CURRICULUM VITAE: Gary N. Cherr

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Education and Training:
B.A. Biology, Sonoma State University, 1979
Ph.D. Zoology, University of California, Davis 1984
National Institutes of Health Postdoctoral Fellow, Department of Obstetrics and Gynecology, School of Medicine, University of California, Davis, 1983-1986.

Areas of Specialization: reproductive physiology, reproductive and developmental biology and toxicology, sperm cell physiology, embryo defense mechanisms, biochemistry and cell biology of environmental stress, endocrine disruption, environmental toxicology

Appointments:
Director Emeritus (2022-present), UC Davis Bodega Marine Laboratory
Professor Emeritus (2019-present), UC Davis Departments of Environmental Toxicology and Nutrition
Director (2009-2022), UC Davis Bodega Marine Laboratory
Professor (1999-2019), UC Davis Departments of Environmental Toxicology and Nutrition

Professional Experience:
Director, Bodega Marine Laboratory, 2009-2022
Interim Director, Bodega Marine Laboratory, 2007-2008
Professor VIII, Departments of Environmental Toxicology and Nutrition, Bodega Marine Laboratory, 2019-2022
Professor VII, Departments of Environmental Toxicology and Nutrition, Bodega Marine Laboratory, 2012-2015
Professor V, Departments of Environmental Toxicology and Nutrition, Bodega Marine Laboratory, 2009-2012
Professor IV, Departments of Environmental Toxicology and Nutrition, Bodega Marine Laboratory, 2006-2009
Professor III, Departments of Environmental Toxicology and Nutrition, Bodega Marine Laboratory, 1999-2006
Research Biologist I, Bodega Marine Laboratory and Dept. Environmental Toxicology, University of California, Davis, 1999
Associate Research Biologist III, Bodega Marine Laboratory and Dept. Environmental Toxicology, University of California, Davis, 1997-1999
Lecturer, Division of Biological Sciences, University of California Davis, 1995-1997
Associate Research Biologist II, Bodega Marine Laboratory and Dept. Environmental Toxicology, University of California, Davis, 1995-1997
Associate Research Biologist I, Bodega Marine Laboratory, University of California, Davis, 1993-1995
Assistant Research Biologist IV, Bodega Marine Laboratory, University of California, Davis, 1991-1993.

Assistant Research Biologist III, Bodega Marine Laboratory, University of California, Davis, 1989-1991.
Assistant Research Biologist II, Bodega Marine Laboratory, University of California, Davis, 1986-1989
Postdoctoral Fellow, National Institutes of Health, Department of Obstetrics & Gynecology, School of Medicine, University of California, Davis 1984-1986
Research Assistant, Department of Animal Science, University of California, Davis, 1980-1983
Teaching Assistant, Department of Zoology, University of California, Davis, 1979-1982
Research Associate, Department of Fish and Game, California, 1979

Graduate Group Membership
Pharmacology and Toxicology, UC Davis
Molecular, Cellular, & Integrative Physiology, UC Davis

Graduate Students Supervised as Major Professor
Gayle Garman, Ph.D, Ecology Graduate Group, UC Davis.
D.G. Crosby, Major Professor, Graduated June, 1993
Heidi Blethrow, M.S., Department of Animal Science, UC Davis
W.H. Clark, Jr., Major Professor, Graduated June, 1993
Jill Spangenberg, Ph.D., Pharmacology and Toxicology Graduate Group
G.N. Cherr, Major Professor. Graduated June, 1997
Carol Vines, Ph.D., Pharmacology and Toxicology Graduate Group
G.N. Cherr, Major Professor. Graduated June, 1999
Edward Salinas, Ph.D, Pharmacology and Toxicology Graduate Group
G.N, Cherr, Major Professor. Graduated June, 2004
Amro Hamdoun, Ph.D., Molecular, Cellular, and Integrative Physiology Graduate Group
G.N. Cherr, Major Professor, Graduated June, 2003
Troy Roepke, Ph.D Molecular, Cellular, and Integrative Physiology Graduate Group
G.N. Cherr, Major Professor, Graduated June, 2005
Theodore Tollner, Ph.D., Molecular, Cellular, and Integrative Physiology Graduate Group
G.N. Cherr, Major Professor, Graduated June, 2007.
Elise Fairbairn, Ph.D., Pharmacology and Toxicology graduate Group
G.N. Cherr, Major Professor, Graduated March, 2010.
Nature McGinn, Ph.D. Molecular, Cellular, and Integrative Physiology Graduate Group
G.N. Cherr, Major Professor, Graduated June, 2010
Susanne Brander, Pharmacology and Toxicology Graduate Group
G.N. Cherr, Major professor, Graduated December, 2011

