

Martin Johann KAINZ

Research scientist and scientific managing director
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Academic background

Dozent (2010) - University of Vienna, Austria (*Habilitation*: Aquatic Ecology, Ecotoxicology)
 PhD (2002) - Université du Québec à Montréal, Canada (Environmental Sciences)
 MSc (1995) - University of Vienna, Austria (Landscape Ecology)

Professional/research history

2021 – present	Scientific managing director, Inter-university Centre for Aquatic Ecosystem Research, WasserCluster Lunz, Austria
2006 – present	Research Scientist, Inter-university Centre for Aquatic Ecosystem Research, WasserCluster Lunz, Austria; Head ‘Aquatic Lipid and Ecotoxicology Research Group (LIPTOX)’
2008 – present	Affiliated Professor, University of Washington, Seattle Environmental Engineering https://www.ce.washington.edu/people/faculty/adjunct
2010	Invited Professor, Laboratoire Microorganismes: Génome et Environnement, Réseaux trophiques aquatiques. Université Blaise Pascal, Clermont-Ferrand, France
2006	Post-doctoral fellow, National Water Research Institute, Environment Canada, Burlington, Ontario, Canada (Host: Michael T. Arts)
2002 – 2005	Post-doctoral fellow, University of Victoria, Department of Biology, Victoria, BC, Canada (Host: Asit Mazumder)
2000	Research internship, Ocean Sciences Centre, University of Newfoundland, St. John’s, Newfoundland, Canada (Host: Chris C. Parrish)
1996 – 2002	PhD, Université du Québec à Montréal, Canada, Centre de recherche en géochimie isotopique et en géochronologie (GEOTOP; Supervisor: Marc Lucotte)

Scholarships

2006	Natural Sciences and Engineering Research Council of Canada (http://nserc.ca/ ; NSERC; \$43.000) – Visiting Fellowship at the National Water Research Institute, Burlington, ON (http://www.nwri.ca).
2001-2005	3 consecutive Post-doctoral Fellowships, COMERN (\$35.000 per annum; www.unites.uqam.ca/comern)
1996-1998	GEOTOP PhD-Student Awards (\$15.000 per annum; http://www.geotop.uqam.ca/)
1996, 1997	PAFARC PhD-Scholarships (\$5.000 per annum; http://www.unites.uqam.ca/src/pafarc/)
1995	University of Vienna, Scholarship for PhD-Internship in Canada (ATS 90.000)
1992, 1993	<i>Siegfried Ludwig</i> Scholarships, Lower Austria

Research funding (as group-leader of LIPTOX)

Funding agency	Year(s)	Title/Description	Award	Associate(s)/PI
GARANT Austria	2022	Development of sustainable fish feeds – effects of fishless feeds on growth and biochemical composition in Rainbow Trout	€28,000	Eduard Schneeberger Hannes Hager
Austrian Science Fund (FWF) – Lise Meitner Program	2019-2022	Consequences of dietary fatty acids and temperature on cognitive capacity and fitness of fishes – SalmoPUFA	€160,000	Libor Zavorka (PI) Martin Kainz (co-PI)
Government Queensland, Australia	2019-21	Hotspots of aquatic primary productivity within the Mitchell river system and the importance of floodplain/floodplain wetland production during the wet season in supporting upstream river ecosystems	€50,000	Jonathan Marshall
GARANT Austria	2019-21	Development of sustainable fish feeds – effects on growth and biochemical composition in Arctic charr	€40,000	Eduard Schneeberger Hannes Hager
Austrian Science Fund (FWF) DACH	2019-2022	Transfer of essential lipids from aquatic to terrestrial ecosystems	€218,000 (€435,000 total)	Dominik Martin-Creuzburg
GARANT Austria	2018	Effects of various fish feeds on growth and biochemical composition of Arctic charr and Rainbow trout	€20,000	Eduard Schneeberger Hannes Hager
Austrian Science Fund (FWF)	2017-2022	The role of chytrids in planktonic food webs	€314,570	Serena Rasconi (PI) Martin Kainz (PI)
Austrian Academy of Science	2017	Effects of microplastics on methyl mercury biomagnification in aquatic organisms	€18,720	Suzana Zizek (beneficiary)
European Union	2017-2020	Network of Leading European AQUATIC MesoCOSM Facilities Connecting Mountains to Oceans from the Arctic to the Mediterranean	€637,376	Jens Neistgaard (PI) Stella Berger Robert Ptacnik (PI WCL)
Austrian Science Fund (FWF) / National Science Foundation (NSF)	2016-2017	Dietary pathways of PCBs to top predators in mountain lakes	€36,660	Ariana Chiapella (beneficiary) Angela Strecker
Austrian Science Fund (FWF)	2016-2021	Trophic pathways of omega-3 fatty acids in stream food webs	€397,000	Martin Kainz (PI) Stuart Bunn Brian Fry

				Tom Battin
GARANT Austria	2014-2015	Sustainable fish feeds – effects on growth and lipids of Arctic charr (<i>S. alpinus</i>)	€33,500	Eduard Schneeberger Hannes Hager
Austrian Academy of Science	2015-2018	Influence of climate extremes on carbon dynamics across the boundaries of aquatic ecosystems (EXCARB)	€348,000	Tom Battin (PI) Georg Wohlfahrt Günter Blöschl
Province of Lower Austria	2013	Threats to lake food web stability – recent pike invasion to pre-alpine lakes	€112,000	Martin Kainz (PI)
Austrian Science Fund (FWF) - BiodivERsA	2012-2016	LIMNOTIP – Biodiversity dynamics and tipping points in our future freshwater ecosystems	€173,000 (€699,000 total)	Lars-Anders Hansson Rita Adrian Dag Hessen
Federal Ministry for Agriculture, Forestry, Environment and Water	2012-2014	Partial replacement of marine-based oils by local pumpkin seed press cake for freshwater fish production (<i>Salvelinus umbla</i>)	€287,000	Martin Kainz (PI) Eduard Schneeberger Douglas Tocher
Government Queensland, Australia	2011-12	Food web interactions in Australian riverlakes	€50,000	Jonathan Marshall
Finnish Academy of Sciences	2011-2014	Impacts of terrestrial organic matter loading on availability and transfer of polyunsaturated fatty acids in pelagic food webs of large boreal lakes	€115,000	Paula Kankaala (PI)
Hydropower Austria	2010	Membrane competency during cold challenges of greyling (<i>T. thymallus</i>)	€24,000	Günther Unfer
Austrian Science Fund (FWF)	2010-13	LIPTEMP - Temperature and diet effects on <i>Daphnia</i> lipids and fitness	€287,200	Martin Kainz (PI) Michael Arts Irina Guschina
Austrian Ministry of Sciences	2008-10	Start-up grant ‘Long-term Ecological Research Program (LTER)’	€75,000	Tom Battin Thomas Hein
Province of Lower Austria	2009-10	FeSchaFISCH – Identification of essential dietary constituents versus potentially toxic compounds in aquatic food webs	€158,000	Martin Kainz (PI)
Austrian Science Fund (FWF)	2008-12	Diet effects on fatty acids and methyl mercury in common carp (<i>C. carpio</i>)	€270,000	Martin Kainz (PI)
Provinces of Lower and Upper Austria, and Styria	2008-11	Effects of artificial lakes on water quality	€421,000	Thilo Hofmann Tom Battin
Lapland Biosphere-Atmosphere (LAPBIAT), Finland	2008-10	Adaptive abilities of <i>Daphnia</i> populations to increasing UVR and temperature	€13,800	Iris Zellmer
Oak Ridge Natl. Lab, Tennessee	2008	Assessing the role of fatty acids of membrane and storage lipids on cold tolerance of shads	\$10,000	S. Marshall Adams
Norwegian Science Foundation	2008-10	Effects of catchment processes and forest management in boreal forests on Hg and MeHg in surface waters (ForestMercury)	€480,000	Heleen de Wit (PI)
National Science Foundation, USA	2007-09	Bioavailability and conversion of fatty acids in <i>Daphnia</i>	\$385,000	Mike T. Brett (PI)

Research expertise and interests

- Aquatic food web ecology
- Lipids in aquatic ecosystems

- Aquatic ecotoxicology
- Chemical tracers/biomarkers
- Sustainable fisheries research

Language Proficiency: German, English, French

Publications/Presentations

In review/revision

1. Vesely, L., Ercoli, F., Ruokonen, T., Blaha, M., Duras, J., **Kainz, M. J.**, Buric, M., Kouba, A. (2022): Strong temporal variation of consumer $\delta^{13}\text{C}$ signal in an oligotrophic reservoir is related to water level fluctuation. *Proceedings B.*, in review.
2. Zavorka, L., Wallerius, M. L., **Kainz, M. J.**, Höjesjö, J. (2022): Linking omega-3 polyunsaturated fatty acids in natural diet with brain size in wild consumers. *Proceedings B.*, in review.
3. Zheng, S.; Wang, R.; **Kainz, M. J.**; Liu, C.; Li, P.; Li, Z.; Yan, H.; Yin, D. (2022): How phytoplankton biomass controls metal(loid) bioaccumulation in size-fractionated plankton in anthropogenic-impacted eutrophic lakes: a comprehensive study in the Yangtze River Delta, China. *ES&T*, in review.
4. Vesterinen, J., Strandberg, U., Taipale, S., **Kainz, M. J.**, Kankaala, P. (2022): Periphyton as a key diet source of essential fatty acids for macroinvertebrates across a nutrient and DOC gradient. *Limnol. Oceanogr.*, in revision.
5. O'Mara, K., Venarsky, M., Stewart-Koster, B., McGregor, G., Schulz, C., Marshall, J., Bunn, S. E., **Kainz, M. J.** (2022): Dietary energy flow through food webs and across habitats in a tropical river system. *Freshw. Biol.*, in review.
6. Zhang, J., **Kainz, M. J.**, Tan, X., Liu, Y., He, Y., Wang, X., Zhang, Q. (2022): Fatty acids reveal effects of light and nutrients on benthic food webs in headwater streams. *Aquatic Sci.*, in review.
7. Mathieu, F., Guo, F., **Kainz, M. J.** (2022): Storage lipids in zooplankton track dietary fatty acids, but membrane lipids show regulatory response to diet and temperature. *Freshw. Biol.*, in revision.
8. Abonyi, A., **Kainz, M. J.**, Ptacnik, R., Rasconi, S. (2022): The functional importance of chytrid algal parasites scales with diet quality, edibility, and biodiversity effects at the phytoplankton-zooplankton interface: A new conceptual view. *Freshw. Biol.*, in revision.
9. **Kainz, M. J.**, Schultz, S., Rasconi, S. (2022): Jumping a trophic link – aqueous, not particulate sources predict methylmercury in zooplankton. *PloS ONE*, in revision.

