

Aquatic Ecosystems Bibliography
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- Abboudi, M., Jeffrey, W. H., Ghiglione, J. F., Pujo-Pay, M., Oriol, L., Sempéré, R., . . . Joux, F. (2008). Effects of photochemical transformations of dissolved organic matter on bacterial metabolism and diversity in three contrasting coastal sites in the northwestern Mediterranean Sea during summer. *Microbial Ecology*, *55*(2), 344-357.
- Abboudi, M., Surget, S. M., Rontani, J. F., Sempéré, R., & Joux, F. (2008). Physiological alteration of the marine bacterium *Vibrio angustum* S14 exposed to simulated sunlight during growth. *Current Microbiology*, *57*(5), 412-417. doi: 10.1007/s00284-008-9214-9
- Abernathy, J. W., Xu, P., Xu, D. H., Kucuktas, H., Klesius, P., Arias, C., & Liu, Z. (2007). Generation and analysis of expressed sequence tags from the ciliate protozoan parasite *Ichthyophthirius multifiliis* *BMC Genomics*, *8*, 176.
- Abseck, S., Andrady, A. L., Arnold, F., Björn, L. O., Bomman, J. F., Calamari, D., . . . Zepp, R. G. (1998). Environmental effects of ozone depletion: 1998 assessment. *Journal of Photochemistry and Photobiology B: Biology*, *46*(1-3), 1-108. doi: Doi: 10.1016/s1011-1344(98)00195-x
- Adachi, K., Kato, K., Wakamatsu, K., Ito, S., Ishimaru, K., Hirata, T., . . . Kumai, H. (2005). The histological analysis, colorimetric evaluation, and chemical quantification of melanin content in 'suntanned' fish. *Pigment Cell Research*, *18*, 465-468.
- Adams, M. J., Hossaek, B. R., Knapp, R. A., Corn, P. S., Diamond, S. A., Trenham, P. C., & Fagre, D. B. (2005). Distribution Patterns of Lentic-Breeding Amphibians in Relation to Ultraviolet Radiation Exposure in Western North America. *Ecosystems*, *8*(5), 488-500.
- Adams, N. L., & Shick, J. M. (2001). Mycosporine-like amino acids prevent UVB-induced abnormalities during early development of the green sea urchin *Strongylocentrotus droebachiensis*. *Marine Biology*, *138*, 267-280.
- Adams, N. L., Shick, J. M., & Dunlap, W. C. (2001). Selective accumulation of mycosporine-like amino acids in ovaries of the green sea urchin *Strongylocentrotus droebachiensis* is not affected by ultraviolet radiation. *Marine Biology*, *138*(2), 281-294.
- Adrian, R., O'Reilly, C. M., Zagarese, H., Baines, S. B., Hessen, D. O., Keller, W., . . . Winder, M. (2009). Lakes as sentinels of climate change. *Limnology and Oceanography*, *54*(6/2), 2283-2297.
- Agogu, H., Joux, F., Obernosterer, I., & Lebaron, P. (2005). Resistance of marine bacterioneuston to solar radiation. *Applied Environmental Microbiology*, *71*, 5282-5289.
- Aguilera, J., Bischof, K., Karsten, U., Hanelt, D., & Wiencke, C. (2002). Seasonal variation in ecophysiological patterns in macroalgae from an Arctic fjord. II. Pigment accumulation and biochemical defence systems against high light stress. *Marine Biology*, *140*(6), 1087-1095.
- Aguilera, J., Dummermuth, A., Karsten, U., Schriek, R., & Wiencke, C. (2002). Enzymatic defences against photooxidative stress induced by ultraviolet radiation in Arctic marine macroalgae. *Polar Biology*, *25*(6), 432-441.
- Aguilera, J., Figueroa, F. L., Häder, D.-P., & Jiménez, C. (2008). Photoinhibition and photosynthetic pigment reorganisation dynamics in light/darkness cycles as photoprotective mechanisms of *Porphyra umbilicalis* against damaging effects of UV radiation. *Scientia Marina*, *72*(1), 87-97.
- Agustí, S., & Llabrés, M. (2007). Solar radiation-induced mortality of marine pico-phytoplankton in the oligotrophic ocean. *Photochemistry and Photobiology*, *83*, 793-801.
- Ahn, M. J., Yoon, K. D., Kim, C. Y., Kim, J. H., Shin, C. G., & Kim, J. (2006). Inhibitory activity on HIV-1 reverse transcriptase and integrase of a carmalol derivative from a brown alga, *Ishige okamurae*. *Phytotherapy Research*, *20*, 711-713.
- Ainsworth, E. A., Beier, C., Calfapietra, C., Ceulemans, R., Durand-Tardif, M., Farquhar, G. D., . . . White, J. W. (2008). Next generation of elevated CO₂ experiments with crops: a critical investment for feeding

- the future world. *Plant, Cell and Environment*, 31(9), 1317-1324.
- Ajuzie, C. C. (2007). Palatability and fatality of the dinoflagellate *Prorocentrum lima* to *Artemia salina*. *Journal of Applied Phycology*, 19, 513-519.
- Aksnes, D. L., Nejtgaard, J., Sædberg, E., & Sørnes, T. (2004). Optical control of fish and zooplankton populations. *Limnology and Oceanography*, 49(1), 2004, 233-238 | DOI: 10.4319/lo.2004.49.1.0233(1), 233-238. doi: 10.4319/lo.2004.49.1.0233
- Al Utaibi, A. A., Niaz, G. R., & Al Lihai, S. S. (2009). Mycosporine-like amino acids in six scleractinian coral species. *Oceanologia*, 51(1), 93-104.
- Albert, A., Drouillard, K., Haffner, G. D., & Dixon, B. (2007). Dietary Exposure to Low Pesticide Doses Causes Long-Term; Immunosuppression in the Leopard Frog (*Rana pipiens*). *Environmental Toxicology and Chemistry*, 26(6), 1179-1185.
- Alemanni, M. E., Lozada, M., & Zagarese, H. E. (2003). Assessing sublethal effects of ultraviolet radiation in juvenile rainbow trout (*Oncorhynchus mykiss*). *Photochemical & Photobiological Sciences*, 2, 867-870.
- Ali, A. A., Mannan, M. A., & Parween, S. (2007). Effect of urea and malathion on the freshwater prawn, *Macrobrachium lamarrei* (H.M. Edwards). *University Journal of Zoology, Rajshahi University*, 26, 107-108.
- Ali, N. A., Dewez, D., Didur, O., & Popovic, R. (2006). Inhibition of photosystem II photochemistry by Cr is caused by alteration of both D1 protein and oxygen evolving complex. *Photosynthesis Research*, 89, 81-87.
- Alonso, C., Rocco, V., Barriga, J. P., Battini, M. A., & Zagarese, H. (2004). Surface avoidance by freshwater zooplankton: Field evidence on the role of ultraviolet radiation. *Limnology and Oceanography*, 49(1), 225-232.
- Alonso-Laita, P., & Agustí, S. (2006). Contrasting patterns of phytoplankton viability in the subtropical NE Atlantic Ocean. *Aquatic Microbial Ecology*, 43, 67-78.
- Alonso-Sáez, L., Gasol, J. M., Lefort, T., Hofer, J., & Sommaruga, R. (2006). Effect of natural sunlight on bacterial activity and differential sensitivity of natural bacterioplankton groups in northwestern Mediterranean coastal waters. *Applied and Environmental Microbiology*, 72(9), 5806-5813.
- Al-Otaibi, A. A., Al-Sofyani, A., Niaz, G. R., & Al-Lihai, S. S. (2006). Temporal and depth variation of photoprotective mycosporine-like amino acids in soft coral species from the eastern red sea coast. *Journal of King Abdulaziz University, Marine Sciences*, 17, 169-180.
- Alton, L. A., Wilson, R. S., & Franklin, C. E. (2010). Risk of predation enhances the lethal effects of UV-B in amphibians. *Global Change Biology*, 16(2), 538 - 545. doi: 10.1111/j.1365-2486.2009.02010.x
- Aminaka, R., Taira, Y., Kashino, Y., Koike, H., & Satoh, K. (2006). Acclimation to the growth temperature and thermosensitivity of photosystem II in a mesophilic cyanobacterium, *Synechocystis* sp. PCC6803. *Plant and Cell Physiology*, 47, 1612-1621.
- Andersson, J. O., Hirt, R. P., Foster, P. G., & Roger, A. J. (2006). Evolution of four gene families with patchy phylogenetic distributions: influx of genes into protist genomes. *BMC Evolutionary Biology*, 6, 27.
- Andrady, A., Aucamp, P. J., Bais, A. F., Ballaré, C. L., Björn, L. O., Bornman, J. F., . . . Zepp, R. G. (2006). Environmental effects of ozone depletion and its interactions with climate change: Progress report, 2005. *Photochemical & Photobiological Sciences*, 5, 13-24.
- Andrady, A., Aucamp, P. J., Bais, A. F., Ballaré, C. L., Björn, L. O., Bornman, J. F., . . . Zepp, R. G. (2009). Environmental effects of ozone depletion and its interactions with climate change: Progress report, 2008. United Nations Environment Programme, Environmental Effects Assessment Panel. *Photochemical & Photobiological Sciences*, 8, 13-22.
- Andrady, A., Aucamp, P. J., Bais, A. F., Ballaré, C. L., Björn, L. O., Bornman, J. F., . . . Zepp, R. G. (2008). Environmental effects of ozone depletion and its interactions with climate change: Progress

- report, 2007. *Photochemical & Photobiological Sciences*, 7, 15-27.
- Andrady, A., Aucamp, P. J., Bais, A. F., Ballaré, C. L., Björn, L. O., Bornman, J. F., . . . Zepp, R. G. (2010). Environmental effects of ozone depletion and its interactions with climate change: progress report, 2009. *Photochemical & Photobiological Sciences*, 9, 275-294. doi: 10.1039/b923342n
- Andrady, A. L., Aucamp, P. J., Bais, A. F., Ballaré, C. L., Björn, L. O., Bornman, J. F., . . . Zepp, R. G. (2007). Environmental effects of ozone depletion: 2006 assessment: interactions of ozone depletion and climate change. Executive summary. *Photochemical & Photobiological Sciences*, 6(3), 212-217.
- Andreasson, K. I. M., & Wangberg, S. (2006). Biological weighting functions as a tool for evaluating two ways to measure UVB radiation inhibition on photosynthesis. *Journal of Photochemistry and Photobiology B: Biology*, 84(2), 111-118.
- Andreasson, K. I. M., & Wangberg, S. (2007). Reduction in growth rate in *Phaeodactylum tricornutum* (Bacillariophyceae) and *Dunaliella tertiolecta* (Chlorophyceae) induced by UV-B radiation. *Journal of Photochemistry and Photobiology B: Biology*, 86(3), 227-233.
- Andreeva, A., Abarova, S., Stoitchkova, K., Picorel, R., & Velitchkova, M. (2007). Selective photobleaching of chlorophylls and carotenoids in photosystem I particles under high-light treatment. *Photochemistry and Photobiology*, 83(6), 1301-1307.
- Anesio, A. M., & Granéli, W. (2003). Increased photoreactivity of DOC by acidification: implications for the carbon cycle in humic lakes. *Limnology and Oceanography*, 48, 735-744.
- Ankley, G. T., Degitz, S. J., Diamond, S. A., & Tietge, J. E. (2004). Assessment of environmental stressors potentially responsible for malformations in North American anuran amphibians. *Ecotoxicology and Environmental Safety*, 58(1), 7-16.
- Ankley, G. T., Diamond, S. A., Tietge, J. E., Holcombe, G. W., Jensen, K. M., DeFoe, D. L., & Peterson, R. (2002). Assessment of the Risk of Solar Ultraviolet Radiation to Amphibians. I. Dose-Dependent Induction of Hindlimb Malformations in the Northern Leopard Frog (*Rana pipiens*). *Environmental Science & Technology*, 36(13), 2853-2858.
- Anusha, K., & Asaeda, T. (2008). Indirect mechanisms accelerated due to ultraviolet-B irradiation on nutrient cycling in a freshwater ecosystem. *Journal of Photochemistry and Photobiology B: Biology*, 93, 1-8.
- Aoyamaa, K., Iwahori, K., & Miyatab, N. (2003). Application of *Euglena gracilis* cells to comet assay: evaluation of DNA damage and repair. *Mutation Research*, 538(1-2), 155-162.
- Aravind, P., & Prasad, M. N. V. (2003). Zinc alleviates Cd induced oxidative stress in *Ceratophyllum demersum* L.: A free floating freshwater macrophyte. *Plant Physiology and Biochemistry*, 41, 391-397.
- Archer, S. D., Gilbert, F. J., Allen, J. I., Blackford, J., & Nightingale, P. D. (2004). Modelling of the seasonal patterns of dimethylsulphide production and fate during 1989 at a site in the North Sea. *Canadian Journal of Fisheries and Aquatic Sciences*, 61, 765-787.
- Arias-Rodriguez, L., Rodriguez-Ibarra, L. E., & Valle-Pignataro, G. (2004). Effect of UV radiation on the genetic inactivation of sperm of the bullseye puffer *Sphoeroides annulatus* (Jenyns, 1842). *Ciencias marinas*, 30(3), 391-402.
- Arrieta, J. M., Weinbauer, M. G., & Herndl, G. J. (2000). Interspecific variability in sensitivity to UV radiation and subsequent recovery in selected isolates of marine bacteria. *Applied and Environmental Microbiology*, 66, 1468-1473.
- Arrigo, K. R., & Thomas, D. N. (2004). Large scale importance of sea ice biology in the Southern Ocean. *Antarctic Science*, 16, 471-486.
- Arróniz-Crespo, M., Núñez-Olivera, E., & Martínez-Abaigar, J. (2008). Hydroxycinnamic acid derivatives in an aquatic liverwort as possible bioindicators of enhanced UV radiation. *Environmental Pollution*, 151(1), 8-16.
- Arróniz-Crespo, M., Núñez-Olivera, E., Martínez-Abaigar, J., Becker, H., Scher, J., Zapp, J., . . . Beaucourt, N.

- (2006). Physiological changes and UV protection in the aquatic liverwort *Jungermannia exsertifolia* subsp. *cordifolia* along an altitudinal gradient of UV-B radiation. *Functional Plant Biology*, 33(11), 1025-1036. doi: 10.1071/FP06096
- Arróniz-Crespo, M., Núñez-Olivera, E., Martínez-Abaigar, J., & Tomás, R. (2004). A survey of the distribution of UV-absorbing compounds in aquatic bryophytes from a mountain stream. *The Bryologist*, 107(2), 202-208.
- Arróniz-Crespo, M., Phoenix, G., Núñez-Olivera, E., & Martínez-Abaigar, J. (2008). Age-specific physiological responses to UV radiation in the aquatic liverwort *Jungermannia exsertifolia* subsp. *cordifolia*. *Cryptogamie - Bryologie*, 29(2), 115-126.
- Arróniz-Crespo, M., Sinha, R. P., Martínez-Abaigar, J., Nunez-Olivera, E., & Haeder, D. P. (2005). Ultraviolet Radiation-Induced Changes in Mycosporine-Like Amino Acids and Physiological Variables in the Red Alga *Lemanea fluviatilis*. *Journal of Freshwater Ecology*, 20(4), 677-687.
- Arunakumara, K., & Zhang, X. (2008). Heavy metal bioaccumulation and toxicity with special reference to microalgae. *Journal of Ocean University of China (English Edition)*, 7(1), 60-64.
- Aubriot, L., Conde, D., Bonilla, S., & Sommaruga, R. (2004). Phosphate uptake behavior of natural phytoplankton during exposure to solar ultraviolet radiation in a shallow coastal lagoon. *Marine Biology*, 144, 623-631.
- Babu, T. S., Akhtar, T. A., Lampi, M. A., Tripuranthakam, S., Dixon, D. G., & Greenberg, B. M. (2003). Similar stress responses are elicited by copper and ultraviolet radiation in the aquatic plant *Lemna gibba*: implication of reactive oxygen species as common signals. *Plant and Cell Physiology*, 44(12), 1320-1329.
- Baier, J., Fuá, T., P'Ilmann, C., Wiesmann, C., Pindl, K., Engl, R., . . . Baumler, W. (2007). Theoretical and experimental analysis of the luminescence signal of singlet oxygen for different photosensitizers. *Journal of Photochemistry and Photobiology B: Biology*, 87, 163-173.
- Bailey, K. E., Toole, D. A., Blomquist, B., Najjar, R. G., Huebert, B., Kieber, D. J., . . . del Valle, D. A. (2008). Dimethylsulfide production in Sargasso Sea eddies. *Deep-Sea Research Part II: Topical Studies in Oceanography*, 55(10-13), 1491-1504. doi: 10.1016/j.dsr2.2008.02.011
- Bailey, S., & Grossman, A. (2008). Photoprotection in cyanobacteria: regulation of light harvesting. *Photochemistry and Photobiology*, 84, 1410-1420.
- Balseiro, E., Souza, M. S., Modenutti, B., & Reissig, M. (2008). Living in transparent lakes: low food P :C ratio decreases antioxidant response to ultraviolet radiation in *Daphnia*. *Limnology and Oceanography*, 53(6), 2383-2390.
- Balskus, E. P., & Walsh, C. T. (2008). Investigating the initial steps in the biosynthesis of cyanobacterial sunscreen scytonemin. *Journal of the American Chemical Society*, 130, 15260-15261.
- Ban, S., Ohi, N., Leong, S. C. Y., Takahashi, K. T., Riser, C. W., & Taguchi, S. (2007). Effect of solar ultraviolet radiation on survival of krill larvae and copepods in Antarctic Ocean. *Polar Biology*, 30(10), 1295-1302.
- Bañares, E., Altamirano, M., Figueroa, F. L., & Flores-Moya, A. (2002). Influence of UV radiation on growth of sporelings of three non-geniculate coralline red algae from Southern Iberian Peninsula. *Phycological Research*, 50, 23-30.
- Banaszak, A. T. (2003). Photoprotective physiological and biochemical responses of aquatic organisms. In E. W. Helbling & H. E. Zagarese (Eds.), *UV effects in aquatic organisms and ecosystems* (pp. 329-356). Cambridge: The Royal Society of Chemistry.
- Banaszak, A. T. (2007). Optimization of DNA extraction from a scleractinian coral for the detection of thymine dimers by immunoassay. *Photobiology and Photochemistry*, 83(4), 833-838.
- Banaszak, A. T., & Lesser, M. P. (2009). Effects of solar ultraviolet radiation on coral reef organisms. *Photochemical & Photobiological Sciences*, 8(9), 1276-1294. doi: 10.1039/B902763G
- Bancroft, B. A., Baker, N. J., & Blaustein, A. R. (2007). Effects of UVB radiation on marine and freshwater

- organisms: a synthesis through meta-analysis. *Ecology Letters*, 10(4), 332-345. doi:10.1111/j.1461-0248.2007.01022.x
- Bancroft, B. A., Baker, N. J., & Blaustein, A. R. (2008). A meta-analysis of the effects of ultraviolet B radiation and its synergistic interactions with pH, contaminants, and disease on amphibian survival. *Conservation Biology*, 22(4), 987-996.
- Bancroft, B. A., Baker, N. J., Searle, C. L., Garcia, T. S., & Blaustein, A. R. (2008). Larval amphibians seek warm temperatures and do not avoid harmful UVB radiation. *Behavioral Ecology*, 19(4), 879-886. doi:10.1093/beheco/arn044
- Barbieri, E. S., Villafañe, V. E., & Helbling, E. W. (2006). Dynamics of oxygen production / consumption in *Dunaliella salina*, *Thalassiosira weissflogii* and *Heterocapsa triquetra* circulating within a simulated upper mixed layer. *Investigaciones Marinas*, 24(2), 97-108.
- Barron, M. (2007). Sediment-associated phototoxicity to aquatic organisms. *Human and Ecological Risk Assessment*, 13(2), 317-321.
- Barron, M. G., & Barron, K. J. (2005). Glacial influences on solar radiation in a subarctic sea. *Photochemistry and Photobiology*, 81(1), 187-189.
- Barron, M. G., Carls, M. G., Short, J. W., Rice, S. D., Heintz, R. A., Rau, M., & Di Giulio, R. (2005). Assessment of the phototoxicity of weathered Alaska North Slope crude oil to juvenile pink salmon. *Chemosphere*, 60(1), 105-110.
- Barron, M. G., Vivian, D. N., Yee, S. H., & Santavy, D. L. (2009). Methods to estimate solar radiation dosimetry in coral reefs using remote sensed, modeled, and in situ data. *Environmental Monitoring and Assessment*, 151(1-4), 445-455.
- Bartsch, I., Wiencke, C., Bischof, K., Buchholz, C. M., Buck, B. H., Eggert, A., . . . Wiese, J. (2008). The genus *Laminaria sensu lato* : recent insights and developments. *European Journal of Phycology*, 43(1), 1-86.
- Bastidas Navarro, M., & Modenutti, B. (2010). UVR induce optical changes and phosphorous release of lake water and macrophyte leachates in shallow Andean lakes. *Journal of Limnology*, 69(1), 112-119. doi: 10.3274/JL10-69-1-10
- Batista González, A. E., Charles, M. B., Mancini-Filho, J., & Vidal Novoa, A. (2009). Seaweeds as sources of antioxidant phytomedicines. *Revista Cubana de Plantas Medicinales*, 14(2), 1-18.
- Baud, D. R., & Beck, M. L. (2005). Interactive Effects of UV-B and Copper on Spring Peeper Tadpoles (*Pseudacris crucifer*). *Southeastern Naturalist*, 4(1), 15-22.
- Baudoux, A. C., & Brussaard, C. P. D. (2008). Influence of irradiance on virus-algal host interactions. *Journal of Phycology*, 44, 902-908.
- Bauer, H., Caldwell, M. M., Tevini, M., Worrest, R. C., United States. Environmental Protection Agency., Germany (West). Bundesministerium für Forschung und Technologie., & Gesellschaft für Strahlen- und Umweltforschung. Bereich Projektträgerschaften. (1982). *Biological effects of UV-B radiation : proceedings of a workshop held in Munich-Neuherberg, May, 25-27, 1982*. Munich: Gesellschaft für Strahlen- und Umweltforschung.
- Baumann, H. A., Morrison, L., & Stengel, D. B. (2009). Metal accumulation and toxicity measured by PAM-Chlorophyll fluorescence in seven species of marine macroalgae. *Ecotoxicology and Environmental Safety*, 72(4), 1063-1075.
- Bazzaz, F. A., Sombroek, W. G., & Food and Agriculture Organization of the United Nations. (1996). *Global climate change and agricultural production : direct and indirect effects of changing hydrological, pedological, and plant physiological processes*. Rome; Chichester; New York: Food and Agriculture Organization of the United Nations; Wiley.
- Beardall, J., Heraud, P., Roberts, S., Shelly, K., & Stojkovic, S. (2002). Effects of UV-B radiation on inorganic carbon acquisition by the marine microalga *Dunaliella tertiolecta* (Chlorophyceae). *Phycologia*, 41(3), 268-272.

- Beardall, J., Sobrino, C., & Stojkovic, S. (2009). Interactions between the impacts of ultraviolet radiation, elevated CO₂, and nutrient limitation on marine primary producers. *Photochemical & Photobiological Sciences*, 8(9), 1257-1265. doi: 10.1039/b9pp00034h
- Becker, S., Walter, B., & Bischof, K. (2009). Freezing tolerance and photosynthetic performance of polar seaweeds at low temperatures. *Botanica Marina*, 52(6), 609-616.
- Beebee, T. J. C., & Griffiths, R. A. (2005). The amphibian decline crisis: A watershed for conservation biology? *Biological Conservation*, 125(3), 271-285.
- Behrenfeld, M. J. (1989). *Primary productivity in the southeast Pacific Ocean : effects of enhanced ultraviolet-B radiation*. (Thesis M S --Oregon State University 1990).
- Behrenfeld, M. J. (1993). *Effects of ultraviolet-B radiation on marine phytoplankton*. (Thesis Ph D --Oregon State University 1994).
- Belden, L. K. (2001). *Sublethal effects of UV-B radiation on larval amphibians*. (Thesis Ph D --Oregon State University 2002).
- Belden, L. K., & Blaustein, A. R. (2002). Population differences in sensitivity to UV-B radiation for larval long-toed salamanders. *Ecology*, 83(6), 1586-1590.
- Belden, L. K., & Blaustein, A. R. (2002). UV-B Induced Skin Darkening in Larval Salamanders Does Not Prevent Sublethal Effects of Exposure on Growth. *Copeia*, 202(3), 748-754.
- Bell, B. D., Carver, S., Mitchell, N. J., & Pledger, S. (2004). The recent decline of a New Zealand endemic: how and why did populations of Archey's frog *Leiopelma archeyi* crash over 1996-2001? *Biological Conservation*, 120, 193-203.
- Belmont, P., Morris, D. P., Pazzaglia, F. J., & Peters, S. C. (2009). Penetration of ultraviolet radiation in streams of eastern Pennsylvania: Topographic controls and the role of suspended particulates. *Aquatic Sciences*, 71(2), 189-201.
- Belzile, C., Demers, S., Ferreyra, G. A., Schloss, I., Nozais, C., Lacoste, K., . . . Vernet, M. (2006). UV effects on marine planktonic food webs: a synthesis of results from mesocosm studies. *Photochemistry and Photobiology*, 82(4), 850-856.
- Belzile, C., Gibson, J. A. E., & Vincent, W. F. (2002). Colored dissolved organic matter and dissolved organic carbon exclusion from lake ice: Implications for irradiance transmission and carbon cycling. *Limnology and Oceanography*, 47, 1283-1293.
- Ben Yosef, D. Z., Kashman, Y., & Benayahu, Y. (2006). Response of the soft coral *Heteroxenia fuscescens* to ultraviolet radiation regimes as reflected by mycosporine-like amino acid biosynthesis. *Marine Ecology - an Evolutionary Perspective*, 27(3), 219-228.
- Ben Yosef, D. Z., Kashman, Y., & Benayahu, Y. (2008). Mycosporine-like amino acids in azooxanthellate and zooxanthellate early developmental stages of the soft coral *Heteroxenia fuscescens* *Journal of Experimental Marine Biology and Ecology*, 355(1), 12-17.
- Bércecs, A., Chernouss, S., Lammer, H., Belisheva, N. K., Kovacs, G., Rontó, G., & Lichtenegger, H. I. M. (2005). A comparison of solar UV induced DNA-damaging effects between southern and central Europe and Arctic high latitudes (pp. 1). Vienna, Austria, 24-29 April: European Geosciences Union.
- Bergmann, T., Richardson, T. L., Paerl, H. W., Pinckney, J. L., & Schofield, O. (2002). Synergy of light and nutrients on the photosynthetic efficiency of phytoplankton populations from the Neuse River Estuary, North Carolina. *Journal of Plankton Research*, 24, 923-933.
- Bertagnolli, C., Peres, R. S., Carbone, S., Manfro, R. L., Pinheiro, D. K., Schuch, A. A. M. P., . . . Schuch, N. J. (2007). Estimativa para o cálculo de ozônio total usando dados de UVB e UVA do observatório espacial do sul, Brasil. *Revista Brasileira de Geofísica*, 25(Supl. 2), 9-15.
- Bertilsson, S., Hansson, L.-A., Graneli, W., & Philibert, A. (2003). Size-selective predation on pelagic microorganisms in Arctic freshwaters. *Journal of Plankton Research*, 25, 621-631.
- Bettarel, Y., Sime-Ngando, T., Amblard, C., Carrias, J.-F., & Portelli, C. (2003). Virioplankton and microbial communities in aquatic systems: a seasonal study in two lakes of differing trophic. *Freshwater*

- Biology*, 48, 810-822.
- Bhandari, R., & Sharma, P. K. (2006). High-light-induced changes on photosynthesis, pigments, sugars, lipids and antioxidant enzymes in freshwater (*Nostoc spongiaeforme*) and marine (*Phormidium corium*) cyanobacteria. *Photochemistry and Photobiology*, 82, 702-710.
- Bhandari, R., & Sharma, P. K. (2007). Effect of UV-B and high visual radiation on photosynthesis in freshwater (*Nostoc spongiaeforme*) and marine (*Phormidium corium*) cyanobacteria. *Indian Journal of Biochemistry and Biophysics*, 44(4), 231-239.
- Bhargava, P., Atri, N., Srivastava, A. K., & Rai, L. C. (2007). Cadmium mitigates ultraviolet-B stress in *Anabaena doliolum* : enzymatic and non-enzymatic antioxidants. *Biologia Plantarum*, 51, 546-550.
- Bhargava, P., Srivastava, A. K., Urmil, S., & Rai, L. C. (2005). Phytochelatin plays a role in UV-B tolerance in N₂-fixing cyanobacterium *Anabaena doliolum*. *Journal of Plant Physiology*, 162(11), 1220-1225.
- Biggs, R. H., & Joyner, M. E. B. (1994). *Stratospheric ozone depletion/UV-B radiation in the biosphere*. Berlin ; New York: Springer-Verlag.
- Bischof, K., Gómez, I., Molis, M., Hanelt, D., Karsten, U., Lüder, U., . . . Wiencke, C. (2006). Ultraviolet radiation shapes seaweed communities. *Reviews in Environmental Science and Biotechnology*, 5(2-3), 141-166.
- Bischof, K., Hanelt, D., Aguilera, J., Karsten, U., Vögele, B., Sawall, T., & Wiencke, C. (2002). Seasonal variation in ecophysiological patterns in macroalgae from an Arctic fjord. I. Sensitivity of photosynthesis to ultraviolet radiation. *Marine Biology*, 140(6), 1097-1106.
- Bischof, K., Kräbs, G., Wiencke, C., & Hanelt, D. (2002). Solar ultraviolet radiation affects the activity of ribulose-1,5-bisphosphate carboxylase-oxygenase and the composition of photosynthetic and xanthophyll cycle pigments in the intertidal green alga *Ulva lactuca* L. *Planta*, 215, 502-509.
- Bischof, K., Peralta, G., Kräbs, G., van de Poll, W. H., Pérez-Lloréns, J. L., & Breeman, A. M. (2002). Effects of solar UV-B radiation on canopy structure of *Ulva* communities from southern Spain. *Journal of Experimental Botany*, 53, 2411-2421.
- Bischof, K., Rautenberger, R., Brey, L., & Perez-Llorens, J. L. (2006). Physiological acclimation to gradients of solar irradiance within mats of the filamentous green macroalga *Chaetomorpha linum* from southern Spain. *Marine Ecology Progress Series*, 306, 165-175.
- Björn, L. O. (2007). Stratospheric ozone, ultraviolet radiation, and cryptogams. *Biological Conservation*, 135(3), 326-333.
- Blaustein, A. R., & Bancroft, B. A. (2007). Amphibian Population Declines: Evolutionary Considerations. *BioScience*, 57(5), 437-444.
- Blaustein, A. R., & Belden, L. K. (2003). Amphibian defenses against ultraviolet-B radiation. *Evolution & Development*, 5(1), 89-97.
- Blaustein, A. R., Han, B., Fasy, B., Romansic, J., Scheessele, Anthony, R. G., . . . Kats, L. B. (2004). Variable breeding phenology affects the exposure of amphibian embryos to ultraviolet radiation and Optical characteristics of natural waters protect amphibians from UV-B in the U.S. Pacific Northwest: A Comment. *Ecology*, 85, 1747-1754.
- Blaustein, A. R., & Johnson, P. T. J. (2003). Explaining frog deformities. *Scientific American*, 288(2), 60-65.
- Blaustein, A. R., & Kats, L. B. (2003). Amphibians in a very bad light. *Bioscience*, 53, 1028-1029.
- Blaustein, A. R., & Kiesecker, J. M. (2002). Complexity in conservation: lessons from the global decline of amphibian populations. *Ecology Letters*, 5(4), 597-608.
- Blaustein, A. R., Romansic, J. M., Kiesecker, J. M., & Hatch, A. C. (2003). Ultraviolet Radiation, Toxic Chemicals and Amphibian Population Declines. *Diversity and Distributions*, 9(2), 123-141.
- Blaustein, A. R., Romansic, J. M., Scheessele, E. A., Han, B. A., Pessier, A. P., & Longcore, J. E. (2005). Interspecific variation in susceptibility of frog tadpoles to the pathogenic fungus *Batrachochytrium dendrobatidis*. *Conservation Biology*, 19, 1460-1468.
- Blunt, J. W., Copp, B. R., Hu, W. P., Munro, M. H. G., Northcote, P. T., & Prinsep, M. R. (2007). Marine natural

- products. *Natural Product Reports*, 24 31-86.
- Boehm, F., Clarke, K., Edge, R., Fernandez, E., Navaratnam, S., Quilhot, W., . . . Truscott, T. G. (2009). Lichens - Photophysical studies of potential new sunscreens. *Journal of Photochemistry and Photobiology B: Biology*, 95(1), 40-45.
- Boeing, W. J., Leech, D. M., Williamson, C. E., Cooke, S., & Torres, L. (2004). Damaging UV radiation and invertebrate predation: conflicting selective pressures for zooplankton vertical distribution in the water column of low DOC lakes. *Oecologia*, 138(4), 603-612.
- Boelen, P., Post, A. F., Veldhuis, M. J. W., & Buma, A. G. J. (2002). Diel patterns of UVBR-induced DNA damage in picoplankton size fractions from the Gulf of Aqaba, Red Sea. *Microbial Ecology*, 44, 164-174.
- Boenigk, J., Wiedroither, A., & Pfandl, K. (2005). Heavy metal toxicity and bioavailability of dissolved nutrients to a bacterivorous flagellate are linked to suspended particle physical properties. *Aquatic Toxicology*, 71, 249-259.
- Bolige, A., Kiyota, M., & Goto, K. (2005). Circadian rhythms of resistance to UV-C and UV-B radiation in *Euglena* as related to 'escape from light' and 'resistance to light'. *Journal of Photochemistry and Photobiology B: Biology*, 81(1), 43-54.
- Bonaventura, R., Poma, V., Russo, R., Zito, F., & Matranga, V. (2006). Effects of UV-B radiation on development and hsp70 expression in sea urchin cleavage embryos. *Marine Biology*, 149(1), 79-86.
- Bonilla, S., Rautio, M., & Vincent, W. F. (2009). Phytoplankton and phytobenthos pigment strategies: implications for algal survival in the changing Arctic. *Polar Biology*, 1293-1303. doi: 10.1007/s00300-009-0626-1
- Bonilla, S., Villeneuve, V., & Vincent, W. F. (2005). Benthic and planktonic algal communities in a high Arctic lake: pigment structure and contrasting responses to nutrient enrichment. *Journal of Phycology*, 41, 1120-1130.
- Bontempi, P. S., & Yoder, J. A. (2004). Spatial variability in SeaWiFS imagery of the South Atlantic bight as evidenced by gradients (fronts) in chlorophyll a and water-leaving radiance. *Deep-Sea Research Part II*, 51, 1019-1032.
- Boone, M. D., & Semlitsch, R. D. (2003). Interactions of bullfrog tadpole predators and an insecticide: predation release and facilitation. *Oecologia*, 137, 610-616.
- Boreen, A. L., Edlund, B. L., Cotner, J. B., & McNeill, K. (2008). Indirect photodegradation of dissolved free amino acids: The contribution of singlet oxygen and the differential reactivity of DOM from various sources. *Environmental Science & Technology*, 42(15), 5492-5498.
- Boss, E. S., Collier, R., Larson, G., Fennel, K., & Pegau, W. S. (2007). Measurements of spectral optical properties and their relation to biogeochemical variables and processes in Crater Lake, Crater Lake National Park, OR. *Hydrobiologia*, 574, 149-159.
- Boubriak, I., Ng, W. L., DasSarma, P., DasSarma, S., Crowley, D. J., & McCready, S. J. (2008). Transcriptional responses to biologically relevant doses of UV-B radiation in the model archaeon, *Halobacterium* sp. NRC-1. *Saline Systems*, 4, 13.
- Bouchard, J. N., Campbell, D. A., & Roy, S. (2005). Effects of UV-B radiation on the D1 protein repair cycle of natural phytoplankton communities from three latitudes (Canada, Brazil, and Argentina). *Journal of Phycology*, 41(2), 273-286.
- Bouchard, J. N., Longhi, M. L., Roy, S., Campbell, D. A., & Ferreyra, G. (2008). Interaction of nitrogen status and UVB sensitivity in a temperate phytoplankton assemblage. *Journal of Experimental Marine Biology and Ecology*, 359(1), 67-76.
- Bouchard, J. N., Roy, S., & Campbell, D. A. (2006). UVB effects on the photosystem II-D1 protein of phytoplankton and natural phytoplankton communities. *Photochemistry and Photobiology*, 82(4), 936-951.
- Bouchard, J. N., Roy, S., Ferreyra, G., Campbell, D. A., & Curtosi, A. (2005). Ultraviolet-B effects on

- photosystem II efficiency of natural phytoplankton communities from Antarctica. *Polar Biology*, 28, 607-618.
- Boulay, C., Abasova, L., Six, C., Vass, I., & Kirilovsky, D. (2008). Occurrence and function of the orange carotenoid protein in photoprotective mechanisms in various cyanobacteria. *Biochimica and Biophysica Acta*, 1777, 1344-1354.
- Boyce, D. G., Lewis, M. R., & Worm, B. (2010). Global phytoplankton decline over the past century. *Nature*, 466(7306), 591-596. doi: 10.1038/nature09268
- Boyer, E. W., Hornberger, G. M., Bencala, K. E., & McKnight, D. M. (1997). Response characteristics of DOC flushing in an alpine catchment. *Hydrological Processes*, 11, 1635-1647.
- Boyer, E. W., Hornberger, G. M., Bencala, K. E., & McKnight, D. M. (2000). Effects of asynchronous snowmelt on flushing of dissolved organic carbon: a mixing model approach. *Hydrological Processes*, 14, 3291-3308.
- Bracchini, L., Cózar, A., Dattilo, A. M., Loïelle, S. A., Tognazzi, A., Azza, N., & Rossi, C. (2006). The role of wetlands in the chromophoric dissolved organic matter release and its relation to aquatic ecosystems optical properties. A case of study: Katonga and Bunjako Bays (Victoria Lake; Uganda). *Chemosphere*, 63(7), 1170-1178.
- Bracchini, L., Cózar, A., Dattilo, A. M., Picchi, M. P., Arena, C., Mazzuoli, S., & Loïelle, S. A. (2005). Modelling the components of the vertical attenuation of ultraviolet radiation in a wetland lake ecosystem. *Ecological Modelling*, 186, 43-54.
- Bracchini, L., Dattilo, A. M., & Hull, V. (2006). The bio-optical properties of CDOM as descriptor of lake stratification. *Journal of Photochemistry and Photobiology B: Biology*, 85(2), 145-149.
- Bracchini, L., Loïelle, S., Dattilo, A. M., Mazzuoli, S., Cózar, A., & Rossi, C. (2004). The spatial distribution of optical properties in the ultraviolet and visible in an aquatic ecosystem. *Photochemistry and Photobiology*, 80, 139-149.
- Brandt, L. A., & Koch, E. W. (2003). Periphyton as a UV-B filter on seagrass leaves: a result of different transmittance in the UV-B and PAR ranges. *Aquatic Botany*, 76, 317-327.
- Breitenbach, T., Kuimova, M. K., Gbur, P., Hatz, S., Schack, N. B., Pedersen, B. W., . . . Ogilby, P. R. (2009). Photosensitized production of singlet oxygen: spatially-resolved optical studies in single cells. *Photochemical & Photobiological Sciences*, 8, 442-452.
- Brévière, E., Metzl, N., Poisson, A., & Tilbrook, B. (2006). Changes of the oceanic CO₂ sink in the Eastern Indian sector of the Southern Ocean. *Tellus*, 58B(5), 438-446.
- Briand, J.-F., Jacquet, S., Bernard, C., & Humbert, J.-F. (2003). Health hazards for terrestrial vertebrates from toxic cyanobacteria in surface water ecosystems. *Veterinary Research*, 34, 361-377.
- Bridges, C. M., & Boone, M. D. (2003). The interactive effects of UV-B and insecticide exposure on tadpole survival, growth and development. *Biological Conservation*, 113, 49-54.
- Brinkmann, T., Sartorius, D., & Frimmel, F. H. (2003). Photobleaching of humic rich dissolved organic matter. *Aquatic Sciences*, 65, 415-424.
- Brodkin, M., Vatnick, I., Simon, M., Hopey, H., Butler-Holston, K., & Leonard, M. (2003). Effects of acid stress in adult *Rana pipiens*. *Journal of Experimental Zoology*, 298A, 16-22.
- Brooker, D. L. (1982). *Response to ultraviolet (UV-B) radiation by attached assemblages of estuarine diatoms*. (Thesis M S --Oregon State University 1983).
- Brooks, M. L., & Lovvorn, J. R. (2008, 2008). *Surprising results of CDOM photooxidation in the Bering Sea: Implications for food webs*. Paper presented at the Ocean Sciences Meeting, March 2-7, 2008, Orlando, Florida, Session # 162.
- Brooks, M. L., Meyer, J. S., & Boese, C. J. (2007). Toxicity of copper to larval *Pimephales promelas* in the presence of photodegraded natural dissolved organic matter. *Canadian Journal of Fisheries and Aquatic Sciences*, 64(3), 391-401.
- Brooks, M. L., Meyer, J. S., & McKnight, D. M. (2007). Photooxidation of wetland and riverine dissolved