Post-Doctoral Fellows
Dr. Murali C. Pillai (1990-1992)
Dr. Gayle Garman (1993-1994)
Dr. Carol Vines (1999-2002)
Dr. Theodore Tollner (2008-2010
Dr. Elise Fairbairn (2009-2015)
Dr. Nature McGinn (2010-2012)
Dr. Bryan Cole (2010-2015)
Dr. Cristina Torres Duarte (2015-2019)

Service: *Departmental*
Seminar Committee, Bodega Marine Laboratory, 1989-1990, 1998-2000, 2002-present
Library Committee, Bodega Marine Laboratory, 1991-1992; 1995-present
Chair, Ph.D. Designated Emphasis in Reproductive Biology, 2000-2007

School of Veterinary Medicine Aquatic Health faculty search, 2008

Service: *System Wide*

Study Section Member for Tobacco-Related Disease Research Program, Office of the President of the University of California, 1990

Steering Committee for University of California at Santa Barbara, Southern California Education Initiative, U.S. Department of Interior, 1990-1994

California Sea Grant College Program Advisory Board Member, 2003-present

California Sea Grant College Program Advisory Board Chair, 2005-present

University of California Marine Council, 2007-2008

Executive Board, Cooperative Institute for Marine Ecosystems and Climate (NOAA and UC San Diego), 2011-2015.

Service: *Non-University*

Science Advisory Board, San Francisco Bay Estuary Project, 1988-1990

Biomonitoring Science Advisory Board, Department of Ecology, State of Washington, 1991-1995

Advisor, US Regional Marine Research Board, Pacific Northwest Region, Washington State Sea Grant College Program, 1992-1993

Protocol Review Committee, Water Resources Control Board, State of California, 1994-present

Technical Review Panel, Department of Ecology, State of Washington, 1998

Toxicity Identification Evaluation Review Committee, US EPA, 1999-2000

Organizer of 2000 Western Regional Developmental Biology Conference, Society for Developmental Biology, Bodega Marine Laboratory

Exxon Valdez Oil Spill Trustee Council Science Panel, 2006-present

State of California Resources Agency Science Sea Grant Advisory Panel, 2007-2010

Technical Advisory Committee, Coastal Conservancy Creosote Removal Project, 2014-present

Community Service:

Lawrence Hall of Science Summer Education Program for junior high and high school students, Summers, 1995-present

Establish Marine Biology Program for 5th and 6th grade students at Penngrove School (Petaluma School District) for project on developing marine organisms, 1996-98

Assist National Oceanic and Atmospheric Administration's National Sanctuary Program in educating high school teachers on herring reproduction in the San Francisco Bay Estuary, Spring, 1996

Petaluma High School Career Day presentations on marine science careers, 2006-2008

Teaching Responsibilities:

UC Davis Molecular and Cellular Biology: Instructor in "Mechanisms of Fertilization" (MCB 251) Fall Quarters. 3 Units

UC Davis Environmental Toxicology/Nutrition 127: "Environmental Stress and Development in Marine Organisms". Summer Session I. 10 Units

UC Davis Pharmacology and Toxicology 230: "Experimental Approaches to Problems in Coastal Toxicology". Special Summer Session. 3 Units.

University of Tokyo, Misaki Marine Station: "Environmental Factors Affecting Development", Spring, 1998, 2002, 2005 "International Courses in Development" series.

Lectures in UC Davis Nutrition 204 (Mineral Metabolism, Winter Quarters)

UC Davis Evironmental Toxicology 120: "Aquatic Toxicology", 4 units.

UC Davis Neurobiology, Physiology, and Behavior 141, 141P: "Physiological Adaptations of Marine Organisms", Spring quarter, 15 units.

Publications:

1. Cherr, G.N. and Wallis H. Clark, Jr. 1982. Fine structure of the envelope and micropyles in the eggs of the white sturgeon, *Acipenser transmontanus* Richardson. *Development Growth and Differentiation* 24:341-352.
2. Cherr, G.N. and W.H. Clark, Jr. 1984. Jelly release in the eggs of the white sturgeon, *Acipenser transmontanus*: An enzymatically mediated event. *Journal of Experimental Zoology* 230:145-149.
3. Cherr, G.N. and W.H. Clark, Jr. 1984. An acrosome reaction in sperm from the white sturgeon, *Acipenser transmontanus*. *Journal of Experimental Zoology* 232(1):129-139.
4. Cherr, G.N. and W.H. Clark, Jr. 1985. An egg envelope component induces the acrosome reaction in sturgeon sperm. *Journal of Experimental Zoology* 234:75-85.
5. Cherr, G.N. and W.H. Clark, Jr. 1985. Gamete interaction in the white sturgeon, *Acipenser transmontanus*: A morphological and physiological review. *Environmental Biology of Fishes* 14(1):11-22.
   Also in: *North American Sturgeons: Biology and Aquaculture Potential*, F. Binkowski and S. Doroshov (eds.), Dordrecht: Dr W. Junk: pp 11-22.
6. Cherr, G.N., H. Lambert, S. Meizel and D.F. Katz. 1986. *In vitro* studies of the golden hamster sperm acrosome reaction: Completion on the zona pellucida and induction by homologous soluble zonae pellucidae. *Developmental Biology* 114:119-131.
7. Kowtal, G. V., W.H. Clark, Jr., and G.N. Cherr. 1986. Elimination of adhesiveness in eggs from the white sturgeon, *Acipenser transmontanus*: Chemical treatment of fertilized eggs. *Aquaculture* 55:139-143.
8. Katz, D.F., G.N. Cherr, and H. Lambert. 1986. The evolution of hamster sperm motility during capacitation and interaction with the ovum vestments *in vitro*. *Gamete Research*, 14:333-346.
9. Cherr, G.N. and W.H. Clark, Jr. 1986. Induction of the acrosomal reaction in sperm from the white sturgeon, *Acipenser transmontanus*, pp 235-249, In: J.L. Hedrick (ed.) *The Molecular and Cellular Biology of Fertilization*, Plenum Publishing Corporation, New York, New York.
10. Cherr, G.N. and N. L. Cross. 1987. Immobilization of mammalian eggs on solid substrates by lectins for electron microscopy. *Journal of Microscopy*. 145:341-346.
11. Cherr, G.N., J. Shenker, C. Lundmark and K.O. Turner. 1987. Toxic effects of selected bleached kraft mill effluent constituents on the sea urchin sperm cell. *Environmental Toxicology and Chemistry*, 6:561-569.
12. Katz, D.F., E.Z. Drobnis, J. Baltz, G.N. Cherr, A.I. Yudin, R.A. Cone, and L.Y. Cheng. 1987. The biophysics of sperm penetrations of the cumulus and zona pellucida, pp 275-285, In: H. Mohri (ed.), *New Horizons in Sperm Cell Research*, Japan Scientific Societies Press, Tokyo; Gordon and Breach Scientific Publishers, New York.
13. Cherr, G.N., E.Z. Drobnis, and D.F. Katz. 1988. Localization of cortical granule constituents before and after exocytosis in the hamster egg. *Journal of Experimental Zoology*, 246(1):81-93.
14. Yudin, A.I., G.N. Cherr, and D.F. Katz. 1988. The structure of the cumulus matrix and zona pellucida: A new view of sperm interaction with oocyte-associated extracellular matrices. *Cell and Tissue Research*, 251:555-564.
15. Drobnis, E.Z., A.I. Yudin, G.N. Cherr, and D.F. Katz. 1988. The kinematics of hamster sperm during penetration of the cumulus cell matrix. *Gamete Research* 21:367-383.
16. Drobnis, E.Z., A.I. Yudin, G.N. Cherr, and D.F. Katz. 1988. Hamster sperm penetration of the zona pellucida: Kinematic analysis and mechanical implications. *Developmental Biology*, 130:311-323.
17. Cherr, G.N., and S. Suarez. 1989. Structure and physiology of mature sperm and egg, pp. 159-168, In: E. Meisami and P.S. Timiras (eds), *Handbook of Human Growth and Developmental Biology*; Vol. II, CRC Press, Boca Raton, Florida.
18. Nuccitelli, R., G.N. Cherr, and W.H. Clark, Jr., eds. 1989. *Mechanisms of Egg Activation*, Bodega Marine Laboratory, Marine Science Series, No. 2, J.S. Clegg, Series Ed., Plenum Press, New York, 290 pp.
19. Cherr, G.N., A.I. Yudin, and D.F. Katz. 1990. Organization of the hamster cumulus extracellular matrix: A hyaluronate-glycoprotein gel which modulates sperm access to the oocyte. *Development*

Growth and Differentiation, 32(4):353-365.

20. Cherr, G.N., J. Shoffner-McGee, and J.M. Shenker. 1990. Methods for assessing fertilization and embryonic/larval development in toxicity tests using the California mussel (*Mytilus californanus*). *Environmental Toxicology and Chemistry*, 9:1137-1145.

21. Cherr, G.N., and T. Ducibella. 1990. Cortical granule distribution, exocytosis, and activation of the egg, pp. 309-330. In: *Serono Symposium on Fertilization in Mammals*, B.D. Bavister, J. Cummins, and E.R.S. Roldan (eds.). Serono Symposia, USA, Norwell, Massachusetts.