Published

10. Shipley, J. R., Twining, C., Mathieu-Resuge, M., Preet Parmar, T., **Kainz, M. J.**, Martin-Creuzburg, D., Weber, C., Winkler, D. W., Graham, C. H., Matthew, B. (2022): Climate change shifts the timing of nutritional flux from aquatic insects. *Current Biol.*, in press.
11. Guo, F., Ebm, N., Fry, B., Bunn, S. E., Brett, M. T., Ouyang, X., Hager, H., **Kainz, M. J.** (2022): Basal resources of river food webs largely affect the fatty acid composition of freshwater fish. *Sci. Total Env.* 812, <https://doi.org/10.1016/j.scitotenv.2021.152450>.
12. Pilecky, M., Kämmer, S.-K., Mathieu-Resuge, M., Taipale, S., Martin-Creuzburg, D., Wassenaar, L., **Kainz, M. J.** (2021): Hydrogen isotopes ($\delta^2\text{H}$) of polyunsaturated fatty acids track bioconversion by zooplankton. *Funct. Ecol.*, <https://doi.org/10.1111/1365-2435.13981>

13. Vad, C., Schneider, C., Fischer, R., **Kainz, M. J.**, Ptacnik, R. (2021): From adverse to beneficial – contrasting dietary effects of freshwater mixotrophs on zooplankton. *Freshw. Biol.* 66:2272–2282, <https://doi.org/10.1111/fwb.13832>
14. Mathieu-Resuge, M., Pilecky, M., Twining, C., Parmar, T.-P., Martin-Creuzburg, D., Vitecek, S., **Kainz, M. J.** (2021): Dietary availability determines metabolic conversion of long-chain polyunsaturated fatty acids in spiders: a dual compound-specific stable isotope approach. *Oikos*, <https://doi.org/10.1111/oik.08513>
15. Mathieu-Resuge, M., Martin-Creuzburg, D., Twining, C., Parmar, T.-P., Hager, H., **Kainz, M. J.** (2021): Taxonomic composition and lake morphometry influence fatty acid export via emerging insects. *Freshw. Biol.* 66:2199–2209, <https://doi.org/10.1111/fwb.13819>
16. Twining, C., Parmar, T.-P., Mathieu-Resuge, M., **Kainz, M. J.**, Shipley, J., Martin-Creuzburg, D. (2021): Use of fatty acids from aquatic prey varies with foraging strategy. *Front. Ecol. Evol.*, <https://doi.org/10.3389/fevo.2021.735350>
17. Guo, F., Ebn, N., Bunn, S. E., Brett, M. T., Hager, H. H., **Kainz, M. J.** (2021): Longitudinal variation in the nutritional quality of basal food sources and its effect on invertebrates and fish in subalpine rivers. *J. Animal Ecol.*, <https://doi.org/10.1111/1365-2656.13574>
18. Scholz, K., Ejarque, E., Hammerle, A., **Kainz, M. J.**, Schelker, J., Wohlfahrt, G. (2021): Atmospheric CO₂ exchange of a small mountain lake: limitations of eddy covariance and boundary layer modeling methods in complex terrain. *J. Geophys. Res. – Biogeosci.* 126; <https://doi.org/10.1029/2021JG006286>
19. Wu, P., **Kainz, M. J.**, Valdez, F., Zheng, S. Wang, R. Branfireun, B., Chen, C. Y., Bishop, K. (2021): Elevated temperature and brownification increase dietary methylmercury, but decrease essential fatty acids at the base of lake food webs. *Nature Sci. Rep.*, <https://doi.org/10.1038/s41598-021-95742-9>
20. Závorka, L., Crespel, A., Dawson, N., Papatheodoulou, M., Killen, S., **Kainz, M. J.** (2021): Climate change induced deprivation of dietary essential fatty acids can reduce growth and mitochondrial efficiency of wild juvenile salmon. *Funct. Ecol.*, <https://doi.org/10.1111/1365-2435.13860>
21. Pilecky, M., Winter, K., Wassenaar, L., **Kainz, M. J.** (2021): Compound-specific stable hydrogen ($\delta^2\text{H}$) isotope analyses of fatty acids: a new method and perspectives for trophic and movement ecology. *Rapid Commun. Mass Spectrom.*, e9135. <https://doi.org/10.1002/rcm.9135>
22. O'Mara, K., Venarsky, M., Stewart-Koster, B., McGregor, G., Schulz, C., **Kainz, M. J.**, Marshall, J., Bunn, S. E. (2021): Connectivity of fish communities in a tropical floodplain river system and predicted impacts of dams. *Sci. Total Env.* 788, 147785. <https://doi.org/10.1016/j.scitotenv.2021.147785>
23. Twining, C., Bernhardt, J., Derry, A., Hudson, C., Ishikawa, A., Kabeya, N., **Kainz, M. J.**, Kitano, J., Kowarik, C., Ladd, S. N., Leal, M., Scharnweber, K., Shipley, J., Matthews, B. (2021). The evolutionary ecology of fatty-acid variation: implications for consumer adaptation and diversification. *Ecol. Letters*, <https://doi.org/10.1111/ele.13771>
24. Laubichler, M. D., Jäger, C., **Kainz, M. J.**, Schernhammer, E., Yang, S., Zenk, L., Zhang, Z., Steiner, G. (2021): COVID-19 reveals the need for One Health network governance. *Global Sustainability*, in press.
25. Pilecky, M., Závorka, L., Arts, M. T., **Kainz, M. J.** (2021): Dietary omega-3 polyunsaturated fatty acids are central to neurophysiological development and behavior leading to strong and pervasive downstream effects on trophic ecology - A multi-perspective synthesis. *Biol. Rev.* 96; 2127-2145. <https://doi.org/10.1111/brv.12747>
26. Taipale, S. J., Kers, E., Peltomaa, E., Loehr, J. A., **Kainz, M. J.** (2021): Selective fatty acid retention and turnover in the freshwater amphipod *Pallasea Quadraspinosa*. *Biomolecules*, 11, 478. <https://doi.org/10.3390/biom11030478>

27. Guo, F., Bunn, S. E., Brett, M. T., Fry, B., Hager, H. H., **Kainz, M. J.** (2021): The dark side of rocks: an underestimated high quality food resource in river ecosystems. *J. Ecol.* 109, 2395-2404; <https://doi.org/10.1111/1365-2745.13647>
28. Jing, M., Lin, D., Wu, P., **Kainz, M. J.**, Bishop, K., Yan, H., Li, Q., Feng, X. (2021): Diet influence on mercury bioaccumulation as revealed by polyunsaturated fatty acids in zoobenthos from two contrasting environments: Chinese reservoirs and Swedish lakes. *Sci. Total Environ.*, <https://doi.org/10.1016/j.scitotenv.2021.146410>
29. Chiapella, A. M., **Kainz, M. J.**, Strecker, A. L. (2021): Fatty acid stable isotopes add clarity, but also complexity, to tracing energy pathways in aquatic food webs. *Ecosphere* 12/2: <https://doi.org/10.1002/ecs2.3360>
30. Ejarque, E., Scholz, K., Wohlfahrt, G., Battin, T. J., **Kainz, M. J.**, Schelker, J. (2021): Hydrology controls the carbon mass balance of a mountain lake in the Eastern European Alps. *Limnol. Oceanogr.* 66/6, 2110-2125; <https://doi.org/10.1002/lno.11712>
31. Ebm, N., Guo, F., Brett, M. T., Bunn, S. M., **Kainz, M. J.** (2021): Selective retention of algal polyunsaturated fatty acids along stream food webs and within fish organs. *Hydrobiologia* 848(2): 371-383; <https://doi.org/10.1007/s10750-020-04445-1>
32. Zenk, L., Steiner, G., Pina e Cunha, M., Laubichler, M. D., Bertau, M., **Kainz, M. J.**, Jäger, C., Schernhammer, E. (2020): Fast response to Superspreading: Uncertainty and complexity in the context of COVID-19. *Int. J. Environ. Res. Public Health* 17 (21), 7884; <https://doi.org/10.3390/ijerph17217884>
33. Rasconi, S., Ptacnik, R., Danner, S., Van den Wyngaert, S., Rohrlack, T., **Kainz, M. J.** (2020): Parasitic chytrids convey and upgrade primary produced carbon during inedible algae proliferation. *Protist* 171, 125768; <https://doi.org/10.1016/j.protis.2020.125768> .
34. Parzanini, C., Colombo, S. M., **Kainz, M. J.**, Wacker, A., Parrish, C. C., Arts, M. T. (2020): Discrimination between freshwater and marine fish using fatty acids: ecological implications and future perspectives. *Environ. Rev.* <https://doi.org/10.1139/er-2020-0031>
35. Guo, F., Lee, S. Y., **Kainz, M. J.**, Brett, M. T. (2020): Fatty acids as dietary biomarkers in mangrove ecosystems: current status and future perspective. *Sci. Total Environ.* 735; <https://doi.org/10.1016/j.scitotenv.2020.139907>
36. Vad, C., Schneider, C., Lukic, D., Horvath, Z., **Kainz, M. J.**, Stibor, H., Ptacnik, R. (2020). Grazing resistance and low food quality of the widespread mixotrophic chrysophyte (*Dinobryon divergens*) impairs zooplankton secondary production. *Oecologia*, 93:489-502 [10.1007/s00442-020-04677-x](https://doi.org/10.1007/s00442-020-04677-x)
37. Jardine, T. D., Galloway, A., **Kainz, M. J.** (2020): Unlocking the power of fatty acids as dietary tracers and metabolic signals in fishes and aquatic invertebrates. *Phil. Trans. R. Soc. B.* 375 : 1804, <https://doi.org/10.1098/rstb.2019.0639>
38. Kühmayer, T., Guo, F., Ebm, N., Battin, T. J., Brett, M. T., Bunn, S. E., Fry, B., **Kainz, M. J.** (2020): Preferential retention of algal carbon in benthic invertebrates – stable isotopes and fatty acids evidence from an outdoor flume experiment. *Freshw. Biol.*, 65; 1200-1209 <https://doi.org/10.1111/FWB.13492>
39. Twining, C. W., Taipale, S. J., Ruess, J., Bec, A., Martin-Creuzberg, D., **Kainz, M. J.** (2020): Stable isotopes and fatty acids – current and future perspectives for advancing trophic ecology. *Phil. Trans. R. Soc. B.* 375:20190641, <http://dx.doi.org/10.1098/rstb.2019.0641>
40. Stadler, M., Ejarque, B., **Kainz, M. J.** (2020): In-lake transformations of dissolved organic matter composition in a sub-alpine lake do not change its biodegradability. *Limnol. Oceanogr.*, <https://doi.org/10.1002/lno.11406>
41. Tao, J., Kennard, M. J., Roberts, D. T., Fry, B., **Kainz, M. J.**, Chen, Y., Bunn, S. E. (2020): Quality and contribution of food sources to Australian lungfish evaluated using fatty acids and stable isotopes. *Aquat. Sci.* 82:8. <https://doi.org/10.1007/s00027-019-0680-x>

