Richard R. Strathmann
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Professional Preparation:

Oberlin College, Ohio		1959-60
Pomona College, Claremont, CA	BA	1963 Zoology-Chemistry
University of Washington, Seattle, WA	MS	1966 Oceanography
University of Washington, Seattle, WA	PhD	1970 Zoology

Appointments: *Predoctoral Fellow*, NSF, Univ. of Washington 1963-69; *Postdoctoral Trainee*, NIH, UCLA, 1970; *Postdoctoral Fellow*, NSF, Hawaii Inst. Marine Biology, 1970-71; *Assistant Prof*., Dept. of Zoology, Univ. of Maryland, 1971-73; *Assist. Prof*. (6/73) to *Professo*r (7/1/82-12/31/2008), Zoology Dept./Biology Dept,, Univ. of Washington; *Resident Assoc. Director* (from 6/73-12/2008), Friday Harbor Labs, Univ. of Wash.; *Visiting Faculty*, FHL, Summer 1973, Estacion Costera de Investigaciones Marinas, Chile, March 2000, and CENAIM/ESPOL, Ecuador, June 2012. Bocas del Toro Research Station, Smithsonian, Summer 2013.

Grants: *NSF grants:* Regional patterns in reproduction and survival of the barnacle *Balanus glandula* (1975-1981), Larvae feeding with cilia (1981-83), Constraints on foraging and form associated with two larval ciliary feeding mechanisms (1984-86), The relation between adult size, brooding, and simultaneous hermaphroditism (with D. Eernisse) (1984-86), Constraints on modes of development of benthic marine invertebrates (1986-1990), Interocean comparisons of food limited larval growth (1987-1988), Limits on size and form of benthic clutches (1990-1993), Plasticity of larval feeding structures (1993-1996), Duration of development of planktonic embryos (1996-2001), Constraints on performance and pelagic periods of larvae (2001-2004), Swimming and vulnerability in pelagic development (2002-2007); Predator induced defenses of marine zooplankton (2007-2010);
Guggenheim Fellow, research at Smithsonian Inst. and Mar. Biol. Assoc. UK, 1980-81

Awards: Marsha L. Landoldt Distinguished Graduate Mentor Award, Univ. Washington, 2009; Life-time Achievement Award, Western Soc. Naturalists, 2012.

Publications since 2006:

Strathmann, M. F., and R. R, Strathmann. 2006. A vermetid gastropod with complex intracapsular cannibalism of nurse eggs and sibling larvae and a high potential for invasion. Pacific Science 294: 23-34.

Strathmann, R. R. 2006. Versatile ciliary behaviour in capture of particles by the bryozoan cyphonautes larva. Acta Zoologica 87: 83-89.

Strathmann, R. R., L. R. Kendall, and A. G. Marsh. 2006. Embryonic and larval development of a cold adapted Antarctic ascidian. Polar Biol. 29(6): 495-501

Strathmann, R. R., and D. Grünbaum. 2006. Good eaters, poor swimmers: compromises in larval form. Integrative Comp. Biol. 46(3): 312-322.

Strathmann, R. R. 2007. Time and extent of ciliary response to particles in a non-filtering feeding mechanism. Biol. Bull. 212: 93-103.

Strathmann, R. R. 2007. Three functionally distinct kinds of pelagic development. Bull. Mar. Sci. 81: 167-179.

