

CURRICULUM VITAE

FRED W. ALLENDORF

August 2010

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P.O. Box 600
Victoria University of Wellington
Wellington, NZ

BIRTH: 29 April 1947; Philadelphia, Pennsylvania

MILITARY SERVICE: U.S. Army, 1965-1968 (Vietnam, 1966-1967)

EDUCATION: B.S., Zoology, Pennsylvania State University, 1971
M.S., Fisheries, University of Washington, 1973
Ph.D., Fisheries and Genetics (Individual PhD), University of Washington, 1975
(co-directors, Fred Utter and Joe Felsenstein)

POST-DOCTORAL: Research Fellow, 1975-1976, Aarhus University, Denmark (Freddy Christiansen)
NATO/NSF Fellow, 1978-1979, Nottingham University (Bryan Clarke)

RESEARCH INTERESTS: Population Genetics and Conservation Biology

POSITIONS:

1976-1979 Assistant Professor of Zoology, University of Montana
1979-1984 Associate Professor of Zoology, University of Montana
1984-1989 Professor of Zoology, University of Montana
1989-1990 Program Director, Population Biology and Physiological Ecology, NSF
1990-2004 Professor of Biology, University of Montana
2004-present Regents Professor, University of Montana
2005-present Professorial Research Fellow, Victoria University of Wellington, New Zealand

AWARDS:

NATO/NSF Postdoctoral Fellowship, University of Nottingham, 1978-1979
European Molecular Biology Organisation (EMBO), Fellowship, University of Stockholm, 1979
Elected Fellow, American Association for the Advancement of Science (AAAS), February 1987
President, American Genetic Association, 1997
Hill Visiting Professor, University of Minnesota, 1997
Fulbright Senior Scholar, New Zealand, 2000-2001
Erskine Fellow, University of Canterbury, New Zealand, 2003
Appointed Regents' Professor, University of Montana, 2004
Gladden Visiting Senior Fellowship, University of Western Australia, 2007-2008

Appointed Editorial Board of the Royal Society's Proceedings B, 2008
Distinguished Visiting Scientist Fellowship, CSIRO, Australia, 2009-2010

STUDENT HONORS:

Robb Leary received the 1984 Theodosius Dobzhansky Prize by the Society for the Study of Evolution for his dissertation research under my direction (*Evolution* 38:995).

Gordon Luikart received a Fulbright Fellowship to spend a year (1994-1995) in Australia as part of his dissertation research under my direction.

Steve Forbes (1990) and Dara Newman (1994) received NSF Dissertation Improvement Grants for their dissertation research under my direction.

Charles Daugherty elected Fellow of The Royal Society of New Zealand, 1999

Andrew Whiteley received a 2003 Raney Award from the American Society of Ichthyologists and Herpetologists for his dissertation research under my direction.

MAJOR GRANTS:

NSF Research Grant, EPSCoR, 1980-1983, \$70,000

NSF Research Grant, Population Biology, 1980-1982, \$60,000

NSF Research Grant, Population Biology, 1983-1986, \$121,000

NSF Faculty Research Opportunity Award, 1986, \$10,000

U. S. Department of Agriculture Grant, Aquaculture, 1983-1985, \$43,000

NSF Research Grant, Population Biology, 1986-1989, \$148,000

NSF Dissertation Research Grant, Steve Forbes, 1988-1990, \$9,850

NSF Research Grant, Population Biology, 1989-1993, \$150,000

NSF Research Grant, Conservation and Restoration Biology, 1993-1998, \$265,000

NSF Dissertation Research Grant, Dara Newman, 1992-1994, \$9,500

NSF Grant. Training within Environmental Biology. P.F. Kukuk (Project Director), C.A. Brewer and F.W. Allendorf (co-PIs). Graduate Research Traineeship, 1995-2002, \$562,500.

NSF Equipment Grant, P. Kukuk, L.S. Mills, and F.W. Allendorf (co-PIs). Acquisition of instrumentation in evolutionary and conservation genetics. \$128,000.