42. Jing, M., Lin, D., Wu, P., **Kainz, M. J.**, Bishop, K., Yan, H., Wang, R., Wang, Q., Li, Q. (2020): Effect of aquaculture on mercury and polyunsaturated fatty acids in fishes from reservoirs in Southwest China. *Env. Poll.* <https://doi.org/10.1016/j.envpol.2019.113543>
43. Taipale, S. J., Peltomaa E., Kukkonen, J. V. K., **Kainz, M. J.**, Kautonen, P., and Tiirola, M. (2019): Microbial transformation of microplastic into cell membranes of aquatic consumers - implications for aquatic food webs. *Nature Sci. Rep.*, 9:19894. <https://doi.org/10.1038/s41598-019-55990-2>.
44. Thomas, S., **Kainz, M. J.**, Amundsen, P.-A., Hayden, B., Taipale, S., Kahilainen, K. (2019): Ecological speciation of a dominant secondary consumer divides energy flow pathways in lake food webs: evidence from diet, stable isotope and fatty acid analyses. *PLoS ONE* 14(8): e0221338. <https://doi.org/10.1371/journal.pone.0221338>
45. Závorka, L., Koeck, B., Killen, S. S., **Kainz, M. J.** (2019): Aquatic predators influence flux of essential micronutrients. *Trends Ecol. Evol.* 2563, <https://doi.org/10.1016/j.tree.2019.06.005>
46. Mathieu-Resuge, M., Schaal, G., Kraffe, E., Corvaisier, R., Lebeau, O., Lluch-Cota, S. E., García, R. S. L., **Kainz, M. J.**, Le Grand, F. (2019): Different particle sources in a bivalve species of a coastal lagoon: evidence from stable isotopes, fatty acids, and compound-specific stable isotopes. *Mar. Biol.* 166, 89. <https://doi.org/10.1007/s00227-019-3535-z>
47. Moser, K., Baron, J., Brahney, J., Olesky, I., Saros, J., Hundey, B., Sadro, S., Kopacek, J., Sommaruga, R., **Kainz, M. J.**, Strecker, A., Chandra, S., Walters, D., Preston, D., Michelutti, N., Lepori, F., Spaulding, S., Hik, D., Christianson, K., Melack, J., Smol, J. (2019): Mountain Lakes: Eyes on Global Environmental Change. *Global and Planetary Change* 178, 77-95. DOI: 10.1016/j.gloplacha.201904.001
48. Wu, P., **Kainz, M. J.**, Åkerblom, S., Bravo, A. G., Sonesten, L., Branfireun, B., Deininger, A., Bergström, A.-K., Bishop, K. (2019): Terrestrial food sources matter for mercury bioaccumulation in zooplankton and macroinvertebrates in lakes with differing dissolved organic carbon concentrations. *Sci. Total Env.* 669, 821-832. DOI: 10.1016/j.scitotenv.2019.03.171
49. Rasconi, S., Ptacnik, R., **Kainz, M. J.** (2018): Phytoplankton responses to recent temperature changes in subalpine Lake Lunz, Austria. *Water Resour. Res.*, doi: 10.1029/2017WR020959
50. Schultz, S., Koussoroplis, A.-M., **Kainz, M. J.** (2018): Dietary fatty acid compositions are more strongly reflected in fatty than lean muscle tissues of common carp (*Cyprinus carpio* L.). *Lipids*, 53: 727–735. doi: 10.1002/lipd.12080
51. Wu, P., **Kainz, M. J.**, Bravo, A. G., Åkerblom, S., Sonesten, S., Bishop, K. (2018): Bioconcentration of aqueous methylmercury in seston predicts methylmercury in fish. *STOTEN*, 646, 357-367. doi: 10.1016/j.scitotenv.2018.07.328
52. Murray, D., **Kainz, M. J.**, Hebberecht, L., Sales, K. R., Hindar, K., Gage, M. J. G. (2018): Comparisons of reproductive function and fatty acid fillet quality between triploid and diploid Atlantic salmon (*Salmo salar*). *Royal Soc. Open Sci.*, 5: 180493. <http://dx.doi.org/10.1098/rsos.180493>
53. Guo, F, Bunn, S., Brett, M. T., Fry, B. Hager, H., Ouyang, X., **Kainz, M. J.** (2018): Stream macroinvertebrates are integrators of high quality food sources. *Limnol. Oceanogr.*, doi: 10.1002/lno.10818
54. **Kainz, M. J.**, Hager, H. H., Schneeberger, E. (2018): Poultry by-product meals as partial fish meal replacement increase somatic growth in hybrid charr (*Salvelinus alpinus* X *fontinalis*). *Open J. Animal Sci.*, 8, 191-205; doi: 10.4236/ojas.2018.83014
55. Ouyang, X., Lee, J., **Kainz, M. J.**, Connolly, R. (2018): Spatially explicit valuation of wetlands for cyclone mitigation in Australia and China. *Scientific Reports*, Feb 14;8(1):3035. doi: 10.1038/s41598-018-21217-z.
56. Bruder, A. **Kainz, M. J.**, Tonolla, M. (2018): Winter conditions are changing rapidly in alpine-lake ecosystems. *EOS* 99, doi: 10.1029/2018EO094291.

57. Ejarque, E., Khan, S., Steniczka, G., Schelker, J., **Kainz, M. J.**, Battin, T. J. (2018): Climate-induced hydrological variation controls the transformation of dissolved organic matter in a subalpine lake. *Limnol. Oceanogr.*, early view. 10.1002/lno.10777
58. Guo, F., Bunn, S. E., Brett, M. T., **Kainz, M. J.** (2017): Polyunsaturated fatty acids in stream food webs – high dissimilarity among producers and consumers. *Freshw. Biol.*, 62: 1325-1334. 10.1111/fwb.12956.
59. Rasconi, S., Winter, K., **Kainz, M. J.** (2017): Increasing water temperature and reoccurring heat waves induce phytoplankton biodiversity loss – evidence from a multi-seasonal mesocosm experiment. *Ecol. and Evol.*; doi: 10.1002/ece3.2889
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Reviewing and evaluation activities for the following journals

I typically review 12-15 manuscripts and 2 research proposals per year:

Advances in Polar Ecology, Applied Geochemistry, Aquaculture Environment Interactions, Aquatic Ecology, Applied Marine Sciences, Aquatic Microbial Ecology, Basic and Applied Ecology, Biogeochemistry, Canadian Journal of Fisheries and Aquatic Sciences, Chemosphere, Comparative Biochemistry and Physiology, Comprehensive Reviews in Food Science and Food Safety, Chinese Journal of Oceanography and Limnology, Ecological Complexity, Ecological Informatics, Ecology and Evolution, Ecology Letters, Ecosystems, Environmental Science and Technology, Environmental Monitoring and Assessment, Evolutionary Applications, Food Webs, Functional Ecology, Fungal Ecology, Freshwater Biology, Geophysical Research Letters, Global Change Biology, Hydrobiologia, ICES Journal of Marine Science, ISME Journal, Journal of Experimental Marine Biology and Ecology, Journal of Marine Systems, Journal of Experimental Biology, Journal of Freshwater Ecology, Journal of Plankton Research, International Journal of Food Sciences and Nutrition, Limnologia, Limnology and Oceanography, Lipids, Marine Biology, Marine Ecology Progress Series, Oikos, Phytochemistry, PLoS ONE, Polar Biology, Polar Research, Polish Journal of Environmental Studies, Quaternary Science Reviews, Reviews in Fish Biology and Fisheries, River Systems, River Research and Applications, Science of the Total Environment, Scientific Reports

Evaluation activities for science grant agencies

- NSF – National Science Foundation (USA)
- NSERC – Natural Science and Engineering Research Council (Canada)
- CFI – Canadian Foundation for Innovation (Canada)
- ANR – French Science Agency/Agence Nationale de la Recherche (France)
- DFG – Deutsche Forschungsgemeinschaft (Germany)
- FNRS – Fund for Scientific Research (Belgium)
- NRF – National Research Foundation (South Africa)
- RSF – Russian Science Foundation (Russia)
- Czech Science Foundation (Czech Republic)
- Exxon Valdez Trustee Council (USA)
- Federal Ministry of the Environment (Austria)

Scientific evaluation of international research institutes/universities/researchers

- National Research Strategy for BIOR (Latvian Institute of Food Safety, Animal Health and Environment), Riga, Latvia (Nov. 2015)
- INRAE – Institut National de la Recherche en agronomie et environnement, Rennes, France (March/April 2021)
- Faculty of Science, Stockholm University, Sweden : Evaluation for promotion to Associate Professor, Dr. Sofi Jonsson (September 2021)

Editorial board member of scientific journals

- 'Advances in Oceanography and Limnology'
- 'Inland Waters'

Academic teaching

- Introduction to Limnology (University of Victoria, BC); 2002-2004
- Advanced Freshwater Ecology (University of Victoria, BC); 2003-2005
- Aquatic food webs ecology (University of Vienna, Austria) on-going
- Introduction to Aquatic Ecotoxicology (University of Vienna, Austria) on-going
- Scientific working and writing (Danube University Krems, Austria) on-going
- International teaching – “Biomarkers and Lipids in Aquatic Ecosystems”:
 - o 2008 – University of Jyväskylä, Finland (invited; Prof. Roger Jones)
 - o 2010 – Griffith University, Brisbane, Australia (invited; Prof. Stuart Bunn)
 - o 2016 – Tongji University, Shanghai, China (Aquatic Ecotoxicology and Ecology, invited; Prof. Rui Wang)
 - o 2019 – Chinese Academy of Science, Wuhan, China (invited; Prof. Quanfa Zhang) with Stuart Bunn and Brian Fry

Contributions at International Scientific Conferences

Martin-Creuzburg, D., **Kainz, M. J.**, Preet Parmar, T., Mathieu-Resuge, M., Twining, C. (2022): Emergent aquatic insects as valuable inland water subsidies and ecosystem services providers (Special Session). SIL conference, Berlin, Germany, August 7-10, 2022.

Twining, C., Preet Parmar, T., Mathieu-Resuge, M., **Kainz, M. J.**, Shipley, J., Martin-Creuzburg, D. (2021): Use of fatty acids from aquatic prey varies with foraging strategy. Aquatic Food Webs in Changing Environments Workshop at Lammi Biological Station, Finland. Nov. 7-12, 2021.

Vesterinen, J., Strandberg, U., Taipale, S., **Kainz, M. J.**, Kankaala, P. (2021): Periphyton as a key diet source of essential fatty acids for macroinvertebrates across a nutrient and DOC gradient in boreal lakes. Aquatic Food Webs in Changing Environments Workshop at Lammi Biological Station, Finland. Nov. 7-12, 2021.

Kainz, M. J. (2021): Discerning dietary organic matter sources and their ecophysiological fate in aquatic consumers (key note lecture). Aquatic Food Webs in Changing Environments Workshop at Lammi Biological Station, Finland. Nov. 7-12, 2021.

Kainz, M. J. (2021): Ökosystemleistungen aus eutrophen Fischteichen - mehr als bloss Fische! A-CZ Teich-Symposium ‚Fischteiche des Waldviertels und Südböhmens‘. Gmünd, Oct. 15, 2021.

Abonyi¹, A., **Kainz, M. J.**, Ptacnik, R., Rasconi, S. (2021): Chytrids synthesize polyunsaturated fatty acids from an inedible alga available to *Daphnia*. SIL conference, Nanjing, China, August 19-24. Gwangju, South Korea, Aug. 22-27, 2021.

¹ Session chair

Pilecky, M., Kämmer, S.-K., Fehlinger, L., Mathieu-Resuge, M., **Kainz, M. J.** (2021): H-CSIA reveals LC-PUFA buffering capacity of zooplankton in eutrophic freshwater ecosystems. SIL conference, Nanjing, China, August 19-24. Gwangju, South Korea, Aug. 22-27, 2021.

Fehlinger, L., Mathieu-Resuge, M., Pilecky, M., Preet Parmar, T. Twining, L., Martin-Creuzburg, D., **Kainz, M. J.** (2021): Dietary nutrient export from hypereutrophic fish ponds via emerging insects. SIL conference, Nanjing, China, August 19-24. Gwangju, South Korea, Aug. 22-27, 2021.

Mathieu-Resuge, M., Pilecky, M., Fehlinger, L., Twining, C., Preet Parmar, T., Martin-Creuzburg, D., **Kainz, M. J.** (2021): Dual use of compound-specific stable isotopes reveals dietary PUFA conversion in consumers. SIL conference, Nanjing, China, August 19-24. Gwangju, South Korea, Aug. 22-27, 2021.

Kainz², M. J., Pilecky, M., Ebm, N., Guo, F., Mathieu-Resuge³, M., Závorka, L. (2021): Established and upcoming tracers in aquatic food webs and why we need tissue-specific analysis. SIL conference, Nanjing, China, August 19-24. Gwangju, South Korea, Aug. 22-27, 2021.

Abonyi, A., **Kainz, M. J.**, Ptacnik, R., Rasconi, S. (2021): Chytrids synthesize polyunsaturated fatty acids from an inedible alga available to *Daphnia*. 12th Symposium for European Freshwater Sciences. Dublin, July 25-30.

Mathieu-Resuge⁴, M., Pilecky, M., Fehlinger, L., Twining, C., Preet Parmar, T., Martin-Creuzburg, D., **Kainz, M. J.** (2021): Dual use of compound-specific stable isotopes reveals dietary PUFA conversion in consumers. 12th Symposium for European Freshwater Sciences. Dublin, July 25-30.

Chiapella, A. M., Stockwell, J. D., **Kainz, M. J.**, Marsden, E. (2021): One step ahead: dietary tracers may help managers better adapt to invasions. 12th Symposium for European Freshwater Sciences. Dublin, July 25-30.

