Curriculum Vitae

J. Rudi Strickler (Johann Rudolf Strickler)
Department of Biological Sciences
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EDUCATION

1969	Dr. sc. nat. ETH-Z (Ph.D.). Thesis: *Experimentell-ökologische Untersuchungen über die Vertikalwanderung planktischer Crustaceen*; Profs. O. Jaag and A. Linder
1965	Swiss Federal Institute of Technology (ETH-Z), Zurich, Switzerland. Dipl. Natw. (M.Sc.). Thesis: *Die neuere Entwicklung des Zooplanktons im Vierwaldstättersee*; Prof. O. Jaag

EXPERIENCE ACADEMIC

1990-	University of Wisconsin - Milwaukee, Milwaukee, WI, USA. Department of Biological Sciences, Shaw Distinguished Professor of Biological Sciences (tenured)
1986-1990	Boston University, Boston, MA, USA. Director of the Boston University Marine Program at the Marine Biological Laboratory, Woods Hole, MA, USA
1986-1990	Boston University, Boston, MA, USA. Department of Biology; Professor of Biology (tenured)
1984-1985	University of Southern California, Los Angeles, CA, USA. Department of Biological Sciences; Research Professor
1980-1984	Australian Institute of Marine Science, Townsville, Queensland, Australia. Principal Research Scientist (tenured)
1977-1979	University of Ottawa, Ottawa, Ont., Canada. Department of Biology; Associate Professor in Ecology
1975-1977	Yale University, New Haven, CT, USA. Department of Biology; Assistant Professor in Biology
1971-1975	The Johns Hopkins University, Baltimore, MD, USA. Department of Earth and Planetary Sciences; Doherty Foundation Assistant Professor in Biological Oceanography
1969-1971	Memorial University of Newfoundland, St. John's, Nfld., Canada. Marine Sciences Research Laboratory (MSRL); Research Associate in Experimental Ecology

EXPERIENCE INDUSTRIAL

2015- OptikTechnik LLC, Co-Founder and Chief Scientific Officer. OptikTechnik LLC commercializes and markets patent-pending sensors for the monitoring and control of particulate systems in environmental and industrial applications

2014- StrickDesign LLC, Founder and President. StrickDesign is a consulting firm in the field of advanced optical scientific instruments for industrial, research and medical applications

2014-2015 Mikroflot Technologies LLC, Scientific Advisor. Mikroflot Technologies LLC produces on-site industrial wastewater systems based on a patent-pending micro-flotation technology

1967-1969 Proceq S.A., Zurich, and Mecana S.A., Schmerikon, Switzerland. Consultant in Applied Ecology (Sewage treatment)

AFFILIATED PROFESSORSHIPS

2009- The University of Texas at Austin, Austin, TX, USA. Department of Marine Science, Port Aransas, TX, USA; Adjunct Professor

VISITING PROFESSORSHIPS

2004 The University of Texas at Austin, Marine Science Institute, Port Aransas, TX. Laura Randall Schweppe Lecturer, March 2004

2003 The Johns Hopkins University, Baltimore, MD. Visiting Scientist of Engineering, April 2003

2002 Université des Sciences et Technologies de Lille 1, France. Visiting Professor, Station Marine de Wimereux, Summer semester

2000 University of Oregon, Oregon Institute of Marine Biology, Visiting Faculty, Instructor for the Workshop in "Biomechanics of Virtual Animals"

1999 Tokyo University of Fisheries, Tokyo, Japan. Japan Ministry of Education Special Visiting Professor. Summer semester

1998 University of Oregon, Oregon Institute of Marine Biology. Visiting Faculty, Spring Term Instructor for the field course in "Animal Behavior"

1997 University of Oregon, Oregon Institute of Marine Biology. Visiting Faculty, Spring Term Instructor for the field course in "Animal Behavior"

ADDITIONAL EXPERIENCE

1980- Oceanographic cruises: Twelve each of one week duration in waters around the Great Barrier Reef, Australia. Chief Scientist on all cruises. One cruise with Drs. G.-A. Paffenhöfer and M. Youngbluth as chief scientists with the submersible SeaLink equipped with our CritterCam. Two cruises with Dr. J.-S. Hwang with Research Vessel 2 off Taiwan working with the CritterCam system.

UNIVERSITY GOVERNANCE

2020-	Chair, Department of Biological Sciences, UWM
2013	Vice-Chancellor of Finances and Academic Affairs Search and Screen Committee
2011-2013	University of Wisconsin – Milwaukee: University Committee (Executive Committee of the Faculty Senate); Physical Environment Committee; Chair, Transportation and Parking Sub-committee; School of Continuing Education Strategic Alliance Group
2011	Chancellor Search and Screen Committee
2011	Founding Dean of the School of Freshwater Sciences Search and Screen Committee
2006	Vice-Chancellor for Research and Dean of the Graduate School Search and Screen Committee
2005	Vice-Chancellor for Research and Dean of the Graduate School Search and Screen Committee, Vice-Chair of committee
2004	Chancellor Search and Screen Committee
2002-2013	Faculty Senate UWM, Member
2002-2007	University of Wisconsin – Milwaukee: University Committee (Executive Committee of the Faculty Senate), Academic Planning and Budget Committee, Board of Visitors
1986-1990	Director of the Boston University Marine Program at the Marine Biological Laboratory, Woods Hole, MA, USA
1975-1990	Member of various academic committees: Graduate Studies Committee at Yale University; Advisory Committee on Marine Science at Yale University; Search Committee for a faculty member at University of Ottawa (Chair); Board of Inquiry at the Australian Institute of Marine Science (Chair); Scientists Meeting at the Australian Institute of Marine Science (Chair); Ship committee at the Australian Institute of Marine Science (Chair); Advisory Committee on Marine Affairs to Dean Spitzer, Letters, Arts & Sciences, University of Southern California; Graduate Studies Committee at Boston University.

AWARDS

2000 Specific Breakthrough, National Science Foundation: *50 Years of Ocean Discovery; Achievements in Biological Oceanography* (Barber, RT, and Hilting, AK). "How Zooplankton Swim, Feed, and Breed" recognizing one of the Four Specific Breakthroughs in the past 50 years.

2009 John Martin Award, established in 2005 by the American Society of Limnology and Oceanography, recognizes a paper in aquatic sciences that is judged to have had a high impact on subsequent research in the field:

> Koehl, M.A.R. and J.R. Strickler. 1981. Copepod feeding currents: Food capture at low Reynolds number. Limnol. Oceanogr. 26, 1062-1073.

2015 BREW accelerator, winner, OptikTechnik LLC receives first prize in Water Council (Milwaukee, WI) start-up accelerator competition, includes seed funds award of $50,000.

