

## Jon Seger

School of Biological Sciences, University of Utah, 257 South 1400 East, Salt Lake City, Utah 84112-0840  
(801) 581-4758, [seger@biology.utah.edu](mailto:seger@biology.utah.edu), [jon.seger@utah.edu](mailto:jon.seger@utah.edu)

January 29, 2021

### Research interests

**Evolutionary genetics**, currently focused on very-small-effect mutations as a source of heritable variation; comparative population genomics of whale lice (Amphipoda, Cyamidae) and right whales (*Eubalaena*).

**Evolutionary ecology**, especially of life-history traits closely related to reproduction (sex ratios, mate choice, sociality); ecology and evolution of bees and apoid wasps (especially *Philanthus*).

### Academic positions

- 1969-1971 Research Associate. Office of Academic Programs, National Museum of Natural History, Smithsonian Institution, Washington, D.C.
- 1972-1974 Curriculum Developer. Education Development Center, Cambridge, MA
- 1974-1979 Teaching Fellow. Harvard University, Cambridge, MA
- 1980-1981 Postdoctoral Associate. Department of Biology, Harvard University. (Supported by The Harry Frank Guggenheim Foundation)
- 1981-1982 Visiting Scientist. Population Biology Group, University of Sussex, Brighton, U.K. (NATO Postdoctoral Fellowship)
- 1982-1983 Postdoctoral Fellow. Museum of Zoology, University of Michigan, Ann Arbor, MI. (Thurnau Postdoctoral Fellowship)
- 1983-1984 Visiting Research Fellow. Department of Biology, Princeton University, Princeton, NJ. (NIH Genetics Training Grant)
- 1984-1986 Instructor. Department of Biology, Princeton University
- 1986-1989 Assistant Professor. Department of Biology, University of Utah
- 1989-2000 Associate Professor. Department of Biology, University of Utah
- 2000- Professor. Department of Biology/School of Biological Sciences, University of Utah

### Degrees and postdoctoral training

- BA 1969 University of California, Santa Barbara. (English)
- EdM 1972 Harvard University. (Education)
- PhD 1980 Harvard University. (Biology)  
Thesis: *Models for the evolution of phenotypic responses to genotypic correlations that arise in finite populations*. Advisors: RL Trivers, EE Williams
- 1980-1981 Department of Biology, Harvard University, Cambridge MA. Thomas J. Givnish. Kin selection models.
- 1981-1982 Population Biology Group, University of Sussex, Brighton, U.K. John Maynard Smith. Evolution of insect sociality; population genetics.
- 1982-1983 Museum of Zoology, University of Michigan, Ann Arbor, MI. W.D. Hamilton. Genetic models of sex allocation in social insects.
- 1983-1984 Department of Biology, Princeton University, Princeton, NJ. Robert M. May. Genetic models of mate choice.

### Fellowships and awards

- NSF NATO Postdoctoral Fellowship, 1981-1982
- MacArthur Fellowship, John D and Catherine T MacArthur Foundation, 1987
- Honors Professorship, University of Utah Honors College, 2012-2013
- AAAS Fellow (American Association for the Advancement of Science), 2014

## Recent grant support

NSF 0841233, 2009 – 2014 (no-cost extension to 2015), “Think Globally, Learn Locally (TGLL): Neighborhood Ecology in a Global Perspective” (PI Don Feener, coPIs Denise Dearing, Jim Ehleringer, Eric Rickart, Jon Seger) DGE, Graduate Teaching Fellows in K-12.

NSF 1051491, 2011 – 2014 (no-cost extension to 2017), “Mitochondrial fitness variation in a naturally replicated evolutionary experiment” (PI Jon Seger, coPIs Fred Adler, Kael Fischer) DEB, Evolutionary Processes.

NSF 1052352, 2011-2014 (no-cost extension to 2017), “Collaborative Research: Chemical Ecology of Host Specialization in Phorid Parasitoids of Ants: An Experimental Analysis (PI Don Feener, coPI Jon Seger) IOS, Symbiosis, Defense and Self-Recognition.

## Teaching

- 1974-1979 Harvard University. Assisted in many different courses; designed and taught an undergraduate seminar on the evolution of sex and recombination
- 1980-1981 Harvard University. Supervised an undergraduate honors thesis project (*summa cum laude*) by JW Wenzel (now Assoc. Prof., Dept. of Entomology, Ohio State University)
- 1981-1982 University of Sussex. Assisted in a course on evolution
- 1983 University of Michigan. Four-week unit on evolution of senescence, in a course on aging
- 1983-1986 Princeton University. Taught undergraduate courses on ecology and evolution
- 1986- University of Utah. Courses on evolution, molecular evolution, population genetics, quantitative genetics, statistics; lower-division core course on genetics; upper-division core course on ecology and evolution; research-project course on quantitative traits of aspen, for entering freshmen. Graduate seminars and courses on evolutionary genetics, quantitative genetics, evolution of sex and recombination, genetic conflicts and genomic imprinting, sexual dimorphism, aggression and violence, K-12 science education, science writing

## Student training

### *Undergraduate students (recent)*

Zofia A. Kaliszewska (1999-2003, BS with honors 2003); Ashley Haun (2003-2005); Jarom Perry (2005-2006); Jessie Hunn (2007); Heather McGirk (2006-2009); Nels Andersson (2008-2009, BS 2009); Deborah Johnson (2010-2012, BS 2012); Stephen Jensen (2011-2014); Halie Andersen (2012-2013); Sarah Bradburn (2012-2013); Meggan Alston (2012-2016); Christian Weinrich (2018-2019); Jaya Muehlman (2018-2021); Sophia Buyess (2019); plus many in the 80s and 90s.