Project Director, NSF Postdoctoral Research Fellowship in Biological Informatics, Dr. Eleanor Steinberg. 1999-2001. \$100,000.

NSF Small Grant for Experimental Research. Detection of trout species by PCR amplification of DNA from stream water. \$47,000. 2000-2002.

Exxon Valdez Oil Spill Trustee Council, Construction of a linkage map for the pink salmon genome, 1996-2004, \$1,420,000

The Royal Society of New Zealand. Marsden Fund. Do mutations in mitochondrial DNA affect population viability? Co-PI with Neil Gemmill, Canterbury University. \$NZ480,000, 3 years.

NSF Small Grant for Experimental Research, A population genomic approach to understand life history variation and sex chromosome evolution in rainbow trout. 2005-2006, \$44,000.

Council for International Exchange of Scholars Fulbright Alumni Initiative Program.

National Center for Ecological Analysis & Synthesis (NCEAS) and National Evolutionary Synthesis Center (NESCent) jointly funded Working Group. Genetic monitoring: Development of tools for conservation and management. \$114,800, 2007-2009.

NSF. Population genetics and management of exploited populations. 2008-2010, \$128,653. DEB 0742181.

ASSOCIATE EDITORSHIPS: Evolution (1987-1990)
Journal of Heredity (1986-1989)

Molecular Biology and Evolution (1994-1996)
Conservation Genetics (1999-2005)
Proceedings of Royal Society B: Biological Sciences (2009-present)

EDITORIAL BOARDS: Molecular Biology and Evolution (1983-1989)
Progressive Fish Culturist (1986-1989)
Conservation Biology (1990-1993)
Conservation Biology (Special Assigning Editor, 2002-present)
Molecular Ecology (1991-1995)
New Zealand Journal of Marine and Freshwater Research (2003-present)
Proceedings of Royal Society B: Biological Sciences (2008)

PROFESSIONAL SERVICE:

Panel Member, Population Biology and Physiological Ecology, NSF (1987-1989)
Panel Member, International Program, NSF (1987)
Panel Member, Conservation and Restoration Biology, NSF (1991-1992; 1995)
Council Member, The American Genetic Association (1986-1989)
Genetics Nomenclature Committee, American Fisheries Society (1986-1991)
Member, Committee on the Protection and Management of Pacific Northwest Anadromous Salmonids, National Research Council (1992-1995)
Chair, Committee of Visitors, Systematic and Population Biology Programs, NSF (1993)
Member, AAAS Council, Biological Sciences Division (1996-1998)
President, American Genetic Association (1997)
Panel member, Dissertation Improvement Grants, NSF (1997)
Member, Board of Trustees, The Nature Conservancy, Montana Chapter (1995-2001).
Chair, Nominations Committee, American Genetic Association (1999)
Member, Invasive Species Collaboratory, NSF (1999-2004)
Co-Chair, Organizing Committee, 2000 Annual Meeting of Society for Conservation Biology (SCB), Missoula, MT
Panel Member, Evolutionary Genetics, NSF (2003-2007)
Fulbright Program for U.S. Students, Science Proposal Review Panel, 2005-2008.
Member, International Scientific Advisory Panel, Allan Wilson Centre for Molecular Ecology & Evolution, New Zealand.

SOCIETIES: Society for the Study of Evolution
Society for Conservation Biology
American Association for the Advancement of Science
American Genetic Association
Montana Native Plant Society

TEACHING (last five years): Genetics and Evolution (Biol 223; lower-division)
Conservation Genetics (Biol 480; upper-division/grad)
Conservation Ecology (Biol 452; field course, Flathead Lake BioStation)
Advanced Population Genetics (Biol 595; graduate)
Micro- and Macro-Evolution (Biol 595; graduate)
Ecology and Buddhism (Environmental Studies 594; graduate)

Nicky Nelson (Victoria University of Wellington, VUW) and I taught a Conservation Biology class by videoconference jointly at VUW and University of Montana. This course was part of collaborative program in

Conservation Biology funded by a grant to myself and Charles Daugherty (VUW) from the Council for International Exchange of Scholars Fulbright Alumni Initiative Program.