- organic matter: altered copper complexation and organic composition *Hydrobiologia*, 579(1), 95-113.
- Brooks, P. D., O'Reilly, C. M., Diamond, S. A., Campbell, D. H., Knapp, R., Bradford, D., . . . Tonnessen, K. (2005). Spatial and Temporal Variability in the Amount and Source of Dissolved Organic Carbon: Implications for Ultraviolet Exposure in Amphibian Habitats. *Ecosystems*, 8(5), 478-487.
- Browman, H. I. (2003). Assessing the Impacts of Solar Ultraviolet Radiation on the Early Life Stages of Crustacean Zooplankton and Ichthyoplankton in Marine Coastal Systems. *Estuaries*, 26(1), 30-39.
- Browman, H. I., Alonso Rodríguez, C., Béland, F., Cullen, J. J., Davis, R. F., Kouwenberg, J. H. M., . . . Vetter, R. D. (2000). Impact of ultraviolet radiation on marine crustacean zooplankton and ichthyoplankton: a synthesis of results from the estuary and Gulf of St. Lawrence, Canada. *Marine Ecology Progress Series*, 199, 293-311.
- Browman, H. I., St-Pierre, J.-F., & Kuhn, P. (2003). Dose and dose-rate dependency in the mortality response of *Calanus finmarchicus* embryos exposed to ultraviolet radiation. *Marine Ecology Progress Series*, 247, 297-302.
- Browman, H. I., Vetter, R. D., Rodriguez, C. A., Cullen, J. J., Davis, R. F., Lynn, E., & St.Pierre, J.-F. (2003). Ultraviolet (280-400 nm)-induced DNA damage in the eggs and larvae of *Calanus finmarchicus* G. (Copepoda) and Atlantic cod (*Gadus morhua*). *Photochemistry and Photobiology*, 77, 397-404.
- Brown, B. E., & Dunne, R. P. (2008). Solar radiation modulates bleaching and damage protection in a shallow water coral. *Marine Ecology Progress Series*, 362, 99-107. doi: 10.3354/meps07439
- Buck, B. H., Rosenthal, H., & Saint-Paul, U. (2002). Effect of increased irradiance and thermal stress on the symbiosis of *Symbiodinium microadriaticum* and *Tridacna gigas*. *Aquatic and Living Resources*, 15, 107-117.
- Buckley, F. S. E., & Mudge, S. M. (2004). Dimethylsulphide and ocean-atmosphere interactions. *Chemical Ecology*, 20, 73-95.
- Buma, A. G. J., de Boer, M. K., & Boelen, P. (2001). Depth distributions of DNA damage in Antarctic marine phyto-and bacterioplankton exposed to summertime UV radiation. *Journal of Phycology*, 37, 200-208.
- Burnaford, J. L., & Vasquez, M. (2008). Solar radiation plays a role in habitat selection by the sea star *Pisaster ochraceus*. *Marine Ecology Progress Series*, 368, 177-187. doi: 10.3354/meps07598
- Burrowes, P. A., Joglar, R. L., & Green, D. E. (2004). Potential causes for amphibian declines in Puerto Rico. *Herpetologica*, 60, 141-154.
- Cabrol, N. A., Grin, E. A., Chong, G., Minkley, E., Hock, A. N., Yu, Y., . . . Majerowicz, J. (2009). The high-lakes project. *Journal of Geophysical Research*, 114, G00D06.
- Cadet, J., Sage, E., & Douki, T. (2005). Ultraviolet radiation-mediated damage to cellular DNA. *Mutation Research*, 571(1-2), 3-17.
- Cadoret, J.-C., Rousseau, B., Perewoska, I., Sicora, C., Cheregi, O., Vass, I., & Houmard, J. (2005). Cyclic nucleotides, the photosynthetic apparatus and response to UV-B stress in the cyanobacterium *Synechocystis* sp. PCC 6803. *Journal of Biological Chemistry*, 280, 33935-33944.
- Cai, H.-j., Tang, X.-x., Zhang, P.-y., Dong, D., & Qu, L. (2005). Effects of UV-B radiation on the growth interaction of *Ulva pertusa* and *Alexandrium tamarense*. *Journal of Environmental Sciences*, 17(4), 605-610.
- Caldeira, K., & Wickett, M. E. (2003). Anthropogenic carbon and ocean pH. *Nature*, 425, 365.
- Caldwell, M. M., Bornman, J. F., Ballar, C. L., Flint, S. D., & Kulandaivelu, G. (2007). Terrestrial ecosystems, increased solar ultraviolet radiation, and interactions with other climate change factors. *Photochemical & Photobiological Sciences*, 6, 252-266.
- Calfee, R. D., Bridges, C. M., & Little, E. E. (2006). Sensitivity of Two Salamander (*Ambystoma*) Species to Ultraviolet Radiation. *Journal of Herpetology*, 40(1), 35-42.
- Callieri, C., Modenutti, B., Queimaliños, C., Bertoni, R., & Balseiro, E. (2007). Production and biomass of

- picophytoplankton and larger autotrophs in Andean ultraoligotrophic lakes: differences in light harvesting efficiency in deep layers. *Aquatic Ecology*, 41(4), 511-523. doi: 10.1007/s10452-007-9125-z
- Callieri, C., & Stockner, J. G. (2002). Freshwater autotrophic picoplankton: a review. *Journal of Limnology*, 61, 1-14.
- Callone, A. I., Carignan, M., Montoya, N. G., & Carreto, J. I. (2006). Biotransformation of mycosporine like amino acids (MAAs) in the toxic dinoflagellate *Alexandrium tamarense*. *Journal of Photochemistry and Photobiology B: Biology*, 84(3), 204-212.
- Campana, G., Zacher, K., Fricke, A., Molis, M., Wulff, A., Quartino, M. L., & Wiencke, C. (2009). Drivers of colonization and succession in polar benthic macro- and microalgal communities. *Botanica Marina*, 52(6), 655-667.
- Cancillo, M. L., Serrano, A., Antón, M., García, J. A., Vilaplana, J. M., & de la Morena, B. (2005). An improved outdoor calibration procedure for broadband ultraviolet radiometers. *Photochemistry and Photobiology*, 81(4), 860-865.
- Canterford, G. S., & Canterford, D. R. (1980). Toxicity of heavy metals to the marine diatom *Ditylum brightwellii* (West) Grunow: correlation between toxicity and metal speciation. *Journal of the Marine Biological Association of the UK*, 60, 227-242.
- Cardozo, K. H. M., Carvalho, V. M., Pinto, E., & Colepicolo, P. (2006). Fragmentation of mycosporine-like amino acids by hydrogen/deuterium exchange and electrospray ionisation tandem mass spectrometry. *Rapid Communications in Mass Spectrometry*, 20, 253-258.
- Cardozo, K. H. M., Guaratini, T., Barros, M. P., Falcão, V. R., Tonon, A. P., Lopes, N. P., . . . Pinto, E. (2007). Metabolites from algae with economical impact. *Comparative Biochemistry and Physiology Part C: Toxicology & Pharmacology*, 146, 60-78.
- Cardozo, K. H. M., Vessicchi, R., Carvalho, V. M., Pinto, E., Gates, P. J., Colepicolo, P., . . . Lopes, N. P. (2008). A theoretical and mass spectrometry study of the fragmentation of mycosporine-like amino acids. *International Journal of Mass Spectrometry*, 273(1-2), 11-19.
- Carey, C., & Alexander, M. A. (2003). Climate change and amphibian declines: is there a link? *Diversity and Distributions*, 9, 111-121.
- Carignan, M. O., Cardozo, K. H. M., Oliveira-Silva, D., Colepicolo, P., & Carreto, J. I. (2009). Palythine-threonine, a major novel mycosporine-like amino acid (MAA) isolated from the hermatypic coral *Pocillopora capitata*. *Journal of Photochemistry and Photobiology B: Biology*, 94, 191-200.
- Carpenter, K. E., Abrar, M., Aeby, G., Aronson, R. B., Banks, S., Bruckner, A., . . . Wood, E. (2008). One-third of reef-building corals face elevated extinction risk from climate change and local impacts. *Science*, 321(1), 560-562.
- Carr, H., & Bjork, M. (2007). Parallel changes in non-photochemical quenching properties, photosynthesis and D1 levels at sudden, prolonged irradiance exposures in *Ulva fasciata* Delile. *Journal of Photochemistry and Photobiology B: Biology*, 87(1), 18-26.
- Carrillo, P., Delgado-Molina, J. A., Medina-Sánchez, J. M., Bullejos, F. J., & Villar-Argaiz, M. (2008). Phosphorus inputs unmask negative effects of ultraviolet radiation on algae in a high mountain lake. *Global Change Biology*, 14, 423-439.
- Carrillo, P., Medina-Sánchez, J. M., & Villar-Argaiz, M. (2002). The interaction of phytoplankton and bacteria in a high mountain lake: importance of the spectral composition of solar radiation. *Limnology and Oceanography*, 47, 1294-1306.
- Casati, P., Lara, M. V., & Andreo, C. S. (2002). Regulation of enzymes involved in C4 photosynthesis and the antioxidant metabolism by UV-B radiation in *Egeria densa*, a submersed aquatic species. *Photosynthesis Research*, 71, 251-264.
- Cassidy, C. M., Tunney, M. M., McCarron, P. A., & Donnelly, R. F. (2009). Drug delivery strategies for

- photodynamic antimicrobial chemotherapy: From benchtop to clinical practice. *Journal of Photochemistry and Photobiology B: Biology*, 95(2), 71-80.
- Cavanaugh, W. M. (1987). *Some effects of ultraviolet-B radiation (290-320 nm) on unialgal and mixed cultures of two centric diatoms*. (Thesis M S --Oregon State University 1987).
- Cebrian, E., & Uriz, M. J. (2007). Contrasting effects of heavy metals on sponge cell behavior. *Archives of Environmental Contamination and Toxicology*, 53(4), 552-558.
- Centeno, C. J. (2002). *Effects of recent warming events on coral reef communities of Costa Rica (Central America)*. University of Bremen, Bremen, Germany.
- Chalker, L. K. (1980). *Sensitivity of the marine copepod Tigriopus californicus to ultraviolet-B (290-320 nm) radiation*. (Thesis M S --Oregon State University 1981).
- Chaloub, R. M., de Magalhaes, C. C. P., & dos Santos, C. P. (2005). Early toxic effects of zinc on PSII of *Synechocystis aquatilis* f. *aquatilis* (Cyanophyceae). *Journal of Phycology*, 41, 1162-1168.
- Charlson, R. J., Lovelock, J. E., Andreae, M. O., & Warren, S. G. (1987). Oceanic phytoplankton, atmospheric sulphur, cloud albedo and climate. *Nature*, 326, 655-661.
- Chatzifotis, S., Pavlidis, M., Jimeno, C. D., Vardanis, G., Steriotti, A., & Divanach, P. (2005). The effect of different carotenoid sources on skin coloration of cultured red porgy (*Pagrus pagrus*). *Aquaculture Research*, 36, 1517-1525.
- Cheevaporn, V., & Menasveta, P. (2003). Water pollution and habitat degradation in the Gulf of Thailand. *Marine Pollution Bulletin*, 47, 43-51.
- Chen, D., Wängberg, S.-Å., Wulff, A., & Borne, K. (2004). Attenuation of biologically effective UV doses under overcast skies: a case study from the eastern Atlantic sector of the Southern Ocean. *Deep-Sea Research Part II*, 51(22-24), 2673-2682.
- Chen, Y., & Yan, X. (2007). The UV-absorbing compounds in gametophytic blades of *Porphyra haitanensis* and the effect on formation of sporangial branchlets of conchocelis. *Chinese Journal of Oceanology and Limnology*, 25(3), 343-346.
- Cheng, L., Qiao, D. R., Lu, X. Y., Xiong, Y., Bai, L. H., Xu, H., . . . Cao, Y. (2007). Identification and expression of the gene product encoding a CPD photolyase from *Dunaliella salina* *Journal of Photochemistry and Photobiology B: Biology*, 87, 137-143.
- Cheregi, O., Sicora, C., Kos, P. B., Barker, M., Nixon, P. J., & Vass, I. (2007). The role of the FtsH and Deg proteases in the repair of UV-B radiation-damaged Photosystem II in the cyanobacterium *Synechocystis* PCC 6803. *Biochimica and Biophysica Acta*, 1767(6), 820-828.
- Chiang, W. L., Au, D. W. T., Yu, P. K. N., & Wu, R. S. S. (2003). UV-B Damages Eyes of Barnacle Larvae and Impairs Their Photoresponses and Settlement Success. *Environmental Science & Technology*, 37(6), 1089-1092.
- Chiang, W.-L., Wu, R. S.-S., Yu, P. K.-N., & Au, D. W. T. (2007). Are barnacle larvae able to escape from the threat of UV? *Marine Biology*, 151(2), 703-711.
- Choo, K. S., Nilsson, J., Pedersen, M., & Snoeijs, P. (2005). Photosynthesis, carbon uptake and antioxidant defence in two coexisting filamentous green algae under different stress conditions. *Marine Ecology Progress Series*, 292, 127-138.
- Christaki, U., Vázquez-Domínguez, E., Courties, C., & Lebaron, P. (2005). Grazing impact of different heterotrophic nanoflagellates on eukaryotic (*Ostreococcus tauri*) and prokaryotic picoautotrophs (*Prochlorococcus* and *Synechococcus*). *Environmental Microbiology*, 7, 1200-1210.
- Clements, W. H., Brooks, M. L., Kashian, D. R., & Zuellig, R. E. (2008). Changes in dissolved organic material determine exposure of stream benthic communities to UV-B radiation and heavy metals: implications for climate change. *Global Change Biology*, 14(9), 2201-2214. doi: 10.1111/j.1365-2486.2008.01632.x
- Clijsters, H., & Van Assche, F. (1985). Inhibition of photosynthesis by heavy metals. *Photosynthesis Research*, 7, 31-40.

- Coba, F. D. L., Aguilera, J., Figueroa, F. L., de Gálvez, M. V., & Herrera, E. (2009). Antioxidant activity of mycosporine-like amino acids isolated from three red macroalgae and one marine lichen. *Journal of Applied Phycology*, *21*, 161-169.
- Cockell, C., Rettberg, P., Horneck, G., Scherer, K., & Stokes, D. M. (2003). Measurements of microbial protection from ultraviolet radiation in polar terrestrial microhabitats. *Polar Biology*, *26*, 62-69.
- Cockell, C. S., & Córdoba-Jabonero, C. (2004). Coupling of climate change and biotic UV exposure through changing snow-ice covers in terrestrial habitats. *Photochemistry and Photobiology*, *79*(1), 26-31.
- Cockell, C. S., McKay, C. P., Warren-Rhodes, K., & Horneck, G. (2008). Ultraviolet radiation-induced limitation to epilithic microbial growth in arid deserts - Dosimetric experiments in the hyperarid core of the Atacama Desert. *Journal of Photochemistry and Photobiology B: Biology*, *90*(2), 79-87.
- Cockell, C. S., & Raven, J. A. (2007). Ozone and life on the Archaean Earth. *Philosophical Transactions of the Royal Society of London A*, *365*(1856), 1889-1901.
- Coesel, S., Obornjk, M., Varela, J., Falciatore, A., & Bowler, C. (2008). Evolutionary origins and functions of the carotenoid biosynthetic pathway in marine diatoms. *PLoS ONE*, *3*(8), e2896.
- Coles, S. L., & Brown, B. E. (2003). Coral bleaching-capacity for acclimatization and adaptation. *Advances in Marine Biology*, *46*, 183-223.
- Collins, S. A. (2005). *UV-B sensitivity of aquatic plants: the impact of artificial ultraviolet radiation on the survival and chlorophyll content of Lemna minor and Spirodela polyrhiza*. (MSc), University of Winnipeg, Winnipeg, Canada.
- Colucci, M. (2007). Suggested interpretation of polysulfone dosimeter mathematical response. *Photochemistry and Photobiology*, *83*(6), 1428-1435.
- Conde, F. R., Churio, M. S., & Previtali, C. M. (2004). The deactivation pathways of the excited-states of the mycosporine-like amino acids shinorine and porphyra-334 in aqueous solution. *Photochemical & Photobiological Sciences*, *3*(10), 960-967.
- Conde, F. R., Churio, M. S., & Previtali, C. M. (2007). Experimental study of the excited-state properties and photostability of the mycosporine-like amino acid palythine in aqueous solution. *Photochemical & Photobiological Sciences*, *6*, 669-674.
- Conde-μlvarez, R. M., Pérez-Rodríguez, E., Altamirano, M., Nieto, J. M., Abdala, R., Figueroa, F., & Flores-Moya, A. (2002). Photosynthetic performance and pigment content in the aquatic liverwort *Riella helicophylla* under natural solar irradiance and solar irradiance without ultraviolet light. *Aquatic Botany*, *73*, 47-61.
- Connan, S., Deslandes, E., & Gall, E. A. (2007). Influence of day-night and tidal cycles on phenol content and antioxidant capacity in three temperate intertidal brown seaweeds. *Journal of Experimental Marine Biology and Ecology*, *349*(2), 359-369.
- Connelly, S. J., Moeller, R. E., Sanchez, G., & Mitchell, D. L. (2009). Temperature effects on survival and DNA repair in four freshwater Cladoceran *Daphnia* species exposed to UV radiation. *Photochemistry and Photobiology*, *85*(1), 144-152. doi: doi: 10.1111/j.1751-1097.2008.00408.x
- Connelly, S. J., Wolyniak, E. A., Williamson, C. E., & Jellison, K. L. (2007). Artificial UV-B and solar radiation reduce *in vitro* infectivity of the human pathogen *Cryptosporidium parvum*. *Environmental Science & Technology*, *41*, 7101-7106.
- Cooke, S. L., & Williamson, C. E. (2006). Positive effects of UV radiation on a calanoid copepod in a transparent lake: do competition, predation or food availability play a role? *Journal of Plankton Research*, *28*, 171-179.
- Cooke, S. L., Williamson, C. E., Hargreaves, B. R., & Morris, D. P. (2006). Beneficial and detrimental interactive effects of dissolved organic matter and ultraviolet radiation on zooplankton in a transparent lake. *Hydrobiologia*, *568*, 15-28.
- Cooke, S. L., Williamson, C. E., Leech, D. M., Boeing, W. J., & Torres, L. (2008). Effects of temperature and ultraviolet radiation on diel vertical migration of freshwater crustacean zooplankton. *Canadian*

- Journal of Fisheries and Aquatic Sciences*, 65(6), 1144-1152.
- Cooke, S. L., Williamson, C. E., & Saros, J. E. (2006). How do temperature, dissolved organic matter and nutrients influence the response of *Leptodiptomus ashlandi* to UV radiation in a subalpine lake? *Freshwater Biology*, 51(10), 1827-1837.
- Cooney, R. P., Pantos, O., Le Tissier, M. D. A., Barer, M. R., O'Donnell, A. G., & Bythell, J. C. (2002). Characterization of the bacterial consortium associated with black band disease in coral using molecular microbiological techniques. *Environmental Microbiology*, 4(7), 401-413.
- Corn, P. S., & Muths, E. (2002). Variable breeding phenology affects the exposure of amphibian embryos to ultraviolet radiation. *Ecology*, 83(11), 2958-2963.
- Corn, P. S., & Muths, E. (2004). Variable breeding phenology affects the exposure of amphibian embryos to ultraviolet radiation: Reply. *Ecology*, 85(6), 1759-1763.
- Costa, C. S. B., Armstrong, R., Detrs, Y., Koch, E. W., Bertiller, M., Beeskow, A., . . . San Roman, N. (2006). Effect of ultraviolet-B radiation on salt marsh vegetation: trends of the genus *Salicornia* along the Americas. *Photochemistry and Photobiology*, 82(4), 878-886.
- Costa, R. M. A., Chigancas, V., Galhardo, R. d. S., Carvalho, H., & Menck, C. F. M. (2003). The eukaryotic nucleotide excision repair pathway. *Biochimie*, 85(11), 1083-1099.
- Cotner, J. B., & Biddanda, B. A. (2002). Small players, large role: microbial influence on biogeochemical processes in pelagic aquatic ecosystems. *Ecosystems*, 5, 105-121.
- Cozza, R., Chiappetta, A., Petrarulo, M., Salimonti, A., Rende, F., Bitonti, M. B., & Innocenti, A. M. (2004). Cytophysiological features of *Posidonia oceanica* as putative markers of environmental conditions. *Chemical Ecology*, 20, 215-223.
- Cramer, W., Bondeau, A., Schaphoff, S., Lucht, W., Smith, B., & Sitch, S. (2004). Tropical forests and the global carbon cycle: impacts of atmospheric carbon dioxide, climate change and rate of deforestation. *Philosophical Transactions of the Royal Society of London B Biological Sciences*, 359(1443), 331-343.
- Cropp, R., Norbury, J., & Braddock, R. (2007). Dimethylsulphide, clouds, and phytoplankton: Insights from a simple plankton ecosystem feedback model. *Global Biogeochemical Cycles*, 21, GB2024. doi: 10.1029/2006GB002812
- Croteau, M. C., Davidson, M., Duarte-Guterman, P., Wade, M., Popesku, J. T., Wiens, S., . . . Trudeau, V. L. (2009). Assessment of thyroid system disruption in *Rana pipiens* tadpoles chronically exposed to UVB radiation and 4-tert-octylphenol. *Aquatic Toxicology*, 95(2), 81-92.
- Croteau, M. C., Davidson, M. A., Lean, D. R. S., & Trudeau, V. L. (2008). Global increases in ultraviolet B radiation: potential impacts on amphibian development and metamorphosis. *Physiological and Biochemical Zoology*, 81(6), 743-761. doi: doi:10.1086/591949
- Croteau, M. C., Martyniuk, C. J., Trudeau, V. L., & Lean, D. R. S. (2008). Chronic exposure of *Rana pipiens* tadpoles to UVB radiation and the estrogenic chemical 4-tert-octylphenol. *Journal of Toxicology and Environmental Health. Part A*, 71(2), 134-144.
- Danovaro, R., & Corinaldesi, C. (2003). Sunscreen products increase virus production through prophage induction in marine bacterioplankton. *Microbial Ecology*, 45, 109-118.
- Dattilo, A. M., Bracchini, L., Carlini, L., Loiselle, S., & Rossi, C. (2005). Estimate of the effects of ultraviolet radiation on the mortality of *Artemia franciscana* in naupliar and adult stages. *International Journal of Biometeorology*, 49(6), 388-395.
- Davidson, A., & Belbin, L. (2002). Exposure of natural Antarctic marine microbial assemblages to ambient UV radiation: effects on the marine microbial community. *Aquatic Microbial Ecology*, 27, 159-174.
- Davidson, C., Shaffer, H. B., & Jennings, M. R. (2002). Spatial Tests of the Pesticide Drift, Habitat Destruction, UV-B, and Climate-Change Hypotheses for California Amphibian Declines. *Conservation Biology*, 16(6), 1588-1601.
- de Bakker, N. V. J., van Bodegom, P. M., van de Poll, W. H., Boelen, P., Nat, E., Rozema, J., & Aerts, R. (2005).

- Is UV-B radiation affecting charophycean algae in shallow freshwater systems? *New Phytologist*, 166(3), 957-966.
- De Lange, H. J., & Lürling, M. (2003). Effects of UV-B irradiated algae on zooplankton grazing. *Hydrobiologia*, 491, 133-144.
- De Lange, H. J., Morris, D. P., & Williamson, C. E. (2003). Solar ultraviolet photodegradation of DOC may stimulate freshwater food webs. *Journal of Plankton Research*, 25(1), 111-117.
- De Lange, H. J., & Van Reeuwijk, P. L. (2003). Negative effects of UVB-irradiated phytoplankton on life history traits and fitness of *Daphnia magna*. *Freshwater Biology*, 48(4), 678-686.
- De Mora, S., Demers, S., & Vernet, M. (2000). *The effect of UV radiation in the marine environment*. Cambridge: Cambridge University Press.
- de Souza, S. C., Junqueira, J. C., Balducci, I., Koga-Ito, C. Y., Munin, E., & Jorge, A. O. C. (2006). Photosensitization of different *Candida* species by low power laser light. *Journal of Photochemistry and Photobiology B: Biology*, 83(1), 34-38.
- Dean, J. H. (1994). *Immunotoxicology and Immunopharmacology*. New York, NY: Raven Press.
- del Valle, D. A., Kieber, D. J., Bisgrove, J., & Kiene, R. P. (2007). Light-stimulated production of dissolved DMSO by a particle-associated process in the Ross Sea, Antarctica. *Limnology and Oceanography*, 52, 2456-2466.
- del Valle, D. A., Kieber, D. J., & Kiene, R. P. (2007). Depth-dependent fate of biologically-consumed dimethylsulfide in the Sargasso Sea. *Marine Chemistry*, 103, 197-208.
- Delgado-Molina, J. A., Carrillo, P., Medina-Sánchez, J. M., Villar-Argaiz, M., & Bullejos, F. J. (2009). Interactive effects of phosphorus loads and ambient ultraviolet radiation on the algal community in a high-mountain lake. *Journal of Plankton Research*, 31(6), 619-634.
- Deloménie, C., Foti, E., Floch, E., Diderot, V., Porquet, D., Dupuy, C., & Bonaly, J. (2007). A new homolog of FocA transporters identified in cadmium-resistant *Euglena gracilis*. *Biochemical and Biophysical Research Communications*, 358, 455-461.
- DeLong, E. F., & Karl, D. M. (2005). Genomic perspectives in microbial oceanography. *Nature*, 437, 336-342.
- Denoel, M., Dzukic, G., & Kalezic, M. L. (2005). Effects of widespread fish introductions on paedomorphic newts in Europe. *Conservation Biology*, 19, 162-170.
- Despommier, D. (2009). The rise of vertical farms. *Scientific American*, 301(5), 60-67.
- Diamond, S. A., Peterson, G. S., Tietge, J. E., & Ankley, G. T. (2002). Assessment of the Risk of Solar Ultraviolet Radiation to Amphibians. III. Prediction of Impacts in Selected Northern Midwestern Wetlands. *Environmental Science & Technology*, 36(13), 2866-2874.
- Diamond, S. A., Trenham, P. C., Adams, M. J., Hossack, B. R., Knapp, R. A., Stark, S. L., . . . Tonnessen, K. (2005). Estimated Ultraviolet Radiation Doses in Wetlands in Six National Parks. *Ecosystems*, 8(5), 462-477.
- Diaz, R. J., & Rosenberg, R. (2008). Spreading dead zones and consequences for marine ecosystems. *Science*, 321, 926-929.
- Diaz, S., Camilión, C., Deferrari, G., Fuenzalida, H., Armstrong, R., Booth, C., . . . Vernet, M. (2006). Ozone and UV radiation over southern South America: climatology and anomalies. *Photochemistry and Photobiology*, 82(4), 834-843.
- Díaz, S., Camilión, C., Escobar, J., Deferrari, G., Roy, S., Lacoste, K., . . . Vernet, M. (2006). Simulation of ozone depletion using ambient irradiance supplemented with UV lamps. *Photochemistry and Photobiology*, 82(4), 857-864.
- Dib, J. R., Weiss, A., Neumann, A., Ordonez, O., Estevez, M. C., & Farias, M. E. (2009). Isolation of bacteria from remote high altitude Andean lakes able to grow in the presence of antibiotics. *Recent Patents on Anti-Infective Drug Discovery*, 4(1), 66-76.
- Dierssen, H. M., Smith, R. C., & Vernet, M. (2002). Glacial meltwater dynamics in coastal waters west of the

- Antarctic peninsula. *Proceedings of the National Academy of Sciences of the United States of America*, 99, 1790-1795.
- Diffey, B. L. (1991). Solar ultraviolet radiation effects on biological systems. *Review in Physics in Medicine and Biology*, 36(3), 299-328.
- Dillon, J. G., & Castenholz, R. W. (2003). The synthesis of the UV-screening pigment, scytonemin, and photosynthetic performance in isolates from closely related natural populations of cyanobacteria (*Calothrix* sp.). *Environmental Microbiology*, 5(6), 484-491.
- Dillon, J. G., Miller, S. R., & Castenholz, R. W. (2003). UV-acclimation responses in natural populations of cyanobacteria (*Calothrix* sp.). *Environmental Microbiology*, 5(6), 473-483.
- Dillon, J. G., Tatsumi, C. M., Tandingan, P. G., & Castenholz, R. W. (2002). Effect of environmental factors on the synthesis of scytonemin, a UV-screening pigment, in a cyanobacterium (*Chroococciopsis* sp.). *Archives of Microbiology*, 177(4), 322-331.
- Dimier, C., Corato, F., Tramontano, F., & Brunet, C. (2007). Photoprotection and xanthophyll-cycle activity in three marine diatoms. *Journal of Phycology*, 43, 937-947.
- Dittmann, E., & Wiegand, C. (2006). Cyanobacterial toxins - occurrence, biosynthesis and impact on human affairs. *Molecular Nutrition & Food Research*, 50, 7-17.
- Dobretsov, S. V., Qian, P. Y., & Wahl, M. (2005). Effect of solar ultraviolet radiation on the formation of shallow, early successional biofouling communities in Hong Kong. *Marine Ecology Progress Series*, 290, 55-65.
- Dobrynin, A. E. (2009). Diurnal dynamics of the vertical distribution of zooplankton in an oligotrophic lake. *Inland Water Biology*, 2(2), 162-170.
- Dondi, D., Albin, A., & Serpone, N. (2006). Interactions between different solar UVB/UVA filters contained in commercial suncreams and consequent loss of UV protection. *Photochemical & Photobiological Sciences*, 5, 835-843.
- Dong, Q., Svoboda, K., Tiersch, T. R., & Monroe, W. T. (2007). Photobiological effects of UVA and UVB light in zebrafish embryos: Evidence for a competent photorepair system. *Journal of Photochemistry and Photobiology B: Biology*, 88(2-3), 136-147.
- dos Santos Ferreira, V., Conforti, V., Bench, S., Feldman, R., & Levin, M. J. (2007). Gene expression patterns in *Euglena gracilis*: Insights into the cellular response to environmental stress. *Gene*, 389, 136-145.
- Douma, J. C., van Wijk, M. T., Lang, S. I., & Shaver, G. R. (2007). The contribution of mosses to the carbon and water exchange of arctic ecosystems: quantification and relationships with system properties. *Plant, Cell and Environment*, 30(10), 1205-1215.
- Dove, S. G., Lovell, C., Fine, M., Deckenback, J., Hoegh-Guldberg, O., Iglesias-Prieto, R., & Anthony, K. R. N. (2008). Host pigments: potential facilitators of photosynthesis in coral symbioses. *Plant, Cell and Environment*, 31, 1523-1533.
- Doyle, S. A., Saros, J. E., & Williamson, C. E. (2005). Interactive effects of temperature and nutrient limitation on the response of alpine phytoplankton growth to ultraviolet radiation. *Limnology and Oceanography*, 50, 1362-1367.
- Drohan, A. F., Thoney, D. A., & Baker, A. C. (2005). Synergistic effect of high temperature and ultraviolet-B radiation on the gorgonian *Eunicea tourneforti* (Octocorallia: Alcyonacea: Plexauridae). *Bulletin of Marine Science*, 77(2), 257-266.
- Duarte, C. M. (2002). The future of seagrass meadows. *Environmental Conservation*, 29, 192-206.
- Ducklow, H. W., Doney, S. C., & Steinberg, D. K. (2009). Contributions of long-term research and time-series observations to marine ecology and biogeochemistry. *Annual Review of Marine Science*, 1, 279-302.
- Dung, N. H., Thien, T. C., Hong, N. V., Loc, N. T., Minh, D. V., Thau, T. D., . . . Son, T. T. (2000). *Impact of Agro-Chemical Use on Productivity and Health in Vietnam*. Ottawa, Canada: International Development Research Centre.

- Dunne, R. P. (2010). Synergy or antagonism—interactions between stressors on coral reefs. *Coral Reefs*, 29, 145-152.
- Durham, W. M., Kessler, J. O., & Stocker, R. (2009). Disruption of vertical motility by shear triggers formation of thin phytoplankton layers. *Science*, 323, 1067-1070.
- Ehling-Schulz, M., Schulz, S., Wait, R., Görg, A., & Scherer, S. (2002). The UV-B stimulon of the terrestrial cyanobacterium *Nostoc commune* comprises early shock proteins and late acclimation proteins. *Molecular Microbiology*, 46, 827-843.
- Eilertsen, H. C., Wyatt, T., & Hansen, E. (2007). Can ultraviolet radiation influence cod *Gadus morhua* L. year class strength: a model study. *Journal of Fish Biology*, 70(4), 1120-1133. doi: 10.1111/j.1095-8649.2007.01377.x
- Ekelund, N. G. A., & Aronsson, K. A. (2007). Changes in chlorophyll a fluorescence in *Euglena gracilis* and *Chlamydomonas reinhardtii* after exposure to wood-ash. *Environmental and Experimental Botany*, 59, 92-98.
- El-Lithy, M. E., Rodrigues, G. C., van Rensen, J. J. S., Snel, J. F. H., Dassen, H. J. H. A., Koornneef, M., . . . Vreugdenhil, D. (2005). Altered photosynthetic performance of a natural *Arabidopsis* accession is associated with atrazine resistance. *Journal of Experimental Botany*, 56(416), 1625-1634.
- El-Shehawi, A. M., Ali, F. K., & Seehy, M. A. (2007). Estimation of water pollution by genetic biomarkers in tilapia and catfish species shows species-site interaction. *African Journal of Biotechnology*, 6(7), 840-846.
- Emerson, K., Russo, R. C., Lund, R. E., & Thurston, R. V. (1975). Aqueous ammonia equilibrium calculations: effect of pH and temperature. *Journal of the Fisheries Research Board of Canada*, 32(12), 2379-2383.
- Engelsen, O., Hansen, G. H., & Svenoe, T. (2004). Long-term (1936-2003) ultraviolet and photosynthetically active radiation doses at a north Norwegian location in spring on the basis of total ozone and cloud cover. *Geophysical Research Letters*, 31(12), L12103.
- Ennis, C. A. (2002). Scientific assessment of ozone depletion: 2002. Executive summary (pp. 1-20). Geneva, Switzerland: UNEP/World Meteorological Organization.
- Epel, D. (2005). Using cell and developmental biology to enhance embryo survival in aquaculture. *Aquaculture International*, 13, 19-28.
- Evangelista, V., Frassanito, A. M., Passarelli, V., Barsanti, L., & Gualtieri, P. (2006). Microspectroscopy of the photosynthetic compartment of algae. *Photochemistry and Photobiology*, 82(4), 1039-1046.
- Evans, C. D., Chapman, P. J., Clark, J. M., Monteith, D. T., & Cresser, M. S. (2006). Alternative explanations for rising dissolved organic carbon export from organic soils. *Global Change Biology*, 12, 2044-2053.
- Fable, S., Kamakate, F., Venkatesh, S., & Little, A. D. (2002). *Selective Catalytic Reduction Urea Infrastructure Study. Report NREL/SR-540-32689*. Golden, Colorado, USA: National Renewable Energy Laboratory.
- Falkowska, L., Pryputniewicz, D., Magulski, R., Dunajska, D., Sikorowicz, G., & Kowacz, M. (2005). The impact of solar radiation on changes in chlorophyll a concentration in the sea surface microlayer in the southern Baltic. *Oceanological and Hydrobiological Studies*, 34(3), 109-123.
- FAO. (2007). *The State of World Fisheries and Aquaculture 2006*: Food and Agriculture Organization of the United Nations.
- Farooq, M., Shankar, U., Ray, R. S., Misra, R. B., Agrawal, N., Verma, K., & Hans, R. K. (2005). Morphological and metabolic alterations in duckweed (*Spirodela polyrhiza*) on long-term low-level chronic UV-B exposure. *Ecotoxicology and Environmental Safety*, 62(3), 408-414.
- Fatoki, O. S., & Mathabatha, S. (2001). An assessment of heavy metal pollution in the East London and Port Elizabeth harbours. *Water S.A.*, 27(2), 233-240.
- Fattorusso, E., & Tagliatela-Scafati, O. (2009). Marine antimalarials. *Marine Drugs*, 7, 130-152.

- Faulkenham, S. E., Hall, R. I., Dillon, P. J., & Karst-Riddoch, T. (2003). Effects of drought-induced acidification on diatom communities in acid-sensitive Ontario lakes. *Limnology and Oceanography*, 48, 1662-1673.
- Feng, L., Li, X., Wang, J., Han, H., Tang, X., & Chen, X. (2007). Effect of UV-B radiation on the feeding behavior of the rotifer *Brachionus plicatilis*. *Acta Oceanologica Sinica [BODY OF ARTICLE IN CHINESE]*, 26(4).
- Feng, S., Zhang, Y. L., & Qin, B. Q. (2006). Photochemical degradation of chromophoric dissolved organic matter in Meiliang Bay of Lake Taihu. *China Environmental Science*, 26(4), 404-408.
- Fernandes, T. B., de Sa Azevedo, W. C., & Pedrosa, P. (2008). Sazonalidade óptica nas águas do rio Paraíba do Sul (Campos dos Goytacezes, RJ): referenciais métricos para o monitoramento de águas naturais. *Oecologia Brasiliensis*, 12(1), 78-84.
- Ferrero, E., Eory, M., Ferreyra, G., Schloss, I., Zagarese, H., Vernet, M., & Momo, F. (2006). Vertical mixing and ecological effects of ultraviolet radiation in planktonic communities. *Photochemistry and Photobiology*, 82(4), 898-902.
- Ferreyra, G. A., Mostajir, B., Schloss, I. R., Chatila, K., Ferrario, M. E., Sargian, P., . . . Demers, S. (2006). Ultraviolet-B radiation effects on the structure and function of lower trophic levels of the marine planktonic food web. *Photochemistry and Photobiology*, 82(4), 887-897.
- Ferrier-Pages, C., Richard, C., Forcioli, D., Allemand, D., Pichon, M., & Shick, J. M. (2007). Effects of Temperature and UV Radiation Increases on the Photosynthetic Efficiency in Four Scleractinian Coral Species. *The Biological Bulletin*, 213(1), 76-87.
- Ferroni, L., Klisch, M., Pancaldi, S., & Häder, D.-P. (2006). Chlorophyll fluorescence analysis in *Euglena gracilis*: a survey on the use of a portable PAM fluorometer for photosynthesis studies in flagellate algae. *Trends in Photochemistry and Photobiology*, 11, 23-32.
- Ferroni, L., Klisch, M., Pancaldi, S., & Häder, D.-P. (2010). Complementary UV-absorption of mycosporine-like amino acids and scytonemin is responsible for the UV-insensitivity of photosynthesis in *Nostoc flagelliforme*. *Marine Drugs*, 8(1), 106-121. doi: 10.3390/md8010106
- Fianko, J. R., Osa, S., Adomako, D., Adotey, D. K., & Serfor-Armah, Y. (2007). Assessment of heavy metal pollution of the Iture estuary in the central region of Ghana. *Environmental Monitoring and Assessment*, 131, 467-473.
- Fichot, C. G., Sathyendranath, S., & Miller, W. L. (2008). SeaUV and SeaUVC: algorithms for the retrieval of UV/visible diffuse attenuation coefficients from ocean color. *Remote Sensing of Environment*, 112(4), 1584-1602.
- Figueroa, F. L., Jiménez, C., Vinegla, B., Pérez-Rodríguez, E., Aguilera, J., Flores-Moya, A., . . . Häder, D.-P. (2002). Effects of solar UV radiation on photosynthesis of the marine angiosperm *Posidonia oceanica* from southern Spain. *Marine Ecology Progress Series*, 230, 59-70.
- Findlay, S. E. G. (2005). Increased carbon transport in the Hudson River: unexpected consequence of nitrogen deposition? *Frontiers in Ecology and the Environment*, 3, 133-137.
- Findlay, S. E. G., & Sinsabaugh, R. L. (2003). *Aquatic Ecosystems. Interactivity of Dissolved Organic Matter*. Amsterdam, San Diego: Academic Press.
- Finlay, J. C., Neff, J., Zimov, S., Davydova, A., & Davydov, S. (2006). Snowmelt dominance of dissolved organic carbon in high-latitude watersheds: Implications for characterization and flux of river DOC. *Geophysical Research Letters*, 33, L10401.
- Fischer, B. B., Wiesendanger, M., & Eggen, R. I. L. (2006). Growth condition-dependent sensitivity, photodamage and stress response of *Chlamydomonas reinhardtii* exposed to high light conditions. *Plant and Cell Physiology*, 47(8), 1135-1145.
- Fischer, J. M., Fields, P. A., Pryzbylowski, P. G., Nicolai, J. L., & Neale, P. J. (2006). Sublethal exposure to UV radiation affects respiration rates of the freshwater cladoceran *Daphnia catawba*. *Photochemistry and Photobiology*, 82(2), 547-550.