Pilecky, M., Kämmer, S.-K., Fehlinger, L., Mathieu-Resuge, M., **Kainz, M. J.** (2021): H-CSIA reveals LC-PUFA buffering capacity of zooplankton in eutrophic freshwater ecosystems. 12th Symposium for European Freshwater Sciences. Dublin, July 25-30.

Fehlinger⁵, L., Mathieu-Resuge, M., Pilecky, M., Preet Parmar, T. Twining, L., Martin-Creuzburg, D., **Kainz, M. J.** (2021): Dietary nutrient export from hypereutrophic fish ponds via emerging insects. 12th Symposium for European Freshwater Sciences. Dublin, July 25-30.

O'Mara, K., Venarsky, M., Stewart-Koster, B., McGregor, G., Schulz, C., **Kainz, M. J.**, Marshall, J., Bunn, S. (2021): Movement of fish communities in the Mitchell River catchment and predicted impacts of potential dams. 12th International Conference on the Applications of Stable Isotope Techniques to Ecological Studies (IsoEcol). May 19-21, Gaming, Austria.

Mathieu-Resuge⁶, M., Pilecky, M., Fehlinger, L., Twining, C., Preet Parmar, T., Martin-Creuzburg, D., **Kainz⁷, M. J.** (2021): Dual use of compound-specific stable isotopes reveals dietary PUFA

² Session chair

³ Session chair

⁴ Session chair as post-doc of my lab

⁵ Session chair as MSc-student of my lab

⁶ Conference co-chair

⁷ Conference chair

conversion in consumers. 12th International Conference on the Applications of Stable Isotope Techniques to Ecological Studies (IsoEcol). May 19-21, Gaming, Austria.

Chiapella, A. M., Stockwell, J. D., **Kainz, M. J.**, Marsden, E. (2021): Using a variety of diet tracers can help managers stay one step ahead of invasions. 12th International Conference on the Applications of Stable Isotope Techniques to Ecological Studies (IsoEcol). May 19-21, Gaming, Austria.

Kainz^A, M. J. (2021): Fatty acids and their stable isotopes – DHA as the ‘driving force’ for eco-evolutionary progress. 12th International Conference on the Applications of Stable Isotope Techniques to Ecological Studies (IsoEcol). May 19-21, Gaming, Austria.

Chiapella, A. M., Stockwell, J. D., **Kainz^A, M. J.**, Marsden, E. (2021): Using a variety of diet tracers can help managers stay one step ahead of invasions. 12th International Conference on the Applications of Stable Isotope Techniques to Ecological Studies (IsoEcol). May 19-21, Gaming, Austria.

Rasconi, S., Ptacnik, R., Lafferty, K., Abonyi, A., **Kainz M. J.** (2021): Recent insights on functional roles of microbial parasites in aquatic food webs. ASLO conference, virtual, June 22-27.

Scholz, K., Ejarque, E., Schelker, J., **Kainz, M. J.**, Wohlfahrt, G. (2021): The CO₂ exchange of a small mountain lake as affected by the local thermo-topographically driven flow regime. Virtual European Geosciences Union (vEGU) General Assembly, 19-30 April 2021, Vienna.

Kainz, M. J., Mathieu-Resuge, M., Preet Parmar, T., Twining, C., Fehlinger, L., Pilecky, M., Martin-Creuzburg, D. (2021): Compound-specific stable isotopes and their use in trophic ecology. SystemLink Virtual Research Workshop on Aquatic-Terrestrial Linkages. Jyväskylä, Finland, Mar 25 (virtual).

Kainz, M. J., Mathieu-Resuge, M., Preet Parmar, T., Twining, C., Fehlinger, L., Pilecky, M., Martin-Creuzburg, D. (2021): From aquatic food webs to spider nets – Advances in lipid and compound-specific stable isotope research for tracing diet sources across ecosystems. SystemLink Virtual Research Workshop on Aquatic-Terrestrial Linkages. Landau, Jan 28 (virtual).

Kainz, M. J. (2020): Unravelling the secrets of aquatic food webs – from essential nutrients to potential contaminants. Humboldt Day, Tihany, Limnological Station Lake Balaton, Hungary; 15 September 2020. Online.

Attermeyer, K., Harjung, A., Schelker, J., **Kainz, M. J.**, Weigelhofer, G. (2020): Is terrestrial carbon degradation in stream hyporheic zones stimulated by nutrients? European Geosciences Union (EGU) General Assembly, 3-8 May 2020, Vienna. *Postponed due to COVID19*

Zavorka, L., Höjesjö, J., **Kainz, M. J.**, Wallerius, M. L. (2019): Shift to terrestrial prey in stream-living native brown trout caused by brook trout invasion induces reduction in brain size and cognitive impairment of the native trout. British Ecological Society Meeting 2019; 10-13 December, Belfast, UK.

Kainz, M. J., Schultz, S., Murray, D., Hager, H. H., Tocher, D. (2019): Entwicklung des Fischfutters von morgen – Forschung an heimischen Fischen. Österreichische Fischereifachtagung 2019, 21.-22. November, Mondsee, Austria.

Khan, S., Burns, C., Closs, G., **Kainz, M. J.**, Schallenberg, M. (2019): Is perch (*Perca fluviatilis*) inhibiting and *Daphnia pulex* inducing oligotrophication? GLEON 21 Meeting, November 4-9. Muskoka Lakes/Huntsville, ON, Canada.

Ebm, N., Guo, F., Brett, M. T., Bunn, S. M., Fry, B., **Kainz, M. J.** 2019. Selective retention of algal polyunsaturated fatty acids along stream food webs and within fish organs. SIL-Austria meeting, 28-30 October, Mondsee, Austria.

Mathieu-Resuge, M., Preet Parmar, T., Martin-Creuzburg, D., **Kainz, M. J.** 2019. Transfer of essential lipids from aquatic to terrestrial ecosystems. SIL-Austria meeting, 28-30 October, Mondsee, Austria.

Wu, P., Valdez, D., **Kainz, M. J.**, Branfireun, B., Björn, E., Zheng, S., Wang, R., Bishop, K. (2019): Increasing water temperature and dissolved organic matter change aquatic mercury bioaccumulation — A mesocosm study. 14th International Conference on Mercury as a Global Pollutant. 8-13 September, Krakow, Poland.

Postel, S., **Kainz, M. J.** 2019. Actions to increase Water Security – Informing and involving people. European Forum Alpbach. Aug 21.

Kainz, M. J., Postel, S. 2019. Linking sustainable water use for nutrition with ecological/economic. European Forum Alpbach. Aug 20.

Kainz, M. J., Postel, S. 2019. Ecological threats for aquatic ecosystems - Ecosystem Services and Management of water – a global perspective. European Forum Alpbach. Aug 18.

Postel, S., **Kainz, M. J.** 2019. The World Water Security – Current status of water around the world – An overview and stating of key issues. European Forum Alpbach. Aug 16.

Kainz, M. J., Postel, S. 2019. Water Security for People and Nature – present to 2050. International Students Workshop. European Forum Alpbach. Aug 13-21.

Ebm, N., Guo, F., Brett, M. T., Bunn, S. M., Fry, B., **Kainz, M. J.** 2019. Selective retention of algal polyunsaturated fatty acids along stream food webs and within fish organs. 11th Symposium for European Freshwater Sciences. Zagreb, Jun 30-Jul 5.

Adams, R., Guschina, I., Winter, K., **Kainz, M. J.** 2019. Different sources of the same fatty acids in lake zooplankton – a compound-specific stable isotope approach. 11th Symposium for European Freshwater Sciences. Zagreb, Jun 30-Jul 5.

Mathieu-Resuge, M., Preet Parmar, T., Martin-Creuzburg, D., **Kainz, M. J.** 2019. Transfer of essential lipids from aquatic to terrestrial ecosystems. 11th Symposium for European Freshwater Sciences. Zagreb, Jun 30-Jul 5.

Kainz, M. J., Winter, K., Ebm, N., Guo, F., Brett, M. T., Bunn, S. M., Fry, B. 2019. From bulk to specific diet source tracking in aquatic food webs – the trophic value of $\delta^{13}\text{C}$ and $\delta^2\text{H}$ in fatty acids from various sources and consumers. 11th Symposium for European Freshwater Sciences. Zagreb, Jun 30-Jul 5.

Attermeyer, K., Schelker, J., **Kainz, M. J.**, Weigelhofer, G. 2019. Nutrients stimulate terrestrial carbon degradation and can compensate for the low quality of terrestrial organic matter in the hyporheic zone. ASLO conference, San Juan, Puerto Rico, February 23-March 2.

Kainz, M. J., R. Ptacnik, S. Rasconi, and H. H. Hager. 2018. Irregular changes in lake surface water temperature and ice cover in subalpine Lake Lunz, Austria. GLEON meeting, Rottneist Island, December 1-6.

Kainz, M. J. (2018): Linking dietary biomarkers with consumer physiology – lessons from lipids, stable isotopes, and compound-specific stable isotopes (*invited*). Otago University, Dunedin, New Zealand. December 18.

Kainz, M. J. (2018): Applying lipids and their stable C and H isotopes for source-tracking potential diets in aquatic consumers. Government of Queensland – workshop (*invited*). Brisbane, Australia. December 10.

Kainz, M. J. (2018): How do dietary energy sources in headwater streams match PUFA requirements in consumers? Workshop presentation. “Lipids in the ocean. Structure, function, ecological role and applications”. Brest, France, November 20-22. <https://marinelipids.sciencesconf.org/resource/page/id/13>

Kainz, M. J. (2018): Discerning dietary lipid sources and their ecophysiological fate in fish tissues (*key note*). “Lipids in the ocean. Structure, function, ecological role and applications.” Brest, France, November 20-22. <https://marinelipids.sciencesconf.org/resource/page/id/13>

Rasconi, S., Danner, S., Van der Wyngaert, S., Rohrlack, T., **Kainz, M. J.** (2018): Phytoplankton fungal parasites nutritional quality and role in trophic transfer. ASLO conference, Victoria, Canada, June 10-15.

Kainz, M. J. (2018): Energy transfer in aquatic food webs – sources, methods, ecological implications (*invited talk*). Chinese Academy of Sciences, Institute of Hydrobiology, Wuhan, China, August 27. http://english.ihb.cas.cn/ns/icn/201810/t20181022_199943.html

Kainz, M. J., Guo, F., Ebm, N., Brett, M. T., Bunn, S., Fry, B. (2018): Diet source allocation from the base of the food chain to fish organs – a compound-specific stable isotope approach. SIL conference, Nanjing, China, August 19-24.

Kainz, M. J., Guo, F., Ebm, N., Brett, M. T., Bunn, S., Fry, B. (2018): Trophic reworking of lipids from the base of the food chain to fish brain and eyes – a compound-specific stable isotope approach. ASLO conference, Victoria, Canada, June 10-15.

Jing, M., Yan, H., Wu, P., **Kainz, M. J.**, Bishop, K. (2018): The bioaccumulation patterns of mercury and essential fatty acids in food chain of reservoirs in Guizhou province, China. European Geosciences Union, General Assembly, Vienna, April 8-13.

Schelker, J., Ejarque, E., **Kainz, M. J.**, Battin, T. J. (2018): Implications of Hydrological Extreme Events on Freshwater Carbon Cycling – Recent Advances from Subalpine Lakes and Streams. European Geosciences Union, General Assembly, Vienna, April 8-13.

Kainz, M. J., Hansson, L.-A. (2017): LIMNOTIP - Biodiversity dynamics and tipping points in our future freshwater ecosystems. Water JPI meeting, European Union, Dublin, 2-3 Nov. 2017.

Guo, F., Ouyang, X., Bunn, S., Fry, B., Brett, M. T., **Kainz, M. J.** (2017): Stream macroinvertebrates are integrators of high quality food sources. SIL-Austria meeting, Innsbruck, 26-27 Oct. 2017.