### *Graduate students*

Mark A McGinley (PhD 1989, U of Utah) Associate Professor, Texas Tech University; Vincent M Eckhart (PhD 1991, U of Utah) Professor of Biology, Grinnell College; John S Burner (MS 1992, U of Utah; D.V.M. 1996, U of Illinois) private veterinary practice; Jay D Evans (PhD 1995, U of Utah) research scientist, USDA, Beltsville MD; Mark Beilstein (MS 1999, U of Utah) Assistant Professor, U of Arizona; Janice Ragsdale (1997-07); Wendy A Smith (2004-05, Ph.D. U of Utah 2010) industrial research scientist; Carina Marón (Ph.D. U of Utah 2015, CONICET postdoc Universidad Nacional de Córdoba, Argentina). Thesis advisory committee member for scores of other students ( $n=10$  active committees in January 2021).

### *Postdoctoral associates*

Miriam H Richards (1992-94) Associate Professor, Brock University, St. Catharines, Ontario; Joshua Cherry (1999-2001) Research scientist, NCBI, Bethesda, Maryland; Aron Branscomb (2000-2002).

## University service

- 1986-** numerous graduate thesis advisory committees, faculty search committees, and RPT (retention, promotion, and tenure) subcommittees (Department of Biology = SBS)
- 1986-2012, **2018-2021** **Computer Advisory Committee (Biology)**
- 1986-1990, 1992-1993 Curriculum Committee (Biology)
- 1988-2005 NIH Genetics Training Grant Steering Committee (University of Utah)
- 1989-1992 Hughes Grant Steering Committee (Biology)
- 1989-1995, 2003-2005 Tanner Lectures Committee (University of Utah)
- 1990-1991, 1993-1995, **2020-2021** **Executive Committee (Biology/SBS)**
- 1992-1993, 1997-2000 Communications Committee (chair 1997-98) (Biology)
- 1992-1995, **2017-2020** **Academic Senate (University of Utah)**
- 1993-2012 Frontiers of Science Lecture Committee (chair 1997-2012) (College of Science)
- 1994-1997 Bookstore Policy Advisory Board (chair 1996-97) (University of Utah)
- 1994-1996, 2006-2007 International Studies Task Force (University of Utah)
- 1994-1996 Graduate Admissions Committee (chair 1995-96) (Biology)
- 1996-1997 Biology Undergraduate Research Program (BioURP) Steering Committee (Biology)
- 1997-2004 Rhodes Scholarship Screening Committee (University of Utah)
- 1997-2003 General Education Physical and Life Sciences Area Committee (University of Utah)
- 1999-2003 International Studies Board (University of Utah)
- 2000-2009 Biology Web Site Committee (chair 2000-2009)
- 2001-2002, **2018-2020** **College of Science Council (College of Science)**
- 2001-2005 Admissions, Standards and Degrees Committee (chair 2004-05) (College of Science)
- 2001-2019 RPT Chair (Biology)
- 2004-2005 Quantitative Intensive Course Requirement Committee (chair) (University of Utah)
- 2006-2021** **Honors Policy Review Board (University of Utah Honors College)**
- 2009 Graduate School internal review committee for Department of Biochemistry
- 2009-2011 Center for Science and Mathematics Education steering committee (University of Utah)
- 2011 Search committee for Dean of the Honors College (University of Utah)
- 2020** **Career-Line Faculty Development Committee (SBS)**

## Professional activities

Editorial boards of *Behavioral Ecology* (1990-94), *The American Naturalist* (1990-95), *Evolution* (1991-94), *Journal of Ethology* (2000-2002).

Manuscript reviews for *Acta Biotheoretica*, *Acta Zoologica*, *American Journal of Human Biology*, *American Naturalist*, *Animal Behaviour*, *Arctic*, *Behavioral Ecology*, *Behavioral Ecology and Sociobiology*, *Biological Journal of the Linnean Society*, *BMC Evolutionary Biology*, *Bulletin of Mathematical Biology*, *Conservation Ecology*, *Current Biology*, *Ecological Entomology*, *Ecology*, *Ecology Letters*, *Evolutionary Ecology*, *Evolutionary Ecology Research*, *Evolutionary Theory*, *Evolution*, *FASEB Journal*, *Frontiers in Zoology*, *Genetics*, *Genome Biology and Evolution*, *Heredity*, *Human Ethology Bulletin*, *Journal of Evolutionary Biology*, *Journal of Heredity*, *Journal of Molecular Evolution*, *Journal of the Kansas Entomological Society*, *Journal of Theoretical Biology*, *Journal of Zoological Systematics and Evolutionary Research*, *Molecular Biology and Evolution*, *Molecular Ecology*, *Nature*, *Nature Communications*, *Ocean and Coastal Management Journal*, *Oikos*, *PLoS ONE*, *PNAS*, *Proceedings of the Royal Society of London B*, *Quarterly Review of Biology*, *Science*, *Theoretical Population Biology*, *Trends in Ecology and Evolution*, Cambridge, Harvard, Oxford, and Princeton University Presses.