- Fischer, J. M., Fields, P. A., Pryzbylkowski, P. G., Nicolai, J. L., & Neale, P. J. (2006). Ultraviolet radiation and *Daphnia* respiration in context: the facts. *Photochemistry and Photobiology*, 82, 1723-1724.
- Fischer, J. M., Nicolai, J. L., Williamson, C. E., Persaud, A. D., & Lockwood, R. S. (2006). Effects of ultraviolet radiation on diel vertical migration of crustacean zooplankton: an in situ mesocosm experiment. *Hydrobiologia*, 563, 217-224.
- Fischer, W. F. (2008). Life before the rise of oxygen. *Nature*, 455, 1051-1052.
- Flatt, P. M., & Mahmud, T. (2007). Biosynthesis of aminocyclitol-aminoglycoside antibiotics and related compounds. *Natural Product Reports*, 24, 358-392.
- Fleming, E. D., & Castenholz, R. W. (2007). Effects of periodic desiccation on the synthesis of the UV-screening compound, scytonemin, in cyanobacteria. *Environmental Microbiology*, 9(6), 1448-1455.
- Fleming, E. D., & Castenholz, R. W. (2008). Effects of nitrogen source on the synthesis of the UV-screening compound, scytonemin, in the cyanobacterium *Nostoc punctiforme* PCC 73102. *FEMS Microbiology Ecology*, 63, 301-308.
- Flores-Moya, A., Posudin, Y. I., Fernandez, J. A., Figueroa, F. L., & Kawai, H. (2002). Photomovement of the swarmers of the brown algae *Scytosiphon lomentaria* and *Petalonia fascia*: effect of photon irradiance, spectral composition and UV dose. *Journal of Photochemistry and Photobiology B: Biology*, 66, 134-140.
- Forlani, G., Pavan, M., Gramek, M., Kafarski, P., & Lipok, J. (2008). Biochemical bases for a widespread tolerance of cyanobacteria to the phosphonate herbicide glyphosate. *Plant and Cell Physiology*, 49(3), 443-456.
- Formicki, G., Stawarz, R., Massanyi, P., Guzik, M., Łaciak, T., Goc, Z., & Kilian, K. (2009). Cadmium availability to freshwater mussel (*Unio tumidus*) in the presence of organic matter and UV radiation. *Journal of Environmental Science & Health, Part A: Toxic/Hazardous Substances & Environmental Engineering*, 44(8), 808-819. doi: 10.1080/10934520902928651
- Fouqueray, M., Mouget, J. L., Morant-Manceau, A., & Tremblin, G. (2007). Dynamics of short-term acclimation to UV radiation in marine diatoms. *Journal of Photochemistry and Photobiology B: Biology*, 89(1), 1-8.
- Frangeul, L., Quillardet, P., Castets, A. M., Humbert, J. F., Matthijs, H. C. P., Cortez, D., . . . Tandeau De Marsac, N. (2008). Highly plastic genome of *Microcystis aeruginosa* PCC 7806, a ubiquitous toxic freshwater cyanobacterium. *BMC Genomics*, 9, 274.
- Frank, H., Christoph, E. H., Holm-Hansen, O., & Bullister, J. L. (2002). Trifluoroacetate in ocean waters. *Environmental Science and Pollution Research*, 36, 12-15.
- Fredersdorf, J. (2009). *Interactive abiotic stress effects on Arctic marine macroalgae - Physiological responses of adult sporophytes*. (Dissertation), University of Bremen, Germany.
- Fredersdorf, J., Müller, R., Becker, S., Wiencke, C., & Bischof, K. (2009). Interactive effects of radiation, temperature and salinity on different life history stages of the Arctic kelp *Alaria esculenta* (Phaeophyceae). *Oecologia*, 160(3), 483-492.
- Freitag, J. F., Steeger, H. U., Storz, U. C., & Paul, R. J. (1998). Sublethal impairment of respiratory control in plaice (*Pleuronectes platessa*) larvae induced by UV-B radiation, determined using a novel biocybernetical approach. *Marine Biology*, 132, 1-8.
- Frenette, J.-J., Arts, M. T., & Morin, J. (2003). Spectral gradients of downwelling light in a fluvial lake (Lake Saint-Pierre, St-Lawrence River). *Aquatic Ecology*, 37, 77-85.
- Fricke, A., Molis, M., Wiencke, C., Valdivia, N., & Chapman, A. (2008). Natural succession of macroalgal-dominated epibenthic assemblages at different water depths and after transplantation from deep to shallow water on Spitsbergen. *Polar Biology*, 31(10), 1191-1203.
- Fritz, J. J., Neale, P. J., Davis, R. F., & Peloquin, J. A. (2008). Response of Antarctic phytoplankton to solar UVR exposure: inhibition and recovery of photosynthesis in coastal and pelagic assemblages.

Marine Ecology Progress Series, 365, 1-16. doi: 10.3354/meps07610

- Fritz, S. C., Engstrom, D. R., & Juggins, S. (2004). Patterns of early lake evolution in boreal landscapes: a comparison of stratigraphic inferences with a modern chronosequence in Glacier Bay, Alaska. *Holocene*, 14, 828-840.
- Frommolt, R., Werner, S., Paulsen, H., Goss, R., Wilhelm, C., Zauner, S., . . . Lohr, M. (2008). Ancient recruitment by chromists of green algal genes encoding enzymes for carotenoid biosynthesis. *Molecular Biology and Evolution*, 25, 2653-2667.
- Frost, P. C., Cherrier, C. T., Larson, J. H., Bridgham, S., & Lamberti, G. A. (2007). Effects of dissolved organic matter and ultraviolet radiation on the accrual, stoichiometry and algal taxonomy of stream periphyton. *Freshwater Biology*, 52, 319-330.
- Frost, P. C., Mack, A., Larson, J. H., Bridgham, S. D., & Lamberti, G. A. (2006). Environmental controls of UV-B radiation in forested streams of northern Michigan. *Photochemistry and Photobiology*, 82(3), 781-786.
- Frost, P. C., & Xenopoulos, M. A. (2002). Ambient solar ultraviolet radiation and its effects on phosphorus flux into boreal lake phytoplankton communities. *Canadian Journal of Fisheries and Aquatic Sciences*, 59, 1090-1095.
- Fuda, K. M., Smith, B. M., Lesser, M. P., Legare, B. J., Breig, H. R., Stack, R. B., & Berlinsky, D. L. (2007). The effects of environmental factors on rainbow smelt *Osmerus mordax* embryos and larvae. *Journal of Fish Biology*, 71(2), 539-549.
- Fukuda, S. Y., Yamakawa, R., Hirai, M., Kashino, Y., Koike, H., & Satoh, K. (2008). Mechanisms to avoid photoinhibition in a desiccation-tolerant cyanobacterium, *Nostoc commune*. *Plant and Cell Physiology*, 49(3), 488-492.
- Fukunishi, Y., Masuda, R., & Yamashita, Y. (2006). Ontogeny of tolerance to and avoidance of ultraviolet radiation in red sea bream *Pagrus major* and black sea bream *Acanthopagrus schlegeli*. *Fisheries Science*, 72(2), 356-363.
- Furla, P., Allemand, D., Shick, J. M., Ferrier-Pagès, C., Richier, S., Plantivaux, A., . . . Tambutt, S. (2005). The symbiotic anthozoan: a physiological chimera between alga and animal. *Integrative and Comparative Biology*, 45, 595-604.
- Gómez, F., Aguilera, A., & Amils, R. (2007). Soluble ferric iron as an effective protective agent against UV radiation: implications for early life. *Icarus*, 191(1), 352-359.
- Gómez, I., Orostegui, M., & Huovinen, P. (2007). Morpho-functional patterns of photosynthesis in the South Pacific kelp *Lessonia nigrescens*: effects of UV radiation on ¹⁴C fixation and primary photochemical reactions. *Journal of Phycology*, 43(1), 55-64.
- Gajda, B. M. (2003). *Shedding light on the photorepair of ultraviolet radiation induced DNA damage in goldfish (Carassius auratus) embryos*. (MSc), Department of Biology, University of Winnipeg, Winnipeg, Canada.
- Gao, J., Liu, L., Liu, X., Zhou, H., Huang, S., & Wang, Z. (2008). Levels and spatial distribution of chlorophenols-2,4-Dichlorophenol, 2,4,6-trichlorophenol, and pentachlorophenol in surface water of China. *Chemosphere*, 71, 1181-1187.
- Gao, K., Guan, W., & Helbling, E. W. (2007). Effects of solar ultraviolet radiation on photosynthesis of the marine red tide alga *Heterosigma akashiwo* (Raphidophyceae). *Journal of Photochemistry and Photobiology B: Biology*, 86(2), 140-148.
- Gao, K., Li, G., Helbling, E. W., & Villafañe, V. E. (2007). Variability of UVR effects on photosynthesis of summer phytoplankton assemblages from a tropical coastal area of the South China Sea. *Photochemistry and Photobiology*, 83(4), 802-809.
- Gao, K., Li, P., Watanabe, T., & Helbling, E. W. (2008). Combined effects of ultraviolet radiation and temperature on morphology, photosynthesis, and DNA of *Arthrospira* (*Spirulina*) *platensis* (Cyanophyta). *Journal of Phycology*, 44, 777-786.

- Gao, K., Ruan, Z., Villafañe, V. E., Gattuso, J.-P., & Helbling, E. W. (2009). Ocean acidification exacerbates the effect of UV radiation on the calcifying phytoplankter *Emiliania huxleyi*. *Limnology and Oceanography*, *54*(6), 1855-1862.
- Gao, K., Wu, Y., Li, G., Wu, H., Villafañe, V. E., & Helbling, E. W. (2007). Solar UV radiation drives CO₂ fixation in marine phytoplankton: a double-edged sword. *Plant Physiology*, *144*, 54-59.
- Gao, K., & Ye, C. (2007). Photosynthetic insensitivity of the terrestrial cyanobacterium *Nostoc flagelliforme* to solar UV radiation while rehydrated or desiccated. *Journal of Phycology*, *43*, 628-635.
- Gao, K., Yu, H., & Brown, M. T. (2007). Solar PAR and UV radiation affects the physiology and morphology of the cyanobacterium *Anabaena* sp. PCC 7120. *Journal of Photochemistry and Photobiology B: Biology*, *89*(2-3), 117-124.
- Gao, K. S., & Ma, Z. L. (2008). Photosynthesis and growth of *Arthrospira* (*Spirulina*) *platensis* (Cyanophyta) in response to solar UV radiation, with special reference to its minor variant. *Environmental and Experimental Botany*, *63*, 123-129.
- Gao, K. S., & Xu, J. (2008). Effects of solar UV radiation on diurnal photosynthetic performance and growth of *Gracilaria lemaneiformis* (Rhodophyta). *European Journal of Phycology*, *43*, 297-307.
- Gao, Y., Cui, Y., Xiong, W., Li, X., & Wu, Q. (2009). Effect of UV-C on algal evolution and differences in growth rate, pigmentation and photosynthesis between prokaryotic and eukaryotic algae. *Photochemistry and Photobiology*, *85*(3), 774-782.
- Gao, Y., Xiong, W., Li, X. B., Gao, C. F., Zhang, Y. L., Li, H., & Wu, Q. Y. (2009). Identification of the proteomic changes in *Synechocystis* sp. PCC 6803 following prolonged UV-B irradiation. *Journal of Experimental Botany*, *60*(4), 1144-1154.
- Garcia, P. E., Perez, A. P., Dieguez, M. D. C., Ferraro, M. A., & Zagarese, H. E. (2008). Dual control of the levels of photoprotective compounds by ultraviolet radiation and temperature in the freshwater copepod *Boeckella antiqua*. *Journal of Plankton Research*, *30*(7), 817-827.
- Garcia, T. S., Hill, R., & Blaustein, A. R. (2007). Indirect effects of UV-B radiation on larval amphibian competition across an elevation gradient. *The ESA/SER Joint Meeting (August 5 -- August 10, 2007)*.
- Garcia, T. S., Paoletti, D. J., & Blaustein, A. R. (2009). Correlated trait response: comparing amphibian defense strategies across a stress gradient. *Canadian Journal of Zoology*, *87*(1), 41-49. doi: 10.1139/Z08-130
- Garcia, T. S., Paoletti, D. J., & Blaustein, A. R. (2009). Correlated trait responses to multiple selection pressures in larval amphibians reveal conflict avoidance strategies. *Freshwater Biology*, *54*(5), 1066-1077.
- Garcia, T. S., Romansic, J. M., & Blaustein, A. R. (2006). Survival of three species of anuran metamorphs exposed to UV-B radiation and the pathogenic fungus *Batrachochytrium dendrobatidis*. *Diseases of Aquatic Organisms*, *72*(2), 163-169.
- Garcia, T. S., Stacy, J., & Sih, A. (2004). Larval Salamander Response to UV Radiation and Predation Risk: Color Change and Microhabitat Use. *Ecological Applications*, *14*(4), 1055-1064.
- Garcia-Pichel, F., & Muyzer, G. (1998). The phylogeny of unicellular, extremely halotolerant cyanobacteria. *Archives of Microbiology*, *169*(6), 469-482.
- Gardiner, D., Ndayibagira, A., Grün, F., & Blumberg, B. (2003). Deformed frogs and environmental retinoids. *Pure and Applied Chemistry*, *75*, 2263-2273.
- Geddes, P. (2009). Decoupling carbon effects and UV protection from terrestrial subsidies on pond zooplankton. *Hydrobiologia*, *628*, 47-66.
- Germ, M. (2005). The response of green alga *Spirogyra* sp. to different levels of UV-B radiation. *Phyton - Annales Rei Botanicae*, *45*(2), 173-182.
- Germ, M., Kreft, I., & Gaberscik, A. (2009). UV-B radiation and selenium affected energy availability in

- green alga *Zygnema* *Biologia*, 64(4), 676-679.
- Germ, M., Mazej, Z., Gaberscik, A., & Sedej, T. T. (2006). The response of *Ceratophyllum demersum* L. and *Myriophyllum spicatum* L. to reduced, ambient, and enhanced ultraviolet-B radiation. *Hydrobiologia*, 570, 47-51.
- Gibbs, J. P., Whiteleather, K. K., & Schueler, F. W. (2005). Changes in frog and toad populations over 30 years in New York State. *Ecological Applications*, 15, 1148-1157.
- Gies, P., Roy, C., Javorniczky, J., Henderson, S., Lemus-Deschamps, L., & Driscoll, C. (2004). Global solar UV index: Australian measurements, forecasts and comparison with the UK. *Photochemistry and Photobiology*, 79(1), 32-39.
- Glennemeier, K. A., & Begnoche, L. J. (2002). Impact of organochlorine contamination on amphibian populations in southwestern Michigan. *Journal of Herpetology*, 36, 233-244.
- Glud, R. N., Rysgaard, S., & Kühl, M. (2002). A laboratory study on O₂ dynamics and photosynthesis in ice algal communities: quantification by microsensors, O₂ exchange rates, ¹⁴C incubations and a PAM fluorometer. *Aquatic Microbial Ecology*, 27, 301-311.
- Goddard Earth Sciences, D. I. S. C. (2009). Science Focus: Dead Zones. from http://disc.sci.gsfc.nasa.gov/oceancolor/additional/science-focus/ocean-color/dead_zones.shtml
- Gómez, F., Aguilera, A., & Amils, R. (2007). Soluble ferric iron as an effective protective agent against UV radiation: implications for early life. *Icarus*, 191(1), 352-359.
- Gómez, I., Figueroa, F. L., Huovinen, P., Ulloa, N., & Morales, V. (2005). Photosynthesis of the red alga *Gracilaria chilensis* under natural solar radiation in an estuary in southern Chile. *Aquaculture*, 244, 369-382.
- Gómez, I., Orostegui, M., & Huovinen, P. (2007). Morpho-functional patterns of photosynthesis in the South Pacific kelp *Lessonia nigrescens*: effects of UV radiation on ¹⁴C fixation and primary photochemical reactions. *Journal of Phycology*, 43(1), 55-64.
- Gómez, I., Wulff, A., Roleda, M. Y., Huovinen, P., Karsten, U., Quartino, M. L., . . . Wiencke, C. (2009). Light and temperature demands of benthic algae in the polar regions. *Botanica Marina*, 52(6), 593-608. doi: 10.1515/BOT.2009.073
- Gonçalves, R. J., Barbieri, E. S., Villafañe, V. E., & Helbling, E. W. (2007). Motility of *Daphnia spinulata* as affected by solar radiation throughout an annual cycle in mid-latitudes of Patagonia. *Photochemistry and Photobiology*, 83(4), 824-832.
- Gonçalves, R. J., Souza, M. S., Aigo, J., Modenutti, B., Balseiro, E., Villafañe, V. E., . . . Helbling, E. W. (2010). Responses of plankton and fish from temperate zones to UVR and temperature in a context of global change. *Ecología Austral*, 20(2), 129-153.
- Gonçalves, R. J., Villafañe, V. E., & Helbling, E. W. (2002). Photorepair activity and protective compounds in two freshwater zooplankton species (*Daphnia menucoensis* and *Metacyclops mendocinus*) from Patagonia, Argentina. *Photochemical & Photobiological Sciences*, 1, 996-1000.
- González, A. E. B., Charles, M. B., Mancini-Filho, J., & Novoa, A. V. (2009). Seaweeds as sources of antioxidant phytomedicines. *Revista Cubana de Plantas Medicinales*, 14(2), 1-18.
- Gorton, H. L., & Vogelmann, T. C. (2003). Ultraviolet radiation and the snow alga *Chlamydomonas nivalis* (Bauer) Wille. *Photochemistry and Photobiology*, 77(6), 608-615.
- Goss, R., Latowski, D., Grzyb, J., Vieler, A., Lohr, M., Wilhelm, C., & Strzalka, K. (2007). Lipid dependence of diadinoxanthin solubilization and de-epoxidation in artificial membrane systems resembling the lipid composition of the natural thylakoid membrane. *Biochimica and Biophysica Acta*, 1768, 67-75.
- Goss, R., Lepetit, B., & Wilhelm, C. (2006). Evidence for a rebinding of antheraxanthin to the light-harvesting complex during the epoxidation reaction of the violaxanthin cycle. *Journal of Plant Physiology*, 163(5), 585-590.
- Gouveia, G. R., Marques, D. S., Cruz, B. P., Geracitano, L. A., Nery, L. E. M., & Trindade, G. S. (2005).

- Antioxidant Defenses and DNA Damage Induced by UV-A and UV-B Radiation in the Crab *Chasmagnathus Granulata* (Decapoda, Brachyura). *Photochemistry and Photobiology*, 81(2), 398-403.
- Grad, G., Burnett, B. J., & Williamson, C. E. (2003). UV damage and photoreactivation: Timing and age are everything. *Photochemistry and Photobiology*, 78(3), 225-227.
- Grad, G., Williamson, C. E., & Karapelou, D. M. (2001). Zooplankton survival and reproduction responses to damaging UV radiation: A test of reciprocity and photoenzymatic repair. *Limnology and Oceanography*, 46(3), 584-591.
- Grant, R. H., & Heisler, G. M. (2006). Effect of cloud cover on UVB exposure under tree canopies: Will climate change affect UVB exposure? *Photochemistry and Photobiology*, 82(2), 487-494.
- Gray, D. W., Lewis, L. A., & Cardon, Z. G. (2007). Photosynthetic recovery following desiccation of desert green algae (Chlorophyta) and their aquatic relatives. *Plant, Cell and Environment*, 30(10), 1240-1255.
- Grinstead, J. S., Hsu, S.-T. D., Laan, W., Bonvin, A. M. J. J., Hellingwerf, K. J., Boelens, R., & Kaptein, R. (2006). The solution structure of the AppA BLUF domain: insight into the mechanism of light-induced signaling. *ChemBioChem*, 7, 187-193.
- Grouneva, I., Jakob, T., Wilhelm, C., & Goss, R. (2007). Evidence for the existence of a fast xanthophyll cycle-independent NPQ component in diatoms. *Photosynthesis Research*, 91, 255.
- Grouneva, I., Jakob, T., Wilhelm, C., & Goss, R. (2008). A new multicomponent NPQ mechanism in the diatom *Cyclotella meneghiniana*. *Plant and Cell Physiology*, 49(8), 1217-1225.
- Guan, W., & Gao, K. (2008). Light histories influence the impacts of solar ultraviolet radiation on photosynthesis and growth in a marine diatom, *Skeletonema costatum*. *Journal of Photochemistry and Photobiology B: Biology*, 91(2-3), 151-156.
- Guan, W., & Gao, K. (2010). Impacts of UV radiation on photosynthesis and growth of the coccolithophore *Emiliania huxleyi* (Haptophyceae). *Environmental and Experimental Botany*, 67(3), 502-508.
- Gunn, J. M., Snucins, E., Yan, N. D., & Arts, M. T. (2001). Use of water clarity to monitor the effects of climate change and other stressors on oligotrophic lakes. *Environmental Monitoring and Assessment*, 67, 69-88.
- Gupta, R., Bhadauriya, P., Chauhan, V. S., & Bisen, P. S. (2008). Impact of UV-B radiation on thylakoid membrane and fatty acid profile of *Spirulina platensis*. *Current Microbiology*, 56(2), 156-161.
- Gupta, S., & Agrawal, S. C. (2007). Survival and motility of diatoms *Navicula grimmei* and *Nitzschia palea* affected by some physical and chemical factors. *Folia Microbiologica*, 52(2), 127-134.
- Gutow, L., Strahl, J., Wiencke, C., Franke, H. D., & Saborowski, R. (2006). Behavioural and metabolic adaptations of marine isopods to the rafting life style. *Marine Biology*, 149, 821-828.
- Guzmán Martínez, M. D. C., Ramírez Romero, P., & Banaszak, A. T. (2007). Photoinduced toxicity of the polycyclic aromatic hydrocarbon, fluoranthene, on the coral, *Porites divaricata*. *Journal of Environmental Science and Health, Part A*, 42(10), 1495-1502. doi: 10.1080/10934520701480946
- Hadapad, A. B., Vijayalakshmi, N., Hire, R. S., & Dongre, T. K. (2008). Effect of ultraviolet radiation on spore viability and mosquitocidal activity of an indigenous ISPC-8 *Bacillus sphaericus* Neide strain. *Acta Tropica*, 107(2), 113-116.
- Häder, D.-P. (2003). Effects of solar ultraviolet radiation on aquatic primary producers. In H. S. Nalwa (Ed.), *Handbook of Photochemistry and Photobiology: Photobiology* (Vol. 4, pp. 329-352). California, USA: Am. Sci. Publ.
- Häder, D.-P. (2003). UV-B impact on the life of aquatic plants. In R. S. Ambasht & N. K. Ambasht (Eds.), *Modern Trends in Applied Aquatic Ecology* (pp. 149-172). New York, Boston, Dordrecht, London, Moscow: Kluwer Acad./Plenum Publ.
- Häder, D.-P. (2006). Photoinhibition and UV response in the aquatic environment. In B. Demmig-Adams,

- W. W. Adams III & A. K. Mattoo (Eds.), *Photoprotection, Photoinhibition, Gene Regulation, and Environment* (pp. 87-105). The Netherlands: Springer.
- Häder, D. P., Kumar, H. D., Smith, R. C., & Worrest, R. C. (1998). Environmental Effects of Ozone Depletion: Effects on aquatic ecosystems. *Journal of Photochemistry and Photobiology B: Biology*, *46*(1-3), 53-68. doi: 10.1016/S1011-1344(98)00185-7
- Häder, D. P., Lebert, M., Schuster, M., del Ciampo, L., Helbling, E. W., & McKenzie, R. (2007). ELDONET-a decade of monitoring solar radiation on five continents. *Photochemistry and Photobiology*, *83*(6), 1348-1357.
- Häder, D. P., & Sinha, R. P. (2005). Solar ultraviolet radiation-induced DNA damage in aquatic organisms: potential environmental impact. *Mutation Research*, *571*(1-2), 221-233.
- Häder, D.-P., Ghetti, F., Checcucci, G., & Bornman, J. F. (2006). Impact of UV radiation on the aquatic environment *Environmental UV Radiation: Impact on Ecosystems and Human Health and Predictive Models* (pp. 179-191). The Netherlands: Springer.
- Häder, D.-P., Helbling, E. W., Williamson, C. E., & Worrest, R. C. (2010). Effects of UV radiation on aquatic ecosystems and interactions with climate change *United Nations Environment Programme: Environmental Effects of Ozone Depletion and Its Interactions with Climate Change: 2010 Assessment* (pp. 113-150): Secretariat for The Vienna Convention for the Protection of the Ozone Layer and The Montreal Protocol on Substances that Deplete the Ozone Layer, United Nations Environment Programme.
- Häder, D.-P., Helbling, E. W., Williamson, C. E., & Worrest, R. C. (2011). Effects of UV radiation on aquatic ecosystems and interactions with climate change. *Photochemical & Photobiological Sciences*, *10*, 242-260. doi: 10.1039/C0PP90036B
- Häder, D.-P., Kumar, H. D., Smith, R. C., & Worrest, R. C. (2003). Aquatic ecosystems: effects of solar ultraviolet radiation and interactions with other climatic change factors. *Photochemical & Photobiological Sciences*, *2*, 39-50.
- Häder, D.-P., Kumar, H. D., Smith, R. C., & Worrest, R. C. (2007). Effects of solar UV radiation on aquatic ecosystems and interactions with climate change. *Photochemical & Photobiological Sciences*, *6*(3), 267-285. doi: 10.1039/b700020k
- Häder, D.-P., Lebert, M., Ghetti, F., Checcucci, G., & Bornman, J. F. (2006). ELDONET - European light dosimeter network *Environmental UV Radiation: Impact on Ecosystems and Human Health and Predictive Models* (pp. 95-108). The Netherlands: Springer.
- Häder, D.-P., Lebert, M., & Helbling, E. W. (2003). Effects of solar radiation on the Patagonian rhodophyte *Corallina officinalis* (L.). *Photosynthesis Research*, *78*(2), 119-132.
- Häder, D.-P., Lebert, M., & Helbling, E. W. (2004). Variable fluorescence parameters in the filamentous Patagonian rhodophytes, *Callithamnion gaudichaudii* and *Ceramium* sp. under solar radiation. *Journal of Photochemistry and Photobiology B: Biology*, *73*, 87-99.
- Häder, D.-P., & Worrest, R. C. (1991). Effects of enhanced solar radiation on aquatic exosystems. *Photochemistry and Photobiology*, *53*(5), 717-725. doi: 10.1111/j.1751-1097.1991.tb08502.x
- Häder, D.-P., & Worrest, R. C. (1997). Consequences of the effects of increased solar ultraviolet radiation on aquatic ecosystems. In D.-P. Häder (Ed.), *The Effects of Ozone Depletion on Aquatic Ecosystems* (pp. 11-30). Austin: Academic Press, R.G. Landes Co.
- Häder, D.-P., Worrest, R. C., & Kumar, H. D. (1991). Aquatic Ecosystems *Environmental effects of ozone depletion: 1991 update*. Nairobi: United Nations Environment Programme.
- Häkkinen, J., & Oikari, A. (2004). A field methodology to study effects of UV radiation on fish larvae. *Water Research*, *38*(12), 2891-2897.
- Häkkinen, J., Vehniäinen, E., & Oikari, A. (2003). Histopathological responses of newly hatched larvae of whitefish (*Coregonus lavaretus* s.l.) to UV-B induced toxicity of retene. *Aquatic Toxicology*, *63*, 159-171.

- Häkkinen, J., Vehniäinen, E., & Oikari, A. (2004). High sensitivity of northern pike larvae to UV-B but no UV-photoinduced toxicity of retene. *Aquatic Toxicology*, 66(4), 393-404.
- Halac, S., García-Mendoza, E., & Banaszak, A. T. (2009). Ultraviolet radiation reduces the photoprotective capacity of the marine diatom *Phaeodactylum tricornutum* (Bacillariophyceae, Heterokontophyta). *Photochemistry and Photobiology*, 85(3), 807-815.
- Hallock, P. (2005). Global change and modern coral reefs: New opportunities to understand shallow-water carbonate depositional processes. *Sedimentary Geology*, 175(1-4), 19-33.
- Hallock, P., Barnes, K., & Fisher, E. M. (2004). Coral-reef risk assessment from satellites to molecules: a multi-scale approach to environmental monitoring and risk assessment of coral reefs. *Environmental Micropaleontology, Microbiology, and Meiobenthology*, 1, 11-39.
- Hall-Spencer, J. M., Rodolfo-Metalpa, R., Martin, S., Ransome, E., Fine, M., Turner, S. M., . . . Buia, M. C. (2008). Volcanic carbon dioxide vents show ecosystem effects of ocean acidification. *Nature*, 454, 96-99.
- Hamer, A., Lane, S., & Mahony, M. (2002). The role of introduced mosquitofish (*Gambusia holbrooki*) in excluding the native green and golden bell frog (*Litoria aurea*) from original habitats in south-eastern Australia. *Oecologia*, 132, 445-452.
- Hamre, B., Stamnes, J. J., Frette, Ø., Erga, S. R., & Stamnes, K. (2008). Could stratospheric ozone depletion lead to enhanced aquatic primary production in the polar regions? *Limnology and Oceanography*, 53(1), 332-338. doi: 10.4319/lo.2008.53.1.0332
- Han, B. A., Kats, L. B., Pommerening, R. C., Ferrer, R. P., Murry-Ewers, M., & Blaustein, A. R. (2007). Behavioral Avoidance of Ultraviolet-B Radiation by Two Species of Neotropical Poison-Dart Frogs. *Biotropica*, 39(3), 433-435.
- Han, T., Han, Y.-S., Kain, J. M., & Häder, D.-P. (2003). Thallus differentiation of photosynthesis, growth, reproduction, and UV-B sensitivity in the green alga *Ulva pertusa* (Chlorophyceae). *Journal of Phycology*, 39, 712-721.
- Han, T., Kong, J.-A., Han, Y.-S., Kang, S.-H., & Häder, D.-P. (2004). UV-A/blue light-induced reactivation of spore germination in UV-B irradiated *Ulva pertusa* (Chlorophyta). *Journal of Phycology*, 40, 315-322.
- Han, Y. S., Kang, S. H., & Han, T. (2007). Photosynthesis and photoinhibition of two green macroalgae with contrasting habitats. *Journal of Plant Biology*, 50(4), 410-416.
- Han, Y.-S., & Han, T. (2005). UV-B induction of UV-B protection in *Ulva pertusa* (Chlorophyta). *Journal of Phycology*, 41(3), 523-530.
- Hanelt, D., Hawes, I., & Rae, R. (2006). Reduction of UV-B radiation causes an enhancement of photoinhibition in high light stressed aquatic plants from New Zealand lakes. *Journal of Photochemistry and Photobiology B: Biology*, 84(2), 89-102.
- Hanelt, D., & Roleda, M. Y. (2009). UVB radiation may ameliorate photoinhibition in specific shallow-water tropical marine macrophytes. *Aquatic Botany*, 91(1), 6-12. doi: DOI: 10.1016/j.aquabot.2008.12.005
- Hanelt, D., Tüg, H., Bischof, K., Groß, C., Lippert, H., Sawall, T., & Wiencke, C. (2001). Light regime in an Arctic fjord: a study related to stratospheric ozone depletion as a basis for determination of UV effects on algal growth. *Marine Biology*, 138(3), 649-658.
- Hanelt, D., Wiencke, C., & Bischof, K. (2003). Photosynthesis in Marine Macroalgae. In A. W. Larkum, S. E. Douglas & J. A. Raven (Eds.), *Photosynthesis in Algae* (pp. 413-435). The Netherlands: Kluwer Acad. Publ.
- Hanelt, D., Wiencke, C., & Bischof, K. (2007). Effects of UV radiation on seaweeds. In J. B. Ørbaek, R. Kallenborn, I. Tombre, E. N. Hegseth, S. Falk-Petersen & A. H. Hoel (Eds.), *Arctic Alpine Ecosystems and People in a Changing Environment, Part 3* (pp. 251-277). Berlin Heidelberg: Springer.
- Hansson, L. A. (2004). Plasticity in pigmentation induced by conflicting threats from predation and UV radiation. *Ecology*, 65(4), 1005-1016.

- Hansson, L. A., & Hylander, S. (2009). Size-structured risk assessments govern *Daphnia* migration. *Proceedings of the Royal Society B: Biological Sciences*, 276(1655), 331-336.
- Hansson, L. A., Hylander, S., & Sommaruga, R. (2007). Escape from UV threats in zooplankton: a cocktail of behavior and protective pigmentation. *Ecology*, 88, 1932-1939.
- Hansson, L.-A., & Hylander, S. (2009). Effects of ultraviolet radiation on pigmentation, photoenzymatic repair, behavior, and community ecology of zooplankton. *Photochemical & Photobiological Sciences*, 8(9), 1266 - 1275. doi: DOI: 10.1039/b908825c
- Hargreaves, B. R., Girdner, S. F., Buktenica, M. W., Collier, R. W., Urbach, E., & Larson, G. L. (2007). Ultraviolet radiation and bio-optics in Crater Lake, Oregon. *Hydrobiologia*, 574(1), 107-140.
- Harker, M., Tsavalos, A. J., & Young, A. J. (1995). Use of response surface methodology to optimise carotenogenesis in the microalga, *Haematococcus pluvialis*. *Journal of Applied Phycology*, 7, 399-406.
- Harley, C. D. G., Randall Hughes, A., Hultgren, K. M., Miner, B. G., Sorte, C. J. B., Thornber, C. S., . . . Williams, S. L. (2006). The impacts of climate change in coastal marine systems. *Ecology Letters*, 9(2), 228-241.
- Harrison, J. W., & Smith, R. E. H. (2009). Effects of ultraviolet radiation on the productivity and composition of freshwater phytoplankton communities. *Photochemical & Photobiological Sciences*, 8(9), 1218-1232. doi: 10.1039/b902604e
- Harrison, R. M., Hester, R. E., & Royal Society of Chemistry (Great Britain). (2000). *Causes and environmental implications of increased UV-B radiation*. Cambridge: Royal Society of Chemistry.
- Hassol, S. J., Arctic Climate Impact Assessment., Arctic Monitoring and Assessment Programme., Program for the Conservation of Arctic Flora and Fauna., & International Arctic Science Committee. (2004). *Impacts of a Warming Arctic: Arctic Climate Impact Assessment*. Cambridge, U.K. ; New York, N.Y.: Cambridge University Press.
- Hatch, A. C., & Blaustein, A. R. (2000). Combined effects of UV-B, nitrate, and low pH reduce the survival and activity level of larval cascades frogs (*Rana cascadae*). *Archives of Environmental Contamination and Toxicology*, 39, 494-499.
- Hayakawa, K., & Sugiyama, Y. (2008). Spatial and seasonal variations in attenuation of solar ultraviolet radiation in Lake Biwa, Japan. *Journal of Photochemistry and Photobiology B: Biology*, 90(2), 121-133.
- Hayashi, K., Mori, J., Saito, H., & Hayashi, T. (2006). Antiviral targets of a chromene derivative from *Sargassum micracanthum* in the replication of human cytomegalovirus. *Biological & Pharmaceutical Bulletin*, 29, 1843-1847.
- Hazell, D., Osborne, W., & Lindenmayer, D. (2003). Impact of post-European stream change on frog habitat: southeastern Australia. *Biodiversity and Conservation*, 12, 301-320.
- Hazra, P., Inoue, K., Laan, W., Hellingwerf, K. J., & Terazima, M. (2006). Tetramer formation kinetics in the signaling state of AppA monitored by time-resolved diffusion. *Biophysics Journal*, 91, 654-661.
- He, Y. Y., & Häder, D.-P. (2006). UV-B-induced oxidative stress and damage in the cyanobacterium *Anabaena* sp. In F. Ghetti, G. Checcucci & J. F. Bornman (Eds.), *Environmental UV Radiation: Impact on Ecosystems and Human Health and Predictive Models* (pp. 281). The Netherlands: Springer.
- He, Y.-Y., & Häder, D.-P. (2002). UV-B-induced formation of reactive oxygen species and oxidative damage of the cyanobacterium *Anabaena* sp.: protective effects of ascorbic acid and N-acetyl-L-cysteine. *Journal of Photochemistry and Photobiology B: Biology*, 66, 115-124.
- He, Y.-Y., Klich, M., & Häder, D.-P. (2002). Adaptation of Cyanobacteria to UV-B Stress Correlated with Oxidative Stress and Oxidative Damage. *Photochemistry and Photobiology*, 76(2), 188-196.
- Hecnar, S. J. (2004). Great Lakes wetlands as amphibian habitats: a review. *Aquatic Ecosystem Health Management*, 7, 289-303.
- Helbling, E. W., Barbieri, E. S., Marcoval, M. A., Gonçalves, R. J., & Villafañe, V. E. (2005). Impact of solar

- ultraviolet radiation on marine phytoplankton of Patagonia, Argentina. *Photochemistry and Photobiology*, *81*(4), 807-818.
- Helbling, E. W., Barbieri, E. S., Sinha, J. P., Villafañe, V. E., & Häder, D. P. (2004). Dynamics of potentially protective compounds in Rhodophyta species from Patagonia (Argentina) exposed to solar radiation. *Journal of Photochemistry and Photobiology B: Biology*, *75*(1-2), 63-71.
- Helbling, E. W., Buma, A. G. J., Van de Poll, W., Fernández Zenoff, M. V., & Villafañe, V. E. (2008). UVR-induced photosynthetic inhibition dominates over DNA damage in marine dinoflagellates exposed to fluctuating solar radiation regimes. *Journal of Experimental Marine Biology and Ecology*, *365*, 96-102.
- Helbling, E. W., Fariás, M. E., Zenoff, M. V. F., & Villafañe, V. E. (2006). *In situ* responses of phytoplankton from the subtropical Lake La Angostura (Tucumán, Argentina) in relation to solar ultraviolet radiation exposure and mixing conditions. *Hydrobiologia*, *559*, 123-134.
- Helbling, E. W., Gao, K., Ai, H., Ma, Z., & Villafañe, V. E. (2006). Differential responses of *Nostoc sphaeroides* and *Arthrospira platensis* to solar ultraviolet radiation exposure. *Journal of Applied Phycology*, *18*, 57-66.
- Helbling, E. W., Gao, K., Goncalves, R. J., Wu, H., & Villafane, V. E. (2003). Utilization of solar UV radiation by coastal phytoplankton assemblages off SE China when exposed to fast mixing. *Marine Ecology Progress Series*, *259*, 59-66.
- Helbling, E. W., Menchi, C. F., & Villafane, V. E. (2002). Bioaccumulation and role of UV-absorbing compounds in two marine crustacean species from Patagonia, Argentina. *Photochemical & Photobiological Sciences*, *1*, 820-825.
- Helbling, E. W., Pérez, D. E., Medina, C. D., Lagunas, M. G., & Villafañe, V. E. (2010). Phytoplankton distribution and photosynthesis dynamics in the Chubut River estuary (Patagonia, Argentina) throughout tidal cycles. *Limnology and Oceanography*, *55*(1), 55-65.
- Helbling, E. W., & Zagarese, H. E. (2003). *UV Effects in Aquatic Organisms and Ecosystems*. Cambridge, UK: Royal Society of Chemistry.
- Helbling, E. W., Zaratti, F., Sala, L. O., Palenque, E. R., Menchi, C. F., & Villafane, V. E. (2002). Mycosporine-like amino acids protect the copepod *Boeckella titicacae* (Harding) against high levels of solar UVR. *Journal of Plankton Research*, *24*, 1191-1216.
- Hemmingson, J. A., Falshaw, R., Furneaux, R. H., & Thompson, K. (2006). Structure and antiviral activity of the galactofucan sulfates extracted from *Undaria pinnatifida* (Phaeophyta). *Journal of Applied Phycology*, *18*, 185-193.
- Henley, W. J., Major, K. M., & Hironaka, J. L. (2002). Response to salinity and heat stress in two halotolerant chlorophyte algae. *Journal of Phycology*, *38*, 757-766.
- Heo, S. J., & Jeon, Y. J. (2009). Protective effect of fucoxanthin isolated from *Sargassum siliquastrum* on UV-B induced cell damage. *Journal of Photochemistry and Photobiology B: Biology*, *95*(2), 101-107.
- Heraud, P., & Beardall, J. (2002). Ultraviolet radiation has no effect on respiratory oxygen consumption or enhanced post-illumination respiration in three species of microalgae. *Journal of Photochemistry and Photobiology B: Biology*, *68*, 109-116.
- Herbert, T. D., Schuffert, J. D., Andreasen, D., Heusser, L., Lyle, M., Mix, A., . . . Herguera, J. C. (2002). The California current, Devils Hole, and pleistocene climate - Response. *Science*, *296*, U1-U2.
- Herlorey, O., Richard, P., & Blanchard, G. (2007). Methodology of light response curves: application of chlorophyll fluorescence to microphytobenthic biofilms. *Marine Biology*, *153*, 91-101.
- Hernández, E. A., Ferreyra, G. A., & MacCormack, P. (2006). Response of two Antarctic marine bacteria to different natural UV radiation doses and wavelengths. *Antarctic Science*, *18*(2), 205-212.
- Hernández, E. A., Ferreyra, G. A., & MacCormack, W. P. (2004). Effect of solar radiation and the subsequent dark periods on two newly isolated and characterized Antarctic marine bacteria. *Polar Research*, *23*(1), 67-77.