22. Shenker, J.M., and G.N. Cherr. 1990. Toxicity of zinc and bleached kraft mill effluent to larval English sole (*Parophrys vetulus*) and topsmelt *(Atherinops affinis*) *Archives of Environmental Contamination and Toxicology*, 19:680-686.

23. Cherr, G.N. 1990. Toxicity tests for *Mytilus californianus* (California mussel). In: *Proceedings of A Workshop on Culture and Toxicity Testing of West Coast Marine Organisms.* G.A. Chapman, ed., U.S. Environmental Protection Agency Publication pp. 89-94.

24. Higashi, R.M., G.N. Cherr, and D.G. Crosby. 1991. The efficacy of enhanced photooxidation for the reduction of TOCL, color, and toxicity in mill aqueous effluents, pp. 73-83, In: *Proceedings of the 1991 TAPPI Environmental Conference*, TAPPI Press, Atlanta, GA.

25 Cherr, G.N., R.G. Summers, J.D. Baldwin, and J.B. Morrill. 1992. Preservation and visualization of the sea urchin blastoceolic extracellular matrix. *Microscopy Research and Technique*, 22:11-22. DOI: 10.1002/jemt.1070220104

26. Cherr, G.N. and E.Z. Drobnis. 1992. Fertilization in the Golden Hamster, In: *A Comparative Overview of Mammalian Fertilization.* B.S. Dunbar and M.G. O'Rand, (eds.), Plenum Press, New York and London. pp. 217-243.

27. Higashi, R.M., G.N. Cherr, T.W-M. Fan, A.N. Lane, and A.D. Jones. 1992. High-resolution analytical separation and structural probes for studies of high molecular mass material from BKME. *Proceedings of the 1992 TAPPI Environmental Conference*, Book 1:275-286. TAPPI Press, Atlanta, GA.

28. Baldwin, J.D., M.C. Pillai, and G.N. Cherr. 1992. The response of sea urchin (*Strongylocentrotus purpuratus*) embryos to aqueous petroleum wastes includes the expression of a high molecular weight glycoprotein. *Marine Biology*, 114: 21-30.

29. Pillai, M.C., J.D. Baldwin, and G.N. Cherr. 1992. Early development in an algal gametophyte: Role the cytoskeleton in germination and nuclear translocation. *Protoplasma*, 170:34-45. DOI: 10.1007/BF01384455

30. Yanagimachi, R., G.N. Cherr, M.C. Pillai, and J.D. Baldwin. 1992. Factors controlling sperm entry into the micropyles of salmonid and herring eggs. *Development, Growth, Differentiation*, 34:447-461.

31. Higashi, R.M., G.N. Cherr, J.M. Shenker, J.M. Macdonald, and D.G. Crosby. 1992. A Polar high molecular mass constituent of bleached kraft mill effluent is toxic to marine organisms. *Environmental Science and Technology*, 26:2413-2420. DOI: 10.1021/es00036a012

32. Fan, T.W-M., R.M. Higashi, G.N. Cherr, and M.C. Pillai. 1992. Use of noninvasive NMR spectroscopy and imaging for assessing produced water effects on mussel reproduction. In: *Produced Water: Technological/Environmental Issues and Solutions*. J. P. Ray and F.R. Engelhardt, eds. Plenum Press, New York. pp. 403-414.

33. Higashi, R.M., G.N. Cherr, C.A. Bergens, T.W-M. Fan, and Crosby, D.G. 1992. Toxicant isolation from a produced water source in the Santa Barbara Channel. In: *Produced Water: Technological/Environmental Issues and Solutions*. J. P. Ray and F.R. Engelhardt, eds. Plenum Press, New York. pp. 223-233.

34. Cherr, G.N. 1993. Lectin-conjugated substrates for attachment of SEM specimens. In: *Procedures in Electron Microscopy*, A.W. Robards and A.J. Wilson, (eds.), John Wiley and Sons, Ltd., London.