CONSERVATION GENETIC BIBLIOGRAPHY:

I have compiled a bibliography focused on genetics and conservation that contains over 95,000 references. This bibliography is updated regularly can be searched at <http://www.lib.umt.edu/guide/allendorf.htm>. The primary focus of this bibliography is genetic variation in natural populations of animals, plants, and microbes. The secondary focus has been conservation, with an emphasis on the application of genetic principles to conservation. There is a taxonomic bias towards fish, especially salmon, trout, and their kin. There has been no effort to exclude papers dealing with other taxa, but there has been an effort to include more papers on the general biology and natural history of salmonid fishes.

GRADUATE STUDENTS DIRECTED:

- Mitchell, N. J. 1977. Genetic variation in populations of *Peromyscus maniculatus* in northwestern Montana. M. A.
- Wishard (now Seeb), L. N. 1977. Larval growth in *Rana pretiosa*: Ecological and genetic factors. M.A.
- O'Malley, D. 1977. Inheritance of isozyme variation and heterozygosity in ponderosa pine. M. A., Botany.
- Daugherty, C.H. 1979. Population ecology and genetics of *Ascapthus truei*: An examination of gene flow and natural selection. Ph. D. (co-director).
- Phelps, S.R. 1980. Genetic population structure of the kokanee, *Oncorhynchus nerka*, in Flathead Lake, Montana. M. A.
- Woods, J.H. 1982. Amount and distribution of isozyme variation in ponderosa pine from eastern Montana. M. S., Forestry. (co-director).
- Aronson, M.E. 1985. Effect of the *Pgm1-t* regulatory gene on liver metabolism in rainbow trout. M. A.
- Danzmann, R.G. 1986. Biochemical genetics of developmental rates of rainbow trout. Ph. D.
- Ferguson, M.M. 1986. Gene regulation and developmental divergence in salmonid fishes. Ph. D.
- Leary, R.F. 1986. Genetic control of meristic variation in salmonid fishes. Ph. D.
- Everett, R.J. 1986. The population genetics of Arctic grayling (*Thymallus arcticus*) of Montana. M. A.
- Forbes, S.H. 1990. Mitochondrial and nuclear genotypes in trout hybrid swarms: tests for gametic equilibrium and effects on phenotypes. Ph. D.
- Gellman, W.A. 1991. Sex linkage of two isozyme loci in rainbow trout. M.A.
- Sage, G.K. 1993. Population genetic analysis of westslope cutthroat trout in the Bob Marshall Wilderness. M. A.
- Lee-Chadde, S. 1994. Genetic effects of supplementation on wild populations of salmon. M. A..
- Newman, D. 1996. Importance of genetic factors on fecundity and survival of small populations. Ph. D.
- Luikart, G. 1992. Conservation genetics and mtDNA variation in bighorn sheep. M. A.
1997. Usefulness of molecular markers for detecting population bottlenecks and monitoring genetic change. Ph. D.
- Kanda, N. 1998. Genetic population structure and conservation of bull trout (*Salvelinus confluentus*). Ph.D.
- Pilgrim, K. 1999. Identification of the sex-determining locus in pink salmon. M.A.
- Thelen, G. 1999. Heterozygosity and fitness in rainbow trout: Marker loci or chromosomal segments? M.A.
- Smithwick, P. 2000. Development of nuclear DNA markers to detect hybridization between cutthroat and rainbow trout. M.A.
- Tallmon, D. 1995. Genetics, metapopulation structure, and conservation of salmonid fishes. M.A.
2001. Ecological and genetic effects of forest fragmentation on California red-backed voles. Ph.D. (co-director)
- Powers, L. 2002. Population genetics of the freshwater mussel *Margaritifera falcata*. M.A.
- Hitt, N. 2002. Introgressive hybridization between westslope cutthroat trout and rainbow trout: the role of limiting factors in the Flathead River system, Montana. M.A. (co-director)