- Hernández, K. L., Quiñones, R. A., Daneri, G., Farias, M. E., & Helbling, E. W. (2007). Solar UV radiation modulates daily production and DNA damage of marine bacterioplankton from a productive upwelling zone (36°S), Chile. *Journal of Experimental Marine Biology and Ecology*, *343*, 82-95.
- Hernández, K. L., Quiñones, R. A., Daneri, G., & Helbling, E. W. (2006). Effects of solar radiation on bacterioplankton production in the upwelling system off central-southern Chile. *Marine Ecology Progress Series*, *315*, 19-31.
- Hernández Moresino, R. D., & Helbling, E. W. (2010). Combined Effects of UVR and Temperature on the Survival of Crab Larvae (Zoea I) from Patagonia: The Role of UV-Absorbing Compounds. *Marine Drugs*, *8*(5), 1681-1698. doi: 10.3390/md8051681
- Hernando, M., Schloss, I., Roy, S., & Ferreyra, G. (2006). Photoacclimation to long-term ultraviolet radiation exposure of natural sub-Antarctic phytoplankton communities: fixed surface incubations versus mixed mesocosms. *Photochemistry and Photobiology*, *82*(4), 923-936.
- Herndl, G. J., Agogue, H., Baltar, F., Reinthaler, T., Sintes, E., & Varela, M. M. (2008). Regulation of aquatic microbial processes: the 'microbial loop' of the sunlit surface waters and the dark ocean dissected. *Aquatic Microbial Ecology*, *53*, 59-68. doi: 10.3354/ame01225
- Herndl, G. J., Muller-Niklas, G., & Frick, J. (1993). Major role of ultraviolet-B in controlling bacterioplankton growth in the surface layer of the ocean. *Nature*, *361*, 717-719.
- Hessen, D. O., Blomqvist, P., Dahl-Hansen, G., Drakare, S., & Lindstroem, E. S. (2004). Production and food web interactions of Arctic freshwater plankton and responses to increased DOC. *Archiv für Hydrobiologie*, *159*(3), 289-307.
- Hessen, D. O., Leu, E. S., Færøvig, P. J., & Petersen, S. F. (2008). Light and spectral properties as determinants of C:N:P-ratios in phytoplankton. *Deep Sea Research Part II: Topical Studies in Oceanography*, *55*(20-21), 2169-2175.
- Heyer, W. R. (2003). Ultraviolet-B and Amphibia. *Bioscience*, *53*(6), 540-541.
- Hideg, & Schreiber, U. (2007). Parallel assessment of ROS formation and photosynthesis in leaves by fluorescence imaging. *Photosynthesis Research*, *92*, 103-108.
- Hill, R., & Ralph, P. J. (2006). Photosystem II heterogeneity of in hospite Zooxanthellae in scleractinian corals exposed to bleaching conditions. *Photochemistry and Photobiology*, *82*, 1577-1585.
- Hinchee, R. E. (1994). *Air sparging for site remediation*. Boca Raton: Lewis Publishers.
- Hiriart-Baer, V. P., & Smith, R. E. H. (2004). Models for ultraviolet radiation-dependent photoinhibition of Lake Erie phytoplankton. *Limnology and Oceanography*, *49*(1), 202-214.
- Hodgson, D. A., Vyverman, W., Verleyen, E., Levitt, P. R., Sabbe, K., Squier, A. H., & Keely, B. J. (2005). Late Pleistocene record of elevated UV radiation in an Antarctic lake. *Earth and Planetary Science Letters*, *236*, 565-572.
- Holtby, L. B., & Bothwell, M. L. (2008). Effects of solar ultraviolet radiation on the behaviour of juvenile coho salmon (*Oncorhynchus kisutch*): avoidance, feeding, and agonistic interactions. *Canadian Journal of Fisheries and Aquatic Sciences*, *65*(4), 701-711.
- Holzappel, A. M., & Vinebrooke, R. D. (2005). Environmental warming increases invasion potential of alpine lake communities by imported species. *Global Change Biology*, *11*, 2009-2015.
- Holzinger, A., Karsten, U., Lutz, C., & Wiencke, C. (2006). Ultrastructure and photosynthesis in the supralittoral green macroalga *Prasiola crispa* from Spitsbergen (Norway) under UV exposure. *Phycologia*, *45*(2), 168-177.
- Holzinger, A., & Lutz, C. (2006). Algae and UV irradiation: Effects on ultrastructure and related metabolic functions. *Micron*, *37*(3), 190-207.
- Holzinger, A., Lütz, C., Karsten, U., & Wiencke, C. (2004). The effect of ultraviolet radiation on ultrastructure and photosynthesis in the red macroalgae *Palmaria palmata* and *Odonthalia dentata* from Arctic waters. *Plant Biology*, *6*(5), 568-577.
- Horcsik, Z., Olah, V., Balogh, Meszaros, I., Simon, L., & Lakatos, G. (2006). Effect of Chromium(VI) on

- growth, element and photosynthetic pigment composition of *Chlorella pyrenoidosa* *Acta Biologica Szegediensis*, 50(1-2), 19-23.
- Hornberger, G. M., Bencala, K. E., & McKnight, D. M. (1994). Hydrological controls on dissolved organic carbon during snowmelt in the Snake River near Montezuma, Colorado. *Biogeochemistry*, 25, 147-165.
- Hortnagl, P. H., & Sommaruga, R. (2007). Photo-oxidative stress in symbiotic and aposymbiotic strains of the ciliate *Paramecium bursaria* *Photochemical & Photobiological Sciences*, 6, 842-847.
- Hossack, B. R., Diamond, S. A., & Corn, P. S. (2006). Distribution of boreal toad populations in relation to estimated UV-B dose in Glacier National Park, Montana, USA. *Canadian Journal of Zoology/Revue Canadienne de Zoologie*, 84(1), 98-107.
- Houlahan, J. E., & Findlay, C. S. (2003). The effects of adjacent land use on wetland amphibian species richness and community composition. *Canadian Journal of Fisheries and Aquatic Sciences*, 60, 1078-1094.
- Hoyer, K., Karsten, U., & Wiencke, C. (2002). Induction of sunscreen compounds in Antarctic macroalgae by different radiation conditions. *Marine Biology*, 141(4), 619-627.
- Hoyer, K., Karsten, U., & Wiencke, C. (2003). Inventory of UV-absorbing mycosporine-like amino acids in polar macroalgae and factors controlling their content. In A. H. L. Huiskes, W. W. C. Gieskes, J. Rozema, R. M. L. Schorno, S. M. van der Vies & W. J. Wolff (Eds.), *Antarctic Biology in a Global Context* (pp. 56-62). Leiden, The Netherlands: Backhuys Publ.
- Hubaud, J. C., Bombarda, I., Decome, L., Wallet, J. C., & Gaydou, E. M. (2008). Synthesis and spectroscopic examination of various substituted 1,3-dibenzoylmethane, active agents for UVA/UVB photoprotection. *Journal of Photochemistry and Photobiology B: Biology*, 92(2), 103-109.
- Hudson, N., Baker, A., & Reynolds, D. (2007). Fluorescence analysis of dissolved organic matter in natural, waste and polluted waters - a review. *River Research and Applications*, 23, 631-649.
- Huebner, J. D., Loadman, N. L., Wiegand, M. D., Young, D. L. W., & Warszycki, L. A. (2009). The Effect of chronic exposure to artificial UVB radiation on the survival and reproduction of *Daphnia magna* across two generations. *Photochemistry and Photobiology*, 85, 374-378.
- Huebner, J. D., Young, D. L. W., Loadman, N. L., Lentz, V. J., & Wiegand, M. D. (2006). Age-Dependent Survival, Reproduction and Photorepair Activity in *Daphnia magna* (Straus, 1820) After Exposure to Artificial Ultraviolet Radiation. *Photochemistry and Photobiology*, 82(6), 1656-1661.
- Huff, D. D., Grad, G., & Williamson, C. E. (2004). Environmental constraints on spawning depth of yellow perch: the roles of low temperature and high solar ultraviolet radiation. *Transactions of the American Fisheries Society*, 133, 718-726.
- Hughes, K. A. (2005). Effect of Antarctic solar radiation on sewage bacteria viability. *Water Research*, 39(11), 2237-2244.
- Hulatt, C. J., Thomas, D. N., Bowers, D. G., Norman, L., & Zhang, C. (2007). Exudation and decomposition of chromophoric dissolved organic matter (CDOM) from some temperate macroalgae. *Estuarine, Coastal and Shelf Science*, 84(1), 147-153.
- Hung, O. S., Gosselin, L. A., Thiyagarajan, V., Wu, R. S. S., & Qian, P. Y. (2005). Do effects of ultraviolet radiation on microbial films have indirect effects on larval attachment of the barnacle *Balanus amphitrite*? *Journal of Experimental Marine Biology and Ecology*, 323(1), 16-26.
- Huovinen, P., Gómez, I., & Orostegui, M. (2007). Patterns and UV sensitivity of carbon anhydrase and nitrate reductase activities in south Pacific macroalgae. *Marine Biology*, 151(5), 1813-1821.
- Huovinen, P., Gómez, I., Figueroa, F. L., Ulloa, N., Morales, V., & Lovengreen, C. (2004). Ultraviolet-absorbing mycosporine-like amino acids in red macroalgae from Chile. *Botany Marine*, 47(1), 21-29.
- Huovinen, P., Gómez, I., & Lovengreen, C. (2006). A five-year study of solar ultraviolet radiation in southern Chile (39 degrees S): potential impact on physiology of coastal marine algae?

- Photochemistry and Photobiology*, 82(2), 515-522.
- Huovinen, P., Matos, J., Sousa Pinto, I., & Figueroa, F. L. (2006). The role of ammonium in photoprotection against high irradiance in the red alga *Grateloupia lanceola* *Aquatic Botany*, 84(4), 308-316.
- Hylander, S., Boeing, W. J., Graneli, W., Karlsson, J., von Einem, J., Gutseit, K., & Hansson, L. A. (2009). Complementary UV protective compounds in zooplankton. *Limnology and Oceanography*, 54(6), 1883-1893.
- Hylander, S., Larsson, N., & Hansson, L.-A. (2009). Zooplankton vertical migration and plasticity of pigmentation arising from simultaneous UV and predation threats. *Limnology and Oceanography*, 54(2), 483-491.
- Ibelings, B. W., & Chorus, I. (2007). Accumulation of cyanobacterial toxins in freshwater "seafood" and its consequences for public health: A review. *Environmental Pollution*, 150, 177-192.
- Ihara, M., Nishihara, H., Yoon, K. S., Lenz, O., Friedrich, B., Nakamoto, H., . . . Okura, I. (2006). Light-driven hydrogen production by a hybrid complex of a [NiFe]-hydrogenase and the cyanobacterial photosystem I. *Photochemistry and Photobiology*, 82(3), 676-682.
- Ingalls, A. E., Whitehead, K., & Bridoux, M. C. (2010). Tinted windows: The presence of the UV absorbing compounds called mycosporine-like amino acids embedded in the frustules of marine diatoms. *Geochimica et Cosmochimica Acta*, 74(1), 104-115. doi: 10.1016/j.gca.2009.09.012
- Intergovernmental Panel on Climate Change (IPCC). (2007). Summary for Policymakers. In: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group 1 to the Fourth Assessment report of the Intergovernmental Panel on Climate Change* [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B Averyt, M. Tignor and H.L. Miller (eds.)]. (pp. 1-18). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA: IPCC.
- Ito, S., Kawamura, H., Niwa, Y., Nakamichi, N., Yamashino, T., & Mizuno, T. (2009). A genetic study of the Arabidopsis circadian clock with reference to the TIMING OF CAB EXPRESSION 1 (TOC1) gene. *Plant and Cell Physiology*, 50(2), 290-303.
- Iwamoto, M., Higo, K., & Takano, M. (2009). Circadian clock- and phytochrome-regulated Dof-like gene, Rdd1, is associated with grain size in rice. *Plant, Cell and Environment*, 32(5), 592-603.
- Jackson, L. J., Lauridsen, T. L., Sondergaard, M., & Jeppesen, E. (2007). A comparison of shallow Danish and Canadian lakes and implications of climate change. *Freshwater Biology*, 52, 1782-1792.
- Jacobs, J. F., Koper, G. J. M., & Ursem, W. N. J. (2007). UV protective coatings: A botanical approach. *Progress in Organic Coatings*, 58, 166-171.
- Jacquet, S., & Bratbak, G. (2003). Effects of ultraviolet radiation on marine virus-phytoplankton interactions. *FEMS Microbiology Ecology*, 44(3), 279-289.
- Jamil, M., Zia, M. S., Qasim, M., & Rahman, A. (2009). Pesticide residue in the food chain and human body inside Pakistan. *Journal of Chemical Society, Pakistan*, 31(2), 284-291.
- Janknegt, P. J., Rijstenbil, J. W., van de Poll, W. H., Gechev, T. S., & Buma, A. G. J. (2007). A comparison of quantitative and qualitative superoxide dismutase assays for application to low temperature microalgae. *Journal of Photochemistry and Photobiology B: Biology*, 87, 218-226.
- Janknegt, P. J., van de Poll, W. H., Visser, R. J. W., Rijstenbil, J. W., & Buma, A. G. J. (2008). Oxidative stress responses in the marine Antarctic diatom *Chaetoceros brevis* (Bacillariophyceae) during photoacclimation. *Journal of Phycology*, 44, 957-966.
- Jankowski, T., Livingstone, D. M., Buhner, H., Forster, R., & Niederhauser, P. (2006). Consequences of the 2003 European heat wave for lake temperature profiles, thermal stability, and hypolimnetic oxygen depletion: Implications for a warmer world. *Limnology and Oceanography*, 51(2), 815-819.
- Jiang, H., Gao, K., & Helbling, E. W. (2008). UV-absorbing compounds in *Porphyra haitanensis* (Rhodophyta) with special references to effects of desiccation. *Journal of Applied Phycology*, 20, 387-395.
- Jiang, H., & Qiu, B. (2005). Photosynthetic adaptation of a bloom-forming cyanobacterium *Microcystis*

- aeruginosa (Cyanophyceae) to prolonged UV-B exposure. *Journal of Phycology*, 41(5), 983-992.
- Jiang, H. X., & Gao, K. S. (2008). Effects of UV radiation on the photosynthesis of conchocelis of *Porphyra haitanensis* (Bangiales, Rhodophyta). *Phycologia*, 47, 241-248.
- Jiménez Centeno, C. (2002). *Effects of recent warming events on coral reef communities of Costa Rica (Central America)*. (Dissertation), University Bremen, Germany.
- Job, S., & Bellwood, D. R. (2007). Ultraviolet photosensitivity and feeding in larval and juvenile coral reef fishes. *Marine Biology*, 151(2), 495-503.
- Johansson, G., & Snoeijs, P. (2002). Macroalgal photosynthetic responses to light in relation to thallus morphology and depth zonation. *Marine Ecology Progress Series*, 244, 63-72.
- Johansson, M. (2004). *Effects of agriculture on abundance, genetic diversity and fitness in the common frog, Rana temporaria*. (Dissertation), Uppsala University, Sweden.
- Johnson, D., Campbell, C. D., Lee, J. A., Callaghan, T. V., & Gwynn-Jones, D. (2002). Arctic microorganisms respond more to elevated UV-B radiation than CO₂. *Nature*, 416(6876), 82-83.
- Johnson, P. T. J., & Chase, J. M. (2004). Parasites in the food web: linking amphibian malformations and aquatic eutrophication. *Ecology Letters*, 7, 521-526.
- Johnson, P. T. J., Lunde, K. B., Zelmer, D. A., & Werner, J. K. (2003). Limb deformities as an emerging parasitic disease in amphibians: evidence from museum specimens and resurvey data. *Conservation Biology*, 17, 1724-1737.
- Joint, I., & Jordan, M. B. (2008). Effect of short-term exposure to UVA and UVB on potential phytoplankton production in UK coastal waters. *Journal of Plankton Research*, 30(2), 199-210.
- Jokinen, I. E., Markkula, E. S., Salo, H. M., Kuhn, P., Nikoskelainen, S., Arts, M. T., & Browman, H. I. (2008). Exposure to increased ambient ultraviolet B radiation has negative effects on growth, condition and immune function of juvenile atlantic salmon (*Salmo salar*). *Photochemistry and Photobiology*, 84(5), 1265 - 1271. doi: 10.1111/j.1751-1097.2008.00358.x
- Jones, A. C., Gu, L., Sorrels, C. M., Sherman, D. H., & Gerwick, W. H. (2009). New tricks from ancient algae: natural products biosynthesis in marine cyanobacteria. *Current Opinion in Chemical Biology*, 13, 216-223.
- Jones, R. J., & Kerswell, A. P. (2003). Phytotoxicity of Photosystem II (PSII) herbicides to coral. *Marine Ecology Progress Series*, 261, 149-159.
- Joux, F., Jeffrey, W. H., Lebaron, P., & Mitchell, D. L. (1999). Marine bacterial isolates display diverse responses to UV-B radiation. *Applied Environmental Microbiology*, 65, 3820-3827.
- Jungfer, C., Schwartz, T., & Obst, U. (2007). UV-induced dark repair mechanisms in bacteria associated with drinking water. *Water Research*, 41, 188-196.
- Jürgens, K., & Matz, C. (2002). Predation as a shaping force for the phenotypic and genotypic composition of planktonic bacteria. *Antonie van Leeuwenhoek*, 81, 413-434.
- Kagami, M., de Bruin, A., Ibelings, B. W., & Van Donk, E. (2007). Parasitic chytrids: their effects on phytoplankton communities and food-web dynamics. *Hydrobiologia*, 578(1), 113-129.
- Kallqvist, T., & Svenson, A. (2003). Assessment of ammonia toxicity in tests with the microalga, *Nephroselmis pyriformis*, Chlorophyta. *Water Research*, 37, 477-484.
- Kápper, H., Parameswaran, A., Leitenmaier, B., Trtílek, M., & Etlík, I. (2007). Cadmium-induced inhibition of photosynthesis and long-term acclimation to cadmium stress in the hyperaccumulator *Thlaspi caerulescens*. *New Phytologist*, 175, 655-674.
- Karanas, J. J. (1978). *Exposure to ultraviolet-B radiation : sensitivity evaluation of an important ecological parameter of the marine copepod Acartia clausi*. (Thesis M S --Oregon State University 1978).
- Karanas, J. J., Van Dyke, H., & Worrest, R. C. (1979). Midultraviolet (UV-B) sensitivity of *Acartia clausii* Giesbrecht (Copepoda). *Limnology and Oceanography*, 24(6), 1104-1116.
- Karentz, D., Bosch, I., & Mitchell, D. M. (2004). Limited effects of Antarctic ozone depletion on sea urchin development. *Marine Biology*, 145(2), 277-292.

- Karetnikova, E. A., & Rapoport, V. L. (2008). Influence of UV irradiation on microbiological degradation of petroleum products *Biological Bulletin*, 35(5), 533-535.
- Karsten, U. (2008). Defense strategies of algae and cyanobacteria against solar ultraviolet radiation. In C. D. Amsler (Ed.), *Algal Chemical Ecology* (pp. 273-296). Berlin Heidelberg: Springer. (Reprinted from: NOT IN FILE).
- Karsten, U., Dummermuth, A., Hoyer, K., & Wiencke, C. (2003). Interactive effects of ultraviolet radiation and salinity on the ecophysiology of two Arctic red algae from shallow waters. *Polar Biology*, 26(4), 249-258.
- Karsten, U., Escoubeyrou, K., & Charles, F. (2009). The effect of re-dissolution solvents and HPLC columns on the analysis of mycosporine-like amino acids in the eulittoral macroalgae *Prasiola crispa* and *Porphyra umbilicalis* *Helgoland Marine Research*, 63, 231-238.
- Karsten, U., Friedl, T., Schumann, R., Hoyer, K., & Lembcke, S. (2005). Mycosporine-like amino acids and phylogenies in green algae: *Prasiola* and its relatives from the Trebouxiophyceae (Chlorophyta). *Journal of Phycology*, 41, 557-566.
- Karsten, U., Lembcke, S., & Schumann, R. (2007). The effects of ultraviolet radiation on photosynthetic performance, growth and sunscreen compounds in aeroterrestrial biofilm algae isolated from building facades. *Planta*, 225, 991-1000.
- Karsten, U., Wulff, A., Roleda, M. Y., Müller, R., Steinhoff, F., Fredersdorf, J., & Wiencke, C. (2009). Physiological responses of polar benthic micro- and macroalgae to ultraviolet radiation. *Botanica Marina*, 52(6), 639-654.
- Kashian, D. R., Zuellig, R. E., Mitchell, K. A., & Clements, W. H. (2007). The cost of tolerance: sensitivity of stream benthic communities to UV-B and metals. *Ecological Applications*, 17(2), 365-375.
- Kataoka, T., Hodoki, Y., Suzuki, K., Saito, H., & Higashi, S. (2009). Detection of UVBR-sensitive and -tolerant bacteria in surface waters of the western North Pacific. *Journal of Photochemistry and Photobiology B: Biology*, 95(2), 108-116.
- Kats, L. B., Kiesecker, J. M., Chivers, D. P., & Blaustein, A. R. (2002). Effects of UV-B Radiation on Anti-Predator Behavior in Amphibians: Reply to Cummins. *Ethology*, 108(7), 649-654.
- Keller, W. (2009). Limnology in northeastern Ontario: from acidification to multiple stressors. *Canadian Journal of Fisheries and Aquatic Sciences*, 66(7), 1189-1198.
- Keller, W., Yan, N. D., Gunn, J. M., & Heneberry, J. (2007). Recovery of acidified lakes: lessons from Sudbury, Ontario, Canada *Water, Air and Soil Pollution: Focus*, 7(1-3), 317-322.
- Keller, W. B., Heneberry, J., Leduc, J., Gunn, J., & Yan, N. (2006). Variations in epilimnion thickness in small boreal shield lakes: Relationships with transparency, weather and acidification. *Environmental Monitoring and Assessment*, 115(1-3), 419-431.
- Kelly, C. J., Tumsaraj, N., & Lajoie, C. A. (2004). Assessing wastewater metal toxicity with bacterial bioluminescence in a bench-scale wastewater treatment system. *Water Research*, 38, 423-431.
- Kelly, D. J., & Bothwell, M. L. (2002). Avoidance of solar ultraviolet radiation by juvenile coho salmon (*Oncorhynchus kisutch*). *Canadian Journal of Fisheries and Aquatic Sciences*, 59(3), 474-482.
- Kelton, N., Molot, L. A., & Dillon, P. J. (2007). Effect of ultraviolet and visible radiation on iron lability in boreal and artificial waters. *Aquatic Sciences*, 69, 86-95.
- Kessler, K., Lockwood, R. S., Williamson, C. E., & Saros, J. E. (2008). Vertical distribution of zooplankton in subalpine and alpine lakes: Ultraviolet radiation, fish predation, and the transparency-gradient hypothesis. *Limnology and Oceanography*, 53(6), 2374-2382.
- Kiesecker, J. M. (1997). *The effects of pathogens, UV-B radiation, and introduced species on amphibians in the Pacific Northwest*. (Thesis Ph D --Oregon State University 1998).
- Kiesecker, J. M., Belden, L. K., Shea, K., & Rubbo, M. J. (2004). Amphibian Decline and Emerging Disease. *American Scientist*, 92(2), 138-147.
- Kift, R., Webb, A. R., Page, J., Rimmer, J., & Janjai, S. (2006). A web-based tool for UV irradiance data:

- predictions for European and Southeast Asian sites. *Photochemistry and Photobiology*, 82(2), 579-586.
- Kim, J., Lee, M., Oh, S., Ku, J. L., Kim, K. H., & Choi, K. (2009). Acclimation to ultraviolet irradiation affects UV-B sensitivity of *Daphnia magna* to several environmental toxicants. *Chemosphere*, 77, 1600-1608.
- King, B. J., Hoefel, D., Daminato, D. P., Fanok, S., & Monis, P. T. (2008). Solar UV reduces *Cryptosporidium parvum* oocyst infectivity in environmental waters. *Journal of Applied Microbiology*, 104(5), 1311-1323.
- Kirilovsky, D. (2007). Photoprotection in cyanobacteria: the orange carotenoid protein (OCP)-related non-photochemical-quenching mechanism. *Photosynthesis Research*, 93, 7-16.
- Kitamura, S.-I., Kamata, S.-I., Nakano, S.-I., & Suzuki, S. (2004). Solar UV radiation does not inactivate marine birnavirus in coastal seawater. *Diseases of Aquatic Organisms*, 58, 251-254.
- Kjeldstad, B., Frette, Ø., Erga, S. R., Browman, H. I., Kuhn, P., Davis, R., . . . Stamnes, J. J. (2003). UV (280 to 400 nm) optical properties in a Norwegian fjord system and an intercomparison of underwater radiometers. *Marine Ecology Progress Series*, 256, 1-11.
- Kline, D. I. (2004). *The effects of anthropogenic stress on the coral holobiont: new insights into coral disease*. (Dissertation), University of California, San Diego, CA, USA.
- Klisch, M. (2002). *Induktion von UV-Schirmpigmenten in marinen Dinoflagellaten*. (Dissertation), Friedrich-Alexander University Erlangen-Nürnberg, Germany.
- Klisch, M., & Häder, D.-P. (2002). Wavelength dependence of mycosporine-like amino acid synthesis in *Gyrodinium dorsum*. *Journal of Photochemistry and Photobiology B: Biology*, 66(1), 60-66.
- Klisch, M., & Häder, D.-P. (2008). Mycosporine-like amino acids and marine toxins - the common and the different. *Marine Drugs*, 6, 147-163.
- Klisch, M., Hader, D. P., Ghetti, F., Checcucci, G., & Bornman, J. F. (2006). A polychromatic action spectrum of MAA synthesis in the dinoflagellate *Gyrodinium dorsum* *Environmental UV Radiation: Impact on Ecosystems and Human Health and Predictive Models* (pp. 282). The Netherlands: Springer.
- Klisch, M., Richter, P., Puchta, R., Häder, D.-P., & Bauer, W. (2007). The stereostructure of porphyra-334: an experimental and calculational NMR investigation. Evidence for an efficient 'proton sponge'. *Helvetica Chimica Acta*, 90, 488-511.
- Klisch, M., Sinha, R. P., & Häder, D.-P. (2002). UV-absorbing compounds in algae. *Current Topics in Plant Biology*, 3, 113-120.
- Klisch, M., Sinha, R. P., Helbling, E. W., & Haeder, D. P. (2005). Induction of thymine dimers by solar radiation in natural freshwater phytoplankton assemblages in Patagonia, Argentina. *Aquatic Sciences*, 67(1), 72-78.
- Klug, J. L. (2002). Positive and negative effects of allochthonous dissolved organic matter and inorganic nutrients on phytoplankton growth. *Canadian Journal of Fisheries and Aquatic Sciences*, 59, 85-95.
- Klug, J. L. (2005). Bacterial response to dissolved organic matter affects resource availability for algae. *Canadian Journal of Fisheries and Aquatic Sciences*, 62, 472-481.
- Klughhammer, C., & Schreiber, U. (2008). Complementary PS II quantum yields calculated from simple fluorescence parameters measured by PAM fluorometry and the Saturation Pulse method. *PAM Application Notes*, 1, 27-35.
- Klughhammer, C., & Schreiber, U. (2008). Saturation pulse method for assessment of energy conversion in PS I. *PAM Application Notes*, 1, 11-14.
- Knapp, R. A. (2005). Effects of nonnative fish and habitat characteristics on lentic herpetofauna in Yosemite National Park, USA. *Biological Conservation*, 121, 265-279.
- Knauert, S., & Knauer, K. (2008). The role of reactive oxygen species in copper toxicity to two freshwater green algae. *Journal of Phycology*, 44, 311-319.
- Kogej, T., Gostincar, C., Volkmann, M., Gorbushina, A. A., & Gunde-Cimerman, N. (2006). Mycosporines in

- extremophilic fungi - novel complementary osmolytes? *Environmental Chemistry*, 2, 105-110.
- Kollias, N., Baqer, A., Sadiq, I., Gillies, R., & Ou-Yang, H. (2003). Measurement of solar UVB variations by polysulphone film. *Photochemistry and Photobiology*, 78(3), 220-224.
- Koponen, P. S., Tuikka, A., & Kukkonen, J. V. K. (2007). Effects of ultraviolet-B radiation and larval growth on toxicokinetics of waterborne bisphenol A in common frog (*Rana temporaria*) larvae. *Chemosphere*, 66(7), 1323-1328.
- Korbee, N., Huovinen, P., Figueroa, F. L., Aguilera, J., & Karsten, U. (2005). Availability of ammonium influences photosynthesis and the accumulation of mycosporine-like amino acids in two *Porphyra* species (Bangiales, Rhodophyta). *Marine Biology*, 146(4), 645-654.
- Kornyeyev, D., Logan, B. A., Tissue, D. T., Allen, R. D., & Holaday, A. S. (2006). Compensation for PSII photoinactivation by regulated non-photochemical dissipation influences the impact of photoinactivation on electron transport and CO₂ assimilation. *Plant and Cell Physiology*, 47(4), 437-446.
- Koskenniemi, K., Lyra, C., Rajaniemi-Wacklin, P., Jokela, J., & Sivonen, K. (2007). Quantitative real-time PCR detection of toxic *Nodularia* cyanobacteria in the Baltic Sea. *Applied and Environmental Microbiology*, 73 (7), 2173-2179.
- Kouwenberg, J. H. M., & Lantoine, F. (2007). Effects of ultraviolet-B stressed diatom food on the reproductive output in Mediterranean *Calanus helgolandicus* (Crustacea; Copepoda). *Journal of Experimental Marine Biology and Ecology*, 341(2), 239-253.
- Kovács, G., Fekete, A., Bérces, A., & Rontó, G. (2007). The effect of the short wavelength ultraviolet radiation. An extension of biological dosimetry to the UV-C range. *Journal of Photochemistry and Photobiology B: Biology*, 88, 77-82.
- Kräbs, G., Bischof, K., Hanelt, D., Karsten, U., & Wiencke, C. (2002). Wavelength-dependent induction of UV-absorbing mycosporine-like amino acids in the red alga *Chondrus crispus* under natural solar radiation. *Journal of Experimental Marine Biology and Ecology*, 268, 69-82.
- Kräbs, G., Watanabe, M., & Wiencke, C. (2004). A monochromatic action spectrum for the photoinduction of the UV-absorbing mycosporine-like amino acid shinorine in the red alga *Chondrus crispus*. *Photochemistry and Photobiology*, 79(6), 515-519.
- Kräbs, G., & Wiencke, C. (2005). Photosynthesis, photosynthetic pigments and mycosporine-like amino acids after exposure of the marine red alga *Chondrus crispus* (Gigartinales, Rhodophyta) to different light qualities. *Phycologia*, 44, 95-102.
- Kramer, G. D., & Herndl, G. J. (2004). Photo- and bioreactivity of chromophoric dissolved organic matter produced by marine bacterioplankton. *Aquatic Microbial Ecology*, 36, 239-246.
- Krapp, R. H., Bassinet, T., Berge, J., Pampanin, D. M., & Camus, L. (2009). Antioxidant responses in the polar marine sea-ice amphipod *Gammarus wilkitzkii* to natural and experimentally increased UV levels. *Aquatic Toxicology*, 94(1), 1-7. doi: doi:10.1016/j.aquatox.2009.05.005
- Kratasyuk, V. A., Esimbekova, E. N., Gladyshev, M. I., Khromichek, E. B., Kuznetsov, A. M., & Ivanova, E. A. (2001). The use of bioluminescent biotests for study of natural and laboratory aquatic ecosystems. *Chemosphere*, 42, 909-915.
- Krupa, S. V., Kickert, R. N., & Jäger, H. J. (1998). *Elevated ultraviolet (UV)-B radiation and agriculture*. Berlin ; New York: Springer.
- Kuffner, I. B. (2001). Effects of ultraviolet (UV) radiation on larval settlement of the reef coral *Pocillopora damicornis*. *Marine Ecology Progress Series*, 217, 251-261.
- Kuffner, I. B. (2002). Effects of ultraviolet radiation and water motion on the reef coral, *Porites compressa* Dana: a transplantation experiment. *Journal of Experimental Marine Biology and Ecology*, 270(2), 147-169.
- Kumar, A., Tyagi, M. B., & Jha, P. N. (2004). Evidences showing ultraviolet-B radiation-induced damage of DNA in cyanobacteria and its detection by PCR assay. *Biochemical and Biophysical Research*

- Communications*, 318(4), 1025-1030.
- Kumar, A., Tyagi, M. B., Jha, P. N., Srinivas, G., & Singh, A. (2003). Inactivation of cyanobacterial nitrogenase after exposure to ultraviolet-B radiation. *Current Microbiology*, 46(5), 380-384.
- Kumari, S., Rastogi, R. P., Singh, K. L., Singh, S. P., & Sinha, R. P. (2008). DNA damage: detection strategies. *EXCLI Journal*, 7, 44-62.
- Kwan, J. C., Taori, K., Paul, V. J., & Luesch, H. (2009). Lyngbyastatins 8-10, elastase inhibitors with cyclic depsipeptide scaffolds isolated from the marine cyanobacterium *Lyngbya semiplena*. *Marine Drugs*, 7, 528-538.
- Laan, W., Gauden, M., Yeremenko, S., van Grondelle, R., Kennis, J. T. M., & Hellingwerf, K. J. (2006). On the mechanism of activation of the BLUF domain of AppA. *Biochemistry*, 45, 51-60.
- Lafrancois, B. M., Nydick, K. R., Johnson, B. M., & Baron, J. S. (2004). Cumulative effects of nutrients and pH on the plankton of two mountain lakes. *Canadian Journal of Fisheries and Aquatic Sciences*, 61, 1153-1165.
- Lah, B., Malovrth, M., Cepeljnik, T., & Marinsek-Logar, R. (2004). Detection and quantification of genotoxicity in wastewater-treated *Tetrahymena thermophila* using comet assay. *Environmental Toxicology*, 19(6), 545-553.
- Lamare, M. D., Barker, M. F., & Lesser, M. P. (2007). In situ rates of DNA damage and abnormal development in Antarctic and non-Antarctic sea urchin embryos. *Aquatic Biology*, 1(1), 21-32.
- Lamare, M. D., Barker, M. F., Lesser, M. P., & Marshall, C. (2006). DNA photorepair in echinoid embryos: effects of temperature on repair rate in Antarctic and non-Antarctic species. *Journal of Experimental Biology*, 209(24), 5017-5028.
- Langenheder, S., Sobek, S., & Tranvik, L. J. (2010). Changes in bacterial community composition along a solar radiation gradient in humic waters. *Aquatic Sciences*, 68(4), 415-424. doi: 10.1007/s00027-006-0849-y
- Latifi, A., Ruiz, M., & Zhang, C. C. (2009). Oxidative stress in cyanobacteria. *FEMS Microbiological Review*, 33, 258-278.
- Laternus, F., Svensson, T., Wiencke, C., & Oberg, G. (2004). Ultraviolet radiation affects emission of ozone-depleting substances by marine macroalgae: results from a laboratory incubation study. *Environmental Science & Technology*, 38(24), 6605-6609.
- Laurion, I., Blouin, F., & Roy, S. (2003). The quantitative filter technique for measuring phytoplankton absorption: Interference by MAAs in the UV waveband. *Limnology and Oceanography: Methods*, 1, 1-9.
- Laurion, I., Blouin, F., & Roy, S. (2004). Packaging of mycosporine-like amino acids in dinoflagellates. *Marine Ecology Progress Series*, 279, 297-303.
- Laurion, I., Lami, A., & Sommaruga, R. (2002). Distribution of mycosporine-like amino acids and photoprotective carotenoids among freshwater phytoplankton assemblages. *Aquatic Microbial Ecology*, 26, 283-294.
- Laurion, I., & Roy, S. (2009). Growth and photoprotection in three dinoflagellates (including two strains of *Alexandrium tamarense*) and one diatom exposed to four weeks of natural and enhanced ultraviolet-B radiation. *Journal of Phycology*, 45, 16-33.
- Lavaud, J., & Kroth, P. G. (2006). In diatoms, the transthylakoid proton gradient regulates the photoprotective non-photochemical fluorescence quenching beyond its control on the xanthophyll cycle. *Plant and Cell Physiology*, 47(7), 1010-1016.
- Lavaud, J., Strzepak, R. F., & Kroth, P. G. (2007). Photoprotection capacity differs among diatoms: Possible consequences on the spatial distribution of diatoms related to fluctuations in the underwater light climate. *Limnology and Oceanography*, 52(3), 1188-1194.
- Laybourn-Parry, J., Hofer, J. S., & Sommaruga, R. (2001). Viruses in the plankton of freshwater and saline Antarctic lakes. *Freshwater Biology*, 46, 1279-1287.

- Le Clainche, Y., Levasseur, M., Vézina, A., Dacey, J. W. H., & Saucier, F. J. (2004). Behaviour of the ocean DMS(P) pools in the Sargasso Sea viewed in a coupled physical-biogeochemical ocean model. *Canadian Journal of Fisheries and Aquatic Sciences*, *61*, 788-803.
- Leavitt, P. R., Cumming, B. F., Smol, J. P., Reasoner, M., Pienitz, R., & Hodgson, D. A. (2003). Climatic control of ultraviolet radiation effects on lakes. *Limnology and Oceanography*, *48*(5), 2062-2069.
- Lebar, M. D., Heimbegner, J. L., & Baker, B. J. (2007). Cold-water marine natural products. *Natural Product Reports*, *24*, 774-797.
- Lebert, M., Schuster, M., & Häder, D.-P. (2002). The European Light Dosimeter Network: four years of measurements. *Journal of Photochemistry and Photobiology B: Biology*, *66*, 81-87.
- Lee, T. M., & Shiu, C. T. (2009). Implications of mycosporine-like amino acid and antioxidant defenses in UV-B radiation tolerance for the algae species *Pterocladia capillacea* and *Gelidium amansii*. *Marine Environmental Research*, *67*(1), 8-16.
- Leech, D. M., Boeing, W. J., Cooke, S. L., Williamson, C. E., & Torres, L. (2009). UV-enhanced fish predation and the differential migration of zooplankton in response to UV radiation and fish. *Limnology and Oceanography*, *54*(4), 1152-1161.
- Leech, D. M., Padeletti, A., & Williamson, C. E. (2005). Zooplankton behavioral responses to solar UV radiation vary within and among lakes. *Journal of Plankton Research*, *27*(5), 461-471.
- Leech, D. M., & Williamson, C. E. (2001). In situ exposure to ultraviolet radiation alters the depth distribution of *Daphnia*. *Limnology and Oceanography*, *46*(2), 416-420.
- Leech, D. M., Williamson, C. E., Moeller, R. E., & Hargreaves, B. R. (2005). Effects of ultraviolet radiation on the seasonal vertical distribution of zooplankton: a database analysis. *Archiv für Hydrobiologie*, *162*(4), 445-464.
- Lefebvre, S., Mouget, J. L., Loret, P., Rosa, P., & Tremblin, G. (2007). Comparison between fluorimetry and oximetry techniques to measure photosynthesis in the diatom *Skeletonema costatum* cultivated under simulated seasonal conditions. *Journal of Photochemistry and Photobiology B: Biology*, *86*(2), 131-139.
- Leflaive, J., & Ten-Hage, L. (2007). Algal and cyanobacterial secondary metabolites in freshwaters: a comparison of allelopathic compounds and toxins. *Freshwater Biology*, *52*, 199-214.
- Lehnher, I., & Louis, V. L. S. (2009). Importance of ultraviolet radiation in the photodemethylation of methylmercury in freshwater. *Environmental Science & Technology*, *43*(15), 5692-5698.
- Lei, F., Xin, L. I., Jinhe, W., Honglei, H. A. N., Xuexi, T., & Xiguang, C. (2007). Effect of UV-B radiation on the feeding behavior of the rotifer *Brachionus plicatilis* [text is in Chinese]. *Acta Oceanologica Sinica*, *26*(004), 82-92.
- Lenton, A., Codron, F., Bopp, L., Metzl, N., Cadule, P., Tagliabue, A., & Le Sommer, J. (2009). Stratospheric ozone depletion reduces ocean carbon uptake and enhances ocean acidification. *Geophysical Research Letters*, *36*(L12606), doi:10.1029/2009GL038227.
- Lepetit, B., Volke, D., Szabo, M., Hoffmann, R., Garab, G., Wilhelm, C., & Goss, R. (2007). Characterization of the oligomeric antenna of the diatom *P. tricornutum*. *Photosynthesis Research*, *91*, 165.
- Lesser, M. P. (2006). Oxidative stress in marine environments: biochemistry and physiological ecology. *Annual Review of Physiology*, *68*, 253-278.
- Lesser, M. P. (2008). Effects of ultraviolet radiation on productivity and nitrogen fixation in the cyanobacterium, *Anabaena* sp. (Newton's strain). *Hydrobiologia*, *598*, 1-9.
- Lesser, M. P., & Barry, T. M. (2003). Survivorship, development, and DNA damage in echinoderm embryos and larvae exposed to ultraviolet radiation (290-400 nm). *Journal of Experimental Marine Biology and Ecology*, *292*, 75-91.
- Lesser, M. P., Barry, T. M., & Banaszak, A. T. (2002). Effects of UV radiation on a chlorophyte alga (*Scenedesmus* sp.) isolated from the fumarole fields of Mt. Erebus, Antarctica. *Journal of Phycology*, *38*, 473-481.

- Lesser, M. P., Barry, T. M., Lamare, M. D., & Barker, M. F. (2006). Biological weighting functions for DNA damage in sea urchin embryos exposed to ultraviolet radiation. *Journal of Experimental Marine Biology and Ecology*, 328, 10-21.
- Lesser, M. P., Farrell, J. H., & Walker, C. W. (2001). Oxidative stress, DNA damage and p53 expression in the larvae of Atlantic cod (*Gadus morhua*) exposed to ultraviolet (290-400 nm) radiation. *The Journal of Experimental Biology*, 204, 157-164.
- Lesser, M. P., Kruse, V. A., & Barry, T. M. (2003). Exposure of ultraviolet radiation causes apoptosis in developing sea urchin embryos. *The Journal of Experimental Biology*, 206, 4097-4103.
- Lesser, M. P., Lamare, M. D., & Barker, M. F. (2004). Transmission of ultraviolet radiation through the Antarctic annual sea ice and its biological effects on sea urchin embryos. *Limnology and Oceanography*, 49(6), 1957-1963.
- Lester, R. A., Parisi, A. V., Kimlin, M. G., & Sabburg, J. (2003). Optical properties of poly(2,6-dimethyl-1,4-phenylene oxide) film and its potential for a long-term solar ultraviolet dosimeter. *Physical and Medical Biology*, 48, 3685-3698.
- Leu, E., Wangberg, S., Wulff, A., Falk-Petersen, S., Orbaek, J. B., & Hessen, D. O. (2006). Effects of changes in ambient PAR and UV radiation on the nutritional quality of an Arctic diatom (*Thalassiosira antarctica* var. *borealis*). *Journal of Experimental Marine Biology and Ecology*, 337, 65-81.
- Levy, O., Dubinsky, Z., & Achituv, Y. (2003). Photobehavior of stony corals: responses to light spectra and intensity. *Journal of Experimental Biology*, 206(22), 4041-4049.
- Li, P., & Gao, K. S. (2008). Effects of solar UV and visible radiations on the spiral structure and orientation of *Arthrospira* (*Spirulina*) *platensis* (Cyanophyta). *Phycologia*, 47, 573-579.
- Li, W. K. W., & Harrison, W. G. (2008). Propagation of an atmospheric climate signal to phytoplankton in a small marine basin. *Limnology and Oceanography*, 53(5), 1734-1745.
- Li, Y., Yu, D., & Huang, Y. (2005). Effects of UV-B, nutrient, and light availability on shoot length and phenolic content of *Myriophyllum spicatum* (L.). *Journal of Freshwater Ecology*, 20(1), 59-63.
- Liang, Y., Beardall, J., & Heraud, P. (2006). Effects of nitrogen source and UV radiation on the growth, chlorophyll fluorescence and fatty acid composition of *Phaeodactylum tricornutum* and *Chaetoceros muelleri* (Bacillariophyceae). *Journal of Photochemistry and Photobiology B: Biology*, 82(3), 161-172.
- Libkind, D., Diéguez, M. C., Moliné, M., Pérez, P., Zagarese, H. E., Sommaruga, R., & van Broock, M. (2006). Occurrence of photoprotective compounds in yeasts from freshwater ecosystems of northwestern Patagonia. *Photochemistry and Photobiology*, 82, 972-980.
- Libkind, D., Moliné, M., Sampaio, J. P., & van Broock, M. (2009). Yeasts from high-altitude lakes: influence of UV radiation. *FEMS Microbiology Ecology*, 69(3), 353-362.
- Libkind, D., Sommaruga, R., Zagarese, H., & van Broock, M. (2005). Mycosporines in carotenogenic yeasts. *Systematic and Applied Microbiology*, 28, 749-754.
- Licht, L. E. (2003). Shedding Light on Ultraviolet Radiation and Amphibian Embryos. *Bioscience*, 53(6), 551-561.
- Lin Zhang, Y., Lou Zhang, E., Liang Liu, M., Wang, X., & Qiang Qin, B. (2007). Variation of chromophoric dissolved organic matter and possible attenuation depth of ultraviolet radiation in Yunnan Plateau lakes. *Limnology*, 8(3), 311-319. doi: 10.1007/s10201-007-0219-z
- Lips, K. R., Reeve, J. D., & Witters, L. R. (2003). Ecological traits predicting amphibian population declines in Central America. *Conservation Biology*, 17, 1078-1088.
- Litchman, E., & Neale, P. J. (2005). UV effects on photosynthesis, growth and acclimation of an estuarine diatom and cryptomonad. *Marine Ecology Progress Series*, 300, 53-62.
- Litchman, E., Neale, P. J., & Banaszak, A. T. (2002). Increased sensitivity to ultraviolet radiation in nitrogen-limited dinoflagellates: photoprotection and repair. *Limnology and Oceanography*, 47, 86-94.