PUBLICATIONS

https://scholar.google.com/citations?user=fWUIEdsAAAAJ&hl=en

Kanso, EA, Lopes, RM, Strickler, JR, Dabiri, JO, Costello, JH. 2021. Teamwork in the viscous oceanic microscale. PNAS 118 (29) https://doi.org/10.1073/pnas.2018193118

Alkhafaji, AA, Selim, OM, Amano, RS, Strickler, JR, Hinow, P, Jiang, H. Sikkel, PC, Kohls, N. 2021. Mass Transfer Performance of a Marine Zooplankton Olfactometer. J. Energy Resources Tech 143 (Nov): 112102.

Yamazaki, H. and J.R. Strickler [Eds.]. 2021. Fluid Mechanics of Plankton. MDPI Switzerland. 178 pp. (With contributions by M. Tanaka, K.T.M. Niimoto, K.J. Kuball, L.N. Block, P.H. Lenz, D. Takagi, J.O. Dabiri, S.P. Colin, B.J. Gemmel, K.N. Lucas, M.C. Leftwich, J.H. Costello, H. Jiang, L. Svetlichny, P.S. Larsen, T. Kioerboe, C.H. Suwaki, L.T. De-La-Cruz, R.M. Lopes, E. Selander, S.T. Fredriksson, L. Arneborg, I. Borazjani, M. Schapira, L. Seuront, Z. Wagner, J.H. Costello, S.P. Colin, H.L. Pecseli, J.K. Trulsen, J.E. Stiansen, S. Sundby).

Yamazaki, H.; Strickler, J.R. Fluid Mechanics of Plankton. (In: *Fluid Mechanics of Plankton*, Yamazaki & Strickler, Eds.) Fluids 2021, 6(2), 56; https://doi.org/10.3390/fluids6020056.

Moreno, G., Ascaneo, J.S., Ricardo, J.O., De La Cruz, L.T., Arias, Y., Strickler, J.R., Lopes, R.M. (2020) A new focus detection criterion in holograms of planktonic organisms. Pattern Recognition Letters 138: 497-506.

Thompson, A., Hable, B., Young, K., Hansen, T., Strickler, J.R., Silva, M.R. (2020) Optically Based Hand-Held Sensor for Visualization and Quantification of *Cryposporidium parvum*. Sensing and Imaging 21:46. https://doi.org/10.1007/s11220-020-00311-5.

Thompson, A., Honts, A., Strickler, J.R., Hansen, T., Silva, M.R. (2020) Optically Based Bacteria Handheld Sensor: From Fundamentals to Proof of Concept. Sensing and Imaging 21(1): 217-241.

Takagi, D., Strickler, J.R. 2020. Active hydrodynamic imaging of a rigid spherical particle. Sci Rep 10, 2665. doi.org/10.1038/s41598-020-58880-0.

Giuffre C, Hinow P, Jiang H, Strickler JR. 2019. Oscillations in the near field feeding current of a calanoid copepod are useful for particle sensing. Sci Rep 9, 17742. doi:10.1038/s41598-019-54264-1.

Tanaka M, Genin A., Lopes RM, Strickler JR, Yamazaki H. 2019. Biased measurements by stationary turbidity-fluorescence instruments due to phototactic zooplankton behavior. Limnol. Oceanogr. Methods. doi.org/10.1002/lom3.10328.

Fashingbauer MC, Tuttle LJ, Robinson HE, Strickler JR, Hartline DK, Lenz PH. 2019. Predatory posture and performance in a precocious larval fish targeting evasive copepods. J. Exp. Biol. 222, jeb191411.doi:10.1242/jeb.191411.

Uttieri M, Nihongi A, Hinow P, Motschman J, Jiang H, Alcaraz M, Strickler JR. 2019. Copepod manipulation of oil droplet size distribution. Sci. Rep. 9: 547.

Robinson HE, J. Strickler JR, Henderson MJ, Hartline DK, Lenz PH. 2019. Predation strategies of larval clownfish capturing evasive copepod prey. Mar. Ecol. Prog. Ser. 614: 125-146.

Tuttle LJ, Robinson HE, Takagi D, Strickler JR, Lenz PH, Hartline DK. 2019 Going with the flow: hydrodynamic cues trigger directed escapes from a stalking predator. J. R. Soc. Interface 16: 20180776.

Langhoff, W., Hinow, P., Strickler, J.R., and J. Yen. 2017. Chemosensation and a Potential Neuronal Mechanism of Ratio Detection in a Copepod. In: *Trends in Copepod Studies - Distribution, Biology and Ecology* (M. Uttieri, Ed). Ch. 11.

Hinow, P., Strickler, J. R. and Yen, J. 2017. Olfaction in a viscous environment: The 'color' of sexual smells in *Temora longicornis*. J. Sci Nat (2017) 104: 46. doi:10.1007/s00114-017-1465-5.

Buskey, E. J., Strickler, J. R., Bradley, C. J., Hartline, D.K. and Lenz, P. H. 2017 Escapes in copepods: comparison between myelinate and amyelinate species. J. Exp Biol 220: 754-758; doi: 10.1242/jeb.148304

Kwak, T.J., Nam, Y.G., Najera, M.A., Lee, S.W., Strickler, J.R., Chang, W-J. 2016 Convex Grooves in Staggered Herringbone Mixer Improve Mixing Efficiency of Laminar Flow in Microchannel. PLoS ONE 11(11): e0166068. doi: 10.1371/journal.pone.0166068

Nihongi, A., Ziarek, J.J., Uttieri, M., Sandulli, R., Zambianchi, E. and Strickler, J.R. 2016. Behavioural interseasonal adaptations in Daphnia pulicaria (Crustacea: Cladocera) as induced by predation infochemicals. Aquat. Ecol. 50: 667-684.

Rowe, M. D., E. J. Anderson, T. T. Wynne, R. P. Stumpf, D. L. Fanslow, K. Kijanka, H. A. Vanderploeg, J. R. Strickler, and T. W. Davis. 2016. Vertical distribution of buoyant Microcystis blooms in a Lagrangian particle tracking model for short-termforecasts in Lake Erie, J. Geophys. Res. Oceans, 121, doi:10.1002/2016JC011720.

Hinow, P., Nihongi, A., and Strickler, J.R. 2015. Statistical Mechanics of Zooplankton. PLoS ONE 10 (8): e0135258. doi:10.1371/journal.pone0135258

Matuszewski, D. J., Cesar, Jr., R. M, Strickler, J. R., Baldasso, L. F., and Lopes, R. M. 2015. Visual rhythm for particle analysis in sample-in-flow systems: Application for continuous plankton monitoring. Limnol. Oceanogr.: Methods 13, 2015, 687–696.

Bradley, C.J., Strickler, J.R., Buskey, E. J. and Lenz, P. H. 2013. Swimming and escape behavior in two species of calanoid copepods from nauplius to adult. J. Plankton Res. 35(1): 49–65.

Matuszewski, D.J.; Martins, C.I.O.; Cesar, R.M.; Strickler, J.R. and Lopes, R.M. 2013. Visual rhythm-based plankton detection method for ballast water quality assessment. 2012 IEEE International Conference on Image Processing. IEEE Xplore digital library, 978-1-4673-2534-9, 1009 – 1012.