Research grant proposal reviews for NSF, NSERC (Canada), NERC (U.K.), ARC (Australia), Wellcome Trust, Smithsonian Institution and other national and private funding agencies.

NSF Predoctoral Fellowships review panel (1993-96); other DEB program panels (~1/yr recently)

NSF Division of Environmental Biology (DEB) Committee of Visitors (2019)

Society for the Study of Evolution, Nominations Committee 2002-2004.

External reviewer, Department of Genetics, University of Pretoria, South Africa (September 2003)

## Publications

Seger J (1976) Evolution of responses to relative homozygosity. *Nature* **262**:578-580.  
doi:10.1038/262578a0.

Seger J (1977) A numerical method for estimating coefficients of relationship in a langur troop. In *The Langurs of Abu* (S Blaffer Hrdy) pp 317-326. Harvard University Press.

Seger J, Harvey P (1980) The evolution of the genetical theory of social behaviour. *New Scientist* **87**:50-51.

Harvey P, Seger J (1980) Misciting latest. *Nature* **286**:754. (letter)

Futuyma DJ, Lewontin RC, Mayer GC, Seger J, Stubblefield JW III (1981) Macroevolution conference. *Science* **211**:770. (letter)

Seger J (1981) Social scientists and sociobiologists get their lines crossed. *Nature* **291**:690. (review of Monbtagu A, *Sociobiology Examined*)

Seger J (1981) Kinship and covariance. *J theor Biol* **91**:191-213.

Seger J (1982) The tactless meme. *New Scientist* **94**:166-168. (review of Dawkins R, *The Extended Phenotype*)

Seger J (1983) Partial bivoltinism may cause alternating sex-ratio biases that favour eusociality. *Nature* **301**:59-62.

Seger J (1983) Sanitary and not so sanitary evolution. *New Scientist* **98**:719. (review of Ayala FJ, *Population and Evolutionary Genetics: A Primer*, and of Miller J, van Loon B, *Darwin for Beginners*)

Seger J (1983) Conditional relatedness, recombination, and the chromosome numbers of insects. In *Advances in Herpetology and Evolutionary Biology: Essays in Honor of Ernest E. Williams* (ed AGJ Rhodin, K Miyata) pp 596-612. Museum of Comparative Zoology, Cambridge, MA.

Fowler K, Seger J (1983) Disruptive or directional selection? *Nature* **304**:376. (Scientific Correspondence)

Seger J (1985) Intraspecific resource competition as a cause of sympatric speciation. In *Evolution: Essays in Honour of John Maynard Smith* (ed PJ Greenwood, PH Harvey, M Slatkin) pp 43-53. Cambridge University Press.

Seger J (1985) Unifying genetic models for the evolution of female choice. *Evolution* **39**:1185-1193.

May RM, Seger J (1985) Sex ratios in wasps and aphids. *Nature* **318**:408-409. (News and Views)

Seger J, Trivers R (1986) Asymmetry in the evolution of female mating preferences. *Nature* **319**:771-773.

May RM, Seger J (1986) Ideas in ecology: yesterday and tomorrow. *American Scientist* **74**:256-267.

Seger J (1987) El Niño and Darwin's finches. *Nature* **327**:461. (News and Views)

Seger J, Brockmann HJ (1987) What is bet-hedging? *Oxford Surveys in Evolutionary Biology* **4**:182-211.

Seger J, Hamilton WD (1988) Parasites and sex. In *The Evolution of Sex: An Examination of Current Ideas* (ed RE Michod, BR Levin) pp 176-193. Sinauer.

Seger J, Charnov EL (1988) Benevolent sisterhood. *Nature* **331**:303. (News and Views)