Ebm, N., Jehle, M., Guo, F., Bunn, S., Fry, B., Brett, M. T., **Kainz, M. J.** (2017): Spatial, ontogenetic and interspecific effects on fatty acid composition in brain and eyes of freshwater fish. SIL-Austria meeting, Innsbruck, 26-27 Oct. 2017.

Jehle, M., Guo, F., Ebm, N., Bunn, S., Fry, B., Brett, M. T., **Kainz, M. J.** (2017): What if algae don't provide it? – in search of DHA for fish muscle tissues. SIL-Austria meeting, Innsbruck, 26-27 Oct. 2017.

Kühmayer, T., Guo, F., Bunn, S., Fry, B., Brett, M. T., **Kainz, M. J.** (2017): How do dietary energy sources in t-OM dominated streams match PUFA requirements in benthic invertebrates? - An experimental approach. SIL-Austria meeting, Innsbruck, 26-27 Oct. 2017.

Winter, K., Steniczka, G., Danner, S., Guo, F., Ebm, N., Jehle, M., Kühmayer, T., **Kainz, M. J.** (2017): Fatty acid specific stable isotopes in organisms of the aquatic food web – background and application. SIL-Austria meeting, Innsbruck, 26-27 Oct. 2017.

Vad, C. F., Lukic, D., Horvath, Z., **Kainz, M.**, Ptacnik, R. (2017): Effects of chrysophyte algae on zooplankton secondary production and diversity. ASLO meeting (27 Feb – 3 Mar; Honolulu, USA).

Ejarque, E., Stadler, M., Steniczka, G., **Kainz, M.**, Battin, T. (2017): Climatic controls on the transformation of dissolved organic matter in a subalpine lake. European Geosciences Union, General Assembly, Vienna, April 23-28.

Wu, P., Yan, H., **Kainz, M.**, Åkerblom, S., Jing, M., Branfireun, B., Bergström, A-K., Bishop, K. (2017): Mercury bioaccumulation, fatty acid profiles, and stable isotopes in Swedish and Chinese lake food webs. 13th International Conference on Mercury as a Global Pollutant, Providence, Rhode Island, USA.

Rasconi, S., **Kainz, M.** (2017): Phytoplankton responses to recent temperature changes in pre-alpine Lake Lunz, Austria. Symposium for European Freshwater Sciences, Olomouc, Czech Republic, July 2-7.

Kainz, M., Ejarque, E., Stadler, M., Hollaus, L., Khan, S., Battin, T. (2017): Inter-seasonal carbon dynamics of oligotrophic, subalpine Lake Lunz, Austria. Symposium for European Freshwater Sciences, Olomouc, Czech Republic, July 2-7.

Ejarque, E., Stadler, M., **Kainz, M.**, Battin, T. (2017): Climatic controls on the transformation of dissolved organic matter in a subalpine lake. Symposium for European Freshwater Sciences, Olomouc, Czech Republic, July 2-7.

Stadler, M., Ejarque, E., **Kainz, M.** (2017): Differences in seasonal and local in-lake DOM biodegradability by subalpine freshwater microorganisms – a bioassay approach. Symposium for European Freshwater Sciences, Olomouc, Czech Republic, July 2-7.

Ptácniková, R., Horvat, S., Vad, C., **Kainz, M.**, Ptácnik, R. (2017): Rotifers in Lake Lunz, Austria – what has changed since the 1970-80s? Symposium for European Freshwater Sciences, Olomouc, Czech Republic, July 2-7.

Guo, F., Bunn, S., Fry, B., Battin, T., **Kainz, M.** (2017): How do stream invertebrates depend on basal resources along a longitudinal pre-alpine stream gradient? Symposium for European Freshwater Sciences, Olomouc, Czech Republic, July 2-7.

Chiapella, A., **Kainz, M.**, Strecker, A. (2017): Partitioning dietary energy sources using compound-specific isotopes: a mesocosm study. Symposium for European Freshwater Sciences, Olomouc, Czech Republic, July 2-7.

Rasconi, S., Winter, K., Danner, **Kainz, M.** (2016): Increases in water temperature and heat waves induce loss in plankton biodiversity - evidence from a multi-seasonal mesocosm experiment. Meeting of the International Society of Limnology (SIL), Torino, Jul 31-Aug 5

Kainz, M. Rasconi, S., Winter, K., Danner, S., Hager, H., Hollaus, L.-M., Khan, S., Ejarque, E., Schelker, J., Battin, T. (2016): Lakes as mere archives or active upgraders of organic matter? – evidence of rapid biotic changes in pre-alpine Lake Lunz, Austria. Meeting of the International Society of Limnology (SIL), Torino, Jul 31-Aug 5

Kainz, M. (2016): Principles of eco-toxicological sampling design. Tongji University, Shanghai, China. May 14.

Ejarque, E., Schelker, J., Khan, S., Hollaus, L.-M., Steniczka, G., **Kainz, M.**, Battin, T. (2016): The dual role of lakes as buffers and amplifiers of dissolved organic matter temporal dynamics: buffering transport and amplifying transformation. European Geosciences Union, General Assembly, Vienna, April 17-22

Khan, S., Hollaus, L.-M., Schelker, J., Ejarque, E., Battin, T., **Kainz, M.** (2016): Lakes as organic matter upgrader – seasonal variation in biochemical compositions of in- and outflowing particles in pre-alpine Lake Lunz, Austria. European Geosciences Union, General Assembly, Vienna, April 17-22

Hollaus, L.-M., Khan, S., Schelker, J., Ejarque, E., Battin, T., **Kainz, M.** (2016): Are lake sediments mere archives of degraded organic matter? – Evidence of rapid biotic changes tracked in sediments of pre-alpine Lake Lunz, Austria. European Geosciences Union, General Assembly, Vienna, April 17-22

Thake, P., Rasconi, S., **Kainz, M.** (2015): Effects of temperature changes on taxonomy of phyto- and zooplankton and their biochemical composition - A multi-seasonal mesocosm study. SIL-Austria meeting, Illmitz, October 14-16, 2015.

Rasconi, S., Winter, K., **Kainz, M.** (2015): Effect of increasing temperature and heat waves on plankton communities in experimental ecosystems. SIL-Austria meeting, Illmitz, October 14-16, 2015.

Jecmenica, M., Rasconi, S., Neif, E., **Kainz, M.**, Jeppesen, E. (2015): Effects of temperature and nutrients on polyunsaturated fatty acids in phytoplankton – a mesocosm approach. SIL-Austria meeting, Illmitz, October 14-16, 2015.

Kainz, M., Hager H., Schneeberger, E. (2015): Poultry by-product meals as partial fish meal replacement increase somatic growth in hybrid charr (*Salvelinus alpinus x fontinalis*). Aquaculture 2015: Cutting Edge Science in Aquaculture. Montpellier, France. August 23-26.

Rasconi, S., Winter, K., **Kainz, M.** (2015): Effect of increasing temperature and heat waves on plankton communities in experimental ecosystems. Symposium for European Freshwater Sciences, Geneva, Switzerland, July 5-10.

Kainz, M., H. Hager, S. Rasconi, K. Kahilainen, P.-A. Amundsen, B. Hayden (2015): Evidence for continuous change in alpine lakes – the case of abrupt effects in pre-alpine Lake Lunz, Austria. Symposium for European Freshwater Sciences, Geneva, Switzerland, July 5-10.

Kainz, M., S. Schultz (2015): Aquatic, not particulate sources predict methyl mercury concentrations in zooplankton. ASLO Meeting, Granada, Spain, Feb 23-27.

Kainz, M. (2015): Changing climate, changing lakes – the steady rise of lake temperatures and sudden decline of native Arctic charr in Lake Lunz, Austria. Intern. LTER-Austria Conference. Vienna (Feb 18-19), Austria.

Rasconi, S., Gall A., Winter, K., **Kainz, M.** (2014): Increasing temperature and humic content from terrestrial runoff in freshwater ecosystems enhance cyanobacteria proliferation. ASLO Meeting, Portland OR, USA.

Kainz, M., Arts, M. T., Brett, M. T., Koussoroplis, A.-M., McMeans, B. C., Murray, D. S., Rasconi, S., Taipale, S. J. (2014): Reassessing fatty acids as diet biomarkers in freshwater consumers – lessons from different ecosystems. ASLO Meeting, Portland OR, USA.

Arts, M. T., **Kainz, M.**, Guschina, I. A., N. D. Yan, Koussoroplis, A.-M., Sawyer, J., Fisk, A. T., Arhonditsis, G., Diamond, M., Wacker, A., Fuschino, J. R., and Harwood, J. L. (2014): Does climate change have the potential to affect the production and distribution of essential long-chain polyunsaturated fatty acids (LC-PUFA) in aquatic and terrestrial food webs? IAGLR meeting, Hamilton, ON, May 2014.

Woods, R., Marshall, J., Fawcett, J., Lobegeiger, J., Valdez, D., **Kainz, M.**, Jardine, T., (2014): Combined stable isotope and fatty acid biomarkers reveal food web connectivity in a dryland river. ASLO meeting (May 2014), Portland, OR, USA.

Hager, H. H., **Kainz M.** (2014): Temperature changes in Lake Lunz – trends since 1921. SIL Austria – Alpine Limnology meeting, Lunz am See (Feb 12-14), Austria.

Kainz, M. (2014): Diet transfer from the base of aquatic food webs to fish - applications for future freshwater aquaculture. 13. BOKU-Symposium Tierernährung, "Wertvolle Pflanzeninhaltsstoffe für die Tierernährung: Perspektiven und Entwicklungen". Vienna, 29 April.

Kainz, M., Murray, D., Hager, H., Tocher, D. (2013): Increasing contribution of allochthonous diet decreases somatic growth and omega-3 fatty acids in Alpine Charr (*Salvelinus umbla*). Aquaculture

2013: to the next 40 years of sustainable global aquaculture. Las Palmas, Gran Canaria. 3 – 7 November.

Murray, D., Tocher, D., **Kainz, M.** (2013): Nutritional regulation of hepatic n-3 long-chain polyunsaturated fatty acid synthesis in Arctic charr (*Salvelinus alpinus*). Aquaculture 2013: to the next 40 years of sustainable global aquaculture. Las Palmas, Gran Canaria. 3 – 7 November.

McMeans, B. C., Koussoroplis, A.-M., Arts, M. T., **Kainz, M.** (2013): Allochthonous dissolved organic matter pathways support somatic growth of *Daphnia magna* when algae are limiting. Symposium for European Freshwater Sciences, Münster, Germany, July 1-5.

Merante, A., Derry, A., **Kainz, M.**, Arts, M. (2013). Environmental change and aquatic health: Shifts in nutritional states and community structure of zooplankton. May 14. Canadian Society for Ecology and Evolution. Kelowna, BC, Canada.

Merante, A., Derry, A., **Kainz, M.**, Arts, M. (2013). Changements environnementaux et santé aquatique: Les changements au sein des états nutritionnels et de la structure des communautés de zooplankton. Annual Science Meeting 'Groupe de recherche en limnologie interuniversitaire'. Montreal, QC, Canada.

Chalifour, A., **Kainz, M.**, Arts, M., Juneau, P. (2012): How does temperature affect herbicide toxicity in phytoplankton? SETAC North America 33rd Annual Meeting in Long Beach, CA.

Brett, M., **Kainz, M.**, Taipale, S., Martin, K. (2012): A prototype algorithm to reverse-engineer zooplankton diets based on their fatty acid composition. ASLO meeting, Lake Biwa, Japan.

Koussoroplis, A., Nussbaumer, J., Arts, M., Guschina, I., **Kainz, M.** (2012): Temperature effects on membrane and storage fatty acid dynamics of the freshwater copepod *Eudiaptomus gracilis* during fasting. ASLO meeting, Lake Biwa, Japan.