Yang, J., Yu, J.H., Strickler, J.R., Chang, W.J., and Gunasekaran, S. 2013. Nickel nanoparticle-chitosan-reduced graphene oxide-modified screen-printed electrodes for enzyme-free glucose sensing in portable microfluidic devices. Biosensors & Bioelectronics 47: 530-538 DOI: 10.1016/j.bios.2013.03.051.

Gemmell, B. J., Jiang, H., Strickler, J. R. and Buskey, E. J. 2012. Plankton reach new heights in effort to avoid predators. Proc. Royal Soc. Biol. Sci. 279: 2786-2792.

Yang, J., Strickler, J. R. and Gunasekaran S. 2012. Indium tin oxide-coated glass modified with reduced graphene oxide sheets and gold nanoparticles as disposable working electrodes for dopamine sensing in meat samples. NANOSCALE 4: 4594-4602.

Ziarek, J.J., A. Nihongi, T. Nagai, M. Uttieri and J.R. Strickler. 2011. Seasonal adaptations of Daphnia pulicaria swimming behaviour: the effect of water temperature. Hydrobiologia 661: 317–327.

Penalva-Arana, D. C., Forshay, K., Johnson, P. T. J., Strickler, J. R. and Dodson, Stanley I. 2011. Chytrid infection reduces thoracic beat and heart rate of Daphnia pulicaria. HYDROBIOLOGIA 668: 147-154.

Giuffre, C., Hinow, P., Vogel, R., Ahmed, T., Stocker, R., Consi, T. R. and Strickler, J. R. 2011. The Ciliate Paramecium Shows Higher Motility in Non-Uniform Chemical Landscapes. PLOS ONE 6: e15274.

Buskey, E. J., Lenz, P. H., Hartline, D. K., Gemmell, B., Bradley, C., Sheng, J. and Strickler, J. R. 2011. Sensory perception, behavioral adaptations and the neuroecology of predator avoidance in planktonic copepods. INTEGRATIVE AND COMPARATIVE BIOLOGY 51: E18.

Nihongi, A., Ziarek J. J., Nagai, T., Uttieri. M., Zambianchi, E., Strickler, J. R. 2011. Daphnia pulicaria hijacked by Vibrio cholera: Altered swimming behavior and predation risk implications. In: Zooplankton and Phytoplankton, Giri Kattel [Ed.], Nova Science Publishers. Ch. 9, 1-12.

Uttieri, M., L. Sabia, D. Cianelli, J.R. Strickler and E. Zambianchi. 2010. Lagrangian modelling of swimming behaviour and encounter success in co-occurring copepods: Clausocalanus furcatus vs. Oithona plumifera. J. Mar. Sys. 81: 112-121.

Wu C.H., H.U. Dahms, E.J. Buskey, J.R. Strickler and J.-S. Hwang. 2010. Behavioral Interactions of the Copepod Temora turbinata with Potential Ciliate Prey. Zool. Studies 49: 157-168.

Vandromme, P., F. Schmitt, S. Souissi, E.J. Buskey, J.R. Strickler, C.H. Wu and J.S. Hwang. 2010. Symbolic analysis of plankton swimming trajectories: case study of Strombilidium sp (Protista) helical walking under various food conditions. Zool. Studies 49: 289-303.

Cianellia, D., M. Uttieri, J. R. Strickler and E. Zambianchia. 2009. Zooplankton encounters in patchy particle distributions. Ecol. Modelling 220: 596-604.

Jiang, H., M.A. Grosenbaugh, J. Janssen and J.R. Strickler. 2009. Hydrodynamic imaging of a self-propelling zooplankton prey by the lateral line system of a fish: A computational fluid dynamics study. Integr. Comp. Biol. 49: E85.

Peñalva-Arana, D.C., J. R. Strickler and B. A. Feinberg. 2008. Real-Time Assessment of Fluid Flow Generated by Appendage Movements of Daphnia Using Standing Square-Wave Chronamperometry. Anal. Chem. 80: 7499–7503.

Kasl, E., N. Giebel and J.R. Strickler. 2008. Anti-Predator Swimming Behavior in Daphnia. MarSci 5: 1-7.

Uttieri, M., A. Nihongi, M.G. Mazzocchi, J.R. Strickler, and E. Zambianchi. 2007. Pre-copulatory swimming behaviour of Leptodiaptomus ashlandi (Copepoda: Calanoida): a fractal approach. J. Plankton Res. 29: 117-126.

Garcia R., F. Moss, A. Nihongi, J.R. Strickler, S. Göller, U. Erdmann, L. Schimansky-Geier and I.M. Sokolov. 2007. Optimal foraging by zooplankton within patches: the case of Daphnia. Math. Biosci. 207: 165-188.

Uttieri, M., D. Cianelli, J.R. Strickler and E. Zamblanchi. 2007. On the relationship between fractal dimension and encounters in three-dimensional trajectories. J. Theor. Biol. 247: 480-491.

Strickler, J.R. and G. Balázsi. 2007. Planktonic copepods reacting selectively to hydrodynamic disturbances. Phil. Trans. R. Soc. Lond. B. 362: 1947-1958

Jiang, H. and J.R. Strickler. 2007. Copepod flow modes and modulation: A modeling study of the water currents produced by an unsteady swimming copepod. Phil. Trans. R. Soc. Lond. B. 362: 1959-1971

Jersabek, C.D., M.S. Luger, R. Schabetsberger, S. Grill, J.R. Strickler. 2007. Mate and run: Copepod mating versus predation risk in contrasting environments. Oecologia 153: 761-773

Lovern, S.B., J.R. Strickler and R. Klaper. 2007. Behavioral and Physiological Changes in Daphnia magna when Exposed to Nanoparticle Suspensions (Titanium Dioxide, Nano-C60, and C60HxC70Hx). Environ. Sci. & Technol. 41: 4465-4470

Peñalva-Arana, D.C., P.A. Moore, B.A. Feinberg, J. DeWall and J.R. Strickler. 2007. Studying Daphnia feeding behavior as a black box: a novel electrochemical approach. Hydrobiologia 594: 153-163

Hwang, J.S. and J.R. Strickler. 2006. The underwater applications of Scuba and optical technology in zooplankton research within coral reef environments, Ken-Ting, Taiwan. Journal of Ocean and Underwater Technology, Taiwan 15: 35-38 (in Chinese).

Hwang, J.-S., and J.R. Strickler. 2006. A review of laser optical technology in plankton and benthos research: What's known and what's next in research. Journal of Ocean and Underwater Technology, Taiwan 16: 40-45 (in Chinese).

Janssen, J. and J.R. Strickler. 2006. Hydromechanical Communication via the Lateral Line: Copepodology for the Ichthyologist. In: Communication in Fishes. Ladich, F., Collin, S.P., Moller, P., Kapoor, B.G. [Eds.]. Science Publishers, New Delhi; pp 207-222.