35. Pillai, M.C., T.S. Shields, R. Yanagimachi, and G.N. Cherr. 1993. Isolation and partial characterization of the sperm motility initiation factor from eggs of the Pacific Herring, *Clupea pallasi*. *Journal of Experimental Zoology*, 265:336-342. DOI: 10.1002/jez.1402650316

36. Cherr, G.N., T.W-M. Fan, M.C. Pillai, T. Shields, and R.M. Higashi. 1993. Electrophoretic

separation, characterization, and quantification of biologically active lignin-derived macromolecules. *Analytical Biochemistry*, 214:521-527. DOI: 10.1006/abio.1993.1533

37. Garman, G.D., M.C. Pillai, and G.N. Cherr. 1994. Inhibition of cellular events during algal gametophyte development: Effects of select metals and an aqueous petroleum waste. *Aquatic Toxicology*, 28:127-144. DOI: 10.1016/0166-445X(94)90025-6

38. Pillai, M.C., R. Yanagimachi, and G.N. Cherr. 1994. *In vivo* and *in vitro* initiation of sperm motility using fresh and cryopreserved gametes from the Pacific herring, *Clupea pallasi*. *Journal of Experimental Zoology*, 269:62-68. DOI: 10.1002/jez.1402690108

39. Garman, G.D., M.C. Pillai, L.J. Goff, and G.N. Cherr. 1995. Nuclear events during early development in *Macrocystis pyrifera* gametophytes and the temporal effects of a marine contaminant. *Marine Biology*, 121:355-362. DOI: 10.1007/BF00346745

40. Cherr, G.N., S.A. Meyers, A.I. Yudin, C.A. VandeVoort, D. G. Myles, P. Primakoff, and J.W. Overstreet. 1996. The PH-20 protein in cynomolgus macaque spermatozoa: Identification of two different forms exhibiting hyaluronidase activity. *Developmental Biology*, 175:142-153. DOI: 10.1006/dbio.1996.0102

41. Griffin, F.J., C. Vines, M.C. Pillai, R. Yanagimachi, and G.N. Cherr. 1996. Sperm Motility Initiation Factor (SMIF) is a minor component of the Pacific herring egg chorion. *Development, Growth, and Differentiation*, 38:193-202.

42. Spangenberg, J.M. and G.N. Cherr. 1996. Developmental effects of barium in a marine bivalve (*Mytilus californianus*). *Environmental Toxicology and Chemistry*, 15(10):1769-1774. DOI: 10.1897/1551-5028(1996)015<1769:DEOBEI>2.3.CO;2

43. Vines, C.A. Griffin, F.J., M.C. Pillai, R. Yanagimachi, T. Hibbard-Robbins, and G.N. Cherr. 1996. A specialized role for the Pacific herring egg chorion in sperm motility initiation. *In:* The Fish Egg: Its Biology and Culture. D. MacKinlay and M. Eldridge, eds. pp.167-172. Symposium Proceedings of Int. Cong. Biol. Fish., Physiol. Sec., Am. Fish. Soc.

44. Olin, K.A., G.N. Cherr, E. Rifkin, and C.L. Keen. 1997. The effects of some redox-active and reactive aldehydes on DNA-protein cross-links *in vitro*. *Toxicology*, 110:1-8. DOI: 10.1016/0300-483X(96)03318-5

45. Meyers, S.A., A.I. Yudin, G.N. Cherr, C.A. Vandevoort, D.G. Myles, P. Primakoff, and J.W. Overstreet. 1997. Hyaluronidase activity of macaque sperm assessed by an *in vitro* cumulus penetration assay. *Molecular Reproduction and Development,* 46:392-400. DOI: 10.1002/(SICI)1098-2795(199703)46:3<392::AID-MRD19>3.0.CO;2-0

46. Pillai, M.C., H. Blethrow, R.M. Higashi, C.A. Vines, and G.N. Cherr. 1997. Inhibition of the sea urchin sperm acrosome reaction by a lignin-derived macromolecule. *Aquatic Toxicology*, 37:139-156. DOI: 10.1016/S0166-445X(96)00821-1

47. Sabeur, K., G.N. Cherr, A.I. Yudin, P. Primakoff, M-W. Li, and J.W. Overstreet. 1997. The PH-20 protein in human spermatozoa. *Journal of Andrology*, 18:151-158.

48. VandeVoort, C.A., G.N. Cherr, and J.W. Overstreet. 1997. Hyaluronic acid enhances the zona pellucida-induced acrosome reaction of macaque sperm. *Journal of Andrology*, 18:1-5.

49. Garman, G.D., S.L. Anderson, and G.N. Cherr. 1997. Developmental abnormalities and DNA-protein crosslinks in sea urchin embryos exposed to three metals. *Aquatic Toxicology*, 39:247-265. DOI: 10.1016/S0166-445X(97)00033-7

50. Li, M-W., G.N. Cherr, A.I. Yudin, and J.W. Overstreet. 1997. Biochemical Characterization of the protein on the plasma and inner acrosomal membrane of cynomolgus macaque spermatozoa. *Molecular Reproduction and Development*, 48:356-366. DOI: 10.1002/(SICI)1098-2795(199711)48:3<356::AID-MRD9>3.0.CO;2-Q

51. Griffin, F.J., M.C. Pillai, C.A. Vines, R. Yanagimachi, and G.N. Cherr. 1998. Effects of salinity on sperm motility, fertilization, and development in the Pacific herring, *Clupea pallasi*.. *Biological Bulletin*, 194:25-35. DOI: 10.2307/1542510

52. Shamseldin, A.A., J.S. Clegg, C.S. Friedman, G.N. Cherr, and M.C. Pillai. 1997. Induced thermotolerance in the Pacific oyster, *Crassostrea gigas*. *Journal of Shellfish Research*, 16(2):487-491.

