

Curriculum Vitae

J.Rudi Strickler
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EDUCATION

- 1958-1969 Swiss Federal Institute of Technology (ETH), Zurich, Switzerland. Matriculated as student in the Department of Natural Sciences
- 1963-1969 Swiss Federal Institute of Water Supply, Sewage Treatment and Pollution Control (EAWAG), Zurich. Teaching assistant in Limnology to Prof. O. Jaag. Participation in the research group of Dr. H. Ambühl
- 1965 Dipl. Natw. ETH (M.Sc.). Thesis: *Die neuere Entwicklung des Zooplanktons im Vierwaldstättersee*; Prof. O. Jaag
- 1969 Dr. sc. nat. ETH (Ph.D.). Thesis: *Experimentell-ökologische Untersuchungen über die Vertikalwanderung planktischer Crustaceen*; Profs. O. Jaag and A. Linder

EXPERIENCE

- 1967-1969 Proceq S.A., Zurich, and Mecana S.A., Schmerikon, Switzerland. Consultant in Applied Ecology to both companies
- 1969-1970 Memorial University of Newfoundland, St. John's, Nfld., Canada. Marine Sciences Research Laboratory (MSRL); Science Assistant (Grade V)
- 1971 Memorial University of Newfoundland, St. John's, Nfld., Canada. Marine Sciences Research Laboratory; Research Associate in Experimental Ecology
- 1971-1976 The Johns Hopkins University, Baltimore, MD, USA. Department of Earth and Planetary Sciences; Doherty Foundation Assistant Professor in Biological Oceanography
- 1975-1976 Leave of absence from The Johns Hopkins University
- 1975-1977 Yale University, New Haven, CT, USA. Department of Biology; Assistant Professor in Biology
- 1977-1979 University of Ottawa, Ottawa, Ont., Canada. Department of Biology; Associate Professor in Ecology
- 1980-1984 Australian Institute of Marine Science, Townsville, Queensland, Australia. Principal Research Scientist
- 1984-1985 University of Southern California, Los Angeles, CA, USA. Department of Biological Sciences; Research Professor
- 1986-1990 Boston University, Boston, MA, USA. Department of Biology;

- Professor of Biology
- 1986-1990 Boston University, Boston, MA, USA. Director of the Boston University Marine Program at the Marine Biological Laboratory, Woods Hole, MA, USA
- 1990- University of Wisconsin - Milwaukee, Milwaukee, WI, USA. Department of Biological Sciences, Shaw Distinguished Professor of Biological Sciences
- 1990- University of Wisconsin - Milwaukee, Milwaukee, WI, USA. Center for Great Lakes Studies and the Great Lakes WATER Institute; Senior Scientist

VISITING PROFESSORSHIPS

- 1997 University of Oregon, Oregon Institute of Marine Biology. Visiting Faculty, Spring Term Instructor for the field course in "Animal Behavior"
- 1998 University of Oregon, Oregon Institute of Marine Biology. Visiting Faculty, Spring Term Instructor for the field course in "Animal Behavior"
- 1999 Tokyo University of Fisheries, Tokyo, Japan. Japan Ministry of Education Special Visiting Professor. Summer semester
- 2000 University of Oregon, Oregon Institute of Marine Biology, Visiting Faculty, Instructor for the Workshop in "Biomechanics of Virtual Animals"
- 2002 Université des Sciences et Technologies de Lille 1, France. Visiting Professor, Station Marine de Wimereux, Summer semester
- 2003 The Johns Hopkins University, Baltimore, MD. Visiting Professor of Engineering, April 2003
- 2004 The University of Texas at Austin, Marine Science Institute, Port Aransas, TX. Laura Randall Schweppe Lecturer, March 2004

ADDITIONAL EDUCATION AND EXPERIENCE

- 1968 IBM, Bern, Switzerland. Certificate in Systems Analysis and in FORTRAN programming
- 1969 SCUBA diving course, Marine Sciences Research Laboratory, St. John's, Nfld, Canada. NAUI certificate # C 15404
- 1975- 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.