Uttieri, M., E. Zambianchi, J.R. Strickler and M.G. Mazzochhi. 2005. Fractal characterization of three-dimensional zooplankton swimming trajectories. Ecol. Model. 185: 51-63.

Strickler, J.R., A.J. Udvadia, J. Marino, N. Radabaugh, J. Ziarek and A. Nihongi. 2005. Visibility as a factor in the copepod – planktivorous fish relationship. Sci. Mar. 69: 111-124.

Jiang, H. and J.R. Strickler. 2005. Mass density contrast in relation to the feeding currents in calanoid copepods. J. Plankton Res. 27: 1003-1012.

Yamazaki, A.K. and J.R. Strickler. 2005. Contribution of Biological Studies to the Understanding and Modeling of Skilled Performance: Some Examples. Lecture Notes in Computer Science 3684: 124–128.

Garcia, R., F. Moss, A. Nihongi and J.R. Strickler. 2005. Are Mean Turning Angles Selected for Survival of Zooplankton? In: Unsolved Problems of Noise and Fluctuations. L. Reggiani, C. Pennetta, V. Akimov, E. Alfinito, and M. Rosini [Eds.]. Amer. Inst. Physics, New York. 311-316.

Uttieri, M., M.G. Mazzocchi, A. Nihongi, M. Ribera d'Alcalà, J.R. Strickler and E. Zambianchi. 2004. Lagrangian description of zooplankton swimming trajectories. J. Plankton Res. 26: 99-105.

Strickler, J.R., J.-S. Hwang, E. Malkiel, J. Katz, and A. Arnodin. 2004. Observing Zooplankters in situ using Optical Signal Processors. J. Sea Technology (Taiwan) 13 (4): 31-44 (in Chinese).

Yamazaki, A.K. and J.R. Strickler. 2004. Illustrating Affordance and Skilled Performance Using Results from Plankton Behavior Studies. Japan. Soc. Artificial Intel. 2p.

Nihongi, A., S. Lovern and J.R. Strickler. 2004. Mate-searching behaviors in the freshwater calanoid copepod Leptodiaptomus ashlandi. J. Mar. Systems 49: 65-74.

Seuront, L., F.G. Schmitt, M.C. Brewer, J.R. Strickler and S. Soussi. 2004. From Random Walk to Multifractal Random Walk in Zooplankton Swimming Behavior. Zool. Stud. 43: 498-510.

Yen, J., A. Prusak, M. Caun, M.H. Doall, J. Brown, and J.R. Strickler. 2003. Signalling during mating in the pelagic copepod, Temora longicornis. In: Handbook of scaling methods in aquatic ecology: Measurement, Analysis, Simulation, L.J. Seuront and P.G. Strutton [Eds.], CRC Press, New York, NY. 149-159.

Yamazaki, H., K.D. Squires and J.R. Strickler. 2003. Can turbulence reduce the energy costs of hovering for planktonic animals? In: Handbook of scaling methods in aquatic ecology: Measurement, Analysis, Simulation, L.J. Seuront and P.G. Strutton, [Eds.] CRC Press, New York, NY. 493-506.

Seuront, L.J., M.C. Brewer and J.R. Strickler. 2003. Quantifying zooplankton swimming behavior: the question of scale. In: Handbook of scaling methods in aquatic ecology: Measurement, Analysis, Simulation. L.J. Seuront and P.G. Strutton, [Eds.] CRC Press, New York, NY. 333-359.

Malkiel, E., J. Sheng, J. Katz and J.R. Strickler. 2003. The three-dimensional flow field generated by a feeding calanoid copepod measured using digital holography. J. Exp. Biol. 206: 3657-3666.

Strickler, J.R. and A. Nihongi. 2003. Retention Time and the Behavior of Daphnia in Density Gradients. Proc. Internat. Conf. Residence Times in Lakes: Science, Management, Education, Bolsena, Viterbo - Italy, 238-241.

Hirschmugl, C., M. Bunta, J. Holt, M. Giordano, A. Skilirov, J. R. Strickler. 2003. Synchrotron-Based Infrared Imaging of Euglena Gracilis Single Cells. J. Phycol. 38: 16

Doall, M.H., J.R. Strickler, D.M. Fields and J. Yen 2002. Mapping the free-swimming attack volume of a planktonic copepod, Euchaeta rimana. Mar. Biol. 140: 871–879.

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Arnodin, A. and J.R. Strickler. 1998. Binary Spatial Filtering for Particle Size Discrimination. Special Report No. 49, Center for Great Lakes Studies, Milwaukee, WI, 87 pp.

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Leonard, A.B., J.R. Strickler and N.D. Holland. 1988. Effects of current speed on filtration during suspension feeding in Oligometra serripinna (Echinodermata: Crinoidea). Mar. Biol. 97, 111-125.

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Alcaraz, M., G.-A. Paffenhofer and J.R. Strickler. 1980. Catching the algae: A first account of visual observations on filter-feeding calanoids. In: W.C. Kerfoot [Ed.], Evolution and Ecology of Zooplankton Communities. Special Symposium III American Society of Limnology and Oceanography. Univ. Press of New England, 241-248.

Meyers, D.G. and J.R. Strickler. 1979. Capture enhancement in a carnivorous aquatic plant: function of antennae and bristles in *Utricularia vulgaris*. Science 203, 1022-1025.

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Strickler, J.R. 1977. Observation of swimming performances of planktonic copepods. Limnol. Oceanogr. 22, 165-170.

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Strickler, J.R. 1975. Swimming of planktonic Cyclops species (Copepoda, Crustacea): Pattern, movements and their control. *In*: T.Y.-T. Wu, C.J. Brokaw and C. Brennan [Eds.], *Swimming and Flying in Nature*, Plenum Press, New York, 599-613.

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Strickler, J.R. 1975. Intra- and interspecific information flow among planktonic copepods: Receptors. Int. Ver. Theor. Angew. Limnol. Verh. 19, 2951-2958.

Strickler, J. R. and A. K. Bal. 1973. Setae of the first antennae of the copepod *Cyclops scutifer* (Sars): Their structure and importance. Proc. Natl. Acad. Sci. USA 70, 2656-2659.

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Strickler, J. R. 1969. *Experimental-ökologische Untersuchungen über die Vertikalwanderung planktischer Crustaceen*. Diss. No. 4387, Juris Druck & Verlag, Zurich, 117 pp. Translation 2343, Translation Services, National Research Council, Canada.

THESIS WORK OF GRADUATE STUDENTS

Barrientos Chacon, Yolanda. 1980. Ultrastructure of sensory units on the first antennae of calanoid copepods. M.Sc. thesis, University of Ottawa. 81p.

Brewer, Matthew C. 1996. *Daphnia* swimming behavior and its role in predator - prey interactions. Ph.D. thesis, University of Wisconsin - Milwaukee. 155p.