- Little, E., Calfee, R. D., Fabacher, D., Carey, C., Blazer, V. S., & Middleton, E. M. (2003). Effects of Ultraviolet Radiation on Toad Early Life Stages. *Environmental Science and Pollution Research*, 10(3), 167-172.
- Liu, J., Jiao, N., & Cai, H. (2006). Cell cycle and cell signal transduction in marine phytoplankton. *Progress in Natural Science*, 16, 671-678.
- Liu, S., Zhang, Q. S., Wang, Y., Ju, Q., & Tang, X. X. (2008). The response of the early developmental stages of *Laminaria japonica* to enhanced ultraviolet-B radiation. *Science in China Series C: Life Sciences*, 51(12), 1129-1136.
- Liu, Z., Häder, D. P., & Sommaruga, R. (2004). Occurrence of mycosporine-like amino acids (MAAs) in the bloom-forming cyanobacterium *Microcystis aeruginosa*. *Journal of Plankton Research*, 26(8), 963-966.
- Livingstone, D. R. (2001). Contaminant-stimulated reactive oxygen species production and oxidative damage in aquatic organisms. *Marine Pollution Bulletin*, 42, 656-666.
- Llabrés, M., & Agustí, S. (2006). Picophytoplankton cell death induced by UV radiation: evidence for oceanic Atlantic communities. *Limnology and Oceanography*, 51, 21-29.
- Llewellyn, C. A., & Harbour, D. S. (2003). A temporal study of mycosporine-like amino acids in surface water phytoplankton from the English Channel and correlation with solar irradiation. *Journal of the Marine Biology Association of the U.K.*, 83, 1-9.
- Lobban, C. S., Hallam, S. J., Mukherjee, P., & Petrich, J. W. (2007). Photophysics and multifunctionality of hypericin-like pigments in heterotrich ciliates: a phylogenetic perspective. *Photochemistry and Photobiology*, 83, 1074-1094.
- Loeng, H. (2005). Marine Systems ACIA [Arctic Climate Impact Assessment] Scientific Report (pp. 453-538).
- Longhi, M. L., Ferreyra, G., Schloss, I., & Roy, S. (2006). Variable phytoplankton response to enhanced UV-B and nitrate addition in mesocosm experiments at three latitudes (Canada, Brazil and Argentina). *Marine Ecology Progress Series*, 313, 57-72.
- Losey, G. S., McFarland, W. N., Loew, E. R., Zamzow, J. P., Nelson, P. A., & Marshall, N. J. (2003). Visual Biology of Hawaiian Coral Reef Fishes. I. Ocular Transmission and Visual Pigments. *Copeia*, 2003(3), 433-454.
- Lotze, H. K., Worm, B., Molis, M., & Wahl, M. (2002). Effects of UV radiation and consumers on recruitment and succession of a marine macrobenthic community. *Marine Ecology Progress Series*, 243, 57-66.
- Louda, J. W., Neto, R. R., Magalhaes, A. R. M., & Schneider, V. F. (2008). Pigment alterations in the brown mussel *Perna perna*. *Comparative Biochemistry and Physiology. Part B*, 150, 385-394.
- Lucius, R., & Loos-Frank, B. (2008). Crustacea und Pentastomida. In R. Lucius & B. Loos-Frank (Eds.), *Biologie der Parasiten* (pp. 453-460). Berlin, Heidelberg: Springer. (Reprinted from: IN FILE).
- Lud, D., Moerdijk, T. C. W., Poll, W. H. v. d., Buma, A. G. J., & Huiskes, A. H. L. (2002). DNA damage and photosynthesis in Antarctic and Arctic *Sanionia uncinata* (Hedw.) Loeske under ambient and enhanced levels of UV-B radiation. *Plant, Cell & Environment*, 25(12), 1579-1589.
- Lüder, U. H., Wiencke, C., & Knoetzel, J. (2002). Acclimation of photosynthesis and pigments during and after six months of darkness in *Palmaria decipiens* (Rhodophyta): a study to simulate Antarctic winter sea ice cover. *Journal of Phycology*, 38(5), 904-913.
- Lumsden, P. J. (1997). *Plants and UV-B : responses to environmental change*. Cambridge, U.K. ; New York, NY: Cambridge University Press.
- Ma, Z., & Gao, K. (2009). Photoregulation of morphological structure and its physiological relevance in the cyanobacterium *Arthrospira* (Spirulina) *platensis*. *Planta*, 230(2), 329-337.
- Ma, Z., & Gao, K. (2009). Photosynthetically active and UV radiation act in an antagonistic way in regulating buoyancy of *Arthrospira* (Spirulina) *platensis* (cyanobacterium). *Environmental and Experimental Botany*, 66(2), 265-269.
- Maas, E. W., Latter, R. M., Thiele, J., Waite, A. M., & Brooks, H. J. M. (2007). Effect of multiple antibiotic treatments on a paralytic shellfish toxin-producing culture of the dinoflagellate *Alexandrium*

- minutum *Aquatic Microbial Ecology*, 48 255-260.
- Macaluso, A. L., Mitchell, D. L., & Sanders, R. W. (2009). Direct effects of UV-B radiation on the freshwater heterotrophic nanoflagellate *Paraphysomonas sp.* *Applied and Environmental Microbiology*, 75(13), 4525-4530.
- Mace, B. (2007). Sediment-associated phototoxicity to aquatic organisms. *Human and Ecological Risk Assessment*, 13(2), 317-321.
- Macfadyen, E. J., Williamson, C. E., Grad, G., Lowery, M., Jeffrey, W. H., & Mitchell, D. L. (2004). Molecular response to climate change: temperature dependence of UV-induced DNA damage and repair in the freshwater crustacean *Daphnia pulicaria*. *Global Change Biology*, 10(4), 408-416.
- Macías, F. A., Galindo, J. L. G., García-Díaz, M. D., & Galindo, J. C. G. (2008). Allelopathic agents from aquatic ecosystems: potential biopesticides models. *Phytochemistry Reviews*, 7(1), 155-178.
- Macias, G., Marco, A., & Blaustein, A. R. (2007). Combined exposure to ambient UVB radiation and nitrite negatively affects survival of amphibian early life stages. *Science of the Total Environment*, 385(1-3), 55-65.
- MacKenzie, J. L., Saade, F. E., Le, Q. H., Bureau, T. E., & Schoen, D. J. (2005). Genomic Mutation in Lines of *Arabidopsis thaliana* Exposed to Ultraviolet-B Radiation. *Genetics*, 171(2), 715-723.
- Mackey, K. R. M., Paytan, A., Grossman, A. R., & Bailey, S. (2008). A photosynthetic strategy for coping in a high-light, low-nutrient environment. *Limnology and Oceanography*, 53(3), 900-913.
- Madoni, P., Esteban, G., & Gorbi, G. (1992). Acute toxicity of cadmium, copper, mercury, and zinc to ciliates from activated-sludge plants. *Bulletin of Environmental Contamination and Toxicology*, 49, 900-905.
- Magnuson, J. J., Robertson, D. M., Benson, B. J., Whyne, R. H., Livinstone, D. M., Arai, T., . . . Vuglinski, V. S. (2000). Historical trends in lake and river ice cover in the Northern Hemisphere. *Science*, 289, 1743-1746.
- Magnuson, J. J., Wynne, R. H., Benson, B. J., & Robertson, D. M. (2000). Lake and river ice as a powerful indicator of past and present climates. *Verhandlungen der Internationalen Vereinigung für Theoretische und Angewandte Limnologie*, 27, 2749-2756.
- Malloy, K. D., Holman, M. A., Mitchell, D., & Detrich III, H. W. (1997). Solar UVB-induced DNA damage and photoenzymatic DNA repair in Antarctic zooplankton. *Proceeding of the National Academy of Science USA*, 94, 1258-1263.
- Mansilla, A., Werlinger, C., Palacios, M., Navarro, N. P., & Cuadra, P. (2006). Effects of UVB radiation on the initial stages of growth of *Gigartina skottsbergii*, *Sarcothalia crispata* and *Mazzaella laminarioides* (Gigartinales, Rhodophyta). *Journal of Applied Phycology*, 18(3-5), 451-459.
- Marangoni, R., Messina, N., Gioffré, D., & Colombettia, G. (2004). Effects of UV-B irradiation on a marine microecosystem. *Photochemistry and Photobiology*, 80(1), 78-83.
- Marcoval, M. A., Villafañe, V. E., & Helbling, E. W. (2007). Interactive effects of ultraviolet radiation and nutrient addition on growth and photosynthesis performance of four species of marine phytoplankton. *Journal of Photochemistry and Photobiology B: Biology*, 89(2-3), 78-87.
- Marcoval, M. A., Villafañe, V. E., & Helbling, E. W. (2008). Combined effects of solar ultraviolet radiation and nutrients addition on growth, biomass and taxonomic composition of coastal marine phytoplankton communities of Patagonia. *Journal of Photochemistry and Photobiology B: Biology*, 91(2-3), 157-166.
- Marinone, M. C., Marque, S. M., Suarez, D. A., del Carmen Diéguez, M., Pérez, P., De Los Ríos, P., . . . Zagarese, H. E. (2006). UV radiation as a potential driving force for zooplankton community structure in Patagonian lakes. *Photochemistry and Photobiology*, 82(4), 962-971.
- Markkula, E., Salo, H. M., Rikalainen, K., & Jokinen, I. E. (2009). Long-term UVB irradiation affects the immune functions of carp (*Cyprinus carpio*) and rainbow trout (*Oncorhynchus mykiss*). *Photochemistry and Photobiology*, 85(1), 347-352.

- Markkula, S. E., Karvonen, A., Salo, H., Tellervo Valtonen, E., & Ilmari Jokinen, E. (2007). Ultraviolet B irradiation affects resistance of rainbow trout (*Oncorhynchus mykiss*) against bacterium *Yersinia ruckeri* and trematode *Diplostomum spathaceum*. *Photochemistry and Photobiology*, 83(5), 1263-1269. doi: 10.1111/j.1751-1097.2007.00165.x
- Markkula, S. E., Salo, H. M., Immonen, A. K., & Jokinen, E. I. (2005). Effects of short-and long-term ultraviolet B irradiation on the immune system of the common carp (*Cyprinus carpio*). *Photochemistry and Photobiology*, 81(3), 595-602.
- Markkula, S. E., Salo, H. M., Rikalainen, A.-K., & Jokinen, E. I. (2006). Different sensitivity of carp (*Cyprinus carpio*) and rainbow trout (*Oncorhynchus mykiss*) to the immunomodulatory effects of UVB irradiation. *Fish and Shellfish Immunology*, 21(1), 70-79.
- Marquis, O., Miaud, C., Ficetola, G. F., Bocher, A., Mouchet, F., Guittonneau, S., & Devaux, A. (2009). Variation in genotoxic stress tolerance among frog populations exposed to UV and pollutant gradients. *Aquatic Toxicology*, 95(2), 152-161.
- Marquis, O., Miaud, C., & Lena, J. P. (2008). Developmental responses to UV-B radiation in common frog *Rana temporaria* embryos from along an altitudinal gradient. *Population Ecology*, 50(2), 123-130. doi: DOI: 10.1007/s10144-007-0071-3
- Marshall, J. A., & Newman, S. (2002). Differences in photoprotective pigment production between Japanese and Australian strains of *Chattonella marina* (Raphidophyceae). *Journal of Experimental Marine Biology and Ecology*, 272(1), 13-27.
- Marshall, N. J., Jennings, K., McFarland, W. N., Loew, E. R., & Losey, G. S. (2003). Visual Biology of Hawaiian Coral Reef Fishes. II. Colors of Hawaiian Coral Reef Fish. *Copeia*, 2003(3), 455-466.
- Marshall, N. J., Jennings, K., McFarland, W. N., Loew, E. R., & Losey, G. S. (2003). Visual Biology of Hawaiian Coral Reef Fishes. III. Environmental Light and an Integrated Approach to the Ecology of Reef Fish Vision. *Copeia*, 2003(3), 467-480.
- Martínez-Abaiagar, J., Núñez-Olivera, E., Arróniz-Crespo, M., Tomás, R., Beaucourt, N., & Otero, S. (2006). Effects of ultraviolet radiation on aquatic bryophytes. *Limnetica*, 25, 81-94.
- Martínez-Abaiagar, J., Núñez-Olivera, E., Beaucourt, N., García-Álvaro, M. A., Tomás, R., & Arróniz, M. (2003). Different physiological responses of two aquatic bryophytes to enhanced ultraviolet-B radiation. *Journal of Bryology*, 25, 17-30.
- Martínez-Abaiagar, J., Otero, S., Tomás, R., & Núñez-Olivera, E. (2008). High-level phosphate addition does not modify UV effects in two aquatic bryophytes. *The Bryologist*, 111(3), 444-454.
- Martínez-Junza, V., Szczepaniak, M., Braslavsky, S. E., Sander, J., Nowaczyk, M., Rogner, M., & Holzwarth, A. R. (2008). A photoprotection mechanism involving the D2 branch in photosystem II cores with closed reaction centers. *Photochemical & Photobiological Sciences*, 7, 1337-1343.
- Martinez-Lozano, J. A., Marin, M. J., Tena, F., Utrillas, M. P., Sanchez-Muniosguren, L., Gonzales-Frias, C., . . . Vilaplana, J. M. (2002). UV index experimental values during the years 2000 and 2001 from the Spanish broadband UV-B radiometric network. *Photochemistry and Photobiology*, 76(2), 181-187.
- Matallana-Surget, S., Douki, T., Cavicchioli, R., & Joux, F. (2009). Remarkable resistance to UVB of the marine bacterium *Photobacterium angustum* explained by an unexpected role of photolyase. *Photochemical & Photobiological Sciences*, 8, 1313-1320.
- Matta, C. A., Kheirallah, A. M. M., Abdelmeguid, N. E., & Abdel-Moneim, A. M. (2007). Effects of water pollution in lake Mariut on gonadal free amino acid compositions in *Oreochromis niloticus* fish. *Pakistan Journal of Biological Sciences*, 10(8), 1257-1263.
- Matthews, K. R., Knapp, R. A., & Pope, K. L. (2002). Garter snake distributions in high-elevation aquatic ecosystems: Is there a link with declining amphibian populations and nonnative trout introductions? *Journal of Herpetology*, 36, 16-22.
- Mayer, A. M. S., Rodríguez, A. D., Berlinck, R. G. S., & Hamann, M. T. (2007). Marine pharmacology in 2003-4: Marine compounds with anthelmintic antibacterial, anticoagulant, antifungal,

- anti-inflammatory, antimalarial, antiplatelet, antiprotozoal, antituberculosis, and antiviral activities; affecting the cardiovascular, immune and nervous systems, and other miscellaneous mechanisms of action. *Comparative Biochemistry and Physiology Part C*, 145, 553-581.
- Mazur-Marzec, H., Meriluoto, J., & Pliński, M. (2006). The degradation of the cyanobacterial hepatotoxin nodularin (NOD) by UV radiation. *Chemosphere*, 65(8), 1388-1395.
- McClanahan, T. R. (2002). The near future of coral reefs. *Environmental Conservation*, 29, 460-483.
- McCready, S., & Marcello, L. (2003). Repair of UV damage in *Halobacterium salinarum*. *Biochemical Society Transactions*, 31(3), 694-698.
- McCullagh, C., & Robertson, P. K. J. (2006). Photo-dynamic biocidal action of methylene blue and hydrogen peroxide on the cyanobacterium *Synechococcus leopoliensis* under visible light irradiation. *Journal of Photochemistry and Photobiology B: Biology*, 83(1), 63-68.
- McKee, D., Atkinson, D., Collings, S., Eaton, J., Harvey, I., Heyes, T., . . . Moss, B. (2002). Macro-zooplankter responses to simulated climate warming in experimental freshwater microcosms. *Freshwater Biology*, 47, 1557-1570.
- McKenzie, R., Bodeker, G., Scott, G., Slusser, J., & Lantz, K. (2006). Geographical differences in erythemally-weighted UV measured at mid-latitude USDA sites. *Photochemical & Photobiological Sciences*, 5, 343-352.
- McKenzie, R. L., Björn, L. O., Bais, A., & Ilyas, M. (2003). Changes in biologically active ultraviolet radiation reaching the Earth's surface. *Photochemical & Photobiological Sciences*, 2, 5-15.
- McKenzie, R. L., Liley, J. B., & Bjorn, L. O. (2009). UV radiation: balancing risks and benefits. *Photochemistry and Photobiology*, 85, 88-98.
- McMinn, A., Ryan, K., & Gademann, R. (2003). Diurnal changes in photosynthesis of Antarctic fast ice algal communities determined by pulse amplitude modulation fluorometry. *Marine Biology*, 143(2), 359-367.
- Meador, J., Jeffrey, W. H., Kase, J. P., Pakulski, J. D., Chiarello, S., & Mitchella, D. L. (2002). Seasonal Fluctuation of DNA Photodamage in Marine Plankton Assemblages at Palmer Station, Antarctica. *Photochemistry and Photobiology*, 75(3), 266-271.
- Meador, J. A., Baldwin, A. J., Catala, P., Jeffrey, W. H., Joux, F., Moss, J. A., . . . Mitchell, D. L. (2009). Sunlight-induced DNA damage in marine micro-organisms collected along a latitudinal gradient from 70 °N to 68 °S. *Photochemistry and Photobiology*, 85, 412-420.
- Meiners, K. (2002). *Sea-ice communities: structure and composition in Baltic, Antarctic and Arctic seas*. (Dissertation), Christian-Albrechts-University, Kiel, Germany.
- Menck, C. F. M. (2002). Shining a light on photolyases. *Nature Genetics*, 32, 338-339.
- Mendelson III, J. R., Lips, K. R., Gagliardo, R. W., Rabb, G. B., Collins, J. P., Diffendorfer, J. E., . . . Brodie, E. D., Jr. (2006). Confronting amphibian declines and extinctions. *Science*, 313(5783), 48.
- Mengelt, C., & Prézelin, B. B. (2002, 2002). *A potential novel link between organic nitrogen loading and Pseudo-nitzschia spp. blooms*. Paper presented at the California and the World Ocean 02. Revisiting and Revising California's Ocean Agenda, October 27-30, 2002, Santa Barbara, California, USA.
- Merzouk, A., Levasseur, M., Scarratt, M., Michaud, S., & Gosselin, M. (2004). Influence of dinoflagellate diurnal vertical migrations on dimethylsulfoniopropionate and dimethylsulfide distribution and dynamics (St. Lawrence Estuary, Canada). *Canadian Journal of Fisheries and Aquatic Sciences*, 61, 712-720.
- Metts, B. S., Hopkins, W. A., & Nestor, J. P. (2005). Interaction of an insecticide with larval density in pond-breeding salamanders (*Ambystoma*). *Freshwater Biology*, 50, 685-696.
- Michaelis, B. (1982). *The lethal response of the roughskin newt, Taricha granulosa (Skilton), to ultraviolet-B radiation at three fluence rates*. (Thesis M S --Oregon State University 1982).
- Michler, T., Aguilera, J., Hanelt, D., Bischof, K., & Wiencke, C. (2002). Long-term effects of ultraviolet

- radiation on growth and photosynthetic performance of polar and cold-temperate macroalgae. *Marine Biology*, 140(6), 1117-1127.
- Miller III, H. L., Neale, P. J., & Dunton, K. H. (2009). Biological Weighting Functions for UV inhibition of photosynthesis in the Kelp *Laminaria hyperborea* (Phaeophyceae). *Journal of Phycology*, 45(3), 571 - 584.
- Miller, T. J., Crowder, L. B., Rice, J. A., & Marschall, E. A. (1988). Larval size and recruitment mechanisms in fishes: Toward a conceptual framework. *Canadian Journal of Fisheries and Aquatic Sciences* 45, 1657-1670.
- Miserendino, M. L., & Archangelsky, M. (2006). Aquatic coleoptera distribution and environmental relationships in a large Patagonian river. *International Review of Hydrobiology*, 91, 423-437.
- Mishra, Y., Chaurasia, N., & Rai, L. C. (2009). Heat pretreatment alleviates UV-B toxicity in the cyanobacterium *Anabaena doliolum*: A proteomic analysis of cross tolerance. *Photochemistry and Photobiology*, 85(3), 824-833.
- Misonou, T., Saitoh, J., Oshiba, S., Tokitomo, Y., Maegawa, M., Inoue, Y., . . . Sakurai, T. (2003). UV-absorbing substance in the red alga *Porphyra yezoensis* (Bangiales, Rhodophyta) block thymine photodimer production. *Marine Biotechnology*, 5(2), 194-200.
- Mitchell, D., Connelly, C., Jeffrey, W., Macaluso, A., Moeller, R., Olson, M., . . . Williamson, C. (2008). Photoprotection against UV-B radiation in freshwater plankton: A comparative approach across a broad trophic spectrum. *NONE "Ocean Sciences Meeting"*.
- Mitchell, D. L., Adams-Deutsch, T., & Olson, M. H. (2009). Dose dependence of DNA repair in rainbow trout (*Oncorhynchus mykiss*) larvae exposed to UV-B radiation. *Photochemical & Photobiological Sciences*, 8(1), 75-81.
- Mobley, K. B., & Gleason, D. F. (2003). The effect of light and heterotrophy on carotenoid concentrations in the Caribbean anemone *Aiptasia pallida* (Verrill). *Marine Biology*, 143, 629-637.
- Mock, T., & Thomas, D. N. (2005). Recent advances in sea-ice microbiology. *Environmental Microbiology*, 7, 605-619.
- Modarressie, R., & Bakker, T. (2007). A limited role for ultraviolet radiation when threespine sticklebacks (*Gasterosteus aculeatus*) prey upon *Daphnia*. *Canadian Journal of Fisheries and Aquatic Sciences*, 64(11), 1573-1580.
- Modarressie, R., Rick, I. P., & Bakker, T. C. M. (2006). UV matters in shoaling decisions. *Proceedings of the Royal Society B. Biological Sciences*, 273(1588), 849-854.
- Modenutti, B. E., Balseiro, E. G., Callieri, C., Bertoni, R., & Queimaliños, C. P. (2005). Effect of UV-B and different PAR intensities on the primary production of the mixotrophic planktonic ciliate *Stentor araucanus*. *Limnology and Oceanography*, 50(3), 864-871.
- Moeller, R. E., Gilroy, S., Williamson, C. E., Grad, G., & Sommaruga, R. (2005). Dietary acquisition of photoprotective compounds (mycosporine-like amino acids, carotenoids) and acclimation to ultraviolet radiation in a freshwater copepod. *Limnology and Oceanography*, 50(2), 427-439.
- Mohlin, M., & Wulff, A. (2009). Interaction effects of ambient UV radiation and nutrient limitation on the toxic cyanobacterium *Nodularia spumigena*. *Microbial Ecology*, 57(4), 675-686.
- Mohovic, B., Giancesella, S. M. F., Laurion, I., & Roy, S. (2006). Ultraviolet B-photoprotection efficiency of mesocosm-enclosed natural phytoplankton communities from different latitudes: Rimouski (Canada) and Ubatuba (Brazil). *Photochemistry and Photobiology*, 82(4), 952-961.
- Moisan, T. A., Ellisman, M. H., Buitenhuis, C. W., & Sosinsky, G. E. (2006). Differences in chloroplast ultrastructure of *Phaeocystis antarctica* in low and high light. *Marine Biology*, 149, 1281-1290.
- Molis, M., & Wahl, M. (2009). Comparison of the impacts of consumers, ambient UV, and future UVB irradiance on mid-latitudinal macroepibenthic assemblages. *Global Change Biology*, 15(7), 1833-1845.
- Molis, M., Wessels, H., Hagen, W., Karsten, U., & Wiencke, C. (2009). Do sulphuric acid and the brown alga

- Desmarestia viridis* support community structure in Arctic kelp patches by altering grazing, distribution patterns, and behaviour of sea urchins? *Polar Biology*, 32(1), 71-82.
- Molot, L. A., Keller, W., Leavitt, P. R., Robarts, R. D., Waiser, M. J., Arts, M. T., . . . Douglas, M. S. V. (2004). Risk analysis of dissolved organic matter-mediated ultraviolet B exposure in Canadian inland waters. *Canadian Journal of Fisheries and Aquatic Sciences*, 61, 2511-2521.
- Momo, F., Ferrero, E., Eury, M., Esusy, M., Iribarren, J., Ferreyra, G., . . . Demers, S. (2006). The whole is more than the sum of its parts: modeling community-level effects of UVR in marine ecosystems. *Photochemistry and Photobiology*, 82(4), 903-908.
- Monteith, D. T., Stoddard, J. L., Evans, C. D., de Wit, H. A., Forsius, M., Høgåsen, T., . . . Vesely, J. (2007). Dissolved organic carbon trends resulting from changes in atmospheric deposition chemistry. *Nature*, 450, 537-541.
- Montero, O., & Hader, D. P. (2007). Photosynthetic response of five marine diatoms to acute exposure to PAR and UV radiations. *Acta Protozoologica*, 46, 81-91.
- Montgomery, B. L. (2007). Sensing the light: photoreceptive systems and signal transduction in cyanobacteria. *Molecular Microbiology*, 64, 16-27.
- Moore, R. M. (2008). A photochemical source of methyl chloride in saline waters. *Environmental Science and Technology*, 42, 1933-1937.
- Morel, A., Gentili, B., Claustre, H., Babin, M., Bricaud, A., Ras, J., & Tieche, F. (2007). Optical properties of the "clearest" natural waters. *Limnology and Oceanography*, 52(1), 217-229.
- Morris, D. P., Zagarese, H., Williamson, C. E., Balseiro, E. G., Hargreaves, B. R., Modenutti, B., . . . Queimalinos, C. (1995). The attenuation of solar UV radiation in lakes and the role of dissolved organic carbon. *Limnology and Oceanography*, 40(8), 1381-1391.
- Morrison, J. R., & Nelson, N. B. (2004). Seasonal cycle of phytoplankton UV absorption at the Bermuda Atlantic Time-series Study (BATS) site. *Limnology and Oceanography*, 49(1), 215-224.
- Moser, K. A., Smol, J. P., MacDonald, G. M., & Larsen, C. P. S. (2002). 19th century eutrophication of a remote boreal lake: a consequence of climate warming? *Journal of Paleolimnology*, 28, 269-281.
- Mueller, D. R., Vincent, W. F., Bonilla, S., & Laurion, I. (2005). Extremotrophs, extremophiles and broadband pigmentation strategies in a high arctic ice shelf ecosystem. *FEMS Microbiology Ecology*, 53(1), 73-87. doi: 10.1016/j.femsec.2004.11.001
- Müller, R., Wiencke, C., & Bischof, K. (2008). Interactive effects of UV radiation and temperature on microstages of Laminariales (Phaeophyceae) from the Arctic and North Sea. *Climate Research*, 37(2-3), 203-213.
- Müller, R., Wiencke, C., Bischof, K., & Krock, B. (2009). Zoospores of three Arctic Laminariales under different UV radiation and temperature conditions: Exceptional spectral absorbance properties and lack of phlorotannin induction. *Photochemistry and Photobiology*, 85(4), 970-977.
- Munakata, N., Kazadzis, S., Bais, A. F., Hieda, K., Ronto, G., Rettberg, P., & Horneck, G. (2000). Comparisons of spore dosimetry and spectral photometry of solar-UV radiation at four sites in Japan and Europe. *Photochemistry and Photobiology*, 72, 739-745.
- Mundt, S. (2006). Cyanobacteria. A prolific source of new pharmaceuticals. *BIOforum Europe*, 5, 42-44.
- Muramatsu, M., & Hihara, Y. (2006). Characterization of high-light-responsive promoters of the *psaAB* genes in *Synechocystis* sp. PCC 6803. *Plant and Cell Physiology*, 47(7), 878-890.
- Muths, E., Corn, P. S., Pessier, A. P., & Green, D. E. (2003). Evidence for disease-related amphibian decline in Colorado. *Biological Conservation*, 110, 357-365.
- Nagiller, K., & Sommaruga, R. (2009). Differential tolerance of UV radiation between *Chaoborus* species and role of photoprotective compounds. *Journal of Plankton Research*, 31(5), 503-513. doi: 10.1093/plankt/fbn133
- Nahon, S., Castro Porras, V. A., Pruski, A. M., & Charles, F. (2008). Sensitivity to UV radiation in early life stages of the Mediterranean sea urchin *Sphaerechinus granularis* (Lamarck). *Science of The Total*

- Environment*, 407(6), 1892-1900. doi: doi:10.1016/j.scitotenv.2008.11.044
- Nahon, S., Charles, F., Lantoine, F., Vétion, G., Escoubeyrou, K., Desmalades, M., & Pruski, A. M. (2010). Ultraviolet radiation negatively affects growth and food quality of the pelagic diatom *Skeletonema costatum*. *Journal of Experimental Marine Biology and Ecology*, 383(2), 164-170. doi: 10.1016/j.jembe.2009.12.006
- Nakabayashi, T., Nagao, I., Kinjo, M., Aoki, Y., Tanaka, M., & Ohta, N. (2008). Stress-induced environmental changes in a single cell as revealed by fluorescence lifetime imaging. *Photochemical & Photobiological Sciences*, 7, 671-674.
- Nakamura, T., van Woessik, R., & Yamasaki, H. (2005). Photoinhibition of photosynthesis is reduced by water flow in the reef-building coral *Acropora digitifera*. *Marine Ecology Progress Series*, 301, 109-118.
- National Oceanic and Atmospheric Administration (NOAA). (2008). Scientific Assessment Presents Status, Expectations for Ozone Layer, (pp. 29-30).
- National Risk Management Research Laboratory (U.S.), Superfund Innovative Technology Evaluation Program (U.S.), & Science Applications International Corporation. (1999). ELI/SBP's UVB (vacuum vaporization well) system for treatment of VOC-contaminated soils [microform]. Cincinnati, Ohio: National Risk Management Research Laboratory Office of Research and Development U.S. Environmental Protection Agency.
- National Risk Management Research Laboratory (U.S.), Superfund Innovative Technology Evaluation Program (U.S.), & Tetra Tech EM Inc. (1999). Roy F. Weston, Inc. and IEG Technologies Corporation Unterdruck-Verdampfer-Brunnen (UVB) technology [microform]. Cincinnati, Ohio: National Risk Management Research Laboratory Office of Research and Development U.S. Environmental Protection Agency.
- Navarro, E., Robinson, C. T., & Behra, R. (2008). Increased tolerance to ultraviolet radiation (UVR) and cotolerance to cadmium in UVR-acclimatized freshwater periphyton. *Limnology and Oceanography*, 53(3), 1149-1158.
- Navarro, E., Robinson, C. T., Wagner, B., & Behra, R. (2007). Influence of ultraviolet radiation on UVR-absorbing compounds in freshwater algal biofilms and *Scenedesmus vacuolatus* cultures. *Journal of Toxicology and Environmental Health, Part A*, 70, 760-767.
- Navarro, M. B., Balseiro, E., & Modenutti, B. (2009). Effect of UVR on lake water and macrophyte leachates in shallow Andean-Patagonian lakes: bacterial response to changes in optical features. *Photochemistry and Photobiology*, 85, 332-340.
- Navarro, N. P., Mansilla, A., & Palacios, M. (2008). UVB effects on early developmental stages of commercially important macroalgae in southern Chile. *Journal of Applied Phycology*, 20(5), 897-906.
- Neale, P. J. (2001). Modeling the effects of ultraviolet radiation on estuarine phytoplankton production: impact of variations in exposure and sensitivity to inhibition. *Journal of Photochemistry and Photobiology B: Biology*, 62(1-2), 1-8.
- Neale, P. J., Helbling, E. W., & Day, T. A. (2007). UV effects in aquatic and terrestrial environments. Introduction *Photochemistry and Photobiology*, 83(4), 775-776.
- Neale, P. J., Litchman, E., Sobrino, C., Callieri, C., Morabito, G., Montecino, V., . . . Steiner, D. (2001). Quantifying the response of phytoplankton photosynthesis to ultraviolet radiation: Biological weighting functions versus in situ measurements in two Swiss lakes. *Aquatic Sciences*, 63(3), 265-285.
- Nelson, P. A., Kajiura, S. M., & Losey, G. S. (2003). Exposure to solar radiation may increase ocular UV-filtering in the juvenile scalloped hammerhead shark, *Sphyrna lewini*. *Marine Biology*, 142, 53-56.
- Netten, J. J. C., van Nes, E. H., Scheffer, M., & Roijackers, R. M. M. (2008). Use of open-top chambers to

- study the effect of climate change in aquatic ecosystems. *Limnology and Oceanography: Methods*, 6, 223-229.
- Newman, S. J., Dunlap, W. C., Nicol, S., & Ritz, D. (2000). Antarctic krill (*Euphausia superba*) acquire a UV-absorbing mycosporine-like amino acid from dietary algae. *Journal of Experimental Marine Biology and Ecology*, 255, 93-110.
- Newman, S. J., Nicol, S., Ritz, D., & Marchant, H. (1999). Susceptibility of Antarctic krill (*Euphausia superba* Dana) to ultraviolet radiation. *Polar Biology*, 22, 50-55.
- Nielsen, H. D., & Nielsen, S. L. (2008). Evaluation of imaging and conventional PAM as a measure of photosynthesis in thin- and thick-leaved marine macroalgae. *Aquatic Biology*, 3, 121-131.
- Nina Bouchard, J., Campbell, D. A., & Roy, S. (2005). Effects of UV-B Radiation on the D1 Protein Repair Cycle of Natural Phytoplankton Communities from Three Latitudes (Canada, Brazil, and Argentina). *Journal of Phycology*, 41(2), 273-286. doi: 10.1111/j.1529-8817.2005.04126.x
- Norris, T. B., McDermott, T. R., & Castenholz, R. W. (2002). The long-term effects of UV exclusion on the microbial composition and photosynthetic competence of bacteria in hot-spring microbial mats. *FEMS Microbiology Ecology*, 39(3), 193-209.
- Nouguier, J., Mostajir, B., Le Floch, E., & Vidussi, F. (2007). An automatically operated system for simulating global change temperature and ultraviolet B radiation increases: application to the study of aquatic ecosystem responses in mesocosm experiments. *Limnology and Oceanography: Methods*, 5, 269-279.
- Nozawa, H., Yamamoto, H., Makita, K., Schuch, N. J., Pinheiro, D. K., Carbone, S., . . . Foppiano, A. J. (2007). Ground-based observations of solar UV radiation in Japan, Brazil and Chile. *Revista Brasileira de Geofísica*, 25(Supl. 2), 17-25.
- Ntefidou, M., Lüdtke, T., Ahmad, M., & Häder, D.-P. (2006). Heterologous expression of photoactivated adenylyl cyclase (PAC) genes from the flagellate *Euglena gracilis* in insect cells. *Photochemistry and Photobiology*, 82(6), 1601-1605.
- Nunez, M., Davidson, A. T., & Michael, K. (2006). Modelled effects of ambient UV radiation on a natural Antarctic marine microbial community. *Aquatic Microbial Ecology*, 42, 75-90. doi: 10.3354/ame042075
- Núñez-Olivera, E., Martínez-Abajgar, J., Tomás, R., Beaucourt, N., & Arróniz-Crespo, M. (2004). Influence of temperature on the effects of artificially enhanced UV-B radiation on aquatic bryophytes under laboratory conditions. *Photosynthetica*, 42(2), 201-212.
- Núñez-Olivera, E., Otero, S., Tomás, R., & Martínez-Abajgar, J. (2009). Seasonal variations in UV-absorbing compounds and physiological characteristics in the aquatic liverwort *Jungermannia exsertifolia* subsp. *cordifolia* over a 3-year period. *Physiologia Plantarum*, 136, 73-85.
- Oberholster, P. J., Botha, A.-M., & Grobbelaar, J. U. (2004). *Microcystis aeruginosa*: source of toxic microcystins in drinking water. *African Journal of Biotechnology*, 3, 159-168.
- Obermuller, B., Puntarulo, S., & Abele, D. (2007). UV-tolerance and instantaneous physiological stress responses of two Antarctic amphipod species *Gondogeneia antarctica* and *Djerboa furcipes* during exposure to UV radiation. *Marine Environmental Research*, 64(3), 267-285.
- Obernosterer, I., & Benner, R. (2004). Competition between biological and photochemical processes in the mineralization of dissolved organic carbon. *Limnology and Oceanography*, 49, 117-124.
- Obertegger, U., Flaim, G., & Sommaruga, R. (2008). Multifactorial nature of rotifer water layer preferences in an oligotrophic lake. *Journal of Plankton Research*, 30, 633-643.
- Ochiai, T., Colman, B., & Matsuda, Y. (2007). Acclimation of wild-type cells and CO₂-insensitive mutants of the green alga *Chlorella ellipsoidea* to elevated [CO₂]. *Plant, Cell and Environment*, 30, 944-951.
- O'Dowd, C. D., Jimenez, J. L., Bahreini, R., Flagan, R. C., Seinfeld, J. H., Hämeri, K., . . . Hoffmann, T. (2002). Marine aerosol formation from biogenic iodine emissions. *Nature*, 417, 632 - 636.

- Ogbebo, F. E., & Ochs, C. (2008). Bacterioplankton and phytoplankton production rates compared at different levels of solar ultraviolet radiation and limiting nutrient ratios. *Journal of Plankton Research*, 30(11), 1271-1284.
- Ohi, N., Mizobuchi, A., & Taguchi, S. (2006). Light absorption of *Isochrysis galbana* (Prymnesiophyceae) under a day-night cycle with ultraviolet radiation. *Marine Ecology Progress Series*, 316, 85-93.
- Okamoto, O. K., Pinto, E., Latorre, L. R., Bechara, E. J. H., & Colepiccolo, P. (2001). Antioxidant modulation in response to metal-induced oxidative stress in algal chloroplasts. *Archives of Environmental Contamination and Toxicology*, 40, 18-24.
- Olano, C., Méndez, C., & Salas, J. A. (2009). Antitumor compounds from marine actinomycetes. *Marine Drugs*, 7, 210-248.
- Olivier, M., & Miaud, C. (2008). Variation in UV sensitivity among common frog *Rana temporaria* populations along an altitudinal gradient. *Zoology*, 111 (4), 309-317. doi: doi:10.1016/j.zool.2007.09.003
- Olson, M. H., Adams-Deutsch, T., Cassels, K. J., Oliver, A. E., & Mitchell, D. L. (2008). Patterns of ultraviolet radiation exposure in bluegill nests over the course of the spawning season. *Transactions of the American Fisheries Society*, 137(5), 1446-1454. doi: doi:10.1577/T07-213.1
- Olson, M. H., Colip, M. R., Gerlach, J. S., & Mitchell, D. L. (2006). Quantifying ultraviolet radiation mortality risk in bluegill larvae: effects of nest location. *Ecological Applications*, 16(1), 328-338.
- Olson, M. H., & Mitchell, D. L. (2006). Interspecific variation in UV defense mechanisms among temperate freshwater fishes. *Photochemistry and Photobiology*, 82(2), 606-610.
- Omeregíe, E. O., Crumbliss, L. L., Bebout, B. M., & Zehr, J. P. (2004). Determination of nitrogen-fixing phylotypes in *Lyngbya* sp. and *Microcoleus chthonoplastes* cyanobacterial mats from Guerrero Negro, Baja California, Mexico. *Applied Environmental Microbiology*, 70, 2119-2128.
- Ordoñez, O. F., Flores, M. R., Dib, J. R., Paz, A., & Fariás, M. E. (2009). Extremophile culture collection from Andean lakes: extreme pristine environments that host a wide diversity of microorganisms with tolerance to UV radiation *Microbial Ecology*, 58(3), 461-473. doi: 10.1007/s00248-009-9527-7
- Orellana, M., & Verdugo, P. (2003). Ultraviolet radiation blocks the organic carbon exchange between the dissolved phase and the gel phase in the ocean. *Limnology and Oceanography*, 48(4), 1618-1623.
- Oren, A., & Gunde-Cimerman, N. (2007). Mycosporines and mycosporine-like amino acids: UV protectants or multipurpose secondary metabolites? *FEMS Microbiological Letters*, 269(1), 1-10.
- Oromi, N., Marquis, O., Miaud, C., & Sanuy, D. (2008). Influence of ambient ultraviolet radiation on *Bufo calamita* egg development in a semiarid zone (Catalonia, Spain). *Journal of Environmental Biology*, 29(1), 135-137.
- Ortiz, M. E., Marco, A., Saiz, N., & Lizana, M. (2004). Impact of ammonium nitrate on growth and survival of six European amphibians. *Archives of Environmental Contamination and Toxicology*, 47, 234-239.
- Osanai, T., & Tanaka, K. (2007). Keeping in touch with PII: PII-interacting proteins in unicellular cyanobacteria. *Plant and Cell Physiology*, 48, 908-914.
- Ostrander, G. K. (1996). *Techniques in aquatic toxicology*. Boca Raton, Fla.: Lewis Publishers.
- Otero, S., Cezón, S., Martínez-Abaigar, J., & Núñez-Olivera, E. (2008). Ultraviolet-absorbing capacity of aquatic bryophytes from Tierra del Fuego (Argentina). *Journal of Bryology*, 30(4), 290-296.
- Otero, S., Núñez-Olivera, E., Martínez-Abaigar, J., Tomás, R., Arróniz-Crespo, M., & Beaucourt, N. (2006). Effects of cadmium and enhanced UV radiation on the physiology and the concentration of UV-absorbing compounds of the aquatic liverwort *Jungermannia exsertifolia* subsp. *cordifolia*. *Photochemical & Photobiological Sciences*, 5, 760-769.
- Otero, S., Núñez-Olivera, E., Martínez-Abaigar, J., Tomás, R., & Huttunen, S. (2009). Retrospective bioindication of stratospheric ozone and ultraviolet radiation using hydroxycinnamic acid derivatives of herbarium samples of an aquatic liverwort. *Environmental Pollution*, 157(8-9), 2335-2344.