- 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
- 1985 Course in Lens Design: CODE V, given by Optical Research Associates, Pasadena, one week introduction to computer aided design of lens systems
- 1987-1990 Massachusetts Bay Marine Studies Consortium, Member of the Executive Committee
- 1989-1990 Massachusetts Bay Marine Studies Consortium, Vice-President
- 2002-2005 University Committee (Executive Committee of the Faculty Senate), Faculty Senate, Academic Planning and Budget Committee, Board of Visitors, University of Wisconsin – Milwaukee, Chancellor Search and Screen Committee, Vice-Chancellor for Research and Dean of the Graduate School Search and Screen Committee.

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
University of Oregon	Animal Behavior (Field course), Biomechanics of Virtual Animals (Workshop)
Tokyo University of Fisheries	Planktonic Copepods and Their Surroundings

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.
- 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.

INVITED SEMINARS AND LECTURES

A total of more than 200 departmental seminars and public lectures at the following universities and research institutions and at others:

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, Worcester, 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 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

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 Francisco, 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).

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

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: 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. (C. Elachi)

Panel: Astrobiology Institute, 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)

DESIGN AND DEVELOPMENT OF SCIENTIFIC INSTRUMENTATION

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| 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 |
| 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
- 1980 Design and Installation of the Optical System for High-Speed Cinematography: Laboratory of Dr. G.-A. Paffenhofer, Skidaway Institute of Oceanography, Savannah, GA.
- 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
- 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.
- 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
- 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
- 1993-1999 Design, Development and Construction of the S3DZO System (Super Three Dimensional Zooplankton Observatory): Dr. J. Yen, SUNY Stony Brook, NY
- 1994-1997 Design, Development and Construction of ISOFO (In Situ Optical Feeding Observatory): Dr. G.-A. Paffenhofer, Skidaway Institute of Oceanography, Savannah, GA.
- 1995 Design of EUCAM (European Underwater Camera for Advanced studies of Microscale processes): Dr. M.G. Mazzocchi, Stazione Zoologica Napoli, Italy.
- 2001 Design and Construction supervision of "The Wet Hubble" and "The Traveling Wet Hubble": 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.

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". 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).

ORGANIZATION

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.

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.

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 <i>Weekend Magazine</i>
Australian Broadcasting Corporation	in <i>Towards 2000</i>
British Broadcasting Corporation	in <i>The Living Planet</i>
	in <i>The Blue Planet</i>
North Australian Film Corporation	in <i>The Greatest Reef</i>
Walt Disney Productions	in <i>The Living Sea</i>

GRANTS AND CONTRACTS

1972-75	Petroleum Research Foundation: Processing of Bunker C Oil Particles by Zooplankton. Direct costs only. \$7,500
1973	Biomedical Sciences Support Grant: Hydrodynamic Disturbances Generated by Zooplankters as Information for intra- and interspecific Communication. Direct cost only. \$4,135
1976	National Science Foundation: The Significance of Predation to Prediapause of <i>Cyclops scutifer</i> . Direct and indirect costs. \$23,000
1977	National Research Council (Rector's Fund): Hydrodynamic Studies of the Shape and Swimming Behavior of Planktonic Microcrustaceans. Direct costs only. \$7,800
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
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
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
1985-1986	National Science Foundation: Herbivorous Feeding by Calanoid Copepods: Direct Observations on Free-Swimming Zooplankters. Direct and indirect costs. \$209,404
1987-1989	National Science Foundation: Mechanisms of Food Recognition and Selection in Herbivorous Calanoid Copepods. Direct and indirect costs. \$265,510
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: <i>In situ</i> Observations of Zooplankton. Direct costs only. \$23,000
1990	James D. and Dorothy Shaw Fund, The Milwaukee Foundation: Shaw Distinguished Professorship. Direct costs only. \$374,070
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
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
- 2002-2004 DARPA, Center of Water Security: Daphnia as Bio-Sensor. Direct costs only. \$57,000
- 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