Coughlin, David J. 1992. The ontogeny of feeding behavior of larval fishes. Ph.D. thesis, Boston University. 170p.

Friedman, Marc M. 1977. Electron microscopic studies of the filter-feeding mechanisms of calanoid copepods. Ph.D. thesis, Johns Hopkins University. 100p.

Gerritsen, Jeroen. 1978. Encounter probability and its effects on feeding, defense and breeding systems among zooplankton. Ph.D. thesis, Johns Hopkins University. 93p.

Hwang, Jiang-Shiou. 1991. Behavioral responses and their role in prey/predator interactions of a calanoid copepod, *Centropages hamatus*, under variable hydrodynamic conditions. Ph.D. thesis, Boston University. 165 p.

Liu, Jerry Chih-Ching. 2002. The chemotaxis of *Shewanella oneidensis*, MR-1. Ph.D. thesis, University of Wisconsin – Milwaukee. 92p.

Nihongi, Ai. 2006. Adaptive Behaviors of Crustacean Zooplankton. Ph.D. thesis, University of Wisconsin – Milwaukee. 220p.

Peñalva-Arana, Dinora Carolina. 2007. Behavior and olfaction in *Daphnia*: an aquatic invertebrate's approach to feeding and mating. Ph.D. thesis, University of Wisconsin-Milwaukee.

Riessen, Howard P. 1981. The life history and predatory behavior of the pelagic water mite *Piona constricta*, and their relationship to prey seasonality. Ph.D. thesis, Yale University. 210p.

Trager, Geoffrey C. 1992. Suspension feeding in variable water flow: Effects of flow on the feeding biology of benthic crustaceans. Ph.D. thesis, Boston University. 118p.

Wong, C. Kim. 1980. Copepod predation and prey defense. M.Sc. thesis, University of Ottawa. 85p.

Zaret, Robert E. 1980. Zooplankters and their interactions with water, with each other, and with their predators. Ph.D. thesis, Johns Hopkins University. 166p.

PATENTS

Ramirez, J. A. and Strickler, J. R. 2020. Automated dosing system and method with light profiling for wastewater filtration system, U.S. Patent No. 10,550,019. Issued 02/04/2020.

Ramirez, J. A. and Strickler, J. R. 2020 Optical sensing device and method in a liquid treatment system, US Patent No. 10,690,594. Issued 06/23/2020.

DESIGN AND DEVELOPMENT OF SCIENTIFIC INSTRUMENTATION

2019-2021	Design and Construction of the "Waterflow Olfactometer" with CFD contribution by Dr. Amano, Mechanical Engineering, UWM.
2016-2021	Design, Construction, and Testing of a Light Profiling Wastewater Instrument at the Wastewater Treatment Plant at Jones Islnad, Milwaukee, WI.
2010-2013	Design and Construction of the "Deep Water Simulator": Dr. Amatzia Genin, The Interuniversity Institute of Marine Sciences in Eilat, The Hebrew University of Jerusalem, Israel.
2009-2011	Design and Instruction of optical equipment for SAMBA: Dr. R. Lopes, University of Sao Paulo, Sao Paulo, Brazil.
2006-2008	Design and Construction of "Macro-3D and Micro-3D optical instruments for robust 3D in-line holography": Dr. J. Yen, Georgia Institute of Technology, Atlanta, GA.
2005	Design and Construction of the Prism 3D observation optical set: Dr. E.J. Buskey, University of Texas Marine Science Institute, Port Aransas, TX.
2001	Design and Construction supervision of "The Wet Hubble" and "The Traveling Wet Hubble": Dr. J. Yen, Georgia Institute of Technology, Atlanta, GA.
1995	Design of EUCAM (European Underwater Camera for Advanced studies of Microscale processes): Dr. M.G. Mazzocchi, Stazione Zoologica Napoli, Italy.
1994-1997	Design, Development and Construction of ISOFO (In Situ Optical Feeding Observatory): Dr. G.-A. Paffenhofer, Skidaway Institute of Oceanography, Savannah, GA.
1993-1999	Design, Development and Construction of the S3DZO System (Super Three-Dimensional Zooplankton Observatory): Dr. J. Yen, SUNY Stony Brook, NY
1993	Re-design and Installation of the CritterCam system for in-laboratory use: Laboratories of Dr. H. Vanderploeg, Great Lakes Environmental Research Laboratory, NOAA, Ann Arbor, MI, and Dr. J. Yen, SUNY

	Stony Brook, NY
1987-1989	Design of an upgraded CritterCam System for commercial use: LNG Technical Services, Falmouth, MA. This system was tested to depths of over 1000m and produced video recordings in conjunction with SeaLink dives
1985-1987	Design and Development of the CritterSpy System allowing Three-dimensional Observations of Swimming and Feeding Performances of free-swimming Zooplankters in the Laboratory. University of Southern California, Los Angeles, CA, and Boston University, Boston, MA.
1980-1984	Design and Development of the CritterCam Optical System allowing *in situ* Observations of Algae, Zooplankters and small Fish. Australian Institute of Marine Science, Townsville, Qld., Australia
1980	Design and Installation of the Optical System for High-Speed Cinematography: Laboratory of Dr. G.-A. Paffenhofer, Skidaway Institute of Oceanography, Savannah, GA.
1976-1978	Design and Development of an Optical System for High-Speed Cinematography of Feeding Performances of Zooplankters. Yale University, New Haven, CT, and University of Ottawa, Ottawa, Canada
1973	Design and Development of a Spatially Filtered Laser System for the Observation of the Swimming Performances of Zooplankters. The Johns Hopkins University. Variations of this system were used for observing fluid-mechanical disturbances induced by swimming animals

FILMS AND VIDEOS

Cinematographic observations on the feeding and swimming activities of planktonic copepods have been used in TV and film productions:

Australian Broadcasting Corporation	in *Weekend Magazine*
Australian Broadcasting Corporation	in *Towards 2000*
British Broadcasting Corporation	in *The Living Planet*
	in *The Blue Planet*
	in *Invisible Worlds*
North Australian Film Corporation	in *The Greatest Reef*
Walt Disney Productions	in *The Living Sea*
National Geographic Society	in *The Scientific Method*
Australian Broadcasting Corporation	one segment of *60 Minutes*

WITH DRS. LISA MOLINE and LANE HALL (Peck School of the Arts and Dept. of English, UWM)

Oct 2011	"Underwater Noise of Rain," video screening, Science Gallery, Trinity College, Dublin, Ireland