- Seger J (1988) Dynamics of some simple host-parasite models with more than two genotypes in each species. *Phil Trans R Soc Lond B* **319**:541-555.
- Seger J (1988) The evolution of individuality. *Q Rev Biol* **63**:336-337. (review of LW Buss, *The Evolution of Individuality*)
- Seger J (1989) Diversity of little things. *Nature* **337**:305-306. (News and Views)
- Philippi T, Seger J (1989) Hedging one's evolutionary bets, revisited. *Trends in Ecology and Evolution* **4**:41-44.
- Seger J (1989) All for one, one for all, that is our device. *Nature* **338**:374-375. (News and Views)
- Seger J (1989) Who are the drone police? *Nature* **342**:741-742. (News and Views)
- Seger J, Stubblefield JW, Horn HS, Rose GJ (1990) How to bug a bug. *Sphecos* **19**:24-26.
- Huck UW, Seger J, Lisk RD (1990) Litter sex ratios in the Golden Hamster vary with time of mating and litter size, and are not binomially distributed. *Behav Ecol Sociobiol* **26**:99-109.
- Feener DH Jr, Davidson DW, Seger J (1990) The science of queens. *Nature* **344**:894-895. (review of Hölldobler B, Wilson EO, *The Ants*)
- Stubblefield JW, Seger J (1990) Local mate competition with variable fecundity: dependence of offspring sex ratios on information utilization and mode of male production. *Behavioral Ecology* **1**:68-80.
- Seger J (1991) Conflict and cooperation in social insects. In *Behavioural Ecology: an Evolutionary Approach*, 3rd edition (ed JR Krebs, NB Davies) pp 338-373. Blackwell.
- Seger J (1991) Relatedness, sex ratios, and controls. *Science* **254**:384. (Perspectives)
- Seger J (1991) Sisters in arms. *Nature* **353**:804. (review of Ross KG, Matthews RW, eds., *The Social Biology of Wasps*)
- Seger J (1992) Evolution of victim-exploiter relationships. In *Natural Enemies* (ed MJ Crawley) pp 3-25. Blackwell.
- Stubblefield JW, Seger J, Wenzel JW, Heisler MM (1993) Temporal, spatial, sex-ratio and body-size heterogeneity of prey species taken by the beewolf *Philanthus sanbornii* (Hymenoptera: Sphecidae). *Phil Trans R Soc Lond B* **339**:397-423.
- Seger J (1993) Opportunities and pitfalls in co-operative reproduction. In *Queen Number and Sociality in Insects* (ed L Keller) pp 1-15. Oxford University Press.
- Berrigan D, Evans J, Holway D, Jacobs L, Richards M, Seger J (1994) Gene flow or heterozygote advantage? *Science* **263**:1157. (Technical Comments)
- Evans J, Richards M, Seger J (1994) Evolution and diversity of sex ratio in insects and mites. *Q Rev Biol* **69**:95. (review of DL Wrensch, MA Ebbert, eds, *Evolution and Diversity of Sex Ratio in Insects and Mites*)
- Stubblefield JW, Seger J (1994) Sexual dimorphism in the Hymenoptera. In *The Differences Between the Sexes* (ed R Short, E Balaban) pp 72-103. Cambridge University Press.
- Richards MH, Packer L, Seger J (1995) Unexpected patterns of parentage and relatedness in a primitively eusocial bee. *Nature* **373**:239-241.
- Seger J, Davidson DW, Harper KT, MacMahon JA (1995) The biological richness of deserts. In *Defending the Desert: Conserving Biodiversity On BLM Lands In the Southwest* (AY Cooperrider, DS Wilcove) pp 27-37. Environmental Defense Fund.
- Dickinson WJ, Seger J (1996) Eye evolution. *Science* **272**:467-468. (Letters)

- Seger J, Moran NA (1996) Snapping social swimmers. *Nature* **381**:473-474. (News and Views)
- Seger J, Stubblefield JW (1996) Theoretical evolutionary ecology. *Bull Math Biol* **58**:813-814. (review of M Bulmer, *Theoretical Evolutionary Ecology*)
- Seger J, Eckhart VM (1996) Evolution of sexual systems and sex allocation in plants when growth and reproduction overlap. *Proc R Soc Lond B* **263**:833-841.
- Seger J, Stubblefield JW (1996) Optimization and adaptation. In *Adaptation* (ed GV Lauder, MR Rose) pp 93-123. Academic Press.
- Blaffer Hrdy S, Rodman P, Charnov EL, Seger J, Hawkes K, Emlen ST, Foster SA, Gowaty PA, Haig D, Hauser M, Jacobs LF, Smuts BB (1996) Sociobiology's successes. *Science* **274**:162-163. (Letters)
- Seger J (1996) Exoskeletons out of the closet. *Science* **274**:941. (Perspectives)
- Seger J (1997) Natural history and evolution of paper-wasps. *Q Rev Biol* **72**:78-79. (review of S Turillazzi, MJ West-Eberhard, eds, *Natural History and Evolution of Paper-Wasps*)
- Witherspoon DJ, Doak TG, Williams KR, Seegmiller A, Seger J, Herrick G (1997) Selection on the protein-coding genes of the *TBE1* family of transposable elements in the ciliates *Oxytricha fallax* and *O. trifallax*. *Mol Biol Evol* **14**:696-706.
- Rowntree VJ, MacGuinness P, Marshall K, Payne R, Sironi M, Seger J (1998) Increased harassment of right whales (*Eubalaena australis*) by kelp gulls (*Larus dominicanus*) at Península Valdés, Argentina. *Mar Mam Sci* **14**:99-115.
- Berrigan DB, Seger J (1998) Information and allometry. *Evolutionary Ecology* **12**:535-541.
- Holt RD, McPeck MA, Moran NA, Seger J (1999) 1998 Sewall Wright Award: William Donald Hamilton. *Am Nat* **153**:i-ii.
- Herrick G, Seger J (1999) Imprinting and paternal genome elimination in insects. In *Genomic Imprinting: An Interdisciplinary Approach (Results and Problems in Cell Differentiation, vol. 25)* (ed R Ohlsson) pp 41-71. Springer-Verlag.
- Dickinson WJ, Seger J (1999) Cause and effect in evolution. *Nature* **399**:30. (Scientific Correspondence)
- Eckhart VM, Seger J (1999) Phenological and developmental costs of male sex function in hermaphroditic plants. In *Life History Evolution in Plants* (ed TO Vuorisalo, PK Mutikainen), pp 195-213. Kluwer.
- Seger J (1999) Is sex in the details? *Journal of Evolutionary Biology* **12**:1050-1052. (Commentary)
- Moran N, Pierce N, Seger J (2000) W.D. Hamilton, 1936-2000. *Nature Medicine* **6**:367. (Obituary)
- Seger J (2000) Natural selection: sex ratio. In *Encyclopedia of Life Sciences*. (Nature Publishing Group, London). [www.els.net]
- Branscomb A, Seger J, White RL (2000) Evolution of odorant receptors expressed in mammalian testes. *Genetics* **156**:785-797.
- Morehead SA, Seger J, Feener DH Jr, Brown BV (2001) Evidence for a cryptic species complex in the ant parasitoid *Apocephalus paraponerae* (Diptera: Phoridae). *Evolutionary Ecology Research* **3**:273-284.
- Johnson KP, Seger J (2001) Elevated rates of nonsynonymous substitution in island birds. *Mol Biol Evol* **18**:874-881.
- Seger J (2002) Good? Better? Best? *Evolution* **56**:859-860. (Review of SH Orzack, E Sober, eds, *Adaptationism and Optimality*)
- Seger J, Stubblefield JW (2002) Models of sex ratio evolution. In *Sex Ratios: Concepts and Research Methods* (ed ICW Hardy), pp 2-25. Cambridge University Press.