PUBLICATIONS

- 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.
- Strickler, J. R. 1970. Über das Schwimmverhalten von Cyclopoiden bei Verminderungen der Betrahlungsstärke. *Schweiz. Z. Hydrol.* 32, 150-180.
- 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.
- 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. 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.
- Strickler, J.R. and S. Twombly. 1975. Reynolds number, diapause and predatory copepods. *Int. Ver. Theor. Angew. Limnol. Verh.* 19, 2943-2950.
- Friedman, M.M. and J.R. Strickler. 1975. Chemoreceptors and feeding in calanoid copepods (Arthropoda: Crustacea). *Proc. Natl. Acad. Sci. USA* 72, 4185-4188.
- Strickler, J.R. 1977. Observation of swimming performances of planktonic copepods. *Limnol. Oceanogr.* 22, 165-170.
- Gerritsen, J. and J.R. Strickler. 1977. Encounter probabilities and community structure in zooplankton: A mathematical model. *J. Fish. Res. Bd. Canada* 34, 73-82.
- Drenner, R.W., J.R. Strickler and W.J. O'Brien. 1978. Capture probability: The role of zooplankton escape in the selective feeding of planktivorous fish. *J. Fish. Res. Bd. Canada* 35, 1370-1373.
- Meyers, D.G. and J.R. Strickler. 1978. Morphological and behavioral aspects of interactions between a chydorid cladoceran and a carnivorous aquatic plant. *Int. Ver. Theor. Angew. Limnol. Verh.* 20, 2490-2495.
- 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.

- 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.
- Kerfoot, W.C., D.L. Kellogg, and J.R. Strickler. 1980. Visual observations of live zooplankters: Evasion, escape, and chemical defenses. *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, 10-27.
- Vallentyne, J.R., J.R. Strickler and N. Polunin. 1980. Proposal: International Year of the Biosphere. *Environ. Conservation*. 7,2.
- Vallentyne, J.R., J.R. Strickler and N. Polunin. 1980. Battle for the Biosphere. *Environ. Conservation* 7,89.
- Strickler, J.R. 1981. To know the past does it help to predict the future? Institution of Engineers, Australia, Nat. Conf. Publ. No. 81/6, 70-72.
- Engelhardt, F.R., R. Trucco, C.K. Wong and J.R. Strickler. 1981. Effects of petroleum hydrocarbons on trophic factors of *Daphnia pulex*. *In: P.J. Rand [Ed.], Land and Water Issues Related to Energy Development*, Ann Arbor Science Publ. Inc., 297-301.
- Koehl, M.A.R. and J.R. Strickler. 1981. Copepod feeding currents: Food capture at low Reynolds number. *Limnol. Oceanogr.* 26, 1062-1073.
- Wong, C.K., F.R. Engelhardt and J.R. Strickler. 1981. Survival and fecundity of *Daphnia pulex* on exposure to particulate oil. *Bull. Environ. Contam. Toxicol.* 26, 606-612.
- Strickler, J.R. 1982. Calanoid copepods, feeding currents, and the role of gravity. *Science* 218, 158-160.
- Paffenhofer, G.-A., J.R. Strickler and M. Alcaraz. 1982. Suspension-feeding by herbivorous calanoid copepods: a cinematographic study. *Mar. Biol.* 67, 193-199.
- Cowles, T.J. and J.R. Strickler. 1983. Characterization of feeding activity patterns in the planktonic copepod *Centropages typicus* Kroyer, under various food conditions. *Limnol. Oceanogr.* 28, 106-115.
- Duke, N. and J.R. Strickler. 1983. Mapping of Facial Cavities on a Lagoonal Patch Reef on Davies Reef. Australian Institute of Marine Science Data Report, AIMS-RS-83-2, 33 pp.
- Price, H.J., G.-A. Paffenhofer and J.R. Strickler. 1983. Modes of cell capture in calanoid copepods. *Limnol. Oceanogr.* 28, 116-123.
- Wong C.K., J.R. Strickler and F.R. Engelhardt. 1983. Feeding behavior of *Daphnia pulex* in crude oil dispersions. *Bull Environ Contam Toxicol.* 31, 152-157.
- Strickler, J.R. 1984. Sticky water: a selective force in copepod evolution. *In: D.G. Meyers and J.R. Strickler [Eds.], Trophic Interactions within Aquatic Ecosystems*, Westview Press, 187-239.
- Strickler, J.R. 1984. Concluding remarks. *In: D.G. Meyers and J.R. Strickler [Eds.], Trophic Interactions within Aquatic Ecosystems*, Westview Press, 449-460.
- Colman, R.S., H.C. Crenshaw, D.L. Meyers and J.R. Strickler. 1984. A non-motorized dye ejector for visualization of flow *in situ* and its use with coral reef crinoids. *Mar. Biol.* 83, 125-128.