- Oyamada, C., Kaneniwa, M., Ebitani, K., Murata, M., & Ishihara, K. (2008). Mycosporine-like amino acids extracted from scallop (*Patinopecten yessoensis*) ovaries: UV protection and growth stimulation activities on human cells. *Marine Biotechnology*, *10*, 141-150.
- Pace, M. L., & Cole, J. J. (2002). Synchronous variation of dissolved organic carbon and color in lakes. *Limnology and Oceanography*, *47*, 333-342.
- Paczkowska, M., Kozłowska, M., & Golinsk, P. (2007). Oxidative stress enzyme activity in *Lemna minor* L. exposed to cadmium and lead. *Acta Biologica Cracoviensia Series Botanica*, *49*(2), 33-37.
- Pahkala, M., Laurila, A., & Merilä, J. (2001). Carry-over effects of ultraviolet-B radiation on larval fitness in *Rana temporaria*. *Proceedings of the Royal Society B: Biological Sciences*, *268*, 1699-1706.
- Pahkala, M., Laurila, A., & Merilä, J. (2002). Effects of ultraviolet-B radiation on common frog *Rana temporaria* embryos from along a latitudinal gradient. *Oecologia*, *133*, 458-465.
- Pahkala, M., Laurila, A., & Merilä, J. (2003). Effects of ultraviolet-B radiation on behaviour and growth of three species of amphibian larvae. *Chemosphere*, *51*(3), 197-204.
- Pahkala, M., Merilä, J., Ots, I., & Laurila, A. (2003). Effects of ultraviolet-B radiation on metamorphic traits in the common frog *Rana temporaria*. *Journal of Zoology London*, *259*, 57-62.
- Paixão, S. M., Silva, L., Fernandes, A., O'Rourke, K., Mendonça, E., & Picado, A. (2008). Performance of a miniaturized algal bioassay in phytotoxicity screening. *Ecotoxicology*, *17*(3), 165-171. doi: 10.1007/s10646-007-0179-4
- Pakulski, J. D., Baldwin, A., Dean, A. L., Durkin, S., Karentz, D., Kelley, C. A., . . . Jeffrey, W. H. (2007). Responses of heterotrophic bacteria to solar irradiance in the eastern Pacific Ocean. *Aquatic Microbial Ecology*, *47*, 153-162.
- Pakulski, J. D., Kase, J. P., Meador, J. A., & Jeffrey, W. H. (2008). Effect of stratospheric ozone depletion and enhanced ultraviolet radiation on marine bacteria at Palmer Station, Antarctica in the early Austral spring. *Photochemistry and Photobiology*, *84*(1), 215-221.
- Palen, W. J., & Schindler, D. E. (2010). Water clarity, maternal behavior, and physiology combine to eliminate UV radiation risk to amphibians in a montane landscape. *Proceeding of the National Academy of Science USA*, *107*(21), 9701-9706. doi: 10.1073
- Palen, W. J., Schindler, D. E., Adams, M. J., Pearl, C. A., Bury, B. R., & Diamond, S. A. (2004). Optical characteristics of natural waters protect amphibians from UV-B in the U.S. Pacific Northwest: Reply. *Ecology*, *85*(6), 1754-1759.
- Palen, W. J., Schindler, D. E., Adams, M. J., Pearl, C. A., Bury, R. B., & Diamond, S. A. (2002). Optical characteristics of natural waters protect amphibians from UV-B in the US Pacific northwest. *Ecology*, *83*(11), 2951-2957.
- Palen, W. J., Williamson, C. E., Clauser, A. A., & Schindler, D. E. (2005). Impact of UV-B exposure on amphibian embryos: linking species physiology and oviposition behaviour. *Proceedings of the Royal Society of London, Series B: Biological Sciences [Proc. R. Soc. Lond., Ser. B: Biol. Sci.]*, *272*(1569), 1227-1234.
- Pandhal, J., Wright, P. C., & Biggs, C. A. (2007). A quantitative proteomic analysis of light adaptation in a globally significant marine cyanobacterium *Prochlorococcus marinus* MED4. *Journal of Proteome Research*, *6*(3), 996-1005.
- Parisi, A. V., & Downs, N. (2004). Variation of the enhanced biologically damaging solar UV due to clouds. *Photochemical & Photobiological Sciences*, *3*(7), 643-647.
- Parisi, A. V., Kimlin, M. G., Turnbull, D. J., & Macaranas, J. (2005). Potential of phenothiazine as a thin film dosimeter for UVA exposures. *Photochemical & Photobiological Sciences*, *4*, 907-910.
- Parisi, A. V., Turnbull, D. J., & Kimlin, M. G. (2007). Dosimetric and spectroradiometric investigations of glass-filtered solar UV. *Photochemistry and Photobiology*, *83*(4), 777-781.
- Parisi, A. V., & Turner, J. (2006). Variations in the short wavelength cut-off of the solar UV spectra. *Photochemical & Photobiological Sciences*, *5*, 331-335.

- Park, J. S., Oh, S., Shin, M. Y., Kim, M. K., Yi, S. M., & Zoh, K. D. (2008). Seasonal variation in dissolved gaseous mercury and total mercury concentrations in Juam Reservoir, Korea. *Environmental Pollution*, 154(1), 12-20.
- Parris, M. J., & Beaudoin, J. G. (2004). Chytridiomycosis impacts predator-prey interactions in larval amphibian communities. *Oecologia*, 140, 626-632.
- Pastor, J., Solin, J., Bridgham, S. D., Updegraff, K., Harth, C., Weishampel, P., & Dewey, B. (2003). Global warming and the export of dissolved organic carbon from boreal peatlands. *Oikos*, 100, 380-386.
- Paterson, A. M., Somers, K. M., Dillon, P. J., Heneberry, J., Keller, W. B., & Ford, A. (2008). Relationships between dissolved organic carbon concentrations, weather, and acidification in small Boreal Shield lakes. *Canadian Journal of Fisheries and Aquatic Sciences*, 65(5), 786-795.
- Pattanaik, B., Roleda, M. Y., Schumann, R., & Karsten, U. (2008). Isolate-specific effects of ultraviolet radiation on photosynthesis, growth and mycosporine-like amino acids in the microbial mat-forming cyanobacterium *Microcoleus chthonoplastes*. *Planta*, 227(4), 907-916.
- Peachey, R. B. J. (2005). The synergism between hydrocarbon pollutants and UV radiation: a potential link between coastal pollution and larval mortality. *Journal of Experimental Marine Biology and Ecology*, 315(1), 103-114.
- Pelletier, Sargian, P., Payet, J., & Demers, S. (2006). Ecotoxicological effects of combined UVB and organic contaminants in coastal waters: a review. *Photochemistry and Photobiology*, 82(4), 981-993.
- Perales-Vela, H. V., González-Moreno, S., Montes-Horcasitas, C., & Cañizares-Villanueva, R. O. (2007). Growth, photosynthetic and respiratory responses to sub-lethal copper concentrations in *Scenedesmus incrassatulus* (Chlorophyceae). *Chemosphere*, 67, 2274-2281.
- Percy, K. E. (1994). *Air pollutants and the leaf cuticle*. Berlin ; New York: Springer-Verlag.
- Pereira, P., Onodera, H., Andrinolo, D., Franca, S., Araújo, F., Lagos, N., & Oshima, Y. (2008). Paralytic shellfish toxins in the freshwater cyanobacterium *Aphanizomenon flos-aquae*, isolated from Montargil reservoir, Portugal. *Toxicon*, 38 (12), 1689-1702.
- Pérez, A. P., Diaz, M. M., Ferraro, M. A., Cusminsky, G. C., & Zagarese, H. E. (2003). Replicated mesocosm study on the role of natural ultraviolet radiation in high CDOM, shallow lakes. *Photochemical & Photobiological Sciences*, 2, 118-123.
- Pérez, G. L., Queimalinos, C. P., & Modenutti, B. E. (2002). Light climate and plankton in the deep chlorophyll maxima in North Patagonian Andean lakes. *Journal of Plankton Research*, 24, 591-599.
- Pérez, M. T., & Sommaruga, R. (2006). Differential effect of algal- and soil-derived dissolved organic matter on alpine lake bacterial community composition and activity. *Limnology and Oceanography*, 51, 2527-2537.
- Pérez, M. T., & Sommaruga, R. (2007). Interactive effects of solar radiation and dissolved organic matter on bacterial activity and community structure. *Environmental Microbiology*, 9(9), 2200-2210.
- Pérez, P., Libkind, D., del Carmen Diéguez, M., Summerer, M., Sonntag, B., Sommaruga, R., . . . Zagarese, H. E. (2006). Mycosporines from freshwater yeasts: a trophic cul-de-sac? *Photochemical & Photobiological Sciences*, 5, 25-30. doi: 10.1039/B509764A
- Perotti, M. G., & Diéguez, M. d. C. (2006). Effect of UV-B exposure on eggs and embryos of Patagonian anurans and evidence of photoprotection. *Chemosphere*, 65, 2063-2070.
- Perovich, D. K. (2002). Ultraviolet radiation and the optical properties of sea ice and snow. In D. O. Hessen (Ed.), *UV radiation and Arctic ecosystems* (Vol. 153, pp. 73-89). Berlin: Springer-Verlag.
- Persaud, A. D., & Williamson, C. E. (2005). Ultraviolet and temperature effects on planktonic rotifers and crustaceans in northern temperate lakes. *Freshwater Biology*, 50(3), 467-476.
- Pessaraki, M. (1995). *Handbook of plant and crop physiology*. New York: M. Dekker.
- Petersen, D. G., & Dahllöf, I. (2007). Combined effects of pyrene and UV-light on algae and bacteria in an Arctic sediment. *Ecotoxicology*, 16, 371-377.
- Peterson, G. S., Johnson, L. B., Axler, R. P., & Diamond, S. A. (2002). Assessment of the Risk of Solar

- Ultraviolet Radiation to Amphibians. II. In Situ Characterization of Exposure in Amphibian Habitats. *Environmental Science & Technology*, 36(13), 2859-2865.
- Pfundel, E. (2008). Estimating epidermal UV-A and UV-B screening in leaves with a WALZ XE-PAM Fluorometer. *PAM Application Notes*, 1, 25-26.
- Phoenix, V. R., Bennett, P. C., Engel, A. S., Tyler, S. W., & Ferris, F. G. (2006). Chilean high-altitude hot-spring sinters: a model system for UV screening mechanisms by early Precambrian cyanobacteria. *Geobiology*, 4, 15-28.
- Piazena, H., & Häder, D.-P. (2009). Solar UV-B and UV-A irradiance in arid high-mountain regions: Measurements on the island of Tenerife as compared to previous tropical Andes data. *Journal of Geophysical Research*, 114, G04024. doi: 10.1029/2008JG000820
- Piazena, H., Perez-Rodriguez, E., Häder, D.-P., & Lopez-Figueroa, F. (2002). Penetration of solar radiation into the water column of the central subtropical Atlantic Ocean - optical properties and possible biological consequences. *Deep-Sea Research Part II*, 49, 3513-3528.
- Piccini, C., Conde, D., Pernthaler, J., & Sommaruga, R. (2009). Alteration of chromophoric dissolved organic matter by solar UV radiation causes rapid changes in bacterial community composition. *Photochemical & Photobiological Sciences*, 8(9), 1321-1328. doi: 10.1039/B905040J , Paper
- Poppe, F., Schmidt, R. A. M., Hanelt, D., & Wiencke, C. (2003). Effects of UV radiation on the ultrastructure of several red algae. *Phycological Research*, 51, 11-19.
- Porcal, P., Hejzlar, J., & Kopček, J. (2004). Seasonal and photochemical changes of DOM in an acidified forest lake and its tributaries. *Aquatic Sciences*, 66, 211-222.
- Prabha, G. L., & Kulandaivelu, G. (2002). Induced UV-B resistance against photosynthesis damage by adaptive mutagenesis in *Synechococcus* PCC 7942. *Plant Science*, 162, 663-669.
- Prakash, B., Veeregowda, B. M., & Krishnappa, G. (2003). Biofilms: a survival strategy of bacteria. *Current Science*, 85, 1299-1307.
- Prasad, M. R. N. (1997). *Plant ecophysiology*. New York: J. Wiley.
- Prasad, S. M., & Zeeshan, M. (2005). UV-B radiation and cadmium induced changes in growth, photosynthesis, and antioxidant enzymes of cyanobacterium *Plectonema boryanum*. *Biologia Plantarum*, 49(2), 229-236.
- Priya, B., Premanandh, J., Dhanalakshmi, R. T., Seethalakshmi, T., Uma, L., Prabakaran, D., & Subramanian, G. (2007). Comparative analysis of cyanobacterial superoxide dismutases to discriminate canonical forms. *BMC Genomics*, 8, 435.
- Pruski, A. M., Nahon, S., Escande, M.-L., & Charles, F. (2009). Ultraviolet radiation induces structural and chromatin damage in Mediterranean sea-urchin spermatozoa. *Mutation Research/Genetic Toxicology and Environmental Mutagenesis*, 673(1), 67-73.
- Przeslawski, R. (2005). Combined effects of solar radiation and desiccation on the mortality and development of encapsulated embryos of rocky shore gastropods. *Marine Ecology Progress Series*, 298, 169-177.
- Przeslawski, R., Davis, A. R., & Benkendorff, K. (2004). Effects of ultraviolet radiation and visible light on the development of encapsulated molluscan embryos. *Marine Ecology Progress Series*, 268, 151-160.
- Przeslawski, R., Davis, A. R., & Benkendorff, K. (2005). Synergistic effects associated with climate change and the development of rocky shore molluscs. *Global Change Biology*, 11(3), 515-522.
- Qualls, R. G., & Richardson, C. J. (2003). Factors controlling concentration, export, and decomposition of dissolved organic nutrients in the Everglades of Florida. *Biogeochemistry*, 62, 197-229.
- Radke, R. J., & Gaupisch, A. (2005). Effects of phytoplankton-induced turbidity on predation success of piscivorous Eurasian perch (*Perca fluviatilis*): possible implications for fish community structure in lakes. *Naturwissenschaften*, 92(2), 91-94.
- Rae, R., Howard-Williams, C., Hawes, I., Schwarz, A.-M., & Vincent, W. F. (2001). Penetration of solar ultraviolet radiation into New Zealand lakes: influence of dissolved organic carbon and catchment

- vegetation. *Limnology*, 2, 79-89.
- Rajagopal, S., Sicora, C., Várkonyi, Z., Mustárdy, L., & Mohanty, P. (2005). Protective effect of supplemental low intensity white light on ultraviolet-B exposure-induced impairment in cyanobacterium *Spirulina platensis*: formation of air vacuoles as a possible protective measure. *Photosynthesis Research*, 85(2), 181-189. doi: 10.1007/s11120-005-2439-6
- Ramos-Jiliberto, R., Dauelsberg, P., & Zúniga, L. R. (2004). Differential tolerance to ultraviolet-B light and photoenzymatic repair in cladocerans from a Chilean lake. *Marine and Freshwater Research*, 55, 193-200.
- Räsänen, K., Laurila, A., & Merilä, J. (2002). Carry-over effects of embryonic acid conditions on development and growth of *Rana temporaria* tadpoles. *Freshwater Biology*, 47, 19-30.
- Räsänen, K., Pakkala, M., Laurila, A., & Merilä, J. (2003). Does jelly envelope protect the common frog *Rana temporaria* embryos from UV-B radiation? *Herpetologica*, 59(3), 293-300.
- Rath, J., & Adhikary, S. P. (2007). Response of the estuarine cyanobacterium *Lyngbya aestuarii* to UV-B radiation. *Journal of Applied Phycology*, 19(5), 529-536.
- Rautenberger, R., Mansilla, A., Gómez, I., Wiencke, C., & Bischof, K. (2009). Photosynthetic responses to UV-radiation of intertidal macroalgae from the Strait of Magellan (Chile). *Revista Chilena de Historia Natural*, 82, 43-61.
- Rautio, M., & Korhola, A. (2002). UV-induced pigmentation in subarctic *Daphnia*. *Limnology and Oceanography*, 47, 295-299.
- Rautio, M., Korhola, A., & Zellmer, I. D. (2003). Vertical distribution of *Daphnia longispina* in a shallow subarctic pond: Does the interaction of ultraviolet radiation and *Chaoborus* predation explain the pattern? *Polar Biology*, 26(10), 659-665. doi: 10.1007/s00300-003-0533-9
- Raven, J. A., Finkel, Z. V., & Irwin, A. J. (2005). Picophytoplankton: bottom-up and top-down controls on ecology and evolution. *Vie et milieu*, 55, 3-4.
- Rech, M., Mouget, J.-L., Morant-Manceau, A., Rosa, P., & Tremblin, G. (2005). Long-term acclimation to UV radiation: effects on growth, photosynthesis and carbonic anhydrase activity in marine diatoms. *Botanica Marina*, 48, 407-420.
- Reef, R., Dunn, S., Levy, O., Dove, S., Shemesh, E., Brickner, I., . . . Hoegh-Guldberg, O. (2009). Photoreactivation is the main repair pathway for UV-induced DNA damage in coral planulae. *The Journal of Experimental Biology*, 212(17), 2760-2766. doi: 10.1242/jeb.031286
- Reef, R., Kaniewska, P., & Hoegh-Guldberg, O. (2009). Coral skeletons defend against ultraviolet radiation. *PLoS ONE*, 4(11), e7995.
- Regalado, E. L., Rodríguez, M., Menéndez, R., Concepción, A. A., Nogueiras, C., Laguna, A., . . . Hernandez, Y. (2009). Repair of UVB-damaged skin by the antioxidant sulphated flavone glycoside thalassiolin B isolated from the marine plant *Thalassia testudinum* Banks ex König. *Marine Biotechnology*, 11, 74-80.
- Rehman, A., Shakoory, F. R., & Shakoory, A. R. (2007). Heavy metal resistant *Distigma proteus* (Euglenophyta) isolated from industrial effluents and its possible role in bioremediation of contaminated wastewaters. *World Journal of Microbiology and Biotechnology*, 23(6), 753-758.
- Reist, J. D., Wrona, F. J., Prowse, T. D., Dempson, J. B., Power, M., Köck, G., . . . Tallman, R. F. (2006). Effects of Climate Change and UV Radiation on Fisheries for Arctic Freshwater and Anadromous Species. *Ambio*, 35(7), 402-410. doi: 10.1579/0044-7447(2006)35[402:EOCCAU]2.0.CO;2
- Relyea, R. A. (2005). The lethal impacts of Roundup and predatory stress on six species of North American tadpoles. *Archives of Environmental Contamination and Toxicology*, 48, 351-357.
- Ren, Z., Zha, J., Ma, M., Wang, Z., & Gerhardt, A. (2007). The early warning of aquatic organophosphorus pesticide contamination by on-line monitoring behavioral changes of *Daphnia magna*. *Environmental Monitoring and Assessment*, 134, 373-383.
- Reuder, J., Ghezzi, F., Palenque, E., Torrez, R., Andrade, M., & Zaratti, F. (2007). Investigations on the effect

- of high surface albedo on erythemally effective UV irradiance: Results of a campaign at the Salar de Uyuni, Bolivia. *Journal of Photochemistry and Photobiology B: Biology*, 87(1), 1-8.
- Rezanka, T., & Dembitsky, V. M. (2006). Metabolites produced by cyanobacteria belonging to several species of the family Nostocaceae *Folia Microbiologica*, 51(3), 159-182.
- Ribeiro, S., Berge, T., Lundholm, N., Andersen, T. J., Abrantes, F., & Ellegaard, M. (2011). Phytoplankton growth after a century of dormancy illuminates past resilience to catastrophic darkness. *Nature Communications*, 2(311), 1-7. doi: 10.1038/ncomms1314
- Richards, T. A., Dacks, J. B., Campbell, S. A., Blanchard, J. L., Foster, P. G., McLeod, R., & Roberts, C. W. (2006). Evolutionary origins of the eukaryotic shikimate pathway: gene fusions, horizontal gene transfer, and endosymbiotic replacements. *Eukaryotic Cell*, 5, 1517-1531.
- Richter, P. R., Ayash, A. S., Al-Araidh, I. A., Sinha, R. P., & Hader, D. P. (2006). Methanol and acetone soluble UV-absorbing pigments in lichens from Saudi Arabia. *Trends in Photochemistry and Photobiology*, 11, 45-56.
- Richter, P. R., Goncalves, R. J., Marcoval, A., Helbling, E. W., & Hader, D. P. (2006). Diurnal changes in the composition of mycosporine-like amino acids (MAA) in *Corallina officinalis* *Trends in Photochemistry and Photobiology*, 11, 33-44.
- Richter, P. R., Häder, D.-P., Goncalves, R. J., Marcoval, M. A., Villafañe, V. E., & Helbling, E. W. (2007). Vertical migration and motility responses in three marine phytoplankton species exposed to solar radiation. *Photochemistry and Photobiology*, 83, 810-817.
- Richter, P. R., Helbling, E. W., Streb, C., & Häder, D.-P. (2007). PAR and UV effects on vertical migration and photosynthesis in *Euglena gracilis*. *Photochemistry and Photobiology*, 83, 818-823.
- Richter, P. R., Klisch, M., Sinha, R. P., Hader, D. P., Ghetti, F., Checucci, G., & Bornman, J. F. (2006). Mycosporine-like amino acids (MAAs) protect against UV-B-induced damage in *Gyrodinium dorsum* *Environmental UV Radiation: Impact on Ecosystems and Human Health and Predictive Models* (pp. 283). The Netherlands: Springer.
- Richter, P. R., Sinha, R. P., & Häder, D.-P. (2006). Scytonemin-rich epilithic cyanobacteria survive acetone treatment. *Current Trends in Microbiology*, 2, 13-19.
- Richter, P. R., Streb, C., & Hader, D. P. (2006). Sign change of phototaxis in *Euglena gracilis* *Trends in Photochemistry and Photobiology*, 11, 57-61.
- Riebesell, U., Schulz, K. G., Bellerby, R. G. J., Botros, M., Fritsche, P., Meyerh"fer, M., . . . Zollner, E. (2007). Enhanced biological carbon consumption in a high CO₂ ocean. *Nature*, 450, 545-548.
- Riemer, U., Lamare, M. D., & Peake, B. M. (2007). Temporal concentrations of sunscreen compounds (mycosporine-like amino acids) in phytoplankton and in the New Zealand krill, *Nyctiphanes australis* G.O. Sars. *Journal of Plankton Research*, 29, 1077-1086.
- Rigaut, G., Shevchenko, A., Rutz, B., Wilm, M., Mann, M., & Séraphin, B. (1999). A generic protein purification method for protein complex characterization and proteome exploration. *Nature Biotechnology*, 17, 1030-1032.
- Rinalducci, S., Hideg, É., Vass, I., & Zolla, L. (2006). Effect of moderate UV-B irradiation on *Synechocystis* PCC 6803 biliproteins. *Biochemical and Biophysical Research Communications*, 341, 1105-1112.
- Rocco, V. E., Opezzo, O., Pizarro, R., Sommaruga, R., Ferraro, M., & Zagarese, H. E. (2002). Ultraviolet damage and counteracting mechanisms in the freshwater copepod *Boeckella poppei* from the Antarctic Peninsula. *Limnology and Oceanography*, 47(3), 829-836.
- Rodríguez, M. C., Barsanti, L., Passarelli, V., Evangelista, V., Conforti, V., & Gualtieri, P. (2007). Effects of chromium on photosynthetic and photoreceptive apparatus of the alga *Chlamydomonas reinhardtii* *Environmental Research*, 105, 234-239.
- Rodríguez-Zúñiga, U. F., Milori, D. M., da Silva, W. T., Martin-Neto, L., Oliveira, L. C., & Rocha, J. C. (2008). Changes in optical properties caused by UV-irradiation of aquatic humic substances from the Amazon River Basin: seasonal variability evaluation. *Environmental Science & Technology*, 42(6),

1948-1953.

- Roleda, M. Y. (2009). Photosynthetic response of Arctic kelp zoospores exposed to radiation and thermal stress. *Photochemical & Photobiological Sciences*, 8(9), 1302-1312.
- Roleda, M. Y., Campana, G. L., Wiencke, C., Hanelt, D., Liliana Quartino, M., & Wulff, A. (2009). Sensitivity of Antarctic *Urospora penicilliformis* (Ulotrichales, Chlorophyta) to ultraviolet radiation is life-stage dependent. *Journal of Phycology*, 45(3), 600-609.
- Roleda, M. Y., Clayton, M. N., & Wiencke, C. (2006). Screening capacity of UV-absorbing compounds in spores of Arctic Laminariales. *Journal of Experimental Marine Biology and Ecology*, 338(1), 123-133.
- Roleda, M. Y., Dethleff, D., & Wiencke, C. (2008). Transient sediment load on blades of Arctic *Saccharina latissima* can mitigate UV radiation effect on photosynthesis. *Polar Biology*, 31(6), 765-769.
- Roleda, M. Y., Hanelt, D., Kräbs, G., & Wiencke, C. (2004). Morphology, growth, photosynthesis and pigments in *Laminaria ochroleuca* (Laminariales, Phaeophyta) under ultraviolet radiation. *Phycologia*, 43, 603-613.
- Roleda, M. Y., Hanelt, D., & Wiencke, C. (2005). Growth kinetics related to physiological parameters in young *Saccorhiza dermatodea* and *Alaria esculenta* sporophytes exposed to UV radiation. *Polar Biology*, 28(7), 539-549.
- Roleda, M. Y., Hanelt, D., & Wiencke, C. (2006). Growth and DNA damage in young *Laminaria* sporophytes exposed to ultraviolet radiation: implication for depth zonation of kelps on Helgoland (North Sea). *Marine Biology*, 148(6), 1201-1211.
- Roleda, M. Y., Lüder, U. H., & Wiencke, C. (2009). UV-susceptibility of zoospores of the brown macroalga *Laminaria digitata* from Spitsbergen. *Polar Biology*, 33, 577-588.
- Roleda, M. Y., Lütz-Meindl, U., Wiencke, C., & Lütz, C. (2009). Physiological, biochemical, and ultrastructural responses of the green macroalga *Urospora penicilliformis* from Arctic Spitsbergen to UV radiation. *Protoplasma*, 243, 105-116.
- Roleda, M. Y., van de Poll, W. H., Hanelt, D., & Wiencke, C. (2004). PAR and UVBR effects on photosynthesis, viability, growth and DNA in different life stages of two coexisting Gigartinales: implications for recruitment and zonation pattern. *Marine Ecology Progress Series*, 281, 37-50.
- Roleda, M. Y., Wiencke, C., & Hanelt, D. (2006). Thallus morphology and optical characteristics affect growth and DNA damage by UV radiation in juvenile Arctic *Laminaria* sporophytes. *Planta*, 223(3), 407-417.
- Roleda, M. Y., Wiencke, C., Hanelt, D., & Bischof, K. (2007). Sensitivity of the early life stages of macroalgae from the northern hemisphere to ultraviolet radiation. *Photochemistry and Photobiology*, 83(4), 851-862.
- Roleda, M. Y., Wiencke, C., Hanelt, D., van de Poll, W. H., & Gruber, A. (2005). Sensitivity of Laminariales zoospores from Helgoland (North Sea) to ultraviolet and photosynthetically active radiation: implications for depth distribution and seasonal reproduction. *Plant Cell and Environment*, 28(4), 466-479.
- Roleda, M. Y., Wiencke, C., & Lüder, U. H. (2006). Impact of ultraviolet radiation on cell structure, UV-absorbing compounds, photosynthesis, DNA damage, and germination in zoospores of Arctic *Saccorhiza dermatodea*. *Journal of Experimental Botany*, 57(14), 3847-3856.
- Roleda, M. Y., Zacher, K., Campana, G. L., Wulff, A., Hanelt, D., Quartino, M. L., . . . Marensi, S. (2008). Photosynthetic performance and impact of ultraviolet radiation on the reproductive cells of Antarctic macroalgae *The Potter Cove coastal ecosystem, Antarctica. Synopsis of research performed 1999-2006 at the Dallmann Laboratory and Jubany Station, King George Island (Isla 25 de Mayo)*. *Berichte zur Polar- und Meeresforschung* Nø 571 (pp. 254-262).
- Roleda, M. Y., Zacher, K., Wulff, A., Hanelt, D., & Wiencke, C. (2007). Photosynthetic performance, DNA damage and repair in gametes of the endemic Antarctic brown alga *Ascoseira mirabilis* exposed to ultraviolet radiation. *Austral Ecology*, 32(8), 917-926.

- Roleda, M. Y., Zacher, K., Wulff, A., Hanelt, D., & Wiencke, C. (2008). Susceptibility of spores of different ploidy levels from Antarctic *Gigartina skottsbergii* (Gigartinales, Rhodophyta) to ultraviolet radiation. *Phycologia*, 47(4), 361-370.
- Romansic, J. M., Waggener, A. A., Bancroft, B. A., & Blaustein, A. R. (2009). Influence of ultraviolet-B radiation on growth, prevalence of deformities, and susceptibility to predation in Cascades frog (*Rana cascadae*) larvae. *Hydrobiologia*, 624, 219-233. doi: 10.1007/s10750-009-9703-2
- Roncarati, F., Rijstenbil, J. W., & Pistocchi, R. (2008). Photosynthetic performance, oxidative damage and antioxidants in *Cylindrotheca closterium* in response to high irradiance, UVB radiation and salinity. *Marine Biology*, 153(5), 965-973.
- Rosales, A., Pedroni, J. V., & Tocho, J. O. (2006). Global spectral UV-radiometer with automatic shadow band. *Photochemistry and Photobiology*, 82(4), 844-849.
- Rose, K. C., Williamson, C. E., Saros, J. E., Sommaruga, R., & Fischer, J. M. (2009). Differences in UV transparency and thermal structure between alpine and subalpine lakes: implications for organisms. *Photochemical & Photobiological Sciences*, 8(9), 1244-1256. doi: 10.1039/B905616E, Perspective
- Rose, K. C., Williamson, C. E., Schladow, S. G., Winder, M., & Oris, J. T. (2009). Patterns of spatial and temporal variability of UV transparency in Lake Tahoe, California-Nevada. *Journal of Geophysical Research*, 114(G00D03), 1-9. doi: 10.1029/2008JG000816, 2009
- Rosenstock, B., Zwisler, W., & Simon, M. (2005). Bacterial consumption of humic and non-humic low and high molecular weight DOM and the effect of solar irradiation on the turnover of labile DOM in the Southern Ocean. *Microbial ecology*, 50(1), 90-101.
- Ross, C., Santiago-Viquez, L., & Paul, V. (2006). Toxin release in response to oxidative stress and programmed cell death in the cyanobacterium *Microcystis aeruginosa*. *Aquatic Toxicology*, 78, 66-73.
- Ross, R. M., Quetin, L. B., Martinson, D. G., Iannuzzi, R. A., Stammerjohn, S. E., & Smith, R. C. (2008). Palmer LTER: Patterns of distribution of five dominant zooplankton species in the epipelagic zone west of the Antarctic Peninsula, 1993–2004. *Deep Sea Research Part II: Topical Studies in Oceanography*, 55(18-19), 2086-2105.
- Roy, D. (2002). Amphibians as environmental sentinels. *Journal of Bioscience*, 27, 187-188.
- Roy, S., Mohovic, B., Gianesella, S. M. F., Schloss, I., Ferrario, M., & Demers, S. (2006). Effects of enhanced UV-B on pigment-based phytoplankton biomass and composition of mesocosm-enclosed natural marine communities from three latitudes. *Photochemistry and Photobiology*, 82(4), 909-922. doi: 10.1562/2005-09-03-RA-674
- Rozema, J., Björn, L. O., Bornman, J. F., Gaberik, A., Häder, D.-P., Trot, T., . . . Meijkamp, B. B. (2002). The role of UV-B radiation in aquatic and terrestrial ecosystems—an experimental and functional analysis of the evolution of UV-absorbing compounds. *Journal of Photochemistry and Photobiology B: Biology*, 66(1), 2-12.
- Ruelas, D. S., Karentz, D., & Sullivan, J. T. (2006). Lethal and sub-lethal effects of UVB on juvenile *Biomphalaria glabrata* (Mollusca: Pulmonata). *Journal of Invertebrate Pathology*, 93, 192-200.
- Russell, J., & Phillips, N. (2009). Species-specific vulnerability of benthic marine embryos of congeneric snails (*Haminoea* spp.) to ultraviolet radiation and other intertidal stressors. *Biological Bulletin*, 217(1), 65-72.
- Russell, J., & Phillips, N. E. (2009). Synergistic effects of ultraviolet radiation and conditions at low tide on egg masses of limpets (*Benhamina obliquata* and *Siphonaria australis*) in New Zealand. *Marine Biology*, 156(4), 579-587.
- Saito, H., & Taguchi, S. (2003). Influence of UVB radiation on hatching success of marine copepod *Paracalanus parvus* s. l. *Journal of Experimental Marine Biology and Ecology*, 282(1-2), 135-147.
- Sakai, H., Oguma, K., Katayama, H., & Ohgaki, S. (2007). Effects of low- or medium-pressure ultraviolet

- lamp irradiation on *Microcystis aeruginosa* and *Anabaena variabilis* *Water Research*, 41(1), 11-18.
- Sakamoto, T., Delgaizo, V. B., & Bryant, D. A. (1998). Growth on urea can trigger death and peroxidation of the Cyanobacterium *Synechococcus* sp. strain PCC 7002. *Applied and Environmental Microbiology*, 64(7), 2361-2366.
- Salgado, L. T., Tomazetto, R., Cinelli, L. P., Farina, M., & Filho, G. M. A. (2007). The influence of brown algae alginates on phenolic compounds capability of ultraviolet radiation absorption in vitro. *Brazilian Journal of Oceanography*, 55(2), 145-154.
- Salonen, K., Keskitalo, J., & Arvola, L. (1994). Effect of rapid pH changes on phytoplankton and bacterioplankton of clear and humic waters. *Archiv für Hydrobiologie*, 129, 425-441.
- Salvidio, S. (2009). Detecting amphibian population cycles: The importance of appropriate statistical analyses *Biological Conservation*, 142(2), 455-461.
- Sanders, R. W., Macaluso, A. L., Sardina, T. J., & Mitchell, D. L. (2005). Photoreactivation in two freshwater ciliates: differential responses to variations in UV-B flux and temperature. *Aquatic Microbial Ecology*, 40(3), 283-292.
- Sandkam, B. A., & Fuller, R. C. (2008). Ovoposition in the water column of the blue-finned killifish (*Lucania goodei*) and subsequent affects of UV light. *The 93rd ESA Annual Meeting*.
- Santocono, M., Zurria, M., Berrettini, M., Fedeli, D., & Falcioni, G. (2006). Influence of astaxanthin, zeaxanthin and lutein on DNA damage and repair in UVA-irradiated cells. *Journal of Photochemistry and Photobiology B: Biology*, 85, 205-215.
- Sargian, P., Mas, S., Pelletier, & Demers, S. (2007). Multiple stressors on an Antarctic microplankton assemblage: water soluble crude oil and enhanced UVBR level at Ushuaia (Argentina). *Polar Biology*, 30, 829-841.
- Sargian, P., Pelletier, E., Mostajir, B., Ferreyra, G. A., & Demers, S. (2005). TBT toxicity on a natural planktonic assemblage exposed to enhanced ultraviolet-B radiation. *Aquatic Toxicology (Amsterdam, Netherlands)*, 73(3), 299-314.
- Sayed, A., Ibrahim, A. T., Mekkawy, I. A. A., & Mahmoud, U. M. (2007). Acute effects of Ultraviolet-A radiation on African Catfish *Clarias gariepinus* (Burchell, 1822). *Journal of Photochemistry & Photobiology, B: Biology*, 89(2-3), 170-174.
- Schäfer, H., McDonald, I. R., Nightingale, P. D., & Murrell, J. C. (2005). Evidence for the presence of a CmuA methyltransferase pathway in novel marine methyl halide-oxidizing bacteria. *Environmental Microbiology*, 7(6), 839-852. doi: 10.1111/j.1462-2920.2005.00757.x
- Scheessele, E. A. (2007). Indirect effects of ultraviolet-B radiation on larval amphibians as mediated by food quality and trophic interactions. *PhD Dissertation*.
- Schindler, D. W., & Smol, J. P. (2006). Cumulative effects of climate warming and other human activities on freshwaters of Arctic and Subarctic North America. *Ambio*, 35(4), 160-168.
- Schmidt, E. C., Scariot, L. A., Rover, T., & Bouzon, Z. L. (2009). Changes in ultrastructure and histochemistry of two red macroalgae strains of *Kappaphycus alvarezii* (Rhodophyta, Gigartinales), as a consequence of ultraviolet B radiation exposure. *Micron*, 40(8), 860-869.
- Schmidt, M., Geáner, G., Luff, M., Heiland, I., Wagner, V., Kaminski, M., . . . Kreimer, G. (2006). Proteomic analysis of the eyespot of *Chlamydomonas reinhardtii* provides novel insights into its components and tactic movements. *Plant Cell*, 18(8), 1908-1930.
- Schoenwaelder, M. E. A., Wiencke, C., Clayton, M. N., & Glombitza, K. W. (2003). The effect of elevated UV radiation on *Fucus* spp. (Fucales, Phaeophyta) zygote and embryo development. *Plant Biology*, 5, 366-377.
- Schouten, P. W., Parisi, A. V., & Turnbull, D. J. (2007). Evaluation of a high exposure solar UV dosimeter for underwater use. *Photochemistry and Photobiology*, 83(4), 931-937.
- Schouten, P. W., Parisi, A. V., & Turnbull, D. J. (2008). Field calibrations of a long-term UV dosimeter for

- aquatic UVB exposures. *Journal of Photochemistry and Photobiology B: Biology*, 91(2-3), 108-116.
- Schouten, P. W., Parisi, A. V., & Turnbull, D. J. (2009). Applicability of the polyphenylene oxide film dosimeter to high UV exposures in aquatic environments. *Journal of Photochemistry and Photobiology B: Biology*, 96(3), 184-192.
- Schuch, A. P., da Silva Galhardo, R., de Lima-Bessa, K. M., Schuch, N. J., & Menck, C. F. M. (2009). Development of a DNA-dosimeter system for monitoring the effects of solar-ultraviolet radiation. *Photochemical & Photobiological Sciences*, 8(1), 111-120.
- Schumann, A., Goss, R., Jakob, T., & Wilhelm, C. (2007). Investigation of the quenching efficiency of diatoxanthin in cells of *Phaeodactylum tricornutum* (Bacillariophyceae) with different pool sizes of xanthophyll cycle pigments. *Phycologia*, 46, 113-117.
- Schumann, R., Roleda, M. Y., & Karsten, U. (2008). Isolate-specific effects of ultraviolet radiation on photosynthesis, growth and mycosporine-like amino acids in the microbial mat-forming cyanobacterium *Microcoleus chthonoplastes*. *Planta*, 227(4), 907-916.
- Schwenk, K., Junttila, P., Rautio, M., Bastiansen, F., Knapp, J., Dove, O., . . . Streit, B. (2004). Ecological, morphological, and genetic differentiation of *Daphnia* (Hyalodaphnia) from the Finnish and Russian subarctic. *Limnology and Oceanography*, 49(2), 532-539.
- Schwint, P., Gartner, W., Sharda, S., Mroginski, M. A., Hildebrandt, P., & Siebert, F. (2009). The photoreactions of recombinant phytochrome CphA from the cyanobacterium *Calothrix* PCC7601: a low-temperature UV-Vis and FTIR study. *Photochemistry and Photobiology*, 85, 239-249.
- Scott, C. E., Saros, J. E., Williamson, C. E., Salm, C. R., Peters, S. C., & Mitchell, D. L. (2009). Effects of nutrients and dissolved organic matter on the response of phytoplankton to ultraviolet radiation: experimental comparison in spring versus summer. *Hydrobiologia*, 619(1), 155-166.
- Scott, J. D. (1982). *Physiological responses of the marine phytoplankton Dunaliella tertiolecta to UV-B enhanced solar radiation*. (Thesis M S --Oregon State University 1982).
- Seckmeyer, G., Bais, A., Bernhard, G., Blumthaler, M., Booth, C. R., Lantz, K., . . . Webb, A. (2007). Instruments to measure solar ultraviolet radiation. Part 2: Broadband instruments measuring erythemally weighted solar irradiance (pp. 1-41). Geneva: World Meteorological Organization.
- Seiler, J. P., Kroftová, O., & Eybl, V. (1996). *Toxicology--from cells to man : proceedings of the 1995 EUROTOX Congress, meeting held in Prague, Czech Republic, August 27-30, 1995*. Berlin ; New York: Springer.
- Seiler, J. P., & Vilanova, E. (1997). *Applied toxicology : approaches through basic science : proceedings of the 1996 EUROTOX Congress meeting held in Alicante, Spain, September 22-25, 1996*. Berlin ; New York: Springer.
- Selander, E., Thor, P., Toth, G., & Pavia, H. (2006). Copepods induce paralytic shellfish toxin production in marine dinoflagellates. *Proceedings of the Royal Society B. Biological Sciences*, 273, 1673-1680.
- Seo, H. J., & Lee, Y. N. (2006). Occurrence of thioredoxin reductase in *Deinococcus* species, the UV resistant bacteria. *Journal of Microbiology*, 44, 461-465.
- Serra, T., Borrego, C., Quintana, X., Calderer, L., López, R., & Colomer, J. (2009). Quantification of the effect of nonphotochemical quenching on the determination of in vivo Chl a from phytoplankton along the water column of a freshwater reservoir. *Photochemistry and Photobiology*, 85, 321-331.
- Sfichi, L., Ioannidis, N., & Kotzabasis, K. (2004). Thylakoid-associated polyamines adjust the UV-B sensitivity of the photosynthetic apparatus by means of light-harvesting complex II changes. *Photochemistry and Photobiology*, 80, 499-506.
- Sharma, J. G., & Chakrabarti, R. (2006). Effects of UV-B radiation on the gills of *Catla catla* during early development. *Toxicological and Environmental Chemistry*, 88(2), 367-371.
- Sharma, J. G., Masuda, R., & Tanaka, M. (2005). Ultrastructural study of skin and eye of UV-B irradiated ayu *Plecoglossus altivelis*. *Journal of Fish Biology*, 67(6), 1646-1652.