- Seger J, Adler FR (2002) Mathematical models. In *Encyclopedia of Evolution* (ed M Pagel), pp 684-688 (vol 2). Oxford University Press.
- Minckley RL, Seger J (2002) Solitary wasps: behavior and natural history. *Q Rev Biol* **77**:462-463 (review of KM O'Neill, *Solitary Wasps: Behavior and Natural History*)
- Roth JR, Kofoid E, Roth FP, Berg OG, Seger J, Andersson DI (2003) Regulating general mutation rates: examination of the hypermutable state model for Cairnsian adaptive mutation. *Genetics* **163**:1483-1496.
- Roth JR, Kofoid E, Roth FP, Berg OG, Seger J, Andersson DI (2003) Adaptive mutation requires no mutagenesis -- only growth under selection: a response. *Genetics* **165**:2319-2321. (Letter)
- Kaliszewska ZA, Seger J, Rowntree VJ, Barco SG, Benegas R, Best PB, Brown MW, Brownell RL Jr, Carribero A, Harcourt R, Knowlton AR, Marshall-Tilas K, Patenaude NJ, Rivarola M, Schaeff CM, Sironi M, Smith WA, Yamada TK (2005) Population histories of right whales (Cetacea: *Eubalaena*) inferred from mitochondrial sequence diversities and divergences of their whale lice (Amphipoda: *Cyamus*). *Molecular Ecology* **14**:3439-3456, doi:10.1111/j.1365-294X.2005.02664.x.
- Valenzuela LO, Sironi M, Rowntree VJ, Seger J (2008) Isotopic and genetic evidence for site fidelity to feeding grounds in southern right whales (*Eubalaena australis*). *Journal of Cetacean Research and Management*, SC/60/BRG13.
- Rowntree VJ, Valenzuela LO, Franco Fraguas P, Seger J (2008) Foraging behaviour of southern right whales (*Eubalaena australis*) inferred from variation of carbon stable isotope ratios in their baleen. *Journal of Cetacean Research and Management*, SC/60/BRG23.
- Seger J (2009) Robert Trivers (b. 1943). In *Evolution: The First Four Billion Years* (ed M Ruse, J Travis), pp 889-891. Belknap Press of Harvard University Press, Cambridge MA. (Encyclopedia entry)
- Valenzuela LO, Sironi M, Rowntree VJ, Seger J. (2009) Isotopic and genetic evidence for culturally inherited site fidelity to feeding grounds in southern right whales (*Eubalaena australis*). *Molecular Ecology* **18**:782-791, doi:10.1111/j.1365-294X.2008.04069.x
- Seger J, Smith WA, Perry JJ, Hunn J, Kaliszewska ZA, La Sala L, Pozzi L, Rowntree VJ, Adler FR (2010) Gene genealogies strongly distorted by weakly selected mutations in constant environments. *Genetics* **184**:529-545, doi:10.1534/genetics.109.103556.
- O'Fallon BD, Seger J, Adler FR (2010) A continuous-state coalescent and the impact of weak selection on the structure of gene genealogies. *Mol Biol Evol* **27**(5):1162-1172. DOI: 10.1093/molbev/msq006.
- Skandalis A, Frampton M, Seger J, Richards MH (2010) The adaptive significance of unproductive alternative splicing in primates. *RNA* **16**:2014-2022, doi:10.1261/rna.2127910.
- Valenzuela LO, Sironi M, Rowntree VJ, La Sala L, Pozzi L, Mohamed N, Musmeci L, Andrejuk J, Uhart M, Chirife A, Marón CF, Seger J (2010) Population genetic structure of living and dead southern right whales (*Eubalaena australis*) off Península Valdés, Argentina. International Whaling Commission scientific report SC/62/BRG15, presented to the International Whaling Commission Scientific Committee, Marruecos, June 2010 (available on the IWC web site).
- Kraus NJ, Showers Corneli P, Watkins M, Bandyopadhyay P, Seger J, Olivera BM (2011) Against expectation: A short sequence with high signal elucidates cone snail phylogeny. *Mol Phylog Evol* **58**:383-389, doi:10.1016/j.ympev.2010.11.020.
- Valenzuela LO, Sironi M, Seger J, Rowntree VJ (2011) Genetic population structure of Patagonian right whales and assessment of foraging strategies by stable isotope analysis. International Whaling Commission scientific report SC/S11/RW3, presented to IWC Scientific Committee, Buenos Aires, November 2010 (available on the IWC web site).