- Meyer, D.L., C.A. La Haye, N.D. Holland and J.R. Strickler. 1984. Time-lapse cinematography of feather stars (*Echinodermata: Crinoidea*) on the Great Barrier Reef, Australia: demonstrations of posture changes, locomotion, spawning and possible predation by fish. *Mar. Biol.* 78, 184-197.
- Meyers, D.G. and J.R. Strickler [Eds.]. 1984. *Trophic Interactions within Aquatic Ecosystems*. Westview Press. AAAS-Selected Symposium Vol. 85, 472 pp. (with contributions by J.J. Gilbert, C.E. Goulden, R.E. Hecky, W.C. Kerfoot, S.S. Kilham, M.A.R. Koehl, J.T. Lehman, K.F. Liem, J.J. McCarthy, D.G. Meyers, W.J. O'Brien, G.-A. Paffenhofer, W.G. Sprules, J.R. Strickler, and co-authors. Foreword by G.E. Hutchinson. Dedicated to Luigi Provasoli.)
- Strickler, J.R. 1985. Gravity, drag, and feeding currents of small zooplankton, (a reply). *Science* 228, 1017.
- Strickler, J.R. 1985. Feeding currents in calanoid copepods: two new hypotheses. *In: M.S. Laverack [Ed.], Physiological Adaptations of Marine Animals*, Symp. Soc. Exp. Biol. 39, 459-485.
- Holland, N.D., J.R. Strickler and A.B. Leonard. 1986. Particle interception, transport and rejection by a feather star *Oligometra serripinna* (*Echinodermata: Crinoidea*), studied by frame analysis of videotapes. *Mar. Biol.* 93, 111-126.
- Holland, N.D., A.B. Leonard and J.R. Strickler. 1987. Upstream and downstream capture during suspension feeding by *Oligometra serripinna* (*Echinodermata: Crinoidea*) under surge conditions. *Biol. Bull.* 173, 552-556.
- Alcaraz, M. and J. R. Strickler. 1988. Locomotion in copepods: pattern of movements and energetics of *Cyclops*. *Hydrobiologia* 167/168, 404-414.
- Gerritsen, J., K.G. Porter and J.R. Strickler. 1988. Not by sieving alone: Suspension feeding in *Daphnia*. *Bull. Mar. Sci.* 43, 366-376.
- 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.
- Price, H.J., G.-A. Paffenhofer, C.M. Boyd, T.J. Cowles, P.L. Donaghay, W.M. Hamner, W. Lampert, L.B. Quetin, R.M. Ross, J.R. Strickler and M.J. Youngbluth. 1988. Future studies of zooplankton behavior: Questions and technological developments. *Bull. Mar. Sci.* 43, 853-872.
- Costello, J.H., C. Marrase, J.R. Strickler, G. Trager, R. Zeller and A.J. Freise. 1990. Grazing in a turbulent environment: Behavioral response of a calanoid copepod, *Centropages hamatus*. *Proc. Natl. Acad. Sci. USA* 87, 1648-1652.
- Coughlin, D.J. and J.R. Strickler. 1990. Zooplankton capture by a coral reef fish: an adaptive response to evasive prey. *Env. Biol. Fish.* 29: 35-42.
- Marrase, C., J.H. Costello, T. Granata and J.R. Strickler. 1990. Grazing in a turbulent environment: Energy dissipation, encounter rates and efficacy of feeding currents in *Centropages hamatus*. *Proc. Natl. Acad. Sci. USA* 87, 1653-1657.
- Trager, G.C., J.-S. Hwang and J.R. Strickler. 1990. Barnacle suspension feeding in variable flow. *Mar. Biol.* 105: 117-127.
- Yen, J., B.G. Sanderson, J.R. Strickler and A. Okubo. 1991. Feeding currents and energy dissipation by *Euchaeta rimana*: a subtropical pelagic copepod. *Limnol. Oceanogr.* 36: 362-369.