Burian, A., Schagerl, M., **Kainz, M.**, Singer, G., Yasindi, A. (2012): Rotifer blooms in African soda-lakes: triggers and ecological functioning. ASLO meeting, Lake Biwa, Japan.

Kainz, M., Marshall, J., Jardine, T., Woods, R., Valdez, D., Lobegeiger, J. (2012): Dietary biomarkers in food webs of semi-arid, turbid waterholes: combined assessment of stable isotopes and fatty acids. ASLO meeting, Lake Biwa, Japan.

Böhm, M., Koussoroplis, A.-M., Schultz, S. **Kainz, M.** (2012): Tissue-specific response of fatty acid signatures to diet in cultures carp (*Cyprinus carpio*). SIL Austria meeting 2012. Pörschach, 28.-29. June 2012.

Drucker, K., Changizi-Maghrour, Z., Koussoroplis, A., Schultz, S., Böhm, M., Mathieu, F., **Kainz, M.** (2012): Separation of membrane and storage lipids in aquatic organisms – analytical challenges and ecological implications. SIL Austria meeting 2012. Pörschach, 28.-29. June 2012.

Mathieu, F., Watzke, J., **Kainz, M.** (2012): How does zooplankton regulate its lipid composition in young, artificial lake systems? Effects of diet supply and seasonal changes. SIL Austria meeting 2012. Pörschach, 28.-29. June 2012.

Kainz, M., Marshall, J., Jardine, T., Woods, R., Valdez, D., Lobegeiger, J. (2012): Dietary biomarkers in food webs of semi-arid, turbid waterholes – combined assessment of stable isotopes and fatty acids. SIL Austria meeting 2012. Pörschach, 28.-29. June 2012.

Woods, R., Fawcett, J. H., Lobegeiger, J., **Kainz, M.** (2012): Flow, floods and fish: new technologies in water planning research. Government Science Retreat. Moreton Bay Research Station, North Stradbroke Island, Queensland, Australia.

Mathieu, F., Muellegger, C., Weilhartner, A., Watzke, J., **Kainz, M.** (2011): How do young, artificial lakes affect food quality and fatty acid composition in zooplankton? Symposium for European Freshwater Sciences, Girona, Spain.

Kainz, M., Heissenberger, M., Koussoroplis, A.-M., Martinz, M., Mathieu, F., Nussbaumer, J. Schultz, S., Watzke, J. (2011): Can dietary fatty acids predict fatty acid profiles in aquatic consumers? – Scrutinizing fatty acid retention of organisms at various trophic levels. Symposium for European Freshwater Sciences, Girona, Spain.

Nussbaumer, J., **Kainz, M.** (2011): Temperature and biodiversity effects on freshwater algae fatty acids. Symposium for European Freshwater Sciences, Girona, Spain.

Kainz, M. (2010): Fatty acids in ecotoxicology – combining diet retention and mercury bioaccumulation. Mercury workshop at Lake Erken, Sweden.

Chalifour, A., **Kainz, M.**, Juneau, P. (2010): Effect of herbicides on fatty acid and pigment composition of *Chlamydomonas reinhardtii* : Consequences on photosynthetic efficiency. 15th International Photosynthesis Congress, Beijing, China.

Brett, MT, **Kainz M**, Taipale SJ, Seshan, H (2010): The importance of allochthonous carbon and phytoplankton for zooplankton production: a fatty acid biomarker assessment. ASLO, Santa Fe, USA.

Mariash, HL, **Kainz, M**, Rautio, ML (2010): Overwintering Daphnia: Fat and reproducing. ASLO, Santa Fe, USA.

Strandberg, U., Taipale, SJ, **Kainz, M**, Brett, MT (2010): Bioconversion of omega-3 and omega-6 polyunsaturated fatty acids in *Daphnia magna*. ASLO, Santa Fe, USA.

Kainz, M, El-Sabaawi, R, Finlay, J (2010): Advantages and disadvantages of using stable isotope and fatty acid biomarker analyses to infer consumer support. ASLO Santa Fe, USA workshop “A synthesis of the importance of allochthonous and autochthonous support of consumers in aquatic ecosystems”.

Kainz, M, Schultz, S, Koderbauer, B, Watzke, J, Guschina, IA (2010): Diet source-dependent retention and bioconversion of polyunsaturated fatty acids in common carp (*Cyprinus carpio*). ASLO, Santa Fe, USA.

Schultz S., Koderbauer, B., Vallant, B, **Kainz, M.** (2010): Decreasing methyl mercury bioaccumulation in common carp (*Cyprinus carpio*) with increasing trophic position. ASLO, Santa Fe, USA.

Chalifour, A., **Kainz, M.**, Juneau, P. (2010): The effect of temperature acclimation and norflurazon on fatty acid composition and photosynthesis of *Chlamydomonas reinhardtii*. Eastern Regional Photosynthesis Conference. Marine Biological Laboratory, Woods Hole, MA, USA.

de Wit, H. A., Granhus A., Larsen, T., Lindholm, M., Ranneklev, S. B., **Kainz, M.** (2009): Norwegian catchment study of forest management effects on Hg leaching and Hg food chain accumulation. 9th International Conference on Mercury as a Global Pollutant, Guiyang, China.

Heissenberger, M., Watzke, J., and **Kainz M.** (2009): Influence of nutrition on fatty acid profiles of riverine, lacustrine and aquaculture-raised salmonids of pre-alpine habitats. Arctic Charr meeting 2009. Stirling, Scotland.

Masclaux, H., Bec, A., **Kainz, M.**, Desvillettes, C., Jouve, L., and Bourdier G. (2009): Combined effects of food quality and temperature on somatic growth and reproduction of two freshwater cladocerans. American Society of Limnology and Oceanography (ASLO), Nice, France.

Brett, M. T., and **Kainz, M.** (2008): The impact of terrestrial leaf litter POC on *Daphnia* growth, reproduction and fatty acid composition. American Society of Limnology and Oceanography (ASLO), St. John's, Canada.

Kainz, M. and Fisk, A. (2008): Linking concepts – lipids and xenobiotics dynamics in aquatic food webs. American Society of Limnology and Oceanography (ASLO), St. John's, Canada.

El-Sabaawi, R., **Kainz, M.**, Dower JF., and Mazumder A. (2007): Consequences of interannual variability in the trophic status of *Neocalanus plumchrus* in the Strait of Georgia, British Columbia. 4th International Zooplankton Production Symposium. Hiroshima, Japan.

Kainz, M., Arts, M., and Johannsson, O. (2007): Effect of different diets on fatty acid profiles and nucleic acid ratios of the benthic amphipod *Diporeia* spp. 30th Congress of the International Association of Theoretical and Applied Limnology, Montreal, Canada. Special Session: New Insights on the Potential Role of Biochemicals in Aquatic Trophic Interactions. Oral presentation.

Drebenstedt, M., Arts, M., and **Kainz, M.** (2007): Effects of handling and storage conditions on fatty acid concentrations of freshwater organisms. 30th Congress of the International Association of Theoretical and Applied Limnology, Montreal, Canada. Special Session: New Insights on the Potential Role of Biochemicals in Aquatic Trophic Interactions.

Kainz, M., Mazumder, A., and Arts, M. (2006): Dietary compound pathways in planktonic food webs – recent advances, constraints and perspectives. American Society of Limnology and Oceanography (ASLO), Victoria, Canada. Invited session speaker.

Kainz, M. and Mazumder, A. (2006): Methyl mercury in planktonic organisms – the role of biochemical diet composition. 8th International Conference on Mercury as a Global Pollutant, Madison, USA.

Perga, M., **Kainz, M.**, Mazumder, A. (2006): Zooplankton feeding selectivity on isotopically heterogeneous phytoplankton challenges classic stable isotope analyses of origins of zooplankton carbon. American Society of Limnology and Oceanography (ASLO), Victoria, Canada.

El-Sabaawi, R., **Kainz, M.**, Mazumder, A., and Dower, J. F. (2006): The trophic position of *Neocalanus plumchrus* in the Strait of Georgia, British Columbia, Canada. American Society of Limnology and Oceanography (ASLO), Victoria, Canada.

Kainz, M., Arts, M., and Mazumder, A. (2005): “Essential” versus “conserved” substances: Seasonal analysis of fatty acid and methyl mercury concentrations in pelagic food webs. American Society of Limnology and Oceanography (ASLO), Santiago de Compostela, Spain. Oral presentation.

Perga, M. E., **Kainz, M.**, Matthews, B., and Mazumder, A. (2005): Changes of carbon pathways within the pelagic food web of a recently flooded reservoir. American Society of Limnology and Oceanography (ASLO), Santiago de Compostela, Spain (June 19-24).

Kainz, M., Telmer, K., and Mazumder, A. (2004): Methyl mercury and essential nutrients in planktonic food webs and fish – Implications of different bioaccumulation patterns. 1st COMERN Food Web Workshop. November 6-7th, Winnipeg. Oral presentation.

Kainz, M., Arts, M., and Mazumder, A. (2004): Transfer of essential fatty acids within the planktonic food web and its ecological role for higher trophic levels. American Society of Limnology and Oceanography (ASLO), Savannah. Oral presentation.

Kainz, M. and Mazumder, A. (2004): Relationships between essential fatty acids and methyl mercury in organisms of the planktonic food web. 7th International Conference on Mercury as a Global Pollutant, Ljubljana, Slovenia. Poster presentation.

Kainz, M. and Mazumder, A. (2003): Interactions between methyl mercury and essential fatty acids in the planktonic food web. COMERN meeting, November 5-8th, St. Andrews by the Sea, Canada. Poster presentation.

Kainz, M., Mazumder, A., Telmer, K., and Gabriel, L. (2002): Mercury dynamics in zooplankton from drinking water reservoirs and natural lakes on Vancouver Island. American Society of Limnology and Oceanography (ASLO). Victoria 2002. Poster presentation.

Kainz, M., Lucotte, M., and Parrish, C. C. (2002): Relationships between organic matter composition and methyl mercury content of littoral and profundal lake sediments in an oligotrophic Canadian lake. North American Lake Management Society (NALMS). 22nd International Symposium, Anchorage (AL). Oral presentation.

Lucotte, M., **Kainz, M.**, and Parrish, C. C. (2001): Identification and degradation of organic matter and its importance for MeHg concentrations in lacustrine sediments. ASLO/ESA conference, February 12-16, Albuquerque, USA. Oral presentation.

Kainz, M., Lucotte, M., and Parrish, C. C. (2001): Contribution of allochthonous and autochthonous organic matter to the MeHg burden in zooplankton. ASLO/ESA conference, February 12-16, Albuquerque, USA. Oral presentation.

Kainz, M. and Lucotte, M. (1998): Influence of catchment characteristics on MeHg concentrations at the sediment-water interface of natural lakes. ASLO/ESA conference *The land-water interface: science for a sustainable biosphere*, June 7-12, St. Louis, USA. Oral presentation.

Kainz, M. and Lucotte, M. (1996): Mercury biogeochemistry in a natural lake receiving water from a flooded system in northern Québec. Mercury as a Global Pollutant, Aug. 4-8, 1996, Hamburg, Germany. Poster presentation.

Invited lectures

Jyväskylä University, Finland (March 2021): Compound-specific stable isotopes and their use in trophic ecology.

Biological Station Balaton, Tihany, Hungary (September 2020): Unravelling the secrets of aquatic food webs - from essential nutrients to potential contaminants. Alexander von Humboldt Symposium.

European Forum Alpbach, Oberösterreich (August 2020): Water as Fundamental Right. Schloss Puchberg, Wels.

European Forum Alpbach (August 2020): Water, the Origin of Life: Podiumsdiskussion, Alpbach.

Umweltbundesamt, Austria (June 2019): Futtermittel für zukünftige Aquakultur. Vienna.

Tongji University, Shanghai, China (April 2019): When environmental technology meets ecology – what we need to learn from each other to solve problems of aquatic ecosystems.