- Sharma, J. G., Masuda, R., & Tanaka, M. (2007). Orientation behaviour of *Pagrus major* larvae exposed to UV-B radiation in laboratory conditions. *International Journal of Radiation Biology*, 83(1), 49-52.
- Sharma, J. G., Mittal, P., & Chakrabarti, R. (2008). Development of survivorship model for UV-B irradiated *Catla catla* larvae. *Aquatic Ecology*, 42(1), 17-23. doi: 10.1007/s10452-006-9069-8
- Shelly, K., Heraud, P., & Beardall, J. (2002). Nitrogen limitation in *Dunaliella tertiolecta* (Chlorophyceae) leads to increased susceptibility to damage by ultraviolet-B radiation but also increased repair capacity. *Journal of Phycology*, 38(4), 713-720.
- Shelly, K., Heraud, P., & Beardall, J. (2003). Interactive effects of PAR and UV-B radiation on PSII electron transport in the marine alga *Dunaliella tertiolecta* (Chlorophyceae). *Journal of Phycology*, 39(3), 509-512.
- Shelly, K., Roberts, S., Heraud, P., & Beardall, J. (2005). Interactions between UV-B exposure and phosphorus nutrition. I. Effects on growth, phosphate uptake, and chlorophyll fluorescence. *Journal of Phycology*, 41, 1204-1211.
- Sheppard, C., & Loughland, R. (2002). Coral mortality and recovery in response to increasing temperature in the southern Arabian Gulf. *Aquatic Ecosystem Health Management*, 5, 395-402.
- Shick, J. M. (2004). The continuity and intensity of ultraviolet irradiation affect the kinetics of biosynthesis, accumulation, and conversion of mycosporine-like amino acids (MAAs) in the coral *Stylophora pistillata*. *Limnology and Oceanography*, 49, 442-458.
- Shick, J. M., Dunlap, W. C., Pearse, J. S., & Pearse, V. B. (2002). Mycosporine-like amino acid content in four species of sea anemones in the genus *Anthopleura* reflects phylogenetic but not environmental or symbiotic relationships. *Biological Bulletin*, 203, 315-330.
- Shick, J. M., Lesser, M. P., & Jokiel, P. L. (1996). Effects of ultraviolet radiation on corals and other coral reef organisms. *Global Change Biology*, 2, 527-545.
- Shiller, A. M., Duan, S., van Erp, P., & Bianchi, T. S. (2006). Photo-oxidation of dissolved organic matter in river water and its effect on trace element speciation. *Limnology and Oceanography*, 51(4), 1716-1728.
- Shirey, L. J., & Williamson, C. E. (2004, March 27-28, 2004). *Mechanisms of UV radiation tolerance displayed by benthic stream mayfly nymphs*. Paper presented at the MID-ATLANTIC ECOLOGY CONFERENCE 2004 ABSTRACTS, Lancaster, Pennsylvania (USA).
- Shiu, C.-T., & Lee, T.-M. (2005). Ultraviolet-B-induced oxidative stress and responses of the ascorbate-glutathione cycle in a marine macroalga *Ulva fasciata*. *Journal of Experimental Botany*, 56(421), 2851-2865.
- Shiurba, R., Hirabayashi, T., Masuda, M., Kawamura, A., Komoike, Y., Klitz, W., . . . Higashinakagawa, T. (2006). Cellular responses of the ciliate, *Tetrahymena thermophila*, to far infrared irradiation. *Photochemical & Photobiological Sciences*, 5, 799-807.
- Sicora, C., Máté, Z., & Vass, I. (2003). The interaction of visible and UV-B light during photodamage and repair of Photosystem II. *Photosynthesis Research*, 75, 127-137.
- Sicora, C. I., Appleton, S. E., Brown, C. M., Chung, J., Chandler, J., Cockshutt, A. M., . . . Campbell, D. A. (2006). Cyanobacterial psbA families in *Anabaena* and *Synechocystis* encode trace, constitutive and UVB-induced D1 isoforms. *Biochimica and Biophysica Acta*, 1757, 47-56.
- Sigg, J. E., Lloyd-Knight, K. M., & Boal, J. G. (2007). UV radiation influences covering behaviour in the urchin *Lytechinus variegatus*. *Journal of the Marine Biological Association of the UK*, 87(05), 1257-1261.
- Silva, A. A., & Gabrich, L. L. P. (2007). Seasonal erythemal UV doses in Belo Horizonte, Brazil. *Photochemistry and Photobiology*, 83, 1197-1204.
- Simó, R. (2004). From cells to globe: approaching the dynamics of DMS(P) in the ocean at multiple scales. *Canadian Journal of Fisheries and Aquatic Sciences*, 61, 673-684.
- Singh, S. P., Häder, D.-P., & Sinha, R. P. (2010). Cyanobacteria and ultraviolet radiation (UVR) stress:

- Mitigation strategies. *Ageing Research Reviews*, 9(2), 79-90. doi: 10.1039/b923342n
- Singh, S. P., Klisch, M., Hader, D. P., & Sinha, R. P. (2008). Role of various growth media on shinorine (mycosporine-like amino acid) concentration and photosynthetic yield in *Anabaena variabilis* PCC 7937. *World Journal of Microbiology and Biotechnology*, 24, 3111-3115.
- Singh, S. P., Klisch, M., Sinha, R. P., & Häder, D.-P. (2008). Effects of abiotic stressors on synthesis of the mycosporine-like amino acid shinorine in the cyanobacterium *Anabaena variabilis* PCC 7937. *Photochemistry and Photobiology*, 84, 1500-1505.
- Singh, S. P., Klisch, M., Sinha, R. P., & Häder, D.-P. (2010). Genome mining of mycosporine-like amino acid (MAA) synthesizing and non-synthesizing cyanobacteria: A bioinformatics study. *Genomics*, 95(2), 120-128. doi: 10.1016/j.ygeno.2009.10.002
- Singh, S. P., Kumari, S., Rastogi, R. P., Singh, K. L., Richa, Sinha, R. P., & Hader, D. P. (2008, 2008). *Induction of mycosporine-like amino acids (MAAs) in a cyanobacterium Anabaena doliolum by ultraviolet (UV) radiation*. Paper presented at the 4 th Asia Oceania Conference on Photobiology, Nov. 24-26, 2008, Varanasi, India.
- Singh, S. P., Kumari, S., Rastogi, R. P., Singh, K. L., & Sinha, R. P. (2008). Mycosporine-like amino acids (MAAs): Chemical structure, biosynthesis and significance as UV-absorbing/screening compounds. *Indian Journal of Experimental Biology*, 46, 7-17.
- Singh, S. P., Sinha, R. P., Daiker, V., & Hader, D. P. (2009). Quantitative and qualitative extraction of RNA from a filamentous cyanobacterium *Anabaena variabilis* PCC 7937 *Journal of Applied Phycology*, 22(1), 113-116. doi: 10.1007/s10811-009-9428-7
- Singh, S. P., Sinha, R. P., Klisch, M., & Häder, D.-P. (2008). Mycosporine-like amino acids (MAAs) profile of a rice-field cyanobacterium *Anabaena doliolum* as influenced by PAR and UVR. *Planta*, 229, 225-233.
- Sinha, R. P. (2003). Stress responses in cyanobacteria. In R. S. Ambasht & N. K. Ambasht (Eds.), *Modern Trends in Applied Aquatic Ecology* (pp. 201-218). New York, Boston, Dordrecht, London, Moscow: Kluwer Acad./Plenum Publ.
- Sinha, R. P., Ambasht, N. K., Sinha, J. P., & Häder, D.-P. (2003). Wavelength-dependent induction of a mycosporine-like amino acid in a rice-field cyanobacterium, *Nostoc commune*: role of inhibitors and salt stress. *Photochemical & Photobiological Sciences*, 2, 171-176.
- Sinha, R. P., Barbieri, E. S., Lebert, M., Helbling, E. W., & Häder, D.-P. (2003). Effects of solar radiation on phycobiliproteins of marine red algae. *Trends in Photochemistry and Photobiology*, 10, 149-157.
- Sinha, R. P., Gröniger, A., Klisch, M., & Häder, D.-P. (2002). Ultraviolet-B radiation: Photoprotection and repair in aquatic organisms. *Recent Research and Developments in Photochemistry and Photobiology*, 6, 107-119.
- Sinha, R. P., & Häder, D.-P. (2002). Impacts of ultraviolet-B radiation on rice-field cyanobacteria. *Journal of Photoscience*, 9, 439-441.
- Sinha, R. P., & Häder, D.-P. (2002). UV-induced DNA damage and repair: A review. *Photochemical & Photobiological Sciences*, 1, 225-236.
- Sinha, R. P., & Häder, D.-P. (2003). Biochemistry of mycosporine-like amino acids (MAAs) synthesis: Role in photoprotection. *Recent Research Development in Biochemistry*, 4, 971-983.
- Sinha, R. P., & Häder, D.-P. (2003). Photoprotection in cyanobacteria. *Recent Research Development in Biochemistry*, 4, 915-924.
- Sinha, R. P., & Häder, D.-P. (2004). Ultraviolet screening compounds in algae: role in evolution. In S. J. Britto (Ed.), *Molecular Systematics* (pp. 91-117). Tiruchirappalli, India: The Rapinat Herbarium & Centre for Molecular Systematics.
- Sinha, R. P., & Häder, D.-P. (2008). UV-protectants in cyanobacteria. *Plant Science*, 174, 278-289.
- Sinha, R. P., Hader, D. P., Ghetti, F., Checcucci, G., & Bornman, J. F. (2006). Impact of UV radiation on rice-field cyanobacteria: role of photoprotective compounds *Environmental UV Radiation: Impact*

- on *Ecosystems and Human Health and Predictive Models* (pp. 217-230). The Netherlands: Springer.
- Sinha, R. P., Keshari, G., Kumari, S., Singh, S. P., Rastogi, R. P., & Singh, K. L. (2006). Screening of mycosporine-like amino acids (MAAs) in cyanobacteria. *Modern Journal of Life Sciences*, *5*, 1-6.
- Sinha, R. P., Kumar, A., Tyagi, M. B., & Häder, D.-P. (2005). Ultraviolet-B-induced destruction of phycobiliproteins in cyanobacteria. *Molecular Biology of Plants*, *11*, 313-319.
- Sinha, R. P., Rastogi, R. P., Ambasht, N. K., & Häder, D.-P. (2008). Live of wetland cyanobacteria under enhancing solar UV-B radiation. *Proc.Nat.Acad.Sci.India B*, *78*, 53-65.
- Sinha, R. P., Richter, P., Faddoul, J., Braun, M., & Häder, D.-P. (2002). Effects of UV and visible light on cyanobacteria at the cellular level. *Photochemical & Photobiological Sciences*, *1*, 553-559.
- Sinha, R. P., Singh, S. P., & Häder, D.-P. (2007). Database on mycosporines and mycosporine-like amino acids (MAAs) in fungi, cyanobacteria, macroalgae, phytoplankton and animals. *Journal of Photochemistry and Photobiology B: Biology*, *89*, 29-35.
- Sinha, R. P., Singh, S. P., & Häder, D.-P. (2008). Effects of UV-B radiation on phytoplankton and macroalgae: adaptation strategies. *Proceedings of the National Academy of Sciences of India B*, *78*, 105-116.
- Sinha, R. P., Sinha, J. P., Gröniger, A., & Häder, D.-P. (2002). Polychromatic action spectrum for the induction of a mycosporine-like amino acid in a rice-field cyanobacterium, *Anabaena* sp. *Journal of Photochemistry and Photobiology B: Biology*, *66*(1), 47-53.
- Six, C., Joubin, L., Partensky, F., Holtzendorff, J., & Garczarek, L. (2007). UV-induced phycobilisome dismantling in the marine picocyanobacterium *Synechococcus* sp. WH8102. *Photosynthesis Research*, *92*, 75-86.
- Slattery, M., & Paul, V. J. (2008). Indirect effects of bleaching on predator deterrence in the tropical Pacific soft coral *Sinularia maxima*. *Marine Ecology Progress Series*, *354*, 169-179. doi: 10.3354/meps07200
- Smirnoff, N. (1995). *Environment and plant metabolism : flexibility and acclimation*. Oxford Herndon: BIOS Scientific Publishers; Books International distributor.
- Smith, D. J., Suggett, D. J., & Baker, N. R. (2005). Is photoinhibition of zooxanthellae photosynthesis the primary cause of thermal bleaching in corals? *Global Change Biology*, *11*, 1-11.
- Smith, R. C., Mobley, C. D., & Björn, L. O. (2007). Underwater light *Photobiology. The Science of Life and Light. Second Edition* (pp. 131-138). New York: Springer.
- Smith, R. C., Prezelin, B. B., Baker, K. S., Bidigare, R. R., Boucher, N. P., Coley, T., . . . Waters, Z. W. K. J. (1992). Ozone depletion: Ultraviolet radiation and phytoplankton biology in Antarctic waters. *Science* *255*, 952-959.
- Smyrniotopoulos, V., Vagias, C., & Roussis, V. (2009). Sphaeroane and neodolabellane diterpenes from the red alga *Sphaerococcus coronopifolius*. *Marine Drugs*, *7*, 184-195.
- Sobek, S., Algesten, G., Bergström, A.-K., Jansson, M., & Tranvik, L. J. (2003). The catchment and climate regulation of pCO₂ in boreal lakes. *Global Change Biology*, *9*, 630-641.
- Sobierajska, K., Fabczak, H., & Fabczak, S. (2006). Photosensory transduction in unicellular eukaryotes: a comparison between related ciliates *Blepharisma japonicum* and *Stentor coeruleus* and photoreceptor cells of higher organisms. *Journal of Photochemistry and Photobiology B: Biology*, *83*(3), 163-171.
- Sobrinho, C., Montero, O., & Lubian, L. M. (2005). Effect of UV-A and UV-B on diel patterns of growth and metabolic activity in *Nannochloris atomus* cultures assessed by flow cytometry. *Marine Ecology Progress Series*, *293*, 29-35.
- Sobrinho, C., Montero, O., & Lubián, L. M. (2004). UV-B radiation increases cell permeability and damages nitrogen incorporation mechanisms in *Nannochloropsis gaditana*. *Aquatic Sciences*, *66*, 421-429.
- Sobrinho, C., & Neale, P. J. (2007). Short-term and long-term effects of temperature on photosynthesis in the diatom *Thalassiosira pseudonana* under UVR exposures. *Journal of Phycology*, *43*, 426-436.

- Sobrino, C., Neale, P. J., & Lubián, L. M. (2005). Interaction of UV radiation and inorganic carbon supply in the inhibition of photosynthesis: spectral and temporal responses of two marine picoplankters. *Photochemistry and Photobiology*, *81*(2), 384-393.
- Sobrino, C., Neale, P. J., Phillips-Kress, J. D., Moeller, R. E., & Porterc, J. A. (2009). Elevated CO₂ increases sensitivity to ultraviolet radiation in lacustrine phytoplankton assemblages. *Limnology and Oceanography*, *54*(6 (part 2)), 2448-2459.
- Sobrino, C., Ward, M. L., & Neale, P. J. (2008). Acclimation to elevated carbon dioxide and ultraviolet radiation in the diatom *Thalassiosira pseudonana*: Effects on growth, photosynthesis, and spectral sensitivity of photoinhibition. *Limnology and Oceanography*, *53*(2), 494-505.
- Soh, Y. C., Roddick, F., & van Leeuwen, J. (2008). The future of water in Australia: The potential effects of climate change and ozone Depletion on australian water quality, quantity and treatability. *Environmentalist*, *28*, 158-165. doi: doi: 10.1007/s10669-007-9123-7
- Solomon, K. R. (2008). Effects of ozone depletion and UV-B radiation on humans and the environment. *Atmosphere-Ocean*, *46*(1), 185-202.
- Solomon, S. (2004). The hole truth. What's news (and what's not) about the ozone hole. *Nature*, *427*, 289-291.
- Sommaruga, R., & Augustin, G. (2006). Seasonality in UV transparency of an alpine lake is associated to changes in phytoplankton biomass. *Aquatic Sciences*, *68*, 129-141.
- Sommaruga, R., & Casamayor, E. O. (2009). Bacterial 'cosmopolitanism' and importance of local environmental factors for community composition in remote high-altitude lakes. *Freshwater Biology*, *54*(5), 994-1005. doi: 10.1111/j.1365-2427.2008.02146.x
- Sommaruga, R., Chen, Y., & Liu, Z. (2009). Multiple strategies of bloom-forming *Microcystis* to minimize damage by solar ultraviolet radiation in surface waters. *Microbial Ecology*, *57*(4), 674-667.
- Sommaruga, R., Hofer, J. S., Alonso-Sáez, L., & Gasol, J. M. (2005). Differential sunlight sensitivity of picophytoplankton from surface mediterranean coastal waters. *Applied and Environmental Microbiology*, *71*, 2154-2157.
- Sommaruga, R., Whitehead, K., Shick, J. M., & Lobban, C. S. (2006). Mycosporine-like amino acids in the zooxanthella-ciliate symbiosis *Maristentor dinoferus*. *Protist*, *157*(2), 185-191.
- Sommer, F., Agurto, C., Henriksen, P., & Kjørboe, T. (2006). Astaxanthin in the calanoid copepod *Calanus helgolandicus* : dynamics of esterification and vertical distribution in the German Bight, North Sea. *Marine Ecology Progress Series*, *319*, 167-173.
- Song, W., Bardowell, S., & O'Shea, K. E. (2007). Mechanistic study and the influence of oxygen on the photosensitized transformations of microcystins (cyanotoxins). *Environmental Science & Technology*, *41*(15), 5336-5341.
- Sonntag, B., Summerer, M., & Sommaruga, R. (2007). Sources of mycosporine-like amino acids in planktonic *Chlorella* -bearing ciliates (Ciliophora). *Freshwater Biology*, *52*, 1476-1485.
- Sorrels, C. M., Proteau, P. J., & Gerwick, W. H. (2009). Organization, evolution, and expression analysis of the biosynthetic gene cluster for scytonemin, a cyanobacterial UV-absorbing pigment. *Applied and Environmental Microbiology*, *75*, 4861-4869.
- Sorvari, S., Korhola, A., & Thompson, R. (2002). Lake diatom response to recent Arctic warming in Finnish Lapland. *Global Change Biology*, *8*, 171-181.
- Soule, T., Garcia-Pichel, F., & Stout, V. (2009). Gene expression patterns associated with the biosynthesis of the sunscreen scytonemin in *Nostoc punctiforme* ATCC 29133 in response to UVA radiation. *Journal of Bacteriology*, *191*, 4639-4646.
- Soule, T., Palmer, K., Gao, Q., Potrafka, R. M., Stout, V., & Garcia-Pichel, F. (2009). A comparative genomics approach to understanding the biosynthesis of the sunscreen scytonemin in cyanobacteria. *BMC Genomics*, *10*, 336-345.
- Soule, T., Stout, V., Swingle, W. D., Meeks, J. C., & Garcia-Pichel, F. (2007). Molecular genetics and

- genomic analysis of scytonemin biosynthesis in *Nostoc punctiforme* ATCC 29133. *Journal of Bacteriology*, 189(12), 4465-4472.
- Southerland, H. A., & Lewitus, A. J. (2004). Physiological responses of estuarine phytoplankton to ultraviolet light-induced fluoranthene toxicity. *Journal of Experimental Marine Biology and Ecology*, 298(2), 303-322.
- Souza, M. S., Balseiro, E., Laspoumaderes, C., & Modenutti, B. (2010). Effect of ultraviolet radiation on acetylcholinesterase activity in freshwater copepods. *Photochemistry and Photobiology*, 86(2), 367-373. doi: 10.1111/j.1751-1097.2009.00675.x
- Souza, M. S., Modenutti, B. E., & Balseiro, E. G. (2007). Antioxidant Defences in Planktonic Crustaceans Exposed to Different Underwater Light Irradiances in Andean Lakes. *Water, Air, & Soil Pollution*, 183(1-4), 49-57.
- Spolaore, P., Joannis-Cassan, C., Duran, E., & Isambert, A. (2006). Commercial applications of microalgae. *Journal of Bioscience Bioengineering*, 101(2), 87-96.
- Squier, A. H., Hodgson, D. A., & Keely, B. J. (2004). A critical assessment of the analysis and distributions of scytonemin and related UV screening pigments in sediments. *Organic Geochemistry*, 35, 1221-1228.
- Squires, M. M., & Lesack, L. F. W. (2003). Spatial and temporal patterns of light attenuation among lakes of the Mackenzie Delta. *Freshwater Biology*, 48, 1-20.
- Squires, M. M., Lesack, L. F. W., & Huebert, D. (2002). The influence of water transparency on the distribution and abundance of macrophytes among lakes of the Mackenzie Delta, Western Canadian Arctic. *Freshwater Biology*, 47, 2123-2135.
- Srivastava, A. K., Bhargava, P., Mishra, Y., Shukla, B., & Rai, L. C. (2006). Effect of pretreatment of salt, copper and temperature on ultraviolet-B-induced antioxidants in diazotrophic cyanobacterium *Anabaena doliolum*. *Journal of Basic Microbiology*, 46(2), 135-144.
- Staal, M., Stal, L. J., te Lintel-Hekkert, S., & Harren, F. J. M. (2003). Light action spectra of N₂ fixation by heterocystous cyanobacteria from the Baltic Sea. *Journal of Phycology*, 39, 668-677.
- Stammerjohn, S. E., Martinson, D. G., Smith, R. C., & Iannuzzi, R. A. (2008). Sea ice in the western Antarctic Peninsula region: Spatio-temporal variability from ecological and climate change perspectives. *Deep Sea Research Part II: Topical Studies in Oceanography*, 55(18-19), 2041-2058
- Starcevic, A., Akthar, S., Dunlap, W. C., Shick, J. M., Hranueli, D., Cullum, J., & Long, P. F. (2008). Enzymes of the shikimic acid pathway encoded in the genome of a basal metazoan, *Nematostella vectensis*, have microbial origins. *Proceedings of the National Academy of Sciences of the United States of America*, 105, 2533-2537.
- Steinberg, D. K., Nelson, N. B., Craig, A. C., & Prusak, A. (2004). Production of chromophoric dissolved organic matter (CDOM) in the open ocean by zooplankton and the colonial cyanobacterium *Trichodesmium* spp. *Marine Ecology Progress Series*, 267, 45-56.
- Steinbrener, J., & Linden, H. (2003). Light induction of carotenoid biosynthesis genes in the green alga *Haematococcus pluvialis*: regulation by photosynthetic redox control. *Plant Molecular Biology*, 52(2), 343-356.
- Steinhoff, F. S., Wiencke, C., Muller, R., & Bischof, K. (2008). Effects of ultraviolet radiation and temperature on the ultrastructure of zoospores of the brown macroalga *Laminaria hyperborea*. *Plant Biology*, 10(3), 388-397.
- Sterr, B., & Sommaruga, R. (2008). Does ultraviolet radiation alter kairomones? An experimental test with *Chaoborus obscuripes* and *Daphnia pulex*. *Journal of Plankton Research*, 30(12), 1343-1350.
- Stoletzki, N., & Schierwater, B. (2005). Genetic and color morph differentiation in the Caribbean sea anemone *Condylactis gigantea*. *Marine Biology*, 147(3), 747-754.
- Ston, J., & Kosakowska, A. (2002). Phytoplankton pigments designation - an application of RP-HPLC in qualitative and quantitative analysis. *Journal of Applied Phycology*, 14, 205-210.

- Storrs, S. I., & Kiesecker, J. M. (2004). Survivorship patterns of larval amphibians exposed to low concentrations of atrazine. *Environmental Health Perspectives*, *112*, 1054-1057.
- Stransky, H., & Hager, A. (1970). Das Carotinoidmuster und die Verbreitung des lichtinduzierten Xanthophyllcyclus in verschiedenen Algenklassen. IV. Cyanophyceae und Rhodophyceae. *Archives of Microbiology*, *72*(1), 84-96. doi: 10.1007/BF00411017
- Striegl, R. G., Aiken, G. R., Dornblaser, M. M., Raymond, P. A., & Wickland, K. P. (2005). A decrease in discharge-normalized DOC export by the Yukon River during summer through autumn. *Geophysical Research Letters*, *32*, L21413.
- Stroeve, J., & Serreze, M. (2008). Arctic sea ice extent plummets in 2007. *EOS, Transactions, American Geophysical Union*, *89*(2), 13-20.
- Stuart, V., Ulloa, O., Alarcón, G., Sathyendranath, S., Major, H., Head, E. J. H., & Platt, T. (2004). Bio-optical characteristics of phytoplankton populations in the upwelling system off the coast of Chile. *Revista Chilena Historia Naturae*, *77*, 87-105.
- Stubbins, A., Uher, G., Law, C. S., Mopper, K., Robinson, C., & Upstill-Goddard, R. C. (2006). Open-ocean carbon monoxide photoproduction. *Deep-Sea Research Part II*, *53*(14-16), 1695-1705.
- Suh, H.-J., Lee, H.-W., & Jung, J. (2003). Mycosporine glycine protects biological systems against photodynamic damage by quenching singlet oxygen with a high efficiency. *Photochemistry and Photobiology*, *78*(2), 109-113.
- Suhett, A. L., Amado, A. M., Enrich-Prast, A., de Assis Esteves, F., & Farjalla, V. F. (2007). Seasonal changes of dissolved organic carbon photo-oxidation rates in a tropical humic lagoon: the role of rainfall as a major regulator. *Canadian Journal of Fisheries and Aquatic Sciences*, *64*(9), 1266-1272.
- Sullivan, J. H., Gitz III, D. C., Liu-Gitz, L., Xu, C., Gao, W., & Slusser, J. (2007). Coupling short-term changes in ambient UV-B levels with induction of UV-screening compounds. *Photochemistry and Photobiology*, *83*(4), 863-870.
- Summerer, M., Sonntag, B., Hortnagl, P., & Sommaruga, R. (2009). Symbiotic ciliates receive protection against UV damage from their algae: a test with *Paramecium bursaria* and *Chlorella*. *Protist*, *160*, 233-243.
- Summerer, M., Sonntag, B., & Sommaruga, R. (2007). An experimental test of the symbiosis specificity between the ciliate *Paramecium bursaria* and strains of the unicellular green alga *Chlorella*. *Environmental Microbiology*, *9*(8), 2117-2122.
- Summerer, M., Sonntag, B., & Sommaruga, R. (2008). Ciliate-symbiont specificity of freshwater endosymbiotic *Chlorella* (Trebouxiophyceae, Chlorophyta). *Journal of Phycology*, *44*, 77-84.
- Sunda, W., Kieber, D. J., Kiene, R. P., & Huntsman, S. (2002). An antioxidant function for DMSP and DMS in marine algae. *Nature*, *418*, 317-320.
- Swanson, A. K., & Fox, C. H. (2007). Altered kelp (Laminariales) phlorotannins and growth under elevated carbon dioxide and ultraviolet-B treatments can influence associated intertidal food webs. *Global Change Biology*, *13*, 1696-1709.
- Taira, H., Aoki, S., Yamanoha, B., & Taguchi, S. (2004). Daily variation in cellular content of UV-absorbing compounds mycosporine-like amino acids in the marine dinoflagellate *Scrippsiella sweeneyae*. *Journal of Photochemistry and Photobiology. B, Biology*, *75*(3), 145-155.
- Takahashi, A., & Ohnishi, T. (2009). Molecular mechanisms involved in adaptive responses to radiation, UV light, and heat. *Journal of Radiation Research*, *50*(5), 385-393.
- Takahashi, A., Shibata, N., Nishikawa, S., Ohnishi, K., Ishioka, N., & Ohnishi, T. (2006). UV-B light induces an adaptive response to UV-C exposure via photoreactivation activity in *Euglena gracilis*. *Photochemical & Photobiological Sciences*, *5*, 467-471.
- Takaichi, S., & Mirau, M. (1998). Distribution and geometric isomerism of neoxanthin in oxygenic phototrophs: 9-cis, a sole molecular form. *Plant and Cell Physiology*, *39*(9), 968-977.
- Takatani, N., Kobayashi, M., Maeda, S. I., & Omata, T. (2006). Regulation of nitrate reductase by

- non-modifiable derivatives of PII in the cells of *Synechococcus elongatus* strain PCC 7942. *Plant and Cell Physiology*, 47(8), 1182-1186.
- Tala, F., Véliz, K., Gómez, I., & Edding, M. (2007). Early life stages of the South Pacific kelps *Lessonia nigrescens* and *Lessonia trabeculata* (Laminariales, Phaeophyceae) show recovery capacity following exposure to UV radiation. *Phycologia*, 46(4), 467-470.
- Tan, L. T. (2007). Bioactive natural products from marine cyanobacteria for drug discovery. *Phytochemistry*, 68(7), 954-979.
- Tang, X., Cai, H., & Zhang, P. (2005). The effect of UV-B radiation enhancement on the growth competition between *Alexandrium tamarense* and *Heterosigma akashiwo*. *Acta Scientiae Circumstantiae/Huanjing Kexue Xuebao*, 25(3), 340-345.
- Tanimura, A., Kawaguchi, S., Oka, N., Nishikawa, Toczka, S., Takahashi, K. T., . . . Hosie, G. (2008). Abundance and grazing impacts of krill, salps and copepods along the 140°E meridian in the Southern Ocean during summer. *Antarctic Science*, 20(4), 365-379.
- Tank, S. E., & Schindler, D. W. (2004). The role of ultraviolet radiation in structuring epilithic algal communities in Rocky Mountain montane lakes: evidence from pigments and taxonomy. *Canadian Journal of Fisheries and Aquatic Sciences*, 61, 1461-1474.
- Tank, S. E., Schindler, D. W., & Arts, M. T. (2003). Direct and indirect effects of UV radiation on benthic communities: epilithic food quality and invertebrate growth in four montane lakes. *Oikos*, 103, 651-667.
- Tartarotti, B., Cravero, W., & Zagarese, H. E. (2000). Biological weighting function for the mortality of *Boeckella gracilipes* (Copepoda, Crustacea) derived from experiments with natural solar radiation. *Photochemistry and Photobiology*, 72(3), 314-319.
- Tartarotti, B., & Sommaruga, R. (2006). Seasonal and ontogenetic changes of mycosporine-like amino acids in planktonic organisms from an alpine lake. *Limnology and Oceanography*, 51, 1530-1541.
- Tartarotti, B., & Torres, J. J. (2009). Sublethal stress: Impact of solar UV radiation on protein synthesis in the copepod *Acartia tonsa*. *Journal of Experimental Marine Biology and Ecology*, 375(1-2), 106-113. doi:doi:10.1016/j.jembe.2009.05.016
- Taylor, B., Skelly, D., Demarchis, L. K., Slade, M. D., Galusha, D., & Rabinowitz, P. M. (2005). Proximity to pollution sources and risk of amphibian limb malformation. *Environmental Health Perspectives*, 113, 1497-1501.
- Tchounwou, P. B., Englande, A. J., & Malek, E. A. (1991). Toxicity evaluation of ammonium sulphate and urea to three developmental stages of freshwater snails. *Archives of Environmental Contamination and Toxicology*, 21, 359-364.
- Tedetti, M., & Sempéré, R. (2006). Penetration of ultraviolet radiation in the marine environment. A review. *Photochemistry and photobiology*, 82(2), 389-397.
- Tedetti, M., Sempere, R., Vasilkov, A., Charriere, B., Nerini, D., Miller, W. L., . . . Raimbault, P. (2007). High penetration of ultraviolet radiation in the south east Pacific waters. *Geophysical Research Letters*, 34(12), L126101-L126105.
- Teira, E., Mourino, B., Marañón, E., Pérez, V., Paz, M. J., Serret, P., . . . Fernández, E. (2005). Variability of chlorophyll and primary production in the Eastern North Atlantic subtropical gyre: potential factors affecting phytoplankton activity. *Deep-Sea Research Part 1*, 52, 569-588.
- Tevini, M. (1993). *UV-B radiation and ozone depletion : effects on humans, animals, plants, microorganisms, and materials*. Boca Raton: Lewis Publishers.
- Thomas, H., Prowe, A. E. F., van Heuven, S., Bozec, Y., de Baar, H. J. W., Schiettecatte, L. S., . . . Doney, S. C. (2007). Rapid decline of the CO₂ buffering capacity in the North Sea and implications for the North Atlantic Ocean. *Global Biogeochemical Cycles*, 21, 13. doi: Gb4001 10.1029/2006gb002825
- Thomson, B. E., Van Dyke, H., & Worrest, R. C. (1980). Impact of UV-B radiation (290–320 nm) upon

- estuarine bacteria. *Oecologia*, 47(1), 56-60. doi: 10.1007/BF00541776
- Thomson, B. E., Worrest, R. C., & Van Dyke, H. (1980). The growth response of an estuarine diatom (*Melosira nummuloides* [dillw.] Ag.) to UV-B (290–320 nm) radiation. *Estuaries and Coasts*, 3(1), 69-72. doi: 10.2307/1351937
- Tietge, J. E., Diamond, S. A., Ankley, G. T., DeFoe, D. L., Holcombe, G. W., Jensen, K. M., . . . Hammer, E. (2001). Ambient solar UV radiation causes mortality in larvae of three species of *Rana* under controlled exposure conditions. *Photochemistry and Photobiology*, 74, 261-268.
- Tirok, K., & Gaedke, U. (2007). The effect of irradiance, vertical mixing and temperature on spring phytoplankton dynamics under climate change: Long-term observations and model analysis. *Oecologia*, 150, 625-642.
- Tollrian, R., & Heibl, C. (2004). Phenotypic plasticity in pigmentation in *Daphnia* induced by UV radiation and fish kairomones. *Functional Ecology*, 18(4), 497-502.
- Toole, D. A., Slezak, D., Kiene, R. P., Kieber, D. J., & Siegel, D. A. (2006). Effects of solar radiation on dimethylsulfide cycling in the western Atlantic Ocean. *Deep Sea Research*, 53(1), 136-153.
- Torregiani, J. H., & Lesser, M. P. (2007). The effects of short-term exposures to ultraviolet radiation in the Hawaiian Coral *Montipora verrucosa*. *Journal of Experimental Marine Biology and Ecology* 340(2), 194-203.
- Torres, A., Enk, C. D., Hochberg, M., & Srebnik, M. (2006). Porphyra-334, a potential natural source for UVA protective sunscreens. *Photochemical & Photobiological Sciences*, 5, 432-435.
- Torres, J. L., Armstrong, R. A., Corredor, J. E., & Gilbes, F. (2007). Physiological Responses of *Acropora cervicornis* to Increased Solar Irradiance. *Photochemistry and Photobiology*, 83(4), 839-850.
- Torres, J. L., Armstrong, R. A., & Weil, E. (2008). Enhanced ultraviolet radiation can terminate sexual reproduction in the broadcasting coral species *Acropora cervicornis* Lamarck. *Journal of Experimental Marine Biology and Ecology*, 358(1), 39-45. doi: doi:10.1016/j.jembe.2008.01.022
- Touzet, N., Franco, J. M., & Raine, R. (2007). Influence of inorganic nutrition on growth and PSP toxin production of *Alexandrium minutum* (Dinophyceae) from Cork Harbour, Ireland. *Toxicon*, 50, 106-119.
- Tranvik, L. J., Downing, J., Cotner, J. B., Loiselle, S., Striegl, R., Ballatore, T. J., . . . Weyhenmeyer, G. A. (2009). Lakes and reservoirs as regulators of carbon cycling and climate. *Limnology and Oceanography*, 54(6), 2298-2314.
- Trenham, P. C., & National Health and Environmental Effects Research Laboratory (U.S.). Mid-Continent Ecology Division. (1999). PRIMENet: Ultraviolet Radiation/Amphibian Populations Research Planning Workshop, February 1-3, 1999 [microform :]. Duluth, Minn. (6201 Congdon Blvd., Duluth 55804): U.S. Environmental Protection Agency, Office of Research and Development, National Health and Environmental Effects Research Laboratory, Mid-Continent Ecology Division,.
- Tucker, A. J., Williamson, C. E., Rose, C. E., Oris, J. T., Connelly, S. J., Olson, M. H., & Mitchell, D. L. (2010). Ultraviolet radiation affects invasibility of lake ecosystems by warmwater fish. *Ecology*, 91(882-890).
- Tulonen, T. (2004). *Role of allochthonous and autochthonous dissolved organic matter (DOM) as a carbon source for bacterioplankton in boreal humic lakes*. (Dissertation), University of Helsinki, Helsinki, Finland.
- Turner, J. T. (2002). Zooplankton fecal pellets, marine snow and sinking phytoplankton blooms. *Aquatic Microbial Ecology*, 27, 57-102.
- Turner, M. A., Findlay, D. L., Baulch, H. M., Armstrong, L. M., Kasian, S. E. M., McNicol, D. K., & Vinebrooke, R. D. (2009). Heavy metal bioaccumulation and toxicity with special reference to microalgae Benthic algal communities: recovery from experimental acidification. *Canadian Journal of Fisheries and Aquatic Sciences*, 66(11), 1875-1891.
- Tyagi, M. B., Singh, D. P., Kumar, A., Jha, P. N., Sinha, R. P., & Kumar, A. (2006). Hepatotoxicity of

- Microcystis aeruginosa* strains growing as blooms in certain eutrophic ponds. *EXCLI Journal*, 5, 66-78.
- Tyagi, R., Kumar, A., Tyagi, M. B., Jha, P. N., Kumar, H. D., Sinha, R. P., & Häder, D.-P. (2003). Protective role of certain chemicals against UV-B-induced damage in the nitrogen-fixing cyanobacterium, *Nostoc muscorum*. *Journal of Basic Microbiology*, 43, 137-147.
- Tzortziou, M., Osburn, C. L., & Neale, P. J. (2007). Photobleaching of dissolved organic material from a tidal marsh-estuarine system of the Chesapeake Bay. *Photochemistry and Photobiology*, 83(4), 782-792.
- Unal, D., Tuney, I., Esiz-Dereboylu, A., & Sukatar, A. (2009). The effect of UV-A (352 nm) stress on chlorophyll fluorescence, chlorophyll a content, thickness of upper cortex and determinate DNA damage in *Physcia semipinnata*. *Journal of Photochemistry and Photobiology B: Biology*, 94(1), 71-76.
- The Vienna Convention for the Protection of the Ozone Layer (1985).
- United Nations Environment Programme Environmental Effects Assessment Panel. (1998). Environmental Effects of Ozone Depletion (pp. 193). Nairobi, Kenya: UNEP.
- United Nations Environment Programme Environmental Effects Assessment Panel. (2002). Environmental Effects of Ozone Depletion and Its Interactions with Climate Change: 2002 Assessment (pp. 181). Nairobi, Kenya: UNEP.
- United Nations Environment Programme Environmental Effects Assessment Panel. (2006). Environmental Effects of Ozone Depletion and Its Interactions with Climate Change: 2006 Assessment (pp. 209). Nairobi, Kenya: UNEP.
- United Nations Environment Programme Environmental Effects Assessment Panel. (2008). Environmental effects of ozone depletion and its interactions with climate change: Progress report, 2007. *Photochemical & Photobiological Sciences*, 7(1), 15-27. doi: 10.1039/b717166h
- United Nations Environment Programme Environmental Effects Assessment Panel. (2009). Environmental effects of ozone depletion and its interactions with climate change: Progress report, 2008. *Photochemical & Photobiological Sciences*, 8(1), 13-22. doi: 10.1039/b820432m
- The Montreal Protocol on Substances That Deplete the Ozone Layer (1987).
- Usami, Y. (2009). Recent synthetic studies leading to structural revisions of marine natural products. *Marine Drugs*, 7, 314-330.
- Vähätalo, A. V., & Wetzel, R. G. (2008). Long-term photochemical and microbial decomposition of wetland-derived dissolved organic matter with alteration of C-13 : C-12 mass ratio. *Limnology and Oceanography*, 53, 1387-1392.
- Vähätalo, A. V., Wetzel, R. G., & Paerl, H. W. (2005). Light absorption by phytoplankton and chromophoric dissolved organic matter in the drainage basin and estuary of the Neuse River, North Carolina (U.S.A.). *Freshwater Biology*, 50, 477-493.
- van de Poll, W. H., Bischof, K., Buma, A. G. J., & Breeman, A. M. (2003). Habitat related variation in UV tolerance of tropical marine red macrophytes is not temperature dependent. *Physiologia Plantarum*, 118(1), 74-83.
- van de Poll, W. H., & Buma, A. G. J. (2009). Does ultraviolet radiation affect the xanthophyll cycle in marine phytoplankton? *Photochemical & Photobiological Sciences*, 8, 1295-1301.
- van de Poll, W. H., Hanelt, D., Hoyer, K., Buma, A. G. J., & Breeman, A. M. (2002). Ultraviolet-B-induced cyclobutane-pyrimidine dimer formation and repair in Arctic marine macrophytes. *Photochemistry and Photobiology*, 76, 493-500.
- van de Poll, W. H., Janknegt, P. J., van Leeuwe, M. A., Visser, R. J. W., & Buma, A. G. J. (2009). Excessive irradiance and antioxidant responses of an Antarctic marine diatom exposed to iron limitation and to dynamic irradiance. *Journal of Photochemistry and Photobiology B: Biology*, 94(1), 32-37.
- van den Belt, M., Bianciotto, O. A., Costanza, R., Demers, S., Diaz, S., Ferreyra, G. A., . . . Vernet, M. (2006). Mediated modeling of the impacts of enhanced UV-B radiation on ecosystem services.