- Coughlin, D.J., J.R. Strickler and B.G. Sanderson. 1992. Swimming and search behaviour in clownfish (*Amphiprion perideraion*) larvae. *Anim. Behav.* 44: 427-440.
- Davis, C.S., S.M. Gallagher, M.S. Berman, L.R. Haury and J.R. Strickler. 1992. The video plankton recorder (VPR): Design and initial results. *Arch. Hydrobiol. Beih.* 36: 67-81.
- Schulze, P.C., J.R. Strickler, B.I. Bergstrom, M.S. Berman, P. Donaghay, S. Gallagher, J.F. Haney, B.R. Hargreaves, U. Kils, G.-A. Paffenhofer, S. Richman, H.A. Vanderploeg, W. Welsch, D. Wethey and J. Yen. 1992. Video systems for in situ studies of zooplankton. *Arch. Hydrobiol. Beih.* 36: 1-21.
- Hwang, J.-S., J.T. Turner, J.H. Costello, D.J. Coughlin and J.R. Strickler. 1993. A cinematographic comparison of behavior by the calanoid copepod *Centropages hamatus* Lilljeborg: Tethered versus free-swimming animals. *J. Exp. Mar. Biol. Ecol.* 167: 277-288.
- Turner, J.T., P.A. Tester and J.R. Strickler. 1993. Zooplankton feeding ecology: A cinematographic study of animal-to-animal variability in the feeding behavior of the copepod *Calanus finmarchicus*. *Limnol. Oceanogr.* 38: 255-264.
- Keiyu, A.Y., H. Yamazaki and J.R. Strickler. 1993. Application of Artificial Intelligence to Zooplankton Behavior Model. Special Report No. 46, Center for Great Lakes Studies, Milwaukee, WI, 48 pp.
- Hussussian, G., J. Yen and J.R. Strickler. 1993. Digitized Data from 1993 Experiments on Swarming in *Daphnia magna*. Special Report No. 47, Center for Great Lakes Studies, Milwaukee, WI, 146 pp.
- Bundy, M.H., T.F. Gross, D.J. Coughlin and J.R. Strickler. 1993. Quantifying copepod searching efficiency using swimming pattern and perceptive ability. *Bull. Mar. Sci.* 53: 15-28.
- Paffenhofer, G.-A., P.L. Donaghay, J.R. Strickler and S. Richman [Eds.]. 1993. *Proceedings of Zooplankton Ecology Symposium*, 21-25 August 1991, Lawrence University, Appleton, WI, USA. *Bull. Mar. Sci.* 53: 1-280.
- Keiyu, A.Y., H. Yamazaki and J.R. Strickler. 1994. A new modelling approach for zooplankton behaviour. *Deep-Sea Research* 41: 171-184.
- Hwang, J.-S., J.H. Costello and J.R. Strickler. 1994. Copepod grazing in turbulent flow: elevated foraging behavior and habituation of escape responses. *J. Plankton Res.* 16: 421-431.
- Hwang, J.-S. and J.R. Strickler. 1994. Effects of periodic turbulent events upon escape responses of a calanoid copepod, *Centropages hamatus*. *Bull. Plankton Soc. Japan* 41: 117-130
- Strickler, J.R., D. Ono and J. Reimer. 1995. Spatial Filtering in Microscopy: The Use of Matched Filters to See Further in Time and Space. *Zool. Studies* 34 (Suppl. I): 227-228.
- Yen, J. and J.R. Strickler. 1996. Advertisement and concealment in the plankton: what makes a copepod hydrodynamically conspicuous? *Invert. Biol.* 115: 191-205
- Strickler, J.R. and J.H. Costello. 1996. Calanoid copepod behavior in turbulent flows. *Mar. Ecol. Prog. Ser.* 139: 307-309.
- Paffenhofer, G.-A., J.R. Strickler, K.D. Lewis and S. Richman. 1996. Motion behavior of nauplii and early copepodid stages of marine planktonic copepods. *J. Plankton Res.* 18: 1699-1715.