- Funk, W.C. 2004. Ph.D. Patterns and consequences of dispersal in Columbia spotted frogs (*Rana luteiventris*). (co-director).
- Whiteley, A.R. 2005. Ph.D. Genetic and morphological diversity in the mountain whitefish, *Prosopium williamsoni*. (co-director)
- Hastings, K. Ph.D. 2005. The biogeography of isolated headwater stream fish populations of the Alexander Archipelago. (co-director)
- Ramstad, K. 2006. Ph.D. Colonization and local adaptation of sockeye salmon (*Oncorhynchus nerka*) in Lake Clark, Alaska.
- Boyer, M. M.S. 2006. Rainbow trout invasion and the spread of hybridization with native westslope cutthroat trout.
- Gardipee, F. MA. 2007. Development of fecal DNA sampling methods to assess genetic population structure of Greater Yellowstone Bison. (co-director)
- Pierson, J. Ph.D. 2010. Genetic population structure and dispersal of two North American woodpeckers in ephemeral habitats. (co-director)
- Tucker, J. Ph.D. Current. Monitoring fisher population abundance with noninvasive genetic sampling. (co-director)
- Short Bull, R. MS. The importance of replication in landscape genetics: the American black bear in the Rocky Mountains. (co-director)
- Heeg, Elizabeth. Ph.D. Current, Victoria University of Wellington, Rapid evolution in New Zealand rainbow trout. (co-director)
- Varela, Andrea. Ph.D. Current, Victoria University of Wellington, Genetic population and harvest of orange roughy. (co-director)
- O'Brien, Mike. MS. Current. Transmission of brucella among ungulate species in the Yellowstone Ecosystem. (co-director)
- Kardos, Marty. Ph.D. Current. Genetic effects on individual fitness, population growth, and population persistence in the wild. (co-director)
- Bingham, Dan. MS. Current. Extent and Dynamics of hybridization between sauger (*Sander canadensis*) and walleye (*Sander vitreus*) in the Upper Missouri River Drainage, Montana.
- Adis, Brett. MS. Current. Floodplain habitats as drivers of evolutionary divergence in arboreal toads. (co-director)

POST-DOCTORAL RESEARCHERS DIRECTED:

- Paul Spruell, 1995-2000, Conservation genetics of bull trout
- Eleanor Steinberg, 1999-2001, NSF Postdoctoral Research Fellowship in Biological Informatics
- John Wenburg, 2000-2001, Hybridization and conservation of trout species
- Megan McPhee, 2006-2008, Sex chromosome evolution and life history variation in rainbow trout
- Sebastien Paquette, 2008-present, Victoria University of Wellington, Use of genomics to identify important stocks of marine fish. (Co-director)

SELECTED INTERNATIONAL ACTIVITIES:

- 1975-1976 Postdoctoral research, Department of Genetics and Ecology, Aarhus University, Denmark.
- Oct 1975 Visiting scientist, Department of Genetics, Stockholm University, Sweden.
- 1977 Participating scientist, Biochemical investigations of the evolution of genes and enzymes (C. Markert, Yale University, P. I.). Aboard R.V. Alpha Helix in Caribbean Sea (Belize, Honduras, and Panama). Nov-Dec.
- 1978-1979 NATO/NSF Postdoctoral Fellow, Laboratory of Professor Bryan Clarke, Genetics Research Unit, University of Nottingham, England.
- Sep 1978 Genetics Society of America Grant to attend XIV International Congress of Genetics, Moscow, USSR.

1979 EMBO Short-term Fellow, Department of Genetics, Stockholm University, Stockholm, Sweden. May-Jun.

Dec 1983 Genetics Society of America Grant to attend XV International Congress of Genetics, Delhi, India.

Jan 1989 USDA supported visit to Republic of China (Taiwan) to confer and advise on genetics and conservation of biodiversity.

Aug 1993 Organized workshop on Conservation Biology and Genetics at the XVII International Congress of Genetics, Birmingham, England.