Jan 2011	"Watershed," Union Art Gallery, University of Wisconsin-Milwaukee, Milwaukee, WI
July 2010	"The Nature of Cities," UN Pavilion at Shanghai World Expo, Shanghai, China
Sept 2009	"Underwater Noise of Rain," video screening with live music by the Milwaukee Laptop Orchestra, Vogel Hall, Marcus Center for the Performing Arts, Milwaukee, WI
June 2009	"Metazoa," video screening, Kolbe Museum, Berlin, Germany "Bilateral," video screening, Neuen Gesellschaft fur Bildende Kunst, Berlin, Germany
March 2009	"Underwater Noise of Rain," video screening with live music by Christopher Burns, Union Cinema, University of Wisconsin-Milwaukee, Milwaukee, WI
Sept 2008	"Underwater Noise of Rain," multimedia installation, Wisconsin Academy of Sciences, Arts and Letters, Madison, WI
June 2008	"Phylum," 4-channel video installation, Cornerstone Arts Center, Colorado Springs, CO
May 2007	"Metazoa," video screening, Wisconsin Triennial, Madison Museum of Contemporary Art, Madison, WI "Bilateral," video screening as part of Environmental Renaissance exhibition, San Francisco City Hall, San Francisco, CA

COURSES TAUGHT AT UNIVERSITIES

Johns Hopkins University	Experimental Ecology, Zooplankton Ecology, Biological Oceanography, Structure and Function of Invertebrates
Yale University	Experimental Ecology, Zooplankton Ecology, Bioenergetics, Multivariate Statistics for Biologists, General Ecology
University of Ottawa	Limnology, Population & Community Ecology
University of Southern California	Form and Function (Graduate course)
Boston University	Marine Biology, Biomechanics
University of Wisconsin - Milwaukee	Biology for Non-majors, Animal Behavior: Ethology, Animal Thinking (Honors seminar), Grand Questions in Biology (Honors seminar), Seminar on Giving Seminars, Zoology for non-Majors
University of Oregon	Animal Behavior (Field course), Biomechanics of Virtual Animals (Workshop)

STAFF MEMBER OF SPECIAL COURSES

Summer Course in Marine Ecology. Marine Biological Laboratory & Woods Hole Oceanographic Institute. Lecturer from 5 to 7 July 1977. (I. Valiela and J. Teal, course coordinators).

Course on Advanced Limnology, OECD course in Zaragoza, Spain. Lecturer from 11 to 16 September 1977. (R. Margalef).

Summer Course in Marine Ecology, Marine Biological Laboratory, Woods Hole. Lecturer from 14 to 15 July 1987. (P. Frank, course coordinator).

Annual meeting of American Association for the Advancement of Science (AAAS), Boston (1988). Lecturer in the "Youth Symposium". (P. Morrison, organizer).

Course in "The Ecology of Movement as seen through the Study of Zooplankton" at the University of Barcelona, invited by La Societat Catalana de Biologia. 2-7 May 1991. (R. Guerrero, coordinator).

Course in "Praktikum zur Erfassung verhaltensphysiologischer Parameter mit optischen Methoden". Institut für Meereskunde, Christian-Albrechts University, Kiel, Germany. 21 May - 4 June 1992. (with U. Kils as Co-teacher).

Summer Course in "Neurobiology of Animal Behavior". Shoals Marine Laboratory. Lecturer from 18-19 July 1993. (B. Johnson, course coordinator).

DEA d'Océanologie biologique et Environnement marin, Station Zoologique, Observatoire océanologique, Villefranche sur Mer, France. Lecturer from 17-24 January 1994. (P. Nival, coordinator).

MAST of the EU in Barcelona. "Ocean Turbulence: a Basic Environmental Property of Plankton". Lecturer 23-28 September 1995. (C. Marrase, E. Saiz and J.M. Redondo, course coordinators).

AGU Special Session: From Integrating Observations on Individuals to Predicting Changes in Planktonic Ecosystems: Organizer with L. Shapiro. 9 December 1998. AGU Fall Meeting San Francisco, CA.

EUROMECH Colloquium 488: The Influence of Fluid Dynamics on the Behaviour and Distribution of Plankton. 13-15 June 2007. Department of Mathematics, University of Liverpool, UK.

9th SACC - CRN2076 Short Course: Scaling the effects of climate change on marine zooplankton. 1 to 10 July 2009. Integrated Laboratory on Oceanic Processes, Oceanographic Institute, University of São Paulo, Ubatuba, Brazil.

SCOR Working Group 130: Automatic Visual Plankton Identification. 7-9 May 2008. Integrated Laboratory on Oceanic Processes, Oceanographic Institute, University of São Paulo, Ubatuba, Brazil.

MEETINGS ORGANIZED

Population Biologists of New England (PBONE): Organizer of the biannual spring meeting, 30 April 1977, Yale University, New Haven, CT.

American Association for the Advancement of Science (AAAS): Co-organizer of the symposium *Trophic Dynamics of Aquatic Ecosystems*, (with D.G. Meyers), 4 January 1981, Toronto.

Zooplankton Ecology Symposium: Organizer of the symposium with S. Richman as treasurer and G.-A. Paffenhofer as proceedings editor, 24-29 August 1991, Lawrence University, Appleton, WI.

AGU Special Session: Mating in Planktonic Copepods: Where Fluid-Dynamics also Meets Biology and Video Taping: Organizer with J. Yen. 18 December 1996. AGU Fall Meeting San Francisco, CA.

PARTICIPATION IN NATIONAL POLICY ADVISORY GROUPS

Hearing: President's Council of Advisors on Science and Technology (PCAST). Testified and wrote an opinion. 24 September 1992.

Workshop: Biology-based Technology to Enhance Human Well-being and Function in Extended Space Exploration. Houston, TX. 21-22 October 1997. (National Research Council)

Panel: Evaluation Panel for forming the NASA Astrobiology Institute. Washington D.C. 6-10 April 1998. (G. Soffen and M. Meyer).

Panel: Mars Exploration Architecture Review Board. Pasadena, CA. 10-12 September 1998. Advisory panel to President Clinton. (C. Elachi)

PARTICIPATION AT INTERNATIONAL SYMPOSIA

Symposium on Swimming and Flying in Nature. Caltech, Pasadena, CA. 8-12 July 1974. (T.Y.-T. Wu, C.J. Brokaw and C. Brennan).

Symposium on Population Ecology. Academy of Sciences, Mainz, Germany. 11-14 April 1978. (J. Jacobs and U. Halbach).

Symposium on the Structure of Zooplankton Communities. Dartmouth College, Hanover, NH. 21-25 August 1978. (W.C. Kerfoot).

Making sense of sense organs. Third international symposium on sensory physiology, Edinburgh, Scotland. 8-11 April 1980. Talk presented by Y. Barrientos Chacon. (M. Laverack).

Symposium: Organisms and Flow: Influence of Small-scale Geophysical Processes on Biological Activities. ASLO Winter meeting, Seattle, WA. 28 December 1980. (A.R.M. Nowell).

Symposium: Trophic Dynamics of Aquatic Ecosystems. American Association for the Advancement of Science, annual meeting, Toronto, Canada. 4 January 1981. (J.R. Strickler and D.G. Meyers).

First International Conference on Copepoda. Amsterdam, Holland. 24-28 August 1981. Talk presented by D. Tafe. (J.H. Stock).