53. Middaugh, D.P., M.E. Shelton, C.L. McKenney Jr., G.N. Cherr, P.J. Chapman, and L.A. Courtney. 1998. Preliminary observations on responses of embryonic and larval Pacific herring, *Clupea pallasi*, to neutral fraction biodegradation products of weathered Alaska North Slope oil. *Archives Environmental Contamination and Toxicology*, 34:188-196.

54. Clegg, J.S., K. R. Uhlinger, S.A. Jackson, G.N. Cherr, E. Rifkin, and C.S. Friedman. 1998. Induced thermotolerance and the heat shock protein-70 family in the Pacific oyster, *Crassostrea gigas*. *Molecular Marine Biology and Biotechnology*, 7(1):21-30.

55. Sabeur, K., G.N. Cherr, A.I. Yudin, and J.W. Overstreet. 1998. Hyaluronic acid enhances induction of the acrosome reaction of human sperm through interaction with the PH-20 protein. *Zygote*, 6:103-111. DOI: 10.1017/S0967199498000021

56. Yudin, A.I., G.N. Cherr, C.A. VandeVoort, and J.W. Overstreet. 1998. Rearrangement of the PH-20 protein on the surface of macaque spermatozoa following exposure to anti-PH-20 antibodies or binding to zona. *Molecular Reproduction and Development* , 50:207-220. DOI: 10.1002/(SICI)1098-2795(199806)50:2<207::AID-MRD12>3.0.CO;2-3

57. Cherr, G. N., Griffin, F. J., Pillai, M. C., Vines, C. A., Morisawa, M., and R. Yanagimachi. 1998. The role of the chorion in initiation of sperm motility in the Pacific herring. *Zygote*, 6, SUPPL. 1:S16-S17.

58. Yoshida, K., Vines, C. A., Cherr, G. N., and M. Morisawa. 1998. Egg derived protein factors, (HSAPs and SMIF) induce depolarization of the plasma membrane and increase in intracellular Ca^{2+} in the initiation and activation of sperm motility in the herring. *Zoological Science* (Tokyo), v.15, n.SUPPL.

59. Cherr, G.N., A.I. Yudin, M.-W. Li, C.A. Vines, and J.W. Overstreet. 1999. Hyaluronic acid and the cumulus extracellular matrix induce increases in intracellular calcium in macaque sperm via the plasma membrane protein PH-20. *Zygote*, 7(3):211-222. DOI: 10.1017/S0967199499000593

60. Lokeshwar, V.B., M.M. Young, G. Goudarzi, N. Lida, A.I. Yudin, G.N. Cherr, and M. Seizer. 1999. Identification of bladder tumor-derived hyaluronidase: Its similarity to Hyal-1. *Cancer Research*, 59(17):4464-4470.

61. Tollner, T.L., Yudin, A.I., Cherr, G.N., and J.W. Overstreet. 2000. Soybean trypsin inhibitor as a probe for the acrosome reaction in motile Cynomolgus macaque sperm. *Zygote*, 8:127-137. DOI: 10.1017/S0967199400000903

62. Vines, C.A., F.J. Griffin, M.C. Pillai, and G.N. Cherr. 2000. The effects of soluble creosote-derived compounds on development of Pacific herring embryos. *Aquatic Toxicology* , 51:225-239. DOI: 10.1016/S0166-445X(00)00107-7

63. Ishijima, S., C.A. Vines, F.J. Griffin, and G N. Cherr. 2000. Flagellar movements of herring spermatozoa. *Zoological Science (Tokyo).* 17(Supplement). Pp.34.

