backer; W. Edwin; A. Kardinaal; I. Chorus (2014): Current approaches to cyanotoxin risk assessment and risk management around the globe: Harmful Algae 40, S. 63-74

2012

Schmoll, O.; I. Chorus; I. Feuerpfeil; H.-C. Selinka; R. Szewzyk (2012): Die Bewertung gesundheitlicher Risiken durch Krankheitserreger im Trinkwasser. Theoretische Maßstäbe und praktische Konsequenzen. Umweltmed Forsch Prax 17 (2) 81-95

2011

Schmoll, O.; Castell-Exner, C., Chorus, I. (2011): From international developments to local practice: Germany's evaluation and dialogue process towards Water Safety Plan implementation. Water Science & Technology: Water Supply 11 (4)

2010

Klitzke, S.; S. Apelt; C. Beusch; C. Weiler; J. Fastner and I. Chorus (2010): The Fate of Cylindrospermopsin and Anatoxin-a during Sediment Passage. In: Official program and abstract book, the 8th International Conference on Toxic Cyanobacteria, p. 30.

Grützmacher, G.; G. Wessel; S. Klitzke, I. Chorus (2010): Microcystin Elimination during Sediment Contact. Environm. Sci. Technol. 44, No. 2, 657-662

Klitzke, S., S. Apelt, C. Weiler, J. Fastner, and I. Chorus (2010). Retention and Degradation of the cyanobacterial Toxin Cylindrospermopsin in Sediments - The Role of Sediment preconditioning and DOM composition. Toxicon, 55, 999 – 1007.

Hilt, S., van de Weyer, K., Köhler, A., Chorus, I.: Submerged macrophyte responses to reduced phosphorus concentrations in two periurban lakes. Restoration ecology, 18, 452–461

2009

Grützmacher, G., G. Wessel, S. Klitzke, I. Chorus: Microcystin Elimination during Sediment Contact. Environmental Science and Technology, 44, 657–662.

Klitzke, S.; S. Apelt, C. Weiler, J. Fastner and I. Chorus (2009): Fate of the canotoxin cylindrospermopsin in sediments. Geochimica et Cosmochimica Acta 73. No. 13S, A669.

Preußel, K.; Wessel, G.; Fastner, J.; Chorus, I. (2009): Response of cylindrospermopsin production and release in *Aphanizomenon flos-aquae* (Cyanobacteria) to varying light and temperature conditions: Harmful Algae. 8(2009) 645-650

Schauser, I.; Chorus, I: Water and phosphorus mass balance of Lake Tegel and Schlachtensee - a modelling approach. Water Research, 43, 1788-1800 doi: 10.1016/j.watres.2009.01.007

2008

Preußel,K., Wessel, G., Fastner, J., Chorus, I. (accepted): Response of cylindrospermopsin production and release in *Aphanizomenon flos-aquae* (Cyanobacteria) to varying light and temperature conditions: Harmful Algae.

Wiedner, C.; Rücker J., Fastner, J.; Chorus, I.; Nixdorf, B. (2008): Seasonal dynamics of cylindrospermopsis and cylindrospermopsin in two German lakes. Toxicon 52, 677-686

2007

Ibelings, B., Chorus, I. 2007: Accumulation of cyanobacterial toxins in freshwater „seafood“ and its consequences for public health – a review. Environmental Pollution, accepted

Naselli-Flores, L.; Barone, R.; Chorus, I.; Kurmayer, R. (2007): Toxic Cyanobacterial blooms in reservoirs under a semi-arid mediterranean climate: the magnification of a problem. Environm. Toxicol. 399-404

Fastner, J.; Rücker, J.; Stüken, A.; Preußel, K.; Nixdorf, I.; Chorus, I.; Köhler, A.; Wiedner, C., 2007: Occurrence of the cyanobacterial toxin cylindrospermopsin in Northeast Germany. *Environm. Toxicol.* 22, 26-32

Schauser, I.; Chorus, I. 2007: Assessment of the success of external and internal restoration measures in two Berlin lakes, *Lake and Reservoir Management* (accepted Dec. 2006)

Niesel, V.; Chorus, I.; Sudbrack, R.; Willmitzer, H.; Hoehn, E. 2007: The probability of occurrence of the dinoflagellates *Gymnodinium uberrimum* and *Peridinium willeii* in German reservoirs. *Journal of Plankton Research*; doi: 10.1093/plankt/fbm017

Schauser, I.; Heinzmann, B.; Chorus, I. 2007: Strategy and current status of combating eutrophication in lakes for safeguarding drinking water resources, *Wat. Science Techn.* (accepted)

2006

Schauser, I.; Chorus, I.; Lewandowski, J. 2006: Effects of nitrate on phosphorus release: comparison of two Berlin lakes. *Acta hydrochim. Hydrobiol.*

Preussel, K.; Stüken, A.; Wiedner, C.; Chorus, I.; Fastner, J. 2006: First report on cylindrospermopsin producing *Aphanizomenon flos-aquae* (Cyanobacteria) isolated from two German lakes. *Toxicon* 47, S. 156 - 162

A.J. Gijsbertsen-Abrahamse, W. Schmidt, I. Chorus, S.G.J. Heijman 2006: Removal of cyanotoxins by ultrafiltration and nanofiltration, *Journal of Membrane Science* 276, 252-259

Grützmacher, G.; Wessel, G.; Chorus, I.; Bartel, H. 2006: Are there Limits to Cyanobacterial Toxin (Microcystin) Elimination by Sand Passage?. In: Recharge systems for protecting and enhancing groundwater resources, Proceedings of the International Symposium on Management of Artificial Recharge, Proceedings of the ISMAR05 11. - 16.6.05, Berlin. UNESCO IHP-VI, Series on Groundwater 13, p. 485 – 490

Grützmacher, G.; Wessel, G.; Chorus, I.; Bartel, H. 2006: Removal of cyanobacterial toxins (microcystins) during slow sand and bank filtration. In: Gimbel, R., Graham N.J.D. & Collins, M.R. (ed.): Recent Progress in Slow Sand and Alternative Biofiltration Processes: p. 171 – 177. IWA Publishing (London).