Strathmann, M. F., and R. R. Strathmann. 2007. An extraordinarily long larval duration of 4.5 years from hatching to metamorphosis for teleplanic veligers of *Fusitriton oregonensis*. Biol. Bull. 213: 152-159.
Grosberg, R. K., and R. R. Strathmann. 2007. The evolution of multicellularity: a minor major transition? Annu. Rev. Ecol. Evol. Syst. 38: 621-654.
Vaughn, D., and R. R. Strathmann. 2008. Predators induce cloning in echinoderm larvae. Science 319: 1503.
Strathmann R. R., G. P. Foley Jr., and A. N. Hysert. 2008. Loss and gain of the juvenile rudiment and metamorphic competence during starvation and feeding of bryozoan larvae. Evolution & Development 10: 731-736.
Bertram, D. F., N. E. Phillips, and Richard R. Strathmann. 2009. Evolutionary and experimental change in egg volume, heterochrony of larval body and juvenile rudiment, and evolutionary reversibility in pluteus form. Evol. Devel. 11: 728-739.
Romero, M. R., H. C. P. Kelstrup, and R. R. Strathmann. 2010. Capture of particles by direct interception by cilia during feeding of a gastropod veliger. Biological Bulletin 218: 145-159.
Strathmann, R. R., M. F. Strathmann, G. Ruiz-Jones, M. G. Hadfield. 2010. Effect of plasticity in hatching on duration as a precompetent swimming larva in the nudibranch *Phestilla sibogae*. Invertebrate Biology 129: 309-318.
Pernet, B., and R. R. Strathmann. 2011. Opposed ciliary bands in the feeding larvae of sabellariid annelids. Biol. Bull. 220: 186-198.
Oyarzun, F. X., and R. R. Strathmann 2011. Plasticity of hatching and the duration of planktonic development in marine invertebrates. Integr. Comp. Biol. 51: 81-90.
Jaeckle, W. B., and R. R. Strathmann 2013. The anus as a second mouth: anal suspension feeding by an oral deposit-feeding sea cucumber. Invertebrate Biology 132:62-68.
Strathmann, R. R. 2014. Culturing larvae of marine invertebrates. Pp. 1-25 in: D. J. Carroll and S. A. Stricker, eds. Developmental Biology of the Sea Urchin and Other Marine Invertebrates: Methods and Protocols. Humana Press.
Branscomb, E. S., Vedder, K., and Strathmann, R. R. 2014. Risks for larvae mediated by plasticity in hatching. Invertebrate Biology 133: 158-169.
Strathmann, R. R. 2015. Do functional requirements for embryos and larvae have a place in Evo-Devo? Pp. 77-95 in: *Conceptual Change in Biology: Scientific and Philosophical Perspectives on Evolution and Development*, ed. A.C. Love. Boston Studies in the Philosophy and History of Science. Berlin: Springer.
Strathmann, R. R. 2015. Barriers at the intersection of development, ecology, and evolution. Bioscience 65: 64-68.
Burgess, S. C., M. L. Baskett, R. K. Grosberg, S. G. Morgan, and R. R. Strathmann. 2016. When is dispersal for dispersal? Unifying marine and terrestrial perspectives. Biological Reviews 91: 867-882.
Pechenik, J. A., and R. R. Strathmann. 2017. The effect of age at metamorphosis on the transition from larval to adult suspension-feeding of the slipper limpet *Crepidula fornicata*. Invertebrate Biology 136: accepted for publication.
Strathmann, R. R. 2017. Larvae and direct development. In, G. Wellborn and M. Thiel, editors. Natural History of Crustacea 5. Oxford University Press. (accepted for publication)

Service Activities: *Resident Associate Director, Friday Harbor Laboratories:* Facilitate research and instruction for visitors from many institutions, 1973-2008. *FHL Advisory Board* to 2008; *FHL Advancement Board* to present;
Editorial: Editorial Board ECOLOGY and ECOLOGICAL MONOGRAPHS 1982-1985;

Associate Editor PALEOBIOLOGY 1979-1983, 1985-198; Editorial Board J. EXPERIMENTAL MARINE BIOLOGY ECOLOGY 1989-1994; Editorial Board BIOL. BULL., MAR. BIOL. LAB., WOODS HOLE 1993-1998; Scientific Committee of BULL. SOC. ZOOLOGIQUE FRANCE, 1991-2010; Editorial Board JOURNAL MARINE BIOLOGICAL ASSOC. U. K. 1993-2010.
Government advisory: Marine Resource Committee of San Juan County 2008-2010

Thesis advisors*:* K. Banse (U. Washington), A. J. Kohn (U. Washington).
Postdoctoral advisors*:* T. Jahn (UCLA), E. Reese (Univ. Hawaii)

Advising: 16 Graduate students advised for completed PhD; 4 Graduate students advised for completed MS; 6 Postdocs sponsored (not including FHL postdocs co-sponsored); **Completed PhD:** D. Vaughn (Santa Monica College), F. Oyarzun (Univ. Concepción, Chile), K. A. McDonald (writer), M. W. Jacobs (McDaniel College)**;** J. Hoffman (EcoAdapt), S. Y. Henderson (Cerritos Coll.), E. Goldman (Seagrant, U. of Maryland), R. Podolsky (Coll. of Charleston), M. W. Hart (Simon Fraser U.), H. Hess (Coll. of the Atlantic), C. S. Cohen (Calif. State Univ., San Francisco), C. McFadden (Harvey Mudd Coll.), C. D. Harvell (Cornell U.), R. B. Emlet (Oregon State U.), L. McEdward (deceased, formerly U. Florida), B. Rivest (State U. NY, Cortland); **Postdoctoral:** M. Lamare (Univ. Otago), D. Bertram (Environment Canada), J. West (US government), G. Wray (Duke University), D. Eernisse (Cal. State Fullerton), M. A. R. Koehl (UC Berkeley), and >25 FHL postdocs co-sponsored with FHL Director; **Masters:** E. S. Branscomb, P. Kemp, R. Collin, J. Staver

Scientific societies: Soc. Integr. Comp. Biol., Soc. Study Evol., Western Soc. Naturalists