- Seger J (2011) Testing the 'effort' hypothesis for UMEs at Península Valdés. In Report of the Southern Right Whale Die-Off Workshop, *Journal of Cetacean Research and Management* **12** (Suppl.), Annex A, pp. 397-398.
- Kaltenpoth M, Showers Corneli P, Dunn DM, Weiss RB, Strohm E, Seger J (2012) Accelerated evolution of mitochondrial but not nuclear genomes of Hymenoptera: new evidence from crabronid wasps. *PLoS ONE* **7**(3): e32826, doi:10.1371/journal.pone.0032826.
- Kraus NJ, Watkins M, Bandyopadhyay P, Seger J, Olivera BM, Showers Corneli P (2012) A very short, functionally constrained sequence diagnoses cone snails in several *Conasprella* clades. *Mol Phylog Evol* **65**:335–338, doi:10.1016/j.ympev.2012.06.014.
- Slikas B, Baker CS, Clapham P, Frasier TR, Seger J, Valenzuela LO, Wade P (2012) Worldwide genomic diversity and phylogenetic relationships among right whales based on next-generation sequencing of complete mitochondrial genomes and multiple nuclear loci. International Whaling Commission Research Proposal, SC/64/BRG15, presented to IWC Scientific Committee, Panama, June 2012 (available on the IWC web site).
- Rowntree VJ, Uhart MM, Sironi M, Chirife A, Di Martino M, La Sala L, Musmeci L, Mohamed N, Andrejuk J, McAloose D, Sala JE, Carribero A, Rally H, Franco M, Adler FR, Brownell RL Jr, Seger J, Rowles T (2013) Unexplained recurring high mortality of southern right whale *Eubalaena australis* calves at Península Valdés, Argentina. *Mar Ecol Prog Ser* **493**:275–289, doi:10.3354/meps10506.
- Kaltenpoth M, Roeser-Mueller K, Koehler S, Peterson A, Nechitaylo T, Stubblefield JW, Herzner G, Seger J, Strohm E (2014) Partner choice and fidelity stabilize co-evolution in a Cretaceous-age defensive symbiosis. *PNAS* **111**:6359-6364, doi:10.1073/pnas.1400457111.
- Kaltenpoth M, Roeser-Mueller K, Stubblefield JW, Seger J, Strohm E (2014) Biogeography of a defensive symbiosis. *Communicative & Integrative Biology* **7**(6):e993265, doi:10.4161/19420889.2014.993265
- Olivera BM, Seger J, Horvath MP, Fedosov A (2015) Prey-capture strategies of fish-hunting cone snails: behavior, neurobiology and evolution. *Brain, Behavior and Evolution* **86**:58-74, doi:10.1159/000438449
- Marón CF, Beltramino L, Di Martino M, Chirife A, Seger J, Uhart M, Sironi M, Rowntree VJ (2015) Increased wounding of southern right whale (*Eubalaena australis*) calves by kelp gulls (*Larus dominicanus*) at Península Valdés, Argentina. *PLoS ONE* **10**(10):e0139291, doi:10.1371/journal.pone.0139291
- Marón CF, Rowntree VJ, Sironi M, Uhart M, Payne RS, Adler FR, Seger J (2015) Estimating population consequences of increased calf mortality in the southern right whales off Argentina. International Whaling Commission scientific report SC/66a/BRG/1, presented to IWC Scientific Committee, San Diego, June 2015 (available on the IWC web site).
- Wilson C, Sastre AV, Hoffmeyer M, Rowntree VJ, Fire S, Santinelli NH, Díaz Ovejero S, D'Agostino V, Marón CF, Doucette GJ, Broadwater MH, Wang Z, Montoya N, Seger J, Adler FR, Sironi M, Uhart MM (2016) Southern right whale (*Eubalaena australis*) calf mortality at Península Valdés, Argentina: are harmful algal blooms to blame? *Mar Mam Sci* **32**: 423–451, doi:10.1111/mms.12263
- Carroll D, Van Eenennaam AL, Taylor JF, Seger J, Voytas DF (2016) Regulate genome-edited products, not genome editing itself. *Nature Biotechnology* **34**: 477-479, doi:10.1038/nbt.3566
- Safavi-Hemami H, Lu A, Li Q, Fedosov AE, Biggs J, Showers Corneli P, Seger J, Yandell M, Olivera BM (2016) Venom insulins of cone snails diversify rapidly and track prey taxa. *Mol Biol Evol* **33**: 2924-2934, doi:10.1093/molbev/msw174