Symposium: Zooplankton Behavior. Ocean Sciences Meeting AGU, New Orleans, LA. 23-27 January 1984. (G.A. Paffenhofer).

Second International Conference on Copepoda. Ottawa, Canada. 13-17 August 1984. (B.M. Marcotte).

Symposium: Physiological Adaptations of Marine Animals. Society for Experimental Biology, St. Andrews, Scotland. 11-14 September 1984. (M.S. Laverack).

Symposium: Sensory Biology of Aquatic Animals. Sarasota, FL. 24-28 June 1985. (J. Atema, R.R. Fay, A.N. Popper & W.N. Tavolga).

Symposium: Zooplankton Behavior. Savannah, GA. 13-16 April 1987. (G.-A. Paffenhofer and H.J. Price).

Symposium: Global Ecosystems Dynamics: Physical-Biological Interactions in the Sea. American Geophysical Union, San Francisco, CA. 9 December 1988. (M. Mullin).

Symposium: Adaptation in Aquatic Animals. American Society of Zoologists, San Francisco, CA. 30 December 1988. (D. Manahan and M. McFall-Ngai).

Symposium: Mechanisms of Physical/Biological Interactions in Ocean Processes. American Association for the Advancement of Science, annual meeting, San Fransisco, CA. 18-19 January 1989. (A. Bucklin and T. Cowles).

Fifth International Conference on Copepoda. Baltimore, MD. 6-12 June 1993. (B. Bradley).

Coral Reef Symposium, Keelung, Taiwan. (J.-S. Hwang).

Symposium: Focus on Microscopy '95. Taipei, Taiwan. 18-20 April 1995. (P.C. Chen and J.-L. Wu).

Seventh International Conference on Copepoda. Curitiba, Brazil. 25-31 July 1999 (Dov Por and Rubens Lopes).

Jahrestagung der Gesellschaft für Biologische Systematik e. V. GfBS und der Paläontologische Gesellschaft. Oldenburg, Germany. 15-20 September 2001.

36th European Marine Biology Symposium. Menorca, Spain. 17-22 September 2001.

PARTICIPATION AT NATIONAL and INTERNATIONAL WORKSHOPS and PANELS

Workshop: ONR Workshop on Aggregate Dynamics in the Sea. Asilomar Conference Center, Pacific Grove, CA. 21-24 September 1986. (A. Alldredge and Office of Naval Research).

Workshop: Global Ecosystem Dynamics and Coupling (GLOBEC). GLOBEC technology group, Los Angeles, CA. 23 February 1988. (T. Dickey).

Workshop: Zooplankton Colloquium. Lake Arrowhead, CA. 17-21 April 1988. (C. Davis, M. Huntley, G.-A. Paffenhofer).

Workshop: Global Ecosystem Dynamics and Coupling (GLOBEC). Wintergreen, VA. 9-13 May 1988. (Joint Oceanographic Institutions Inc.).

Workshop: Planning the Marine Aggregate Program. Washington, DC. 25-27 July 1988. (Office of Naval Research, A. Bucklin).

Workshop: Future Directions in Zooplankton Biology. WK Kellogg Biological Station, Hickory Corners, MI. 26-31 October 1989. (A. Tessier and National Science Foundation).

Workshop on Acoustical Technology and the Integration of Acoustical and Optical Sampling Methods, GLOBEC. Woods Hole, MA. 2-4 April 1991. (D.V. Holliday and National Science Foundation).

Workshop: Advanced Techniques for in situ studies of zooplankton abundance, distribution, and behavior. Lake Lacawac, PA. 23-25 May 1991. (C.E. Williamson, P.C. Schulze and National Science Foundation).

Panel: Biological Oceanography, Ocean Sciences, National Science Foundation, Washington, DC. 19-23 January 1992.

Representative of Boston University (1990) and of the University of Wisconsin - Milwaukee (1991, 1992) at the annual meetings of the Council of Ocean Affairs, Washington, DC.

Workshop on Optics Technology, GLOBEC. Savannah, GA. 20-22 February 1992. (G.-A. Paffenhofer and National Science Foundation).

Workshop on Secondary Production Modeling, GLOBEC. Savannah, GA. 23-26 February 1993. (G.-A. Paffenhofer, E. Hofmann and National Science Foundation).

Workshop: Sampling and Observational Systems Working Group. International GLOBEC, Paris. 30 March - 2 April 1993. (T. Dickey).

Workshop for ZEUS, IFREMER, Brest (P. Gentien).

Panel: Astrobiology Insitute, Evaluation Cycle 2. Monterey, CA. 6-7 December 2000. (R. Grymes and E. Goolish)

Workshop: The Next Generation of in situ Biological and Chemical Sensors in the Ocean. Woods Hole Oceanographic Institution, Woods Hole, MA. 13–16 July, 2003. (A. Daly and E. Bailey)

Workshop: Copepod Taxonomy, Behaviour and Evolution. Faculty of Sciences of Bizerte (FSB), Tunisia. 4th to 8th July 2005. (S. Soussi)

INVITED SEMINARS AND LECTURES

A total of more than 250 departmental colloquia and public lectures at the following universities and research institutions and at others, some places multiple times:

Academic Sinica, Taipei, Taiwan; Academy of Natural Sciences, Philadelphia PA; Akajima Marine Science Laboratory, Akajima Island, Okinawa, Japan; Australian National University, Canberra, ACT, Australia; Bedford Inst. of Oceanography, Dartmouth, NS, Canada; Boston University, Boston, MA; Bowling Green State University, Bowling Green, OH; California State University, Fullerton, CA; California State University, Long Beach, CA; California State University, San Diego, CA; Canadian Center Inland Waters, Burlington, Ont, Canada; Carleton University, Ottawa, Ont, Canada; Centre de Recherche sur les Ecosystèmes Marins et Aquacoles, l'Houmeau, France; Christian Albrechts University, Kiel, Germany; Clark University, Worchester, MA; Columbia University, New York, NY; Cornell University, Ithaca, NY; CSIRO Marine Laboratories, Cronulla, NSW, Australia; Dalhousie University, Halifax, NS, Canada; Dartmouth College, Hanover, NH; Duke University, Durham, NC; Duke University Marine Laboratory, Beaufort, NC; Freshwater Institute, Winnipeg, Manitoba, Canada; Georgia Institute of Technology, Atlanta, GA; Great Lakes Environmental Research Laboratory, Ann Arbor, MI; Hanscom Sigma Xi Chapter, Bedford, MA; Harvard University, Cambridge, MA; Hiroshima University, Hiroshima, Japan; Hokkaido University, Hakodate, Japan; IFREMER, Brest, France; Institut für Limnologie der Österreichischen Akademie der Wissenschaften, Mondsee, Austria; Instituto de Ciencias del Mar, Barcelona, Spain; James Cook University, Townsville, Qld, Australia; J.W. von Goethe University, Frankfurt, Germany; Johns Hopkins University, Baltimore, MD; Lawrence University, Appleton, WI; Loyola University, Chicago, IL; Marine Biological Laboratory, Woods Hole, MA; Massachusetts Institute of Technology, Cambridge, MA; McGill University, Montreal, PQ, Canada; Memorial University, St. John's, Nfld, Canada; Michigan Tech, Houghton, MI; Mie University, Tsu, Japan; National Taiwan Ocean University, Keelung, Taiwan; Natural History Museum, London, UK; North Carolina State University, Raleigh, NC; Northwestern University, Nahant, MA; Nova University, Fort Lauderdale, FL; Old Dominion University, Norfolk, VA; Oregon Institute of Marine Biology, Charleston, OR; Oregon State University, Corvallis, OR; Princeton University, Princeton, NJ; Providence College, Providence, RI; Queen's University, Kingston, Ont, Canada; Rutgers University, Brunswick, NJ; Schweizerische Alpine Mittelschule Davos, Davos, Switzerland; Scripps Institution Oceanography, La Jolla, CA; Skidaway Institution