Nov 1994 Presented Keynote Address at Symposium in Fish Genetics and Breeding Science, Sendai, Japan

Sep 1997 Presented Keynote Address at International Conference on Fish Migration. Vienna, Austria.

Jan 1998 Presented invited seminars at the Swedish University of Agricultural Sciences, Umeå and Stockholm University, Sweden.

Feb 1998 Presented invited seminars at Dept. Ecology & Genetics, Aarhus University, and Inland Fisheries Institute, Silkeborg, Denmark.

Jun 1998 Presented invited papers in two symposia at the annual meeting of the Society for Conservation Biology. Sydney, Australia.

Jul 1999 Presented invited paper at European Union sponsored meeting on conservation of brown trout. St. Feliu, Spain.

Jul 1999 Presented invited seminars at University Joseph Fourier, Grenoble, France.

2000-2001 Fulbright Senior Scholar, National Institute of Water and Atmospheric Research, Christchurch, and Victoria University of Wellington, New Zealand.

Sep 2001 Conservation Genetics Meeting, Lausanne, Switzerland. Invited speaker.

Sep 2001 Keynote speaker. 2nd Nordic International Symposium on Freshwater Fish Migration and Fish Passage. Reykjavik, Iceland.

May 2002 Participant in workshop on the viability of the Scandinavian wolf population. Färna, Sweden. 1-3 May 2002.

Sep 2002 Participant in Single Nucleotide Polymorphisms (SNPs) Workshop, Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany

Mar 2003 Erskine Fellow, University of Canterbury, Christchurch, New Zealand.

Sep 2003 Keynote address, Exploitation and management of exotic and naturalized aquatic genetic resources in relation to native biodiversity. 24-26 September, 2003. Puerto Varas, Chile.

May 2004 Conservation genetics workshop, Kasetsart University, Bangkok, Thailand

May 2006 Conservation genetics workshop, Burapha University, Thailand

July 2007 Keynote speaker, Hybridization & Evolution, University of Porto, Portugal

2007-2008 Gledden Visiting Senior Fellowship, University of Western Australia, 2007

Aug 2008 Plenary address, 6th World Congress of Herpetology, Manaus, Brazil

Jun 2009 Keynote speaker, Integrating population genetics and conservation biology, European Science Foundation, Trondheim, Norway. May 2009.

2009-2010 Distinguished Visiting Scientist, CSIRO, Australia

Nov 2009 Keynote speaker, Annual meeting of Australian Centre for Biodiversity, Monash University, Melbourne, Australia.

GROUP LEADERSHIP

Mike Schwartz and I co-direct a Working Group entitled “Genetic monitoring: Optimal design and development of tools for data analysis” that is jointly funded by the National Center for Ecological Analysis and Synthesis (NCEAS) and the National Center for Evolutionary Synthesis (NESCent) C. Scott Baker (USA), Michael M. Hansen (Denmark), Jennifer Jackson (UK), Kate Kendall (USA), Linda Laikre (Sweden), Kevin McKelvey (USA), Brad McCrae (USA), Maile Neel (USA), Isabelle Olivieri (France), Nils Ryman (Sweden), Ruth Short Bull (USA), Jeff Stetz (USA), Dave Tallmon (USA), Barbara Taylor (USA), Christina Vojta (USA), Don

Waller (USA), Robin Waples (USA).

- Laikre, L., and 20 others. 2010. Neglect of genetic diversity in implementation of the Convention on Biological Diversity. *Conservation Biology* 24:86-88.
- Tallmon, D.T. and 9 others. 2010. When are genetic methods useful for estimating contemporary abundance and detecting population trends? *Molecular Ecology Resources* 10:684-692.
- Laikre, L., M.K. Schwartz, R.S. Waples, N. Ryman, and The GeM Working Group. 2010. Compromising genetic diversity in the wild: unmonitored large-scale release of plants and animals. *Trends in Ecology and Evolution* 25:520-529.