64. Huovinen, P.S., A.O.J. Oikari, M.R. Soimasuo, and G.N. Cherr. 2000. Impact of UV radiation on the early development of the giant kelp (*Macrocystis pyrifera*) gametophytes. *Photochem.& Photobiol.,* 72(3):308-313. DOI: 10.1562/0031-8655(2000)072<0308:IOUROT>2.0.CO;2

65. Yudin, A.I., M-W. Li, K.R. Robertson, G.N. Cherr, and J.W. Overstreet. 2001. Characterization of the active site of monkey sperm hyaluronidase. *Reproduction*, 121:735-743. DOI: 10.1530/rep.0.1210735

66. Huovinen, P.S., G.N. Cherr, A. Oikari, and M.R. Soimauo. 2001. Heat shock protein (HSP70) responses in algae and cladoceran upon exposure to UV radiation. In: Proceedings of the 5th Finnish Conference of Environmental Sciences, T. Lehtonen, J.P. Salminen, and K. Pihlaja, eds. pp225-228.

67. Moore, J.D., G.N. Cherr, and C.S. Friedman. 2001. Detection of *Cadidatus xenohaliotis califoniensis*' (Rickettsiales-like procaryote) inclusions in tissue squashes of abalone (*Haliotis spp.*) gastrointestinal epithelium using a nucleic acid fluorochrome. *Diseases of Aquatic Organisms*, 46(2):147-152. DOI: 10.3354/dao046147

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Broadcast, Print or Electronic Media

1. Endocrine disruption in fish from San Francisco Bay, Television Interview, March, 2006, NBC.
2. Pacific Herring in San Francisco Bay, Television Interview, March, 2006, NBC.
3. Oil Spill in the Bay, Other, November, 2008, Quest-KQED Radio.
4. Taking the helm at marine lab, Newspaper Article, January, 2010, The Santa Rosa Press Democrat.
5. Science Translational Medicine: Defect in Sperm Protein Linked to Male Infertility, Website, July, 2010, AAAS News Release,
6. Loss of Protein coating sperm may explain male infertility, UCD Researchers say, Newspaper Article, July, 2010, Davis Enterprise.
7. Lack of sperm coating plays role in infertility, Newspaper Article, July, 2010, The Seattle Times.
8. A break through in infertility, Magazine Article, August 2010, The Week.
9. Impatient Futurist, David Freeman, Magazine Article, November, 2010, Discover.
10. Sperm "Cloak" Could Be a Factor in Some Male Infertility Cases, Television Interview, July 2010, PBS News Hour.

11. Sperm Coat Protein May Be Key to Male Infertility, Other, July, 2010, NSF-News from the Field.
12. Lack of sperm coating plays role in infertility, Newspaper Article, 2010, USA Today.
13. Study links male infertility to a missing protein, Newspaper Article, 2010, The New York Times.
14. Sperm "cloak" mutation may explain infertility, Other, July, 2010, CBS News.
15. Gene defect may explain infertility in some men, Website, July, 2010, news@JAMA.
16. Men who lack sperm-shielding protein less fertile, study finds, Newspaper Article, July, 2010, The Globe and Mail (Canada).
17. An international team of scientists, including a Simon Fraser University researcher, have discovered a mutation in a gene that explains why some men are less fertile than others., Newspaper Article, July, 2010, The Vancouver Sun.
18. Clue to male infertility found, Video, July, 2010, BBC News.
19. Sperm coat protein may be key to male infertility: study, Newspaper Article, July, 2010, The Times of India (India).
20. Sperm coat protein may be key to male infertility: study, Video, July, 2010, Xinhua News PR (China).
21. Top 100 Stories of 2011 #58 Sperm Gene Points to Infertility Cure, Magazine Article, January-February 2011, Discover Magazine.
22. Oil from 2007 spill surprisingly toxic to fish, scientists report, Newspaper Article, December 2011, Los Angeles Times.
23. Study: San Francisco Bay oil spill damaged herring, Newspaper Article, December 2011, The Sacramento Bee.
24. Oil spill and San Francisco Bay herring, Video, December 2011, KGO television news broadcast.
25. San Francisco Bay oil spill damaged herring, Video, December 2011, KTVU television news broadcast.
26. Spilled oil and sunlight, a lethal cocktail for marine life, Video, December 2011, BBC World-Mundo (Brazil).
27. Oil unexpected lethal to herring in San Francisco Bay, Magazine Article, December 2011, Mother Jones Magazine.
28. Research along Marin's shores shows impact of Cosco Busan spill on herring, Magazine Article, December 2011, Marin Independent Journal.
29. Oily: How a San Francisco oil spill took its toll on fish, Magazine Article, December 2011, Time Magazine-Ecocentric.
30. Sun-oil mix deadly for young herring, Magazine Article, December 2011, Science News.
31. Exxon Valdez echo: Spilled bunker fuel lethal to fish embryos, Newspaper Article, December 2011, Alaska Dispatch.
32. Gulf Oil Spill: Scientists Develop New Model for Deep-water Oil Spills, Magazine Article, April, 2012, National Science Foundation Discoveries.
33. Detecting endocrine disruption in the Sacramento-San Joaquin Delta, Magazine Article, June, 2012, California Sea Grant News.
34. Endangered White abalone successfully bred in North Bay lab, Television Interview, July, 2013, ABC News KGO-TV.
35. UC Davis Bodega Bay lab plays matchmaker for endangered abalone, Newspaper Article, July, 2013, Sacramento Bee.
36. Urban fish masculinized by hormone-mimicking chemicals, Newspaper Article, September, 2013, Davis Enterprise.
37. Do Sunscreens' Tiny Particles Harm Ocean Life in Big Ways?, Website, May 14, 2015, National Geographic. View this Media
38. http://news.nationalgeographic.com/2015/05/150514-sunscreen-nanoparticle-nanotechnologyoceans-marine-beach-boat-toxic/, Other, May 12, 2015, TakePart.
39. Do sunscreens and boat bottoms hurt sea urchins?, Website, May 13, 2015, Futurity. View this Media