- Eroh GD, Clayton FC, Florell SR, Cassidy PB, Chirife A, Marón CF, Valenzuela LO, Campbell MS, Seger J, Rowntree VJ, Leachman SA (2017) Cellular and ultrastructural characterization of the grey-morph phenotype in southern right whales (*Eubalaena australis*). *PLoS ONE* 12(2): e0171449. doi:10.1371/journal.pone.0171449
- Lewis-Rogers N, Seger J, Adler FR (2017) Human rhinovirus diversity and evolution: How strange the change from Major to minor. *Journal of Virology* 91(7): e01659-16. doi:10.1128/JVI.01659-16
- Seger J, Rowntree VJ (2018) Whale lice. In *Encyclopedia of Marine Mammals, Third Edition* (ed B Würsig, JGM Thewissen, KM Kovacs), pp 1051-1054. Elsevier. ISBN: 978-0-12-804327-1
- Valenzuela LO, Rowntree VJ, Sironi M, Seger J (2018) Stable isotopes ( $\delta^{15}\text{N}$ ,  $\delta^{13}\text{C}$ ,  $\delta^{34}\text{S}$ ) in skin reveal diverse food sources used by southern right whales *Eubalaena australis*. *Mar Ecol Prog Ser* **603**: 243-255, doi:10.3354/meps12722
- Marón CF, Di Martino M, Chirife A, Beltramino L, Alzugaray L, Adler FR, Seger J, Sironi M, Rowntree VJ, Lábaque MC, Uhart M (2019) No evidence of malnutrition in dead southern right whale calves off Argentina as inferred from blubber thickness measurements and lipid content analyses. International Whaling Commission scientific report SC/67B/CMP/03, presented to IWC Scientific Committee, Bled, Slovenia, May 2018 (available on IWC web site).
- Carroll EL, Alderman R, Bannister JL, Bérubé M, Best PB, Boren L, Baker CS, Constantine R, Findlay K, Harcourt R, Lemaire L, Palsbøll PJ, Patenaude NJ, Rowntree VJ, Seger J, Steel D, Valenzuela LO, Watson M, Gaggiotti OE (2019) Incorporating non-equilibrium dynamics into demographic history inferences of a migratory marine species. *Heredity* **122**: 53–68, doi:10.1038/s41437-018-0077-y
- Amici AA, Nadkarni NM, DiBlasi E, Seger J (2019) Contrasting effects of host tree isolation on population connectedness in two tropical epiphytic bromeliads. *Am J Botany* **106**(12): 1602-1611, doi:10.1002/ajb2.1391
- Carroll EL, Ott PH, McMillan LF, Galletti Vernazzani B, Neveceralova P, Vermeulen E, Gaggiotti OE, Andriolo A, Baker CS, Bamford C, Best P, Cabrera E, Calderan S, Chirife A, Fewster RM, Flores PAC, Frasier T, Freitas TRO, Groch K, Hulva P, Kennedy A, Leaper R, Leslie MS, Moore M, Oliveira L, Seger J, Stepien EN, Valenzuela LO, White B, Zerbini A, Jackson JA (2020) Genetic diversity and connectivity of southern right whales (*Eubalaena australis*) found in the Chile-Peru wintering ground and South Georgia/Islands Georgias del Sur feeding ground. *J Heredity* **111**: 263-276, doi:10.1093/jhered/esaa010
- Seger J (2020) Robert M May (1936-2020). *Current Biology* **30** (Issue 12, R680–R683) (obituary) <https://doi.org/10.1016/j.cub.2020.05.063>
- Marón CF, Budge SM, Ward RE, Valenzuela LO, Di Martino M, Ricciardi M, Sironi M, Uhart M, Seger J, Rowntree VJ (2020) Evaluation of fatty acids and stable isotopes ( $\delta^{13}\text{C}$ ,  $\delta^{15}\text{N}$ ) in southern right whale calves (*Eubalaena australis*) in relation to age and mortality at Península Valdés, Argentina. *Mar Ecol Prog Ser* **646**:189-200, <https://doi.org/10.3354/meps13387>
- Dobson AP, Godfray CJ, Levin SA, Pacala SW, Rubenstein DI, Seger J (2020) Resolution of Respect: Robert M. May (1936–2020). *Bulletin of the Ecological Society of America* 102(1):e01769. <https://doi.org/10.1002/bes2.1769>

**In press, or in review, or almost**

- Marón CF, Lábaque MC, Beltramino L, Di Martino M, Alzugaray L, Ricciardi M, Fernández Ajó AA, Adler FR, Seger J, Sironi M, Rowntree VJ, Uhart M (2020) Patterns of blubber fat deposition and evaluation of body condition in growing southern right whale calves. *Mar Ecol Prog Ser* (in press)

Rowntree VJ, Valenzuela LO, Seger J (202x) Foraging histories of individual southern right whales (*Eubalaena australis*) inferred from isotopic variation in their baleen plates. (soon to be resubmitted, *Proceedings B*)

### Citations

More than 4700 *Google Scholar* citations as of January 2021. 54 cited  $\geq 10$  times (*i10* = 54); 38 cited  $\geq 38$  times (*h* = 38); 8 cited  $\geq 100$  times (*i100* = 8).