Oceanography, Savannah, GA; University of Massachusetts , North Dartmouth, MA; State University of New York, Binghamton, NY; State University of New York, Stony Brook, NY; Station Marine de Wimereux (Université des Sciences et Technologies de Lille), France; Station Zoologique, Villefranche sur Mer, France; Stazione Zoologica "Anton Dohrn", Napoli, Italy; Swiss Federal Institute of Technology, Zurich, Switzerland; Tohoku University, Sendai, Japan; Tokyo University of Fisheries, Tokyo, Japan; University of Amsterdam, Amsterdam, Netherland; University of Barcelona, Barcelona, Spain; University of California, Los Angeles, CA; University of California, Santa Barbara, CA; University of Chicago, Chicago, IL; University of Granada, Granada, Spain; University of Hamburg, Hamburg, Germany; University of Kansas, Lawrence, KS; University of Konstanz, Konstanz, Germany; University of Massachusetts, Boston, MA; University of Michigan, Ann Arbor, MI; University of Missouri at St. Louis, MO; University of Munich, Munich, Germany; University of Nevada, Las Vegas, NV; University of North Carolina – Wilmington, NC; University of Oregon, Eugene, OR; University of Ottawa, Ottawa, Ont, Canada; University of Regensburg, Regensburg, Germany; University of Santa Clara, Santa Clara, CA; University of Sao Paulo, Sao Paulo, Brazil; University of Singapore, Singapore; University of South Florida, St. Petersburg, FL; University of Southern California, Los Angeles, CA; University of St. Andrews, St. Andrews, Scotland; University of Toronto, Toronto, Ont, Canada; University of Texas, Port Aransas, TX; University of Tokyo, Tokyo, Japan; University of Wisconsin - Madison, Madison, WI; University of Wisconsin - Milwaukee, Milwaukee, WI; University of Valencia, Valencia, Spain; University of Würzburg, Würzburg, Germany; University of Zurich, Zurich, Switzerland; Woods Hole Oceanographic Institution, Woods Hole, MA; Yale University, New Haven, CT

GRANTS AND CONTRACTS

2015-2018	Gulf of Mexico Research Initiative: Dispersion Research on Oil: Physics and Plankton Studies (DROPPS-2). Direct and indirect costs. $405,019.
2015-2016	2015 BREW accelerator winner, OptikTechnik LLC receives first prize in Water Council (Milwaukee, WI) start-up accelerator competition, includes seed funds award of $50,000.
2011-2015	Gulf of Mexico Research Initiative: Dispersion Research on Oil: Physics and Plankton Studies (DROPPS). Direct and indirect costs. $307,491.
2010-2013	US FISH & WILDLIFE SERVICE: Development of Optics to Quantify Organisms in Ballast Water. Direct and indirect costs. $378,959.
2002-2007	DARPA, Center of Water Security: Daphnia as Bio-Sensor. Direct costs only. $77,000 (additionally two graduate student fellowships)
2004-2007	National Science Foundation: Collaborative Research: Numerical Study of the Unsteady Feeding Currents in Calanoid Copepods. H.S. Jiang, G.-A. Paffenhöfer, J.R. Strickler, co-P.I., direct and indirect. $287,519
1994-1998	National Science Foundation: Swarming Behavior of Zooplankton. Subcontract on grant of J. Yen and A. Okubo, P.I.'s, direct and indirect costs. $83,391

1994-1998	National Science Foundation: Does Turbulence Create Small-Scale Patchiness of Phytoplankton? J.R. Strickler, K. Squires, C. D. Sandgren, H. Yamazaki, co-P.I., direct and indirect. $503,000
1992	National Science Foundation: Direct Numerical Simulation of Homogenous Turbulence for Planktonic Organisms. J.R. Strickler and H. Yamazaki, P.I.'s, direct and indirect costs. $83,703
1990	James D. and Dorothy Shaw Fund, The Milwaukee Foundation: Shaw Distinguished Professorship. Direct costs only. $374,070
1989	National Science Foundation: Mechanisms of Food Recognition and Selection in Herbivorous Calanoid Copepods. Additional ROA for Prof. S. Richman, direct costs only. $15,000
1989	National Geographic Society: *In situ* Observations of Zooplankton. Direct costs only. $23,000
1987-1989	National Science Foundation: Mechanisms of Food Recognition and Selection in Herbivorous Calanoid Copepods. Direct and indirect costs. $265,510
1985-1986	National Science Foundation: Herbivorous Feeding by Calanoid Copepods: Direct Observations on Free-Swimming Zooplankters. Direct and indirect costs. $209,404
1979	National Research Council (Ind. Oper.): Zooplankton: Ecology and Evolution of Behavior Patterns. Direct costs only. $18,000
1979	National Research Council (Capital): Zooplankton Observational Set-up. Direct costs only. $42,000
1978-81	National Research Council (Strategic): Polycyclic Aromatic Hydrocarbons: Effects on the Algae-Zooplankton-Fish Food Chain. (with Dr. R. Engelhardt as co-P.I.). Direct costs only. $50,000
1978	National Research Council (Ind. Oper.): Visual Observation of Filter Feeding Planktonic Crustaceans. Direct costs only. $15,000
1978	National Research Council (Capital): He-Ne and Dye Lasers. Direct costs only. $30,000
1977	National Research Council (Rector's Fund): Hydrodynamic Studies of the Shape and Swimming Behavior of Planktonic Microcrustaceans. Direct costs only. $7,800
1976	National Science Foundation: The Significance of Predation to Prediapausing *Cyclops scutifer*. Direct and indirect costs. $23,000
1973	Biomedical Sciences Support Grant: Hydrodynamic Disturbances Generated by Zooplankters as Information for intra- and interspecific Communication. Direct cost only. $4,135
1972-75	Petroleum Research Foundation: Processing of Bunker C Oil Particles by Zooplankton. Direct costs only. $7,500