University of South Bohemia, Czeske Budejovice, Czech Republic (February 2019): Linking dietary biomarkers with consumer physiology – lessons from lipids, stable isotopes, and compound-specific stable isotopes.

Institute of Zoology, Otago University, Dunedin, New Zealand (December 2018): Linking dietary biomarkers with consumer physiology – lessons from lipids, stable isotopes, and compound-specific stable isotopes.

Institute of Hydrobiology, Chinese Academy of Sciences, Wuhan, China (August 2018): Advances in aquatic trophic ecology – the use of lipid biomarkers.

University of Joensuu, Finland (January 2018): Fatty acid-specific stable isotopes in aquatic organisms – applications for trophic ecology. TERLIT research project workshop.

University of Vienna, Austria (December 2017): Dietary energy effects on freshwater food webs – from molecules to ecosystems. Candidacy talk (research) for professorship position at the University of Vienna.

University of Vienna, Austria (December 2017): Provision of ecosystem services by freshwaters. Candidacy talk (teaching) for professorship position at the University of Vienna.

Uppsala University, Sweden (September 2017): Required or potentially toxic? – the linked fates of carbon and Hg in aquatic food webs. SMarEF's Mercury Bioaccumulation Workshop.

University of Oslo, Norway (June 2017): All carbon is equal, but some is more equal than others – Differences in dietary carbon utilization across aquatic food webs. Candidacy talk (research) for professorship position at the University of Oslo.

École Polytechnique Fédérale de Lausanne (May 2017): All carbon is equal, but some is more equal than others.

Tongji University, Shanghai, China (May 2016): Aquatic ecotoxicology – Study design and analytical methods.

Université du Québec à Trois-Rivières, Canada (Apr 2016): Carbone \neq Carbone - Le flux d'énergie à travers des chaînes alimentaires d'écosystèmes aquatiques différents.

University of Vienna, Geographical Colloquium (Oct 2014): Biomarker research in aquatic food webs – lessons from the sub-arctic to the tropics.

Aarhus University, Denmark (Jul 2014): Lipids and their fatty acids as diet biomarkers in freshwater consumers – lessons from different ecosystems.

Vienna Zoo, Annual Convention of Austrian Veterinarians (June 2014): Diet transfer from the base of aquatic food webs to fish - applications for future freshwater aquaculture.

University of Stockholm, Sweden (May 2012): Biomarkers in aquatic food webs: applications, pitfalls, opportunities.

Queensland Department of Environment and Resource Management, Brisbane, (February 2012): Lipids and fatty acids in aquatic food webs.

Australian Society of Limnology, Brisbane, (February 2012): How powerful are biomarkers for predicting diet sources in aquatic consumers? – Scrutinizing fatty acid retention of organisms at various trophic levels.

University of Eastern Finland, Department of Biology, Joensuu (Finland), January 2011: How useful are biomarkers in aquatic ecotoxicology? – Recent advances, current questions.

Leibniz-Institute of Freshwater Ecology and Inland Fisheries (IGB), Berlin (Germany), December 2010: The unbearable weight of being terrestrial – current advances of aquatic food web research.

Australian Rivers Institute, Griffith University, Nathan (Queensland, Australia), August 2010: How we (think we) know what they feed on – current advances of aquatic food web research.

Université Blaise Pascal - Clermont Ferrand, Laboratoire de Biologie des Protistes (France), May 2010: How we (think we) know what they feed on – current advances of aquatic food web research.

Université du Québec à Montréal, Canada, May 2009: Composés essentiels et toxiques: Intégrer les lipides et les contaminants dans les études de toxicologie aquatique.

Université Blaise Pascal - Clermont Ferrand, Laboratoire de Biologie des Protistes (France), May 2009: Lipid retention in aquatic food webs – some trophic concepts are useful, but most are not.

Universität Potsdam, Germany, December 2008: Lots of diet sources in aquatic food webs ...but what is eventually retained by consumers?

University of Jyväskylä, Finland, October 2008: Many organic matter sources in aquatic ecosystems – which ones are retained in cell membranes of herbivorous consumers?

Norwegian Institute for Water Research (NIVA), June 2008: The use of dietary biomarkers in aquatic ecology and ecotoxicology.

University of Reno, Nevada, USA, April 2008: Autochthonous versus allochthonous organic matter – its functional importance for organisms in aquatic ecosystems.

University of Reno, Nevada, USA, April 2008: Linking concepts – lipids and xenobiotics in aquatic food webs.

University of Ljubljana, Slovenia, January 2008: Concurrent toxic and nutrient pathways through aquatic food webs – Implications and challenges for aquatic ecotoxicology and ecology.

Universität Salzburg, Austria, November 2007: Lipids and Fatty Acids in Aquatic Ecological Research.

Austrian Academy of Sciences, Institute of Limnology, Mondsee, April 2007: Integrating toxic and nutrient pathways through the plankton – Implications and challenges for aquatic ecotoxicology and ecology.

Institut Nationale de la Recherche Agronomique (INRA), Thonon, France, January 2007: Concurrent toxic and nutrient pathways through the plankton - being fuelled or fooled by dietary biomarkers?

University of Waterloo, ON, Canada, September 2006: “Do we really need each other?” – the essential dialogue between ecotoxicologists and ecologists I.

University of Windsor, ON, Canada, September 2006: “Do we really need each other?” – the essential dialogue between ecotoxicologists and ecologists II.

Ryerson University, ON, Canada, September 2006: Toxic and nutrient pathways through the plankton – Implications for ecotoxicology and ecology.

United States Geological Service (USGS), La Crosse, WI, August 2006: ‘Essential’ versus ‘toxic’ diet in lacustrine food webs: pathways of dietary biomarkers and methyl mercury.

Canadian Wildlife Service, Ottawa, March 2006: Dietary pathways of polyunsaturated fatty acids and methyl mercury in lacustrine food webs.

Universität Wien - Institut für Ökologie und Naturschutz (Austria), June 2005: Fette in Organismen der aquatischen Nahrungskette – ihre Anwendung und ökologische Bedeutung.

Université Blaise Pascal - Clermont Ferrand, Laboratoire de Biologie des Protistes (France), May 2005: Le méthyl mercure et des lipides dans les organismes pelagiques.

Université d'Orléans, Institut des Sciences de la Terre d'Orléans, CNRS, (France), October 2003: La matière organique dans des systèmes lacustres - dynamique du méthyl mercure élucidé par des biomarqueurs.

Université de Franche-Comté, Besançon (France), Décembre 2002: Les biomarqueurs lipidiques dans des systèmes lacustres - signification pour la dynamique du méthyl mercure dans les sédiments et le zooplancton.

Public outreach

In addition to frequent local newspaper articles, research activities of the LIPTOX lab are broadcasted:

- 2021 DerStandard – Ein Plädoyer für den Karpfen – nicht nur zu Weihnachten.
<https://www.derstandard.at/story/2000132146399/ein-plaedoyer-fuer-den-karpfen-nicht-nur-zu-weihnachten> 24 Dec
- 2021 Die Presse – Was Algen und Plankton in den Seen der Alpen alles aufnehmen.
<https://www.diepresse.com/6056913/was-algen-und-plankton-in-den-seen-der-alpen-alles-aufnehmen?from=rss> 6 Nov
- 2021 Salzburger Nachrichten – Durch Klimawandel schlechtere Nahrung mit mehr Quecksilber in Seen: <https://www.sn.at/panorama/wissen/durch-klimawandel-schlechtere-nahrung-mit-mehr-quecksilber-in-seen-108741109> 31 Aug
- 2021 ORF Science online – Schlechtere Nahrungsqualität, mehr Quecksilber:
<https://science.orf.at/stories/3208398/> 30 Aug
- 2021 DerStandard – Klimaerwärmung verdirbt die Nahrung von Seebewohnern:
<https://www.derstandard.at/story/2000129271037/klimaerwaermung-verdirbt-die-nahrung-von-seebewohnern> 30 Aug
- 2021 ORF NÖ – „Klimawandel vergiftet Nahrung im See“: <https://noe.orf.at/stories/3119037/> 30 Aug
- 2021 DerStandard Forschung - Wie Wasser in Zeiten des Klimawandels effizienter genutzt werden kann. 25 Aug: <https://www.derstandard.at/story/2000129067626/wie-wasser-in-zeiten-des-klimawandels-effizienter-genutzt-werden-kann>
- 2021 NÖN – Wie beeinflussen Kosmetika unser Wasser? 22 July
<https://www.noen.at/freizeit/gesund-leben/frage-an-die-wissenschaft-wie-beeinflussen-kosmetika-unser-wasser-niederoesterreich-print-frage-an-die-wissenschaft-science-dialogue-martin-j-kainz-282190583>
- 2021 NÖN – Das Labor am See. 12 May
- 2021 ServusTV: Kampf dem Plastik: <https://www.servustv.com/videos/aa-21hp7s7mn2112/>
- 2020 Der Standard: Warum man Karpfen nicht nur zu Weihnachten essen sollte.
<https://www.derstandard.at/story/2000122425171/warum-man-karpfen-nicht-nur-zu-weihnachten-essen-sollte>
- 2020 Der Standard: Wie Karpfenteiche die Welt besser machen können.
<https://www.derstandard.at/story/2000119577333/wie-karpfenteiche-die-welt-besser-machen-koennen>
- 2020 NÖN – Wie vermeidet man, dass Mikroplastik ins Wasser kommt? KW 30
<https://www.noen.at/freizeit/haus-garten/frage-an-die-wissenschaft-wie-vermeidet-man-dass-mikroplastik-ins-wasser-kommt-oesterreich-frage-an-die-wissenschaft-science-dialogue-martin-kainz-217028269>
- 2020 ORF online – Karpfenteiche verbessern Ökosysteme. 27 Jun
<https://orf.at/stories/3171375/> | <https://noe.orf.at/stories/3054831/>
- 2020 NÖN - Wie könnte die Fischzucht der Zukunft aussehen? KW26
<https://www.noen.at/niederoesterreich/wirtschaft/frage-an-die-wissenschaft-wie-koennte-die-fischzucht-der-zukunft-aussehen-frage-an-die-wissenschaft-science-dialogue-211492866>