### Invited seminars

**1978** Amherst College (Amherst MA); **1981** University of Cambridge (Cambridge U.K.); **1982** University of Oxford (Oxford U.K.); University of Sussex (Brighton U.K.); **1983** University of Michigan (Ann Arbor MI) (2); University of Wisconsin, Madison; **1984** Princeton University (Princeton NJ); University of California, San Diego; University of California, Irvine; **1985** University of Maryland, College Park; Rutgers University (New Brunswick NJ); Stanford University (Stanford CA); University of Chicago (Chicago IL); **1986** University of Utah (Salt Lake City UT); Utah State University (Logan UT); **1987** Society for the Study of Evolution (Bozeman MT); The Royal Society (London U.K.); American Society of Zoologists (New Orleans LA); **1988** University of Minnesota (Minneapolis MN); University of Arizona (Tucson AZ) (2); **1989** XI Winter Animal Behavior Conference (Park City UT); **1990** Weber State College (Ogden UT); University of California, Santa Cruz; Fifth International Congress of Ecology (INTECOL) (Yokohama, Japan) (2); Fukuoka Symposium of Theoretical Ecology (Fukuoka, Japan); **1991** Harvard University (Cambridge MA); Entomological Society of America (Reno NV); **1992** Harvard University (Cambridge MA); Cornell University (Ithaca NY) (2); 11th Int'l Conference on Comparative Physiology (Crans Sur-Sierre, Switzerland); **1993** University of Massachusetts, Boston; **1994** University of Kansas (Lawrence KS) (2, including Michener Series lecture); Princeton University (Princeton NJ) Genetics Training Grant Symposium; Universidad Complutense (Madrid, Spain) (2, at summer course on evolution); **1995** University of California, Riverside (2); **1996** Utah State University (Logan, UT); **1997** University of California, Davis; **1998** Santa Fe Institute (Santa Fe NM) Conference on Self Organization in Biology; Gordon Conference on Mathematical and Theoretical Biology (Tilton NH)

Harvard University (Cambridge MA), Department of OEB, 22 February 1999, *Growth costs of male sex function as a factor in the evolution of plant sexual systems.*

University of Konstanz (Germany), 14 September 1999, *Evolution of odorant receptors expressed in the mammalian testis.*

Association of Western Swiss Universities (Switzerland), Summer Course on Kinship: Concept, Measurement, Evolutionary Implications, 16 September 1999, *Intragenomic conflicts and imprints*, and 17 September, *Evolution of paternal genome elimination systems in insects.*

University of Lausanne (Switzerland), Satellite Symposium on Evolution, Ecology and Behavior: Darwin's Birthday, 18 February 2000, *Can too much adaptation be a bad thing?*

Ohio State University (Columbus OH), 19 May 2000, *Evolution of paternal genome elimination in insects.*

Intermountain Junior Science and Humanities Symposium, University of Utah, 5 March 2003 (keynote lecture), *Whale lice as tracers of interactions among right whales.*

University of Pretoria (South Africa), Department of Genetics, 11 September 2003, *Big gene trees from little whale riders: comparative population genetics of six right-whale cyamids.*

Indiana University (Bloomington IN), Department of Biology, 15 October 2004, *Whale lice as naturally replicated evolutionary experiments.*

University of Utah, Department of Mathematics, Mathematical Biology Seminar, 28 September 2005, *Swinging birches: population growth, background selection, and the shapes of gene trees.*

University of Würzburg (Germany), 23 March 2006, *Tracing the movements, associations, feeding strategies and population histories of right whales with stable isotopes, genes and ectoparasites.*

University of Utah, Department of Philosophy, Edges and Boundaries of Biological Objects Symposium, 14 March 2008, *An ultra-clean evolutionary experiment, but a mess just the same.*

University of Utah, Department of Mathematics, RTG Math Biology Workshop on Building an Interdisciplinary Career, 15 May 2009, *The paradox of variation, revisited.*

University of Utah, Department of Biology, 8 April 2010, *Why adaptation is bad for your genome.*

ISHPSSB (International Society for the History, Philosophy and Social Studies of Biology) biennial meeting, Salt Lake City, 13 July 2011, symposium on Population Genetics as a Multidimensional Discipline, *“Missing heritability” and the genetics of genes that can’t be identified.*

University of Vermont, Department of Biology, 14 November 2011, *Have whale lice found the missing heritability?*

Utah State University, Uintah Basin, 10 January 2014, *Using right whales and their prey to estimate the abundance of nearly neutral mutations.* Also, *The biology of variation: an experimental course for first-year students.*

University of Rochester, Department of Biology, 28 March 2014, *Using right whales and their prey to estimate the abundance of nearly neutral mutations.*

HBES (Human Evolution and Behavior Society) annual meeting, Natal, Brazil, 30 July 2014, opening plenary talk about *Bill Hamilton's many influences on 21st-century biology.*

University of Utah, Department of Anthropology, 26 February 2015, *Adaptation is awful. Let your partners do it for you.*

University of Utah, Department of Biology, 9 April 2015, *Tempos and modes of evolution in the passengers and food of right whales.*

University of Florida, Department of Biology, Robert Holt Lab Group Meeting, 6 July 2020, *Adapt to climate change? Be careful what you wish for.* (Remote presentation via Zoom.)

University of Utah, Genetics Training Program “GIG” seminar, 1 February 2021, *Fisher’s microscope and the costs of genetic complexity.* (Remote presentation via Zoom.)