- Strickler, J.R., K.D. Squires, H. Yamazaki and A.H. Abib. 1997. Combining Analog Turbulence with Digital Turbulence. *Sci. Mar.* 61: 197-204.
- Boxshall, G.A., J. Yen and J.R. Strickler. 1997. Functional significance of the sexual dimorphism in the cephalic appendages of *Euchaeta rimana* Bradford. *Bull. Mar. Sci.* 61: 387-398.
- Strickler, J.R. 1998. Observing free-swimming copepods mating. *Phil. Trans. R. Soc. Lond. B* 353: 671-680.
- Doall, M.H., S.P. Colin, J. Yen and J.R. Strickler. 1998. Locating a mate in 3D: The case of *Temora longicornis*. *Phil. Trans. R. Soc. Lond. B* 353: 681-690.
- Bundy, H.M., T.F. Gross, H.A. Vanderploeg and J.R. Strickler. 1998. Perception of inert particles by calanoid copepods: behavioral observations and a numerical model. *J. Plankton Res.* 20: 2129-2152.
- Fields, D.M., J.R. Strickler, S. Wroczynski and D. Vande Sunte. 1998. The Creation of Laboratory Generated Turbulence. Special Report No. 48, Center for Great Lakes Studies, Milwaukee, WI, 144 pp.
- 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.
- Hwang, J.S., J. Yen and J.R. Strickler. 1998. Zooplankton -- novel approaches to observe at the scales of the animals. *Life Sciences Newsletter, NSC*, 87-7:6-8 (in Chinese).
- Krembs, C., A.R. Juhl and J.R. Strickler. 1998. The spatial information preservation method: Sampling the nanoscale spatial distribution of microorganism. *Limnol. Oceanogr.* 43: 298-306.
- Gries, T., K. Jöhnk, D. Fields and J.R. Strickler. 1999. Size and structure of 'footprints' produced by *Daphnia*: impact of animal size and density gradients. *J. Plankton Res.* 21: 509-523.
- Strickler, J.R. and J.- S. Hwang. 1999. Matched Spatial Filters in Long Working Distance Microscopy of Phase Objects. *In: Cheng, P.C., Hwang, P.P., Wu, J.L., Wang, G. and Kim H. [Eds.] Focus on Multidimensional Microscopy.* World Scientific Publishing Pte. Ltd., River Edge, NJ. 217-239.
- Hwang, J.- S. and J.R. Strickler. 2001. Can Copepods Differentiate Prey from Predator Hydromechanically? *Zoological Studies* 40: 1-6.
- 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.
- 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. International Conference "Residence Times in Lakes: Science, Management, Education, Bolsena, Viterbo - Italy, 238-241.
- 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 *Leptodiatomus 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.
- 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.
- Janssen, J. and J.R. Strickler. (in press). Hydromechanical Communication via the Lateral Line: Copepodology for the Ichthyologist. In: *Fish Communication*. Ladich, F., Collin, S.P., Moller, P., Kapoor, B.G. [Eds.]. Narosa Publishing House, New Delhi.