- 2020 NÖN – Was sind die Vorteile von regionalem Fisch? KW20
<https://www.noen.at/wissenschaft/frage-an-die-wissenschaft-was-sind-die-vorteile-von-regionalem-fisch-frage-an-die-wissenschaft-204739241>
- 2020 NÖN – Warum sind Omega-3 Fettsäuren so wichtig für Menschen? 5 Feb
<https://www.noen.at/wissenschaft/frage-an-die-wissenschaft-warum-sind-omega-3-fettsaeuren-so-wichtig-fuer-menschen-oesterreich-science-dialogue-189409861>
- 2020 Die Presse: Mikroplastik wird umgebaut zu Fettsäuren. 1 Feb
<https://www.diepresse.com/5760748/mikroplastik-kann-in-seen-zu-gehirnzell-bausteinen-umgebaut-werden>
- 2020 ORF NÖ: Bakterien nutzen Mikroplastik. 31 Jan <https://noe.orf.at/stories/3032531/>
- 2020 Wiener Zeitung: Bakterien nutzen Mikroplastik. 30 Jan
<https://www.wienerzeitung.at/nachrichten/wissen/natur/2048068-Bakterien-nutzen-Mikroplastik.html>
- 2020 Der Standard: In Seen lebende Bakterien können Mikroplastik verwerten. 30 Jan
<https://www.derstandard.at/story/2000113957768/in-seen-lebende-bakterien-koennen-mikroplastik-verwerten>
- 2020 NÖN: Mikroplastik zu Gehirnzell-Bausteinen umgewandelt. 30 Jan
- 2020 Vorarlberg online: Mikroplastik wird zu Gehirnzell-Bausteinen. 30 Jan
<https://www.vol.at/mikroplastik-wird-zu-gehirnzell-bausteinen/6503861>
- 2019 Radio Ö1-Wissen Aktuell 16 Aug – Insekten liefern gesunde Omega-3-Fettsäuren
- 2019 Radio Ö1-Morgenjournal 15 Aug – Forum Alpbach: Wasser-Sicherheit
- 2019 Wiener Zeitung: „Das blaue Gold“ 4 Aug
- 2018 Austrian Broadcasting Company (ORF-TV): “Quantensprung” 21 Mar
- 2017 Austrian Broadcasting Company (ORF-TV): "Zurück zur Natur" 3 Dec
- 2017 TERRA MATER 3: Wenn es Fischen im Wasser zu warm wird. 86-87.
- 2016 Der Standard: Der Lunzer See im Mostviertel wird grüner; 8 Sep
- 2016 Austrian Broadcasting Company (ORF-TV): "Veränderungen des Lunzer Sees seit 1905" 30 Aug
- 2016 Austrian Broadcasting Company (ORF-Radio): "Alles im Fluss – die Forschungsstationen in Lunz" 21 Jun
- 2015 Der Standard: Der See im Spiegel der globalen Erwärmung; 5 Dec
<http://derstandard.at/2000026754889/Der-See-im-Spiegel-der-globalen-Erwaermung>
- 2014 Die Presse: Wann Fische statt Fischmehl Kürbiskernkuchen fressen; 1 Aug
<http://diepresse.com/home/science/3848347/Wenn-Fische-statt-Fischmehl-Kurbiskernkuchen-fressen>
- 2014 Die Presse: Gewässer in Gefahr: Was Österreichs Seen und Fische stresst; 1 Aug
<http://diepresse.com/home/science/3848348/Gewaesser-in-Gefahr-Was-Oesterreichs-Seen-und-Fische-stresst>
- 2014 Der Standard: Der See im Gurkenglas; 13 Sep
<http://derStandard.at/2000005402910/Der-See-im-Gurkenglas>
- 2014 Austrian Broadcasting Company (ORF-TV): 'Invasive pike threatens lake food webs'
- 2014 Austrian Broadcasting Company (ORF-TV): 'Different diet sources for aquaculture'
- 2013 Austrian Broadcasting Company (ORF-TV): 'Sustainable fish feeds'
- 2012 Ö1 Wissenschaft aktuell (National radio): 'Aquatic food webs'
- 2012 KRONEN ZEITUNG (National newspaper): June 3
- 2011 KURIER (National newspaper): <http://kurier.at/nachrichten/niederoesterreich/4479042-der-karpfen-ist-besser-als-sein-ruf.php>
- 2011 Austrian Broadcasting Company (ORF-TV): 'Aquatic lipid research'
- 2010 Austrian Broadcasting Company (ORF-TV): 'Healthy carp'
- 2009 Austrian Broadcasting Company (ORF-TV): 'Carp without mercury'
- 2008 Austrian Broadcasting Company (ORF-TV): 'Increases of omega-3 fatty acids in carp'

Students/Interns/Lab members

PhD:

Nadine Ebm (FWF-project 'AlphaOmega', Dietary lipids acquisition and conversion in consumers of subalpine streams; on-going)
 Ariana Chiapella (Trophic flow of mercury and essential nutrients in fishes of mountain lakes; co-advised with Dr. Angela Strecker, Oregon U., USA; defended 2019)
 Francine Mathieu ('Effects of artificial lakes on water quality' project; on-going)
 Sebastian Schultz (FWF-project 'carp', defended 2017)

PhD committee member/co-supervision:

Ossi Keva (Jyväskylä University, Finland) 2018-2022
 Pianpian Wu (SLU Uppsala, Sweden) 2016-2017
 Fen Guo (Griffith University, Brisbane, Australia) 2013-2016
 Annie Chalifour (Université du Québec à Montréal, Canada) 2009-2013

PhD-opponent activity:

Per Hedberg (Department of Ecology, Environment and Plant Sciences, Stockholm University) 10-2021
 Isis Sanpera Calbet (Universitat de Barcelona, Spain) 4-2014 (International Mention)
 Erik Sperfeld (University of Potsdam, Germany) 4-2011
 Elizabeth Louise Allan (Rhodes University, Grahamstown, South Africa) 3-2011
 Apostolos-Manuel Koussoroplis (Université Blaise Pascal, Clermont-Ferrand, France) 9-2010

MSc:

Lena Fehlinger (FWF project AquaTerr; 2020-2021)
 Mirjam Jehle (FWF project OMEGA; 2017)
 Thomas Kühmayer (FWF project OMEGA; 2017-2018)
 Lisa-Maria Hollaus (Austrian Academy of Sciences; 2017-2018)
 Samiullah Khan (Austrian Academy of Sciences; 2015-2016)
 Marina Jecmenica (effects of alternative feeds on salmonids; 2016-2017)
 Paula Thake (FWF project LIMNOTIP/BioDiversa; 2015-2016)
 Andrea Gall (FWF project LIMNOTIP/BioDiversa; 2013-2014)
 Markus Böhm (FWF project Carp; 2011-2012)
 Brigitte Koderbauer (FWF project Carp; 2010-2012)
 Katrina Zsifkovits (membrane competency of *T. thymallus*)
 Mariella Martinz (FeSchaFISCH; 2010-2011)
 Esi Biney (IPGL MSc, 2010)
 Martin Heissenberger (project 'FeSchaFISCH'; 2008-2009)
 Julia Nußbaumer (co-advised with Dr. Birgit Sattler, Universität Innsbruck; 2008-2009)

Post-docs:

Dr. Matthias Pilecky (FWF 'AquaTerr' 2020-2021)
 Dr. Libor Zavorcka (FWF 'SalmoPUFA' 2019-2021)
 Dr. Margaux Mathieu-Resuge (FWF 'AquaTerr' 2019-2021)
 Dr. Andras Abonyi (FWF 'FungUp' 2019-2021)
 Dr. Giseli Swerts-Rocha (pd-fellowship from Brazil; 2018-2019)
 Dr. Elisabet Ejarque (OeAW project 'ExCarb' 2015-2018; co-advisor)
 Dr. Fen Guo (FWF project 'Alpha-Omega3' 2016-2018)
 Dr. Serena Rasconi (BioDiversa/FWF 'LIMNOTIP' 2013-2016)
 Dr. David Murray (Ministry of Life, Austria; 'FISK' 2013-2014)
 Dr. Bailey McMeans (FWF project 'LIPTemp' 2012-2013)
 Dr. Apostolos-Manuel Koussoroplis (FWF project 'LIPTemp' 2010-2012)
 Dr. Sami Taipale (co-advised with Dr. Mike T. Brett, UW, Seattle; NSF: 2008-2010)

Research assistants:

Hannes Hager (Fish ecology and aquaculture); since 2012
 Julia Nußbaumer (FWF project ‘LIPTemp’) 2010-2012

Visiting scientists in my lab:

Dr. Leonard Wassenaar (IAEA, United Nations: 2021-2022)
 Dr. Jussi Kukkonen (Joensuu University, Finland: 2019)
 Dr. Pianpian Wu (SLU, Uppsala, Sweden: 2018)
 Prof. Suzana Zizek (University of Nova Gorica, Slovenia: 2017; Austrian Academy of Sciences grant)
 Ariana Chiapella (University of Oregon, Portland: 2016-2017; FWF-support)
 Dr. Xiaoguang Ouyang (Griffith University, Australia: 2016-2017)
 Dr. Stephen Thomas (University of Helsinki, Finland: 2015)
 Dr. Jyrki Tornaiainen (Jyväskylä University, Finland: 2012)
 Dr. Ryan Woods (Government of Queensland, Australia: 2011)

Lab interns:

Thomas Heindl (BSc internship, BOKU Vienna, 9/2021)
 Pascal Hinterleitner (professional school internship, Yspertal, 7-8/2021)
 Marie Rasson (BSc internship, EBI Cergy, France, 7-8/2021)
 Lucile Le Fresne (BSc internship, EBI Cergy, France, 7-8/2021)
 Benjamin Wagner (professional school internship, Yspertal, 7/2020)
 Eric Wassenaar (BSc internship, HZ University of Applied Science, Vlissingen, Netherlands; 7-8/2019 and 7-8/2020)
 Filip Farkas (professional school internship, Yspertal, 7-8/2019)
 Bernhard Fellingner (high school internship, Vienna; 8/2019)
 Sandra Damodaran (BSc internship, EBI Cergy, France, 7-8/2019)
 Lea Perez (BSc internship, EBI Cergy, France, 7-8/2019)
 Richard Adams (Professional Training Year, Cardiff University, UK; 9/2018-6/2019)
 Min Jing (PhD internship, Chinese Academy of Sciences, Guizhou, China; 7-8/2018)
 Siwen Zheng (PhD internship, Tongji University, Shanghai, China; 7-8/2018)
 Agathe Clermont (BSc internship, EBI Cergy, France, 6-9/2018)
 Julia Mercier (BSc internship, EBI Cergy, France, 6-9/2018)
 Fernando Valdez (BSc internship, Uppsala University, 5-8/2018)
 Peter Dechant (BSc internship, BOKU Vienna; 8/2018)
 Bernhard Fellingner (high school internship, Vienna; 8/2018)
 Iris Schachner (BSc internship, University of Vienna, 7/2018)
 Rafael Steinschaden (MSc internship, University of Vienna, 7-8/2018)
 Mattias Riepel (MSc internship, University of Vienna, 7-8/2018)
 Mirjam Jehle (MSc internship, University of Vienna, 9/2016)
 Elisabeth Krassnigg (BSc internship, University of Life Sciences, Vienna; 8-2016)
 Jakob Djikerman (6-7/2016, 7/2017)
 Lukas Hochauer (6-7/2016)
 Magdalena Held (BSc internship, University of Innsbruck; 8-9/2015)
 Anna Schönbichler (8/2015)
 Marina Jecmenica (5-6/2015)
 Bernadette Schindelegger (11/2014-1/2015)
 Gabriel Hager (7/2014)
 Katharina Brenn (6-8/2014 and 7/2015)
 Severin Pechhacker (6/2014)

Fen Guo (PhD internship; Griffith University, Australia, October 2013)
 Anthony Merante (MSc internship; Université du Québec à Montréal: 2012)
 Heather Mariash (PhD internship; Jyväskylä University, Finland: 2009, 2010, 2011)
 Annie Chalifour (PhD internship; Université du Québec à Montréal: 2009)
 Marlene Möser (6-8/2012)
 Matthias Fussthaler (7-9/2012)
 Christian Pühr (7-8/2011)
 Christopher Reichold (7-8/2011)
 Stefanie Gruber (7-9/2010)
 Nicole Auer (7/2010)
 Cornelia Wöber (7-9/2009)
 Karin Nagiller (11/2008)

Lab assistants under my supervision:

Samuel-Karl Kämmer (lab assistant; 2019-ongoing)
 Stefanie Danner (lab assistant; 2014-2018)
 Katharina Winter (lab manager; 2013-ongoing)
 Katharina Hader (lab assistant; 2013-2014)
 Katharina Drucker (lab manager; 2012-2013)
 Sonja Lugbauer (lab manager; 2011-2012)
 Zahra Changizi (lab assistant; 2008-2013)
 Jörg Watzke (lab manager; 2007-2011)

Scientific memberships and positions

- International Society of Limnology (SIL)
 - Vice-president (2018-2021)
- Austrian Society of Limnology (SIL Austria)
 - Secretary (2007-2012)
 - President (2012-ongoing), and national representative for SIL
- Canadian Society of Limnology (CSL)
- Advancing the Science of Limnology and Oceanography (ASLO), former “American Society of Limnology and Oceanography”
- Long Term Ecological Research Austria (LTER Austria)
- GLEON – Global Lakes Ecological Observatory Network