Wikipedia: http://en.wikipedia.org/wiki/Genetic_monitoring

Genetic Monitoring for Managers: http://alaska.fws.gov/gem/mainPage_1.htm

EDITED COLLECTIONS:

- Editor for special issue of the *Journal of Heredity* (Aug-Sep 1998) containing papers resulting from American Genetics Association Presidential Symposium (Conservation and Genetics of Marine Organisms).
- Editor for Special Section of *Conservation Biology* (Feb 2003; Population Biology of Invasive Species). These papers were presented in a symposium at the annual meeting of the Society for Conservation Biology in Hilo, Hawaii, 2001.

BOOKS:

- Allendorf, F.W., and G. Luikart. 2007. *Conservation and the Genetics of Populations*. Wiley-Blackwell Publishing. 642 pp.
- National Research Council (with 14 other committee members). 1996. *Upstream: Salmon and Society in the Pacific Northwest*. Member of NRC's Committee on Protection and Management of Pacific Northwest Anadromous Salmonids.

BOOK CHAPTERS:

- Utter, F.M., H.O. Hodgins, F.W. Allendorf, A.G. Johnson, and J.L. Mighell. 1973. Biochemical variants in Pacific salmon and rainbow trout: their inheritance and application in population studies. In: *Genetics and Mutagenesis of Fish*, pp. 329-339. Springer-Verlag, Berlin.
- Utter, F.M., H.O. Hodgins, and F.W. Allendorf. 1974. Biochemical genetic studies of fishes: potentialities and limitations. In: *Biochemical and Biophysical Perspectives in Marine Biology*, Vol. 1, pp. 213-238.
- Allendorf, F.W., F.M. Utter, and B.P. May. 1975. Gene duplication in the family Salmonidae: II. Detection and determination of the genetic control of duplicate loci through inheritance studies and the examination of populations. In: *Isozymes IV: Genetics and Evolution*, pp. 415-432. Clement L. Markert, editor. Academic Press, New York.
- Allendorf, F.W., and F.M. Utter. 1979. Population genetics. In: *Fish Physiology*, Volume 8, pp. 407-454. W.S. Hoar, D.J. Randall, and J.R. Brett, editors. Academic Press, New York.
- Allendorf, F.W., R.F. Leary, and K.L. Knudsen. 1983. Structural and regulatory variation of phosphoglucomutase in rainbow trout. In: *Isozymes: Current Topics in Biological and Medical Research*, Vol. 9, pp. 123-142. Alan R. Liss Publ. Co., N.Y.
- Allendorf, F.W. 1983. Isolation, gene flow, and genetic differentiation among populations. In: *Genetics and Conservation*, edited by C. Schonewald-Cox, et al. Benjamin/Cummings. pp. 51-65.
- Allendorf, F.W., and G. Thorgaard. 1984. Tetraploidy and the evolution of salmonid fishes. In: *The Evolutionary*