Grützmacher, G.; Wessel, G.; Chorus, I.; Bartel, H.; Holzbecher, E. 2006: On the behaviour of microcystins in saturated porous medium. In: Recharge systems for protecting and enhancing groundwater resources, Proceedings of the International Symposium on Management of Artificial Recharge, Proceedings of the ISMAR05 11. - 16.6.05, Berlin. UNESCO IHP-VI, Series on Groundwater 13, p. 491-497

2005

Welker, M.; Khan, S.; Haque, Md M.; Islam, S.; Khan, N.H.; Chorus, I.; Fastner, J. 2005: Microcystins (cyanobacterial toxins) in surface waters of rural Bangladesh - Pilot study. *Journal of Water and Health*, 325 – 337

2004

Via-Ordorika, L.; Fastner, J.; Kurmayer, R.; Hisbergues, M.; Dittmann, E.; Komarek, J.; Erhard, M.; Chorus, I. 2004: Distribution of microcystin-producing and non-microcystin-producing *Microcystis* sp. In European freshwater bodies: Detection of microcystins and microcystin genes in individual colonies. *System. Appl. Microbiol.* 27, 592 – 602

2003

Fastner, J.; Heinze, R.; Humpage, A.R.; Mischke, U.; Eaglesham, G.K.; Chorus, I. 2003: Cylindrospermopsin occurrence in two German lakes and preliminary assessment of

toxicity and toxin production of *Cylindrospermopsis raciborskii* (Cyanobacteria) isolates. *Toxicon* 42, 313 – 321

Kurmayer, R.; Christiansen, G.; Chorus, I. 2003: The abundance of microcystin-producing genotypes correlates positively with colony size in *Microcystis* and determines its microcystin net production in Lake Wannsee. *Appl. and Environm. Microbiol.* 69, 787 - 795.

Naselli-Flores, L.; Padisák, J.; Dokulil, M.T.; Chorus, I. 2003: Equilibrium/steady-state concept in phytoplankton ecology. *Hydrobiologia* 502, 395 - 403

2002

Grützmacher, G.; Böttcher, G.; Chorus, I.; Bartel, H. 2002: Removal of microcystins by slow sand filtration. *Environ. Toxicol.* 17, 386 – 394

R. Keil, C.; Forchert, A.; Fastner, J.; Szewzyk, U.; Rotard, W.; Chorus, I.; Krätke, R. 2002: Toxicity and microcystin content of extracts from a *Planktothrix* bloom and two laboratory strains. *Water Research* 36, 2133 – 2139

Kurmayer, R.; Dittmann, E.; Fastner, J.; Chorus I. 2002: Diversity of microcystin genes within a population of the toxic cyanobacterium *Microcystis* spp. in Lake Wannsee (Berlin, Germany). *Microbial Ecology* 43, 107-118.

Grützmacher, G.; Böttcher, G.; Chorus, I.; Knappe, A.; Pekdeger, A. 2002: Cyanobacterial toxins in bank filtered water from Lake Wannsee, Berlin. In: Dillon, P.J. (ed.): Management of Aquifer Recharge for Sustainability. – *Proceedings of the 4th international symposium on artificial recharge of groundwater, ISAR-4, Adelaide, South Australia* 22. – 26. September 2002, 175 – 180

2000

Chorus, I.; Falconer, I.; Salas, H.; Bartram, J. 2000: Health risks caused by freshwater cyanobacteria in recreational waters. *J. Toxicol. Environ. Health* 3, 323 - 347

Törökne, K.; László, E.; Chorus, I.; Fastner, J.; Heinze, R.; Padisák, J.; Barbosa, F.A.R. 2000: Water quality monitoring by Thamnotoxkit FTM including cyanobacterial blooms. *Wat. Sci. Tech.* 42, 381-385.

Book contributions (with peer review)

Chorus, I. 2004: Water Safety Plans – a better regulatory approach to prevent human exposure to harmful cyanobacteria. In: J. Huisman, H.C.P. Matthijs and P.M. Visser (eds.): Harmful Cyanobacteria. Kluwer Academic Publishers, 201 – 227

Böttcher, G.; Grützmacher, G.; Chorus, I. 2003: Degradation of Microcystins: Experiments from Tube-scale to Natural Conditions. In: H.D. Schulz und A. Hadeler (ed.): Geochemical Processes in Soil and Groundwater, Measurement – Modelling – Upscaling. Wiley-VCH, 24 – 538

Chorus, I., J. Clasen, J.Fastner 2002: Biologische Aspekte der Wassernutzung und Wasserqualität - Stehende Gewässer. In: A. Grohmann (Hrsg.; ehemals Höll): Wasser. Nutzung im Kreislauf. Hygiene, Analyse und Bewertung. Verlag deGruyter. 408 – 443

Chorus, I. 2000: Algenbürtige Schadstoffe – Auftreten, Wirkung und Bedeutung. In: G. Gunkel (Hrsg.): Handbuch der Umweltveränderungen und Ökotoxikologie, Band 3B, Aquatische Systeme, 48 - 71

Chorus, I.; Cavalieri, M 2000: Cyanobacteria and Algae. In J. Bartram and G. Rees (eds): Monitoring Bathing Waters. Published on the behalf of WHO by Spon/Chapman & Hall, London. 337, 219 – 271