- Photochemistry and Photobiology*, 82(4), 865-877. doi: 10.1562/2005-10-19-IR-722
- van Leeuwe, M. A., & Stefels, J. (1998). Effects of iron and light stress on the biochemical composition of Antarctic *Phaeocystis* sp. (Prymnesiophyceae). II. Pigment composition. *Journal of Phycology*, 34, 496-503.
- van Uitregt, V. O., Wilson, R. S., & Franklin, C. E. (2007). Cooler temperatures increase sensitivity to ultraviolet B radiation in embryos and larvae of the frog *Limnodynastes peronii*. *Global Change Biology*, 13(6), 1114-1121.
- Van Wambeke, F., Tedetti, M., Duhamel, S., & Sempéré, R. (2008). Diel variability of heterotrophic bacterial production and UV doses in the South East Pacific. *Biogeosciences Discussions*, 5(1), 435-462.
- Vasilkov, A., Krotkov, N., Herman, J., McClain, C., Arrigo, K., & Robinson, W. (2001). Global mapping of underwater UV irradiances and DNA-weighted exposures using Total Ozone Mapping Spectrometer and Sea-viewing Wide Field-of-view Sensor data products. *Journal of Geophysical Research*, 106(C11), 27205-27219.
- Vassilakaki, M., & Pflugmacher, S. (2008). Oxidative stress response of *Synechocystis* sp. (PCC 6803) due to exposure to microcystin-LR and cell-free cyanobacterial crude extract containing microcystin-LR. *Journal of Applied Phycology*, 20(3), 219-225.
- Vega, M. P., & Pizarro, R. A. (2000). Oxidative stress and defence mechanisms of the freshwater cladoceran *Daphnia longispina* exposed to UV radiation. *Journal of Photochemistry and Photobiology B: Biology*, 54, 121-125.
- Vehniäinen, E. R., Häkkinen, J. M., & Oikari, A. O. J. (2007). Fluence rate or cumulative dose? Vulnerability of larval northern pike (*Esox lucius*) to ultraviolet radiation. *Photochemistry and Photobiology*, 83(2), 444-449. doi: DOI: 10.1562/2005-05-02-RA-508
- Venn, A. A., Wilson, M. A., Trapido-Rosenthal, H. G., Keely, B. J., & Douglas, A. E. (2006). The impact of coral bleaching on the pigment profile of the symbiotic alga, *Symbiodinium Plant, Cell and Environment*, 29, 2133-2142.
- Verleyen, E., Hodgson, D. A., Sabbe, K., & Vyverman, W. (2005). Late Holocene changes in ultraviolet radiation penetration recorded in an East Antarctic lake. *Journal of Paleolimnology*, 34(2), 191-202.
- Vernet, M. (2006). Introduction: Enhanced UV-B radiation in natural ecosystems as an added perturbation due to ozone depletion. *Photochemistry and Photobiology*, 82(4), 831-833.
- Vernet, M., Díaz, S., Fuenzalida, H., Camilión, C., Booth, C. R., Cabrera, S., . . . Zagarese, H. (2009). Quality of UVR exposure for different biological systems along a latitudinal gradient. *Photochemical & Photobiological Sciences*, 8(9), 1329-1345. doi: 10.1039/b904540f
- Vernet, M., Martinson, D. G., Iannuzzi, R., Stammerjohn, S., Kozlowski, W., Sines, K., . . . Garibottie, I. (2008). Primary production within the sea-ice zone west of the Antarctic Peninsula: I—Sea ice, summer mixed layer, and irradiance. *Deep Sea Research Part II: Topical Studies in Oceanography*, 55(18-19), 2068-2085.
- Villafañe, V. E., Barbieri, E. S., & Helbling, E. W. (2004). Annual patterns of ultraviolet radiation effects on temperate marine phytoplankton off Patagonia, Argentina. *Journal of Plankton Research*, 26(2), 167-174.
- Villafañe, V. E., Buma, A. G. J., Boelen, P., & Helbling, E. W. (2004). Solar UVR-induced DNA damage and inhibition of photosynthesis in phytoplankton from Andean lakes of Argentina. *Archiv für Hydrobiologie*, 161(2), 245-266.
- Villafañe, V. E., Gao, K., & Helbling, E. W. (2005). Short- and long-term effects of solar ultraviolet radiation on the red algae *Porphyridium cruentum* (S. F. Gray) Nageli. *Photochemical & Photobiological Sciences*, 4(4), 376-382.
- Villafañe, V. E., Gao, K., Li, P., & Helbling, E. W. (2007). Vertical mixing within the epilimnion modulates UVR-induced photoinhibition in tropical freshwater phytoplankton from southern China. *Freshwater Biology*, 52, 1260-1270.

- Villafañe, V. E., Janknegt, P. J., de Graaff, M., Visser, R. J. W., van de Poll, W. H., Buma, A. G. J., & Helbling, E. W. (2008). UVR-induced photoinhibition of summer marine phytoplankton communities from Patagonia. *Marine Biology*, *154*, 1021-1029.
- Villafañe, V. E., Marcoval, M. A., & Helbling, E. W. (2004). Photosynthesis versus irradiance characteristics in phytoplankton assemblages off Patagonia (Argentina): temporal variability and solar UVR effects. *Marine Ecology Progress Series*, *284*, 23-24.
- Villafañe, V. E., Sundbäck, K., Figueroa, F. L., & Helbling, E. W. (2003). Photosynthesis in the aquatic environment as affected by UVR. In E. W. Helbling & H. E. Zagarese (Eds.), *UV effects in aquatic organisms and ecosystems* (pp. 357-397): Royal Society of Chemistry.
- Villierius, L. A., Roggeveld, J., Visser, R. J. W., & Stefels, J. (2006). An optimized method for automated analysis of algal pigments by HPLC. *Marine Chemistry*, *102*, 267-275.
- Vincent, W. F., Rae, R., Laurion, I., Howard-Williams, C., & Priscu, J. C. (1998). Transparency of Antarctic ice-covered lakes to solar UV radiation. *Limnology and Oceanography*, *43*, 618-624.
- Vincent, W. F., Rautio, M., & Pienitz, R. (2007). Climate control of biological UV exposure in polar and alpine aquatic ecosystems. In J. B. Ørbæk, R. Kallenborn, I. Tombre, E. N. Hegseth, S. Falk-Petersen & A. H. Hoel (Eds.), *Arctic-Alpine Ecosystems and People in a Changing Environment* (pp. 227-249). Berlin, Heidelberg, New York: Springer-Verlag.
- Vincent, W. F., Rautio, M., Pienitz, R., Ørbæk, J. B., Kallenborn, R., Tombre, I., . . . Hoel, A. H. (2007). Climate control of biological UV exposure in polar and alpine aquatic ecosystems *Arctic-Alpine Ecosystems and People in a Changing Environment* (pp. 227-249). Berlin, Heidelberg, New York: Springer-Verlag.
- Vinebrooke, R. D., Schindler, D. W., Findlay, D. L., Turner, M. A., Paterson, M., & Mills, K. H. (2003). Trophic dependence of ecosystem resistance and species compensation in experimentally acidified Lake 302S (Canada). *Ecosystems*, *6*, 101-113.
- Vinodhini, R., & Narayanan, M. (2008). Bioaccumulation of heavy metals in organs of fresh water fish *Cyprinus carpio* (Common carp). *International Journal of Environment Science and Technology*, *5*(2), 179-182.
- Visser, P. M., Poos, J. J., Scheper, B. B., Boelen, P., & van Duyl, F. C. (2002). Diurnal variations in depth profiles of UV-induced DNA damage and inhibition of bacterioplankton production in tropical coastal waters. *Marine Ecology Progress Series*, *228*, 25-33.
- Volkman, M., & Gorbushina, A. A. (2006). A broadly applicable method for extraction and characterization of mycosporines and mycosporine-like amino acids of terrestrial, marine and freshwater origin. *FEMS Microbiological Letters*, *255*, 286-295.
- Volkman, M., Gorbushina, A. A., Kedar, L., & Oren, A. (2006). Structure of euhalothec-362, a novel red-shifted mycosporine-like amino acid, from a halophilic cyanobacterium (*Euhalotheca* sp.). *FEMS Microbiological Letters*, *258*, 50-54.
- Voytek, M. A. (1990). Addressing the biological effects of decreased ozone on the Antarctic environment. *Ambio* *19*(2), 52-61.
- Vráblíkov, H., McEvoy, M., Solhaug, K. A., Bartk, M., & Gauslaa, Y. (2006). Annual variation in photoacclimation and photoprotection of the photobiont in the foliose lichen *Xanthoria parietina*. *Journal of Photochemistry and Photobiology B: Biology*, *83*, 151-162.
- Vredenburg, V. T., Bingham, R., Knapp, R., Morgan, J. A. T., Moritz, C., & Wake, D. (2007). Concordant molecular and phenotypic data delineate new taxonomy and conservation priorities for the endangered mountain yellow-legged frog. *Journal of Zoology*, *271*(4), 361-374.
- Vuorio, K., Nuottajärvi, M., Salonen, K., & Sarvala, J. (2003). Spatial distribution of phytoplankton and picocyanobacteria in Lake Tanganyika in March and April 1998. *Aquatic Ecosystem Health Management*, *6*, 263-278.
- Wagner, V., Boesger, J., & Mittag, M. (2009). Sub-proteome analysis in the green flagellate alga

- Chlamydomonas reinhardtii*. *Journal of Basic Microbiology*, 49, 32-41.
- Wahl, M. (2008). Ecological modulation of environmental stress: interactions between ultraviolet radiation, epibiotic snail embryos, plants and herbivores. *Journal of Animal Ecology*, 77 (3), 549 - 557. doi: 10.1111/j.1365-2656.2007.01352.x
- Wahl, M., Molis, M., Davis, A., Dobretsov, S., Dürr, S. T., Johansson, J., . . . Ben-Yosef, D. Z. (2004). UV effects that come and go: a global comparison of marine benthic community level impacts. *Global Change Biology*, 10(12), 1962-1972.
- Walczak, M. (2008). Impact of solar radiation, including UV, on the activity of intra- and extracellular bacterial enzymes from the surface microlayer. *Polish Journal of Natural Science*, 23(2), 415-427.
- Waller, R. F., Slamovits, C. H., & Keeling, P. J. (2006). Lateral gene transfer of a multigene region from cyanobacteria to dinoflagellates resulting in a novel plastid-targeted fusion protein. *Molecular Biology and Evolution*, 23(7), 1437-1443.
- Walsh, G. E., & Garnas, R. L. (1983). Determination of bioactivity of chemical fractions of liquid wastes using freshwater and saltwater algae and crustaceans. *Environmental Science & Technology*, 17, 180-182.
- Wang, C. B., Huang, M. Q., Tao, G. L., Yu, G. Y., Han, Z. W., Yang, Z. H., & Wang, Y. J. (2004). Polypeptide from *Chlamys farreri* protects HaCaT cells from UVB-induced apoptosis. *Chemico-biological interactions*, 147(2), 119-127.
- Wang, G., Hu, C., Li, D., Zhang, D., Li, X., Chen, K., & Liu, Y. (2007). The response of antioxidant systems in *Nostoc sphaeroides* against UV-B radiation and the protective effects of exogenous antioxidants. *Advances in Space Research*, 39(6), 1034-1042.
- Wang, M., & Overland, J. E. (2009). A sea ice free summer Arctic within 30 years? *Geophysical Research Letters*, 36: L07502,, doi:10.1029/2009GL037820.
- Wang, W.-C., Isaksen, I. S. A., & North Atlantic Treaty Organization. Scientific Affairs Division. (1995). *Atmospheric ozone as a climate gas : general circulation model simulations*. Berlin ; New York: Springer.
- Wang, X., Lou, T., & Xie, H. (2009). Photochemical production of dissolved inorganic carbon from Suwannee river humic acid. *Chinese Journal of Oceanology and Limnology*, 27(3), 570-573.
- Wang, Y., Chen, J. W., Lin, J., Wang, Z., Bian, H. T., Cai, X. Y., & Hao, C. (2009). Combined experimental and theoretical study on photoinduced toxicity of an anthraquinone dye intermediate to *Daphnia magna*. *Environmental Toxicology and Chemistry*, 28(4), 846-852.
- Wängberg, S. A., Andreasson, K. I. M., Gustavson, K., Reinthaler, T., & Henriksen, P. (2008). UV-B effects on microplankton communities in Kongsfjord, Svalbard - A mesocosm experiment. *Journal of Experimental Marine Biology and Ecology*, 365, 156-163.
- Wängberg, S.-Å., Andreasson, K. I. M., Garde, K., Gustavson, K., Henriksen, P., & Reinthaler, T. (2006). Inhibition of primary production by UV-B radiation in an arctic bay – model calculations. *Aquatic Sciences*, 68(2), 117-128. doi: 10.1007/s00027-006-0819-4
- Wargent, J. J., Moore, J. P., Ennos, R., & Paul, N. D. (2009). Ultraviolet radiation as a limiting factor in leaf expansion and development. *Photochemistry and Photobiology*, 85, 279-286.
- Waring, J., Underwood, G. J. C., & Baker, N. R. (2006). Impact of elevated UV-B radiation on photosynthetic electron transport, primary productivity and carbon allocation in estuarine epipellic diatoms. *Plant, Cell and Environment*, 29(4), 521-534.
- Weatherhead, E. C., & Andersen, S. B. (2006). The search for signs of recovery of the ozone layer. *Nature*, 441(7089), 39-45.
- Wellburn, A., & Wellburn, A. (1994). *Air pollution and climate change : the biological impact* (2nd ed.). Harlow, Essex, England
New York: Longman Scientific & Technical ;
Wiley.

- Weyhenmeyer, G. A., & Karlsson, J. (2009). Nonlinear response of dissolved organic carbon concentrations in boreal lakes to increasing temperatures. *Limnology and Oceanography*, *54*(6), 2513-2519.
- Weyrauch, S. L., & Grubb, T. C. (2006). Effects of the Interaction between Genetic Diversity and UV-B Radiation on Wood Frog Fitness. *Conservation Biology*, *20*(3), 802-810.
- Whalin, L., Kim, E.-H., & Mason, R. (2007). Factors influencing the oxidation, reduction, methylation and demethylation of mercury species in coastal waters. *Marine Chemistry*, *107*, 278-294.
- White, A. L., & Jahnke, L. S. (2002). Contrasting effects of UV-A and UV-B on photosynthesis and photoprotection of β -carotene in two *Dunaliella* spp. *Plant and Cell Physiology*, *43*, 877-884.
- White, A. L., & Jahnke, L. S. (2004). Removing UV-A and UV-C Radiation from UV-B Fluorescent Lamp Emissions. Differences in the Inhibition of Photosynthesis in the Marine Alga *Dunaliella tertiolecta* Using Chromate Versus Cellulose Acetate-Polyester Filters. *Photochemistry and Photobiology*, *80*(2), 340-345.
- Whitehead, K., & Hedges, J. I. (2005). Photodegradation and photosensitization of mycosporine-like amino acids. *Journal of Photochemistry and Photobiology B: Biology*, *80*, 115-121.
- Whitmore, S., & National Agricultural Library (U.S.). (1991). *Effect of ultraviolet-B on plants : January 1980 - December 1990*. Beltsville, Md.: National Agricultural Library.
- Wiegand, M. D., Young, D. L. W., Gajda, B. M., Thuen, D. J. M., Rittberg, D. A. H., Huebner, J. D., & Loadman, N. L. (2004). Ultraviolet light-induced impairment of goldfish embryo development and evidence for photorepair mechanisms. *Journal of Fish Biology*, *64*, 1242-1256.
- Wiencke, C., Clayton, M. N., & Schoenwaelder, M. (2004). Sensitivity and acclimation to UV radiation of zoospores from five species of Laminariales from the Arctic. *Marine Biology*, *145*(1), 31-39.
- Wiencke, C., Gómez, I., & Dunton, K. (2009). Phenology and seasonal physiological performance of polar seaweeds. *Botanica Marina*, *52*, 585-592.
- Wiencke, C., Roleda, M. Y., Gruber, A., Clayton, M. N., & Bischof, K. (2006). Susceptibility of zoospores to UV radiation determines upper depth distribution limit of Arctic kelps: evidence through field experiments. *Journal of Ecology*, *94*, 455-463.
- Wilhelm, S. W., Jeffrey, W. H., Dean, A. L., Meador, J., Pakulski, J. D., & Mitchell, D. L. (2003). UV radiation induced DNA damage in marine viruses along a latitudinal gradient in the southeastern Pacific Ocean. *Aquatic Microbial Ecology*, *31*, 1-8.
- Williams, P. D., Eichstadt, S. L., Kokjohn, T. A., & Martin, E. L. (2007). Effects of ultraviolet radiation on the Gram-positive marine bacterium *Microbacterium maritropicum*. *Current Microbiology*, *55*(1), 1-7.
- Williamson, C., Grad, G., Lowery, M., Jeffrey, W., & Mitchell, D. (2004). Molecular response to climate change: temperature dependence of UV-induced DNA damage and repair in the freshwater crustacean *Daphnia pulex*. *Global Change Biology*, *10*(4), 408-416.
- Williamson, C. E., De Lange, H. J., & Leech, D. M. (2007). Do zooplankton contribute to an ultraviolet clear-water phase in lakes? *Limnology and Oceanography*, *52*(2), 662-667.
- Williamson, C. E., Dodds, W., Kratz, T. K., & Palmer, M. A. (2008). Lakes and streams as sentinels of environmental change in terrestrial and atmospheric processes. *Frontiers in Ecology and the Environment*, *6*(5), 247-254.
- Williamson, C. E., Grad, G., De Lange, H. J., Gilroy, S., & Karapelou, D. M. (2002). Temperature-dependent ultraviolet responses in zooplankton: implications of climate change. *Limnology and Oceanography*, *47*, 1844-1848.
- Williamson, C. E., Neale, P. J., Grad, G., De Lange, H. J., & Hargreaves, B. R. (2001). Beneficial and detrimental effects of UV on aquatic organisms: Implications of spectral variation. *Ecological Applications*, *11*(6), 1843-1857.
- Williamson, C. E., Neale, P. J., & Likens, G. E. (2009). Ultraviolet Light *Encyclopedia of Inland Waters* (pp. 705-714). Oxford: Elsevier.
- Williamson, C. E., Olson, O. G., Lott, S. E., Walker, N. D., Engstrom, D. R., & Hargreaves, B. R. (2001).

- Ultraviolet radiation and zooplankton community structure following deglaciation in Glacier Bay, Alaska. *Ecology*, 82(6), 1748-1760.
- Williamson, C. E., & Rose, K. C. (2009). Ultraviolet insights: Attempting to resolve enigmatic patterns in pelagic freshwaters - the historical context and a view to the future. *International Review of Hydrobiology*, 94(2), 129-142. doi: 10.1002/iroh.200811099
- Williamson, C. E., & Rose, K. C. (2010). When UV meets freshwater. *Science*, 329(5992), 637-639. doi: 10.1126/science.1191192
- Williamson, C. E., & Saros, J. E. (2008). What do lakes and reservoirs tell us about climate change? *EOS*, 89(52), 546.
- Williamson, C. E., Saros, J. E., & Schindler, D. W. (2009). Sentinels of Change. *Science*, 323(5916), 887-888. doi: 10.1126/science
- Williamson, C. E., & Zagarese, H. E. (2003). UVR effects on aquatic ecosystems: a changing climate perspective. In E. W. Helbling & H. E. Zagarese (Eds.), *UV Effects in Aquatic Organisms and Ecosystems* (pp. 547-567). Cambridge, UK: Royal Society of Chemistry.
- Wilson, A., Ajlani, G., Verbavatz, J. M., Vass, I., Kerfeld, C. A., & Kirilovsky, D. (2006). A soluble carotenoid protein involved in phycobilisome-related energy dissipation in cyanobacteria. *Plant Cell*, 18, 992-1007.
- Wilson, W. H., Dale, A. L., Davy, J. E., & Davy, S. K. (2005). An enemy within? Observations of virus-like particles in reef corals. *Coral Reefs*, 24, 145-148.
- Wissmann, S. M. (2003). The effects of elevated ultraviolet B radiation and elevated water temperature on the loss of zooxanthellae from *Aiptasia pallida*. *Transactions of the Kansas Academy of Science*, 106(1/2), 92-98.
- Wolfe, G. V., Strom, S. L., Holmes, J. L., Radzio, T., & Olson, M. B. (2002). Dimethylsulfoniopropionate cleavage by marine phytoplankton in response to mechanical, chemical, or dark stress. *Journal of Phycology*, 38, 948-960.
- Wolfel, J., Schumann, R., Leopold, P., Wiencke, C., & Karsten, U. (2009). Microphytobenthic biomass along gradients of physical conditions in Arctic Kongsfjorden, Svalbard. *Botanica Marina*, 52(6), 573-583.
- Wolfe-Simon, F., Grzebyk, D., Schofield, O., & Falkowski, P. G. (2005). The role and evolution of superoxide dismutases in algae. *Journal of Phycology*, 41, 453-465.
- Wollenberg, J. L., & Peters, S. C. (2009). Mercury emission from a temperate lake during autumn turnover. *Science of the Total Environment*, 407(8), 2909-2918.
- Wong, C. Y., Chu, W. L., Marchant, H., & Phang, S. M. (2007). Comparing the response of Antarctic, tropical and temperate microalgae to ultraviolet radiation (UVR) stress. *Journal of Applied Phycology*, 19(6), 689-699.
- Woodwell, G. M., & Mackenzie, F. T. (1995). *Biotic feedbacks in the global climatic system : will the warming feed the warming?* New York: Oxford University Press.
- Wookey, P. A., Aerts, R., Bardgett, R. D., Baptist, F., Bråthen, K. A., Cornelissen, J. H. C., . . . Shaver, G. R. (2009). Ecosystem feedbacks and cascade processes: understanding their role in the responses of Arctic and alpine ecosystems to environmental change. *Global Change Biology*, 15(5), 1153-1172. doi: 10.1111/j.1365-2486.2008.01801.x
- World Meteorological Organization (WMO). (2002). *Scientific Assessment of Ozone Depletion: Executive Summary* (pp. 1-20). Geneva, Switzerland: UNEP; World Meteorological Organization.
- World Resources Institute (WRI). (2005). *Ecosystems and Human Well-Being: Current State and Trends: Findings of the Condition and Trends Working Group*: Island Press.
- Worrest, R. (1998). Has the world warmed? Ask GCRIO. *Acclimations*, 1998(September/ October).
- Worrest, R. (1998). UV-B effects on aquatic ecosystems. In P. LePreste, J. Reid & E. Morehouse (Eds.), *Protecting the Ozone Layer: Lessons, Models, and Prospects* (pp. 39-42). Norwell, Massachusetts: Kluwer Academic Publishers.

- Worrest, R., & Häder, D.-P. (1997). Impacts of solar UVR on aquatic microorganisms: overview of the effects of increased solar UV on aquatic microorganisms. *Photochemistry and Photobiology*, 65(2), 257-259.
- Worrest, R. C. (1983). Impact of solar ultraviolet-B radiation (290-320 nm) upon marine microalgae. *Physiologia Plantarum*, 58(3), 428-434. doi: DOI: 10.1111/j.1399-3054.1983.tb04204.x
- Worrest, R. C., & Caldwell, M. (1986). *Stratospheric Ozone Reduction, Solar Ultraviolet Radiation and Plant Life*. New York: Springer-Verlag.
- Worrest, R. C., & Diamond, H. J. (2002). Research and systematic observation. In U. S. D. o. State (Ed.), *U.S. Climate Action Report 2002: Third National Communication of the United States of America Under the United Nations Framework Convention on Climate Change* (pp. 137-147). Washington, DC: U.S. Government Printing Office.
- Worrest, R. C., & Kimeldorf, D. J. (1975). Photoreactivation of potentially lethal, UV-induced damage to boreal toad (*Bufo boreas boreas*) tadpoles. *Life Sciences*, 17(10), 1545-1550. doi: 10.1016/0024-3205(75)90175-7
- WRI, UNEP, UNDP, & The World Bank. (1998). *World Resources 1998-99: Environmental change and human health*.
- Wright, A. D., Nielson, J. L., Tapiolas, D. M., Motti, C. A., Ovenden, S. P. B., Kearns, P. S., & Liptrot, C. H. (2009). Detailed NMR, including 1,1-ADEQUATE, and anticancer studies of compounds from the echinoderm *Colobometra perspinosa*. *Marine Drugs*, 7, 565-575.
- Wrona, F., Prowse, T., & Reist, J. (2003). Impacts of climate change and UV radiation on freshwater Arctic ecosystems - UV impacts on freshwater ecosystems (Chapter 7, Section 6). In R. Corell & G. Weller (Eds.), *Arctic Climate Impact Assessment (ACIA) Scientific Report [DRAFT]* (Draft ed.).
- Wrona, F., Prowse, T., Reist, J., Hobbie, J., Lévesque, L., Macdonald, R., & Vincent, W. (2006). Effects of ultraviolet radiation and contaminant-related stressors on arctic freshwater ecosystems. *Ambio*, 35(7), 388-401.
- Wrona, F. J., Prowse, T. D., & Reist, J. D. (2005). Chapter 8: Freshwater Ecosystems and Fisheries ACIA [Arctic Climate Impact Assessment] Scientific Report (pp. 353-452).
- Wrona, F. J., Prowse, T. D., Reist, J. D., Hobbie, J. E., Lévesque, L. M. J., & Vincent, W. F. (2006). Climate Change Effects on Aquatic Biota, Ecosystem Structure and Function. *Ambio*, 35(7), 359-369. doi: 10.1579/0044-7447(2006)35[359:CCEOAB]2.0.CO;2
- Wrona, F. J., Prowse, T. D., Reist, J. D., Hobbie, J. E., Lévesque, L. M. J., & Vincent, W. F. (2006). Climate Impacts on Arctic Freshwater Ecosystems and Fisheries: Background, Rationale and Approach of the Arctic Climate Impact Assessment (ACIA). *Ambio*, 35(7), 326-329. doi: 10.1579/0044-7447(2006)35[326:CIOAFE]2.0.CO;2
- Wu, H., & Gao, K. (2009). Ultraviolet radiation stimulated activity of extracellular carbonic anhydrase in the marine diatom *Skeletonema costatum*. *Functional Plant Biology*, 36, 137-143.
- Wu, H., Gao, K., Villafañe, V. E., Watanabe, T., & Helbling, E. W. (2005). Effects of solar UV radiation on morphology and photosynthesis of filamentous cyanobacterium *Arthrospira platensis*. *Applied and environmental microbiology*, 71(9), 5004-5013.
- Wu, H., Gao, K., & Wu, H. (2009). Responses of a marine red tide alga *Skeletonema costatum* (Bacillariophyceae) to long-term UV radiation exposures. *Journal of Photochemistry and Photobiology B: Biology*, 94, 82-86.
- Wu, H., Zou, D., & Gao, K. (2008). Impacts of increased atmospheric CO₂ concentration on photosynthesis and growth of micro- and macro-algae. *Science in China Series C: Life Sciences*, 51(12), 1144-1150.
- Wübben, D. L., & Vareschi, E. (2001). Differential UVB-sensitivities of five New Zealand freshwater zooplankton species. *New Zealand Journal of Marine and Freshwater Research*, 35, 635-645.
- Wulff, A., & Appelgren, M. (2002). Mycosporine-Like Amino Acids in Harmful Marine Microalgae. *Journal of Phycology*, 38(s1), 37-38.

- Wulff, A., Mohlin, M., & Sundbäck, K. (2007). Intraspecific variation in the response of the cyanobacterium *Nodularia spumigena* to moderate UV-B radiation. *Harmful Algae*, 6, 388-399.
- Wulff, A., Roleda, M. Y., Zacher, K., & Wiencke, C. (2008). Exposure to sudden light burst after prolonged darkness - a case study on benthic diatoms in Antarctica. *Diatom Research*, 23(2), 519-532.
- Wulff, A., Roleda, M. Y., Zacher, K., & Wiencke, C. (2008). UV radiation effects on pigments, photosynthetic efficiency and DNA of an Antarctic marine benthic diatom community. *Aquatic Biology*, 3, 167-177.
- Wulff, A., Zacher, K., Hanelt, D., Al-Handal, A., & Wiencke, C. (2008). UV radiation - a threat to Antarctic benthic marine diatoms? *Antarctic Science*, 20, 13-20.
- Wulff, C., Iken, K., Quartino, M. L., Al-Handal, A., Wiencke, C., & Clayton, M. N. (2009). Biodiversity, biogeography and zonation of benthic micro- and macroalgae in the Arctic and Antarctic. *Botanica Marina*, 52(6), 491-507. doi: 10.1515/BOT.2009.072
- Wuttke, S., el Nagggar, S., Bluszcz, T., & Schrems, O. (2007). Ship-borne measurements of erythemal UV irradiance and ozone content in various climate zones. *Photochemical & Photobiological Sciences*, 6, 1081-1088.
- Xenopoulos, M. A., & Frost, P. C. (2003). UV radiation, phosphorus, and their combined effects on the taxonomic composition of phytoplankton in a boreal lake. *Journal of Phycology*, 39, 291-302.
- Xenopoulos, M. A., Frost, P. C., & Elser, J. J. (2002). Joint effects of UV radiation and phosphorus supply on algal growth rate and elemental composition. *Ecology*, 83(2), 423-435.
- Xenopoulos, M. A., Leavitt, P. R., & Schindler, D. W. (2009). Ecosystem-level regulation of boreal lake phytoplankton by ultraviolet radiation. *Canadian Journal of Fisheries and Aquatic Sciences*, 66(11), 2002-2010. doi: 10.1139/F09-119
- Xenopoulos, M. A., & Schindler, D. W. (2003). Differential responses to UVR by bacterioplankton and phytoplankton from the surface and the base of the mixed layer. *Freshwater Biology*, 48(1), 108-122.
- Xiao, H., Tang, X., Zhang, P., & Cai, H. (2005). The effect of UV-B radiation enhancement on the interspecific competition between *Skeletonema costatum* and *Heterosigma akashiwo*. *Acta Oceanologica Sinica/Haiyang Xuebao*, 24(2), 77-84.
- Xu, D. H., Klesius, P. H., & Shoemaker, C. A. (2006). Apoptosis in *Ichthyophthirius multifiliis* is associated with expression of the Fas receptor of theronts. *Journal of Fish Diseases*, 29, 225-232.
- Xu, J., & Gao, K. S. (2008). Growth, pigments, UV-absorbing compounds and agar yield of the economic red seaweed *Gracilaria lemaneiformis* (Rhodophyta) grown at different depths in the coastal waters of the South China Sea. *Journal of Applied Phycology*, 20(5), 681-686.
- Xue, L., Li, S., Sheng, H., Feng, H., Xu, S., & An, L. (2007). Nitric oxide alleviates oxidative damage induced by enhanced ultraviolet-B radiation in cyanobacterium. *Current Microbiology*, 55(4), 294-301.
- Xue, L., Zhang, Y., Zhang, T., An, L., & Wang, X. (2005). Effects of enhanced ultraviolet-B radiation on algae and cyanobacteria. *Critical Reviews in Microbiology*, 31(2), 79-89.
- Yabu, T., Ishibashi, Y., & Yamashita, M. (2003). Stress-induced apoptosis in larval embryos of Japanese flounder. *Fisheries Science*, 69, 1218-1223.
- Yan, N. D., Paterson, A. M., Somers, K. M., & Scheider, W. A. (2008). An introduction to the Dorset special issue: transforming understanding of factors that regulate aquatic ecosystems on the southern Canadian Shield. *Canadian Journal of Fisheries and Aquatic Sciences*, 65(5), 781-785.
- Yellowlees, D., Rees, T. A. V., & Leggat, W. (2008). Metabolic interactions between algal symbionts and invertebrate hosts. *Plant, Cell and Environment*, 31(5), 679-694.
- Ylönen, O., Heikkilä, J., & Karjalainen, J. (2004). Metabolic depression in UV-B exposed larval coregonids. *Annual Zoology Fennici*, 41, 577-585.
- Ylönen, O., Huuskonen, H., & Karjalainen, J. (2004). UV avoidance of coregonid larvae. *Annales Zoologica Fennici*, 41(1), 89-98.

- Ylönen, O., Huuskonen, H., & Karjalainen, J. (2005). Effects of UV radiation on the vertical distribution of vendace [*Coregonus albula* (L.)] larvae in Finnish lakes. *Ecology of Freshwater Fish*, *14*(2), 161-167.
- Ylönen, O., & Karjalainen, J. (2004). Growth and survival of European whitefish larvae under enhanced UV-B irradiance. *Journal of Fish Biology*, *65*, 869-875.
- Yu, J., Tang, X., Zhang, P., Tian, J., & Dong, S. (2005). Physiological and ultrastructural changes of *Chlorella* sp. induced by UV-B radiation. *Progress in Natural Sciences*, *15*, 678-683.
- Yuan, Y. V., Barrow, C., & Shahidi, F. (2008). Marine algal constituents *Marine Nutraceuticals and Functional Foods* (pp. 259-296). Boca Raton: Taylor and Francis.
- Yuan, Y. V., & Walsh, N. A. (2006). Antioxidant and antiproliferative activities of extracts from a variety of edible seaweeds. *Food and Chemical Toxicology*, *44*, 1044-1050.
- Yuan, Y. V., Westcott, N. D., Hu, C., & Kitts, D. D. (2009). Mycosporine-like amino acid composition of the edible red alga, *Palmaria palmata* (dulse) harvested from the west and east coasts of Grand Manan Island, New Brunswick. *Food Chemistry*, *112*, 321-328.
- Zacher, K. (2007). *Effects of UV radiation on Antarctic benthic algae - with emphasis on early successional stages and communities*: Ph.D. thesis, University of Bremen, Germany.
- Zacher, K., Hanelt, D., Wiencke, C., & Wulff, A. (2007). Grazing and UV radiation effects on an Antarctic intertidal microalgal assemblage: a long-term field study. *Polar Biology*, *30*(9), 1203-1212.
- Zacher, K., Rautenberger, R., Hanelt, D., Wulff, A., & Wiencke, C. (2009). The abiotic environment of polar marine benthic algae. *Botanica Marina*, *52*(6), 483-490. doi: 10.1515/bot.2009.082
- Zacher, K., Roleda, M. Y., Wulff, A., Hanelt, D., & Wiencke, C. (2009). Responses of Antarctic *Iridaea cordata* (Rhodophyta) tetraspores exposed to ultraviolet radiation. *Phycological Research*, *57*(3), 186-193. doi: 10.1111/j.1440-1835.2009.00538.x
- Zacher, K., Wulff, A., Molis, M., Hanelt, D., & Wiencke, C. (2007). Ultraviolet radiation and consumer effects on a field-grown intertidal macroalgal assemblage in Antarctica. *Global Change Biology*, *13*, 1201-1215.
- Zadereev, Y. S., & Tolomeyev, A. P. (2007). The vertical distribution of zooplankton in brackish meromictic lake with deep-water chlorophyll maximum. *Hydrobiologia*, *576*, 69-82.
- Zagarese, H. E., Tartarotti, B., & Suárez, D. A. A. (2003). The significance of ultraviolet radiation for aquatic animals. In R. S. Ambast & N. K. Ambast (Eds.), *Modern Trends in Applied Aquatic Ecology* (pp. 173-200). New York, Boston, Dordrecht, London, Moscow: Kluwer Acad./Plenum Publ.
- Zagarese, H. E., & Williamson, C. E. (2001). The implications of solar UV radiation exposure for fish and fisheries. *Fish and Fisheries*, *2*, 250-260.
- Zamzow, J. P. (2004). Effects of diet, ultraviolet exposure, and gender on the ultraviolet absorbance of fish mucus and ocular structures. *Marine Biology*, *144*, 1057-1064.
- Zamzow, J. P. (2007). Ultraviolet-absorbing compounds in the mucus of shallow-dwelling tropical reef fishes correlate with environmental water clarity. *Marine Ecology Progress Series*, *343*, 263-271.
- Zeevi Ben-Yosef, D., Kashman, Y., & Benayahu, Y. (2006). Response of the soft coral *Heteroxenia fuscescens* to ultraviolet radiation regimes as reflected by mycosporine-like amino acid biosynthesis. *Marine Ecology*, *27*(3), 219-228.
- Zeevi-Ben-Yosef, D., & Benayahu, Y. (2008). Synergistic effects of UVR and temperature on the survival of azooxanthellate and zooxanthellate early developmental stages of soft corals. *Bulletin of Marine Science*, *83*(2), 491-414.
- Zellmer, I. D., Arts, M. T., Abele, D., & Humbeck, K. (2004). Evidence of Sublethal Damage in *Daphnia* (Cladocera) during Exposure to Solar UV Radiation in Subarctic Ponds. *Arctic, Antarctic, and Alpine Research*, *36*(3), 370-377.
- Zenoff, V. F., Heredia, J., Ferrero, M., Siñeriz, F., & Farías, M. E. (2006). Diverse UV-B resistance of culturable bacterial community from high-altitude wetland water. *Current microbiology*, *52*(5), 359-362.
- Zenoff, V. F., Siñeriz, F., & Farías, M. E. (2006). Diverse responses to UV-B radiation and repair mechanisms

- of bacteria isolated from high altitude aquatic environments (3,600 - 4,560 m). *Applied and Environmental Microbiology*, 72(12), 7857-7863.
- Zepp, R. G., Erickson III, D. J., Paul, N. D., & Sulzberger, B. (2007). Interactive effects of solar UV radiation and climate change on biogeochemical cycling. *Photochemical & Photobiological Sciences*, 6(3), 286-300.
- Zepp, R. G., Erickson III, D. J., Paul, N. D., & Sulzberger, B. (2011). Effects of solar UV radiation and climate change on biogeochemical cycling: interactions and feedbacks. *Photochemical & Photobiological Sciences*, 10, 261-279. doi: 10.1039/C0PP90037K
- Zepp, R. G., Shank, G. C., Stabenau, E., Patterson, K. W., Cyterski, M., Fisher, W., . . . Anderson, S. L. (2008). Spatial and temporal variability of solar ultraviolet exposure of coral assemblages in the Florida Keys: Importance of colored dissolved organic matter. *Limnology and Oceanography*, 53(5), 1909-1922.
- Zhang, L., Li, L., & Wu, Q. (2007). Protective effects of mycosporine-like amino acids of *Synechocystis* sp. PCC 6803 and their partial characterization. *Journal of Photochemistry and Photobiology B: Biology*, 86(3), 240-245.
- Zhang, L., & Xing, D. (2008). Rapid determination of the damage to photosynthesis caused by salt and osmotic stresses using delayed fluorescence of chloroplasts. *Photochemical & Photobiological Sciences*, 7, 352-360.
- Zhang, P. Y., Tang, X. X., Cai, H. J., Yu, J., & Xiao, H. (2005). Effects of the enhanced UV-B radiation on the growth of interaction competition between marine macro-algae and micro-algae population. *Acta Ecologica Sinica*, 25(12), 3335-3342.
- Zhang, P.-Y., Yu, J., & Tang, X.-X. (2005). UV-B radiation suppresses the growth and antioxidant systems of two marine microalgae, *Platymonas subcordiformis* (Wille) Hazen and *Nitzschia closterium* (Ehrenb.) W. Sm. *Journal of Integrative and Plant Biology*, 47, 683-691.
- Zhang, Y., Liu, M., Qin, B., & Feng, S. (2009). Photochemical degradation of chromophoric-dissolved organic matter exposed to simulated UV-B and natural solar radiation. *Hydrobiologia*, 627(1), 159-168.
- Zhang, Y., Mu, J., Gu, X., Zhao, C., Wang, X., & Xie, Z. (2009). A marine sulfate-reducing bacterium producing multiple antibiotics: biological and chemical investigation. *Marine Drugs*, 7, 341-354.
- Zhang, Y., Qin, B., & Yang, L. (2006). Spatial distribution and absorption characteristics with relation to fluorescence of chromophoric dissolved organic matter (CDOM) in Meiliang Bay of Lake Taihu. *Journal of Lake Sciences*, 18(4), 319-326.
- Zhang, Y., Qin, B., Zhu, G., Zhang, L., & Yang, L. (2007). Chromophoric dissolved organic matter (CDOM) absorption characteristics in relation to fluorescence in Lake Taihu, China, a large shallow subtropical lake. *Hydrobiologia*, 581(1), 43-52.
- Zhang, Y. L., Qin, B. Q., Zhu, G. W., Zhang, L., Luo, L. C., Wu, S. C., & Wang, W. M. (2005). The attenuation of ultraviolet radiation in shallow lakes in the middle and lower reaches of Yangtze River. *China Environmental Science*, 25(4), 445-449.
- Zhang, Y. L., Zhang, E. L., Liu, M. L., Wang, X., & Qin, B. Q. (2007). Variation of chromophoric dissolved organic matter and possible attenuation depth of ultraviolet radiation in Yunnan Plateau lakes. *Limnology*, 8(3), 311-319.
- Zhao, H., Zhao, Z., An, L., Chen, T., Wang, X., & Feng, H. (2009). The effects of enhanced ultraviolet-B radiation and soil drought on water use efficiency of spring wheat. *Journal of Photochemistry and Photobiology B: Biology*, 94(1), 54-58.
- Zhao, W., Guo, Q., & Zhao, J. (2007). A membrane-associated Mn-superoxide dismutase protects the photosynthetic apparatus and nitrogenase from oxidative damage in the cyanobacterium *Anabaena* sp. PCC 7120. *Plant and Cell Physiology*, 48(4), 563-572.
- Zhao, X. M., Bi, Y. H., Chen, L., Hu, S., & Hu, Z. Y. (2008). Responses of photosynthetic activity in the

- drought-tolerant cyanobacterium, *Nostoc flagelliforme* to rehydration at different temperature. *Journal of Arid Environments*, 72(4), 370-377.
- Zhou, W., Juneau, P., & Qiu, B. (2006). Growth and photosynthetic responses of the bloom-forming cyanobacterium *Microcystis aeruginosa* to elevated levels of cadmium. *Chemosphere*, 65, 1738-1746.
- Zhou, W., Tang, X., Xiao, H., Wang, Y., & Wang, R. (2009). Response of marine microalgae, heterotrophic bacteria and their relationship to enhanced UV-B radiation. *Journal of Ocean University of China (English Edition)*, 8(1), 35-38.