- Genetics of Fishes, B.J. Turner, ed., Plenum Press, pp. 1-53.
- Allendorf, F.W., and R.F. Leary. 1986. Heterozygosity and fitness in natural populations of animals. In: Conservation Biology: The Science of Scarcity and Diversity. M. Soulé, editor. Sinauer Assoc. pp. 57-76.
- Allendorf, F.W., N. Ryman, and F.M. Utter. 1987. Genetics and fishery management: Past, present, and future. In: Population Genetics and Fisheries Management, edited by N. Ryman and F.M. Utter. University of Washington Press, pp. 1-19.
- Allendorf, F.W., and N. Ryman. 1987. Genetic management of hatchery stocks. In: Population Genetics and Fisheries Management, edited by N. Ryman and F.M. Utter. University of Washington Press, pp. 141-159.
- Thorgaard, G.H., and F. W. Allendorf. 1988. Developmental genetics of fishes. In: Developmental Genetics of Animals and Plants, edited by G. M. Malacinski. Macmillan Publishing Company, pp. 363-391.
- Powers, D.A., F.W. Allendorf, and T. Chen. 1990. Application of molecular techniques to the study of marine recruitment problems. In: Large Marine Ecosystems: Patterns, Processes, and Yields, ed. by K. Sherman, L.M. Alexander, and B.D. Gold. Amer. Assoc. Advancement Sci., pp. 104-121.
- Allendorf, F.W., and M.M. Ferguson. 1990. Genetics. In: Methods for Fish Biology, edited by C.B. Schreck and P.B. Moyle. Amer. Fish. Soc., Bethesda, Maryland, pp. 35-63.
- Ferguson, M.M., and F.W. Allendorf. 1991. Evolution of the fish genome. In: Biochemistry and Molecular Biology of Fishes, edited by P.W. Hochachka and T.P. Mommsen. Elsevier. pp. 25-42.
- Allendorf, F. W., R. J. Everett, A. J. Gharrett, M. K. Glubokovsky, W. Jones, T. P. Quinn, J. E. Smoker W. Seeb, and F. M. Utter. 1992. Biological interactions of wild enhanced stocks of salmon in Alaska: Genetic considerations. In Mathisen, O. A. and G. L. Thomas, eds. Biological Interactions of Wild Enhanced Stocks of Salmon in Alaska. Juneau Center Fish. and Ocean. Sciences Publ. 9201.
- Allendorf, F.W., and R.S. Waples. 1996. Conservation and genetics of salmonid fishes. In: Conservation Genetics: Case Histories from Nature, edited by J.C. Avise and J.L. Hamrick. Chapman & Hall. pp. 238-280.
- Allendorf, F.W. 1997. Genetics and demography of grizzly bear populations. In: Principles of Conservation Biology, Second Edition, by G K. Meffe and C.R. Carroll. Sinauer Associates. pp. 174-175.
- Allendorf, F. W., and N. Ryman. 2002. The role of genetics in population viability analysis. In: *Population Viability Analysis*. S. R. Beissinger and D. R. McCullough, editors. University of Chicago Press, Chicago, Illinois. pp. 50-85.
- Allendorf, F.W., C.R. Miller, and L.P. Waits. 2005. Genetics and demography of grizzly bear populations. In: Principles of Conservation Biology, Third Edition, by M.J. Groom, G K. Meffe, and C.R. Carroll. Sinauer Associates. pp. 404-407.
- Haig, S.M., and F.W. Allendorf. 2006. Hybrids and policy. In: The Endangered Species Act at Thirty: Conserving Biodiversity in Human-Dominated Landscapes, Vol. 2. J.M. Scott, D.D. Goble, and F. Davis, editors. Island Press. Washington, D.C. pp. 150-163.
- Allendorf, F.W. 2008. Conserving biodiversity within and among species. In: Conservation Biology: Evolution in Action, S.P. Carroll and C.W. Fox, editors. Oxford University Press, New York. pp. 81-83.
- Utter, F.M. M. V. McPhee, and F.W. Allendorf. 2009. Population genetics and the management of Arctic-Yukon-Kuskokwim salmon populations. In C.C. Krueger and C.E. Zimmerman, editors. Sustainability of the Arctic-Yukon-Kuskokwim Salmon Fisheries: What Do We Know About Salmon Ecology, Management, and Fisheries? American Fisheries Society Symposium, Bethesda, Maryland.
- Allendorf, F.W. In press. For all time: No separation between present and future. Invited contribution to *For All Time*, part of the Second Premise Project, edited by Kathleen Dean Moore and Michael P. Nelson.
- Allendorf, F.W., and J.J. Hard. 2009. Human-induced evolution caused by unnatural selection through harvest of wild animals. In J.C. Avise and F.J. Ayala, editors. In the light of evolution, III: Two centuries of Darwin. National Academies Sciences Press. Pp. 129-147.

ARTICLES: (h-index = 50; total of 9,000 citations)

- Heckman, J.R., F.W. Allendorf, and J.E. Wright, Jr. 1971. Trout leukocytes: growth in oxygenated cultures. *Science* 173:246-247.
- Allendorf, F.W., and F.M. Utter. 1973. Gene duplication in the family Salmonidae: disomic inheritance of two loci reported to be tetrasomic in rainbow trout. *Genetics* 74:647-654.
- Utter, F.M., F.W. Allendorf, H.O. Hodgins, and A.G. Johnson. 1973. Genetic basis of tetrazolium oxidase phenotypes in rainbow trout. *Genetics* 73:159.
- Utter, F.M., F.W. Allendorf, and H.O. Hodgins. 1973. Genetic variability and relationships in Pacific salmon and related trout based on protein variations. *Syst. Zool.* 22:257-270.
- Allendorf, F.W., F.M. Utter, and B.P. May. 1975. Gene duplication in the family Salmonidae: II. Detection and determination of the genetic control of populations. In *Isozymes IV: Genetics and Evolution*, pp. 415-432. C. L. Markert, editor. Academic Press, New York.
- May, B.P., F.M. Utter, and F.W. Allendorf. 1975. Biochemical genetic variation in pink and chum salmon: inheritance of intraspecies variation and apparent absence of interspecies introgression following massive hybridization of hatchery stocks. *J. Hered.* 66:227-232.
- Allendorf, F.W., and F.M. Utter. 1976. Gene duplication in the family Salmonidae: III. Linkage between two duplicated loci coding for aspartate aminotransferase in the cutthroat trout. *Hereditas* 82:19-24.
- Allendorf, F.W., N. Ryman, A. Stenneck, and G. Ståhl. 1976. Genetic variation in Scandinavian populations of brown trout: Evidence of distinct sympatric populations. *Hereditas* 83:73-82.
- Utter, F.M., F.W. Allendorf, and B.P. May. 1976. The use of protein variation in the management of salmonid populations. *Trans. 41st North American Wildlife and Natural Resources Conference*. pp. 373-384.
- Utter, F.M., F.W. Allendorf, and B.P. May. 1976. Genetic delineation of salmonid populations. In: *Salmonid Genetics: Status and Role in Aquaculture*. T. Noshio and W. Hershberger, editors. University of Washington Sea Grant Publication.
- Allendorf, F.W., N.J. Mitchell, N. Ryman, and G. Ståhl. 1977. Isozyme loci in brown trout (*Salmo trutta*): Detection and interpretation from population data. *Hereditas* 86:179-190.
- Allendorf, F.W. 1977. Genetic variation in populations of fish. In: *Fish Genetics-Fundamentals and Implications to Fish Management*, pp. 35-39. C.M. Fetterhoff, editor. Great Lakes Fishery Commission, Mich.
- Utter, F.M., and F.W. Allendorf. 1977. Determination of the breeding structure of steelhead trout (*Salmo gairdneri*) populations through gene frequency analysis. *Calif. Coop. Fish. Res. Unit Special Report* 77-1:44-54.
- Allendorf, F.W. 1977. Electromorphs or alleles? *Genetics* 87:821-822.
- Allendorf, F.W. 1978. Electrophoretic distinction of rainbow trout (*Salmo gairdneri*) and cutthroat trout (*S. clarki*). Letter to the editor. *J. Fisheries Res. Bd. Canada* 35:483.
- Allendorf, F.W. 1978. Protein polymorphism and the rate of loss of duplicate gene expression. *Nature* 272:76-78.
- Utter, F.M., F.W. Allendorf, and B. May. 1979. Genetic basis of creatine kinase isozymes in skeletal muscle of salmonid fishes. *Biochem. Genet.* 17:1079-1091.
- Ryman, N., F.W. Allendorf, and G. Ståhl. 1979. Reproductive isolation with little genetic divergence in sympatric populations of brown trout (*Salmo trutta*). *Genetics* 92:247-262.
- O'Malley, D.M., F.W. Allendorf, and G.M. Blake. 1979. Inheritance of isozyme variation and heterozygosity in *Pinus ponderosa*. *Biochem. Genet.* 17:233-250.
- Clarke, B., and F.W. Allendorf. 1979. Frequency-dependent selection due to kinetic differences between allozymes. *Nature* 279:732-734.
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