40. The Tiny but Toxic Ingredient in Your Sunscreen Yahoo News - #5-12-15, Website, May 12, 2015, Yahoo News.
41. Marine life vulnerable from materials in sunscreens, boats, Newspaper Article, May 13, 2015, Santa Rosa Press Democrat.
42. Ocean life affected by nanomaterials, Website, May 12, 2015, Daily Democrat.
43. Nanomaterials Used in Sunscreens, Boats Threaten Marine Life, Magazine Article, May 13, 2015, Controlled Environments Magazine.
44. Bathers' sunscreens may threaten marine life, Newspaper Article, May 12, 2015, Central Valley Business Times.
45. Nanomaterials in sunscreens and boats leave marine life vulnerable, Other, May 13, 2015, Nanowerk.
46. Nanomaterials in sunscreens and boats leave marine life vulnerable, Other, May 12, 2015, Phys.Org.
47. Nanomaterials in sunscreens and boats leave marine life vulnerable, Website, May 12, 2015, ScienceBlog.com.
48. Bringing White Abalone Back from the Brink, Other, May 11, 2017, Scientia.View this Media
49. Nanomaterials in sunscreens and boats leave marine life vulnerable, Website, May 12, 2015, UC Davis. View this Media
50. Captive Breeding Endangered White Abalone, Website, November 5, 2015, UC Davis Wildlife Health Center. View this Media
51. Endangered white abalone find matchmaker in UC Davis breeding program, Website, July 24, 2013, UC Davis. View this Media

Society Memberships
1990-2018 Member, Society of Environmental Toxicology and Chemistry
1998-2018 Member, American Society for Cell Biology
2009-2018 Member, AAAS
2010-2018, member American Chemical Society
2007-2018, member National Association of Marine Laboratories
2008-2018, member Western Association of Marine Laboratories

Example Presentations

1.	2002	"Biological Responses to Contaminants Component: Biomarkers of Exposure, Effect, and Reproductive Impairment", US EPA STAR EaGLes Program Symposium, Morehead City, NC.
2.	2002	"Polycyclic Aromatic Hydrocarbons Disrupt Axial Development in Sea Urchin Embryos Through a b-Catenin Pathway", American Society for Cell Biology, Annual Meeting.
3.	2002	"Environmental Stress and Development", 1 Week short course, International Course in Developmental Biology, Misaki Marine Biological Station, University of Tokyo.
4.	2002	"Environmental Factors Affecting Reproduction of Pacific Herring in the San Francisco Bay Estuary", Western US Herring Summit, Bellingham, WA.

5. 2002 "Emerging Contaminants" (Invited Speaker and Participant), Special Symposium at the 2002 Annual American Society for Cell Biology, San Francisco, CA.

6. 2003 "Multidrug Resistance in Marine Embryos and Larvae", Sonoma State University, Biology Department Colloquium.

7. 2003 "Multidrug Resistance in Marine Embryos and Larvae: Can They Defend Themselves Against Contamination?", University of California, Santa Cruz, Department of Environmental Toxicology.

8. 2003 "Biological Responses to Contaminants-Update", Pacific Estuarine Ecosystem Indicator Research Program, Bodega Bay, CA.

9. 2003 "Stressor-Specific Responses of Salt Marsh Organisms to Ecosystem Stress", US EPA STAR EaGLes Program Symposium, Bodega Bay, CA.

10. 2004 "The Bodega Marine Laboratory's Environmental Sciences Program", Friends of Environmental Toxicology.

11. 2004 "Environmental Contaminants and the □-Catenin Signaling Pathway During Development", University of California, Davis, Nutrition Department Seminar.

12. 2004 "Developing an integrated indicator of fish condition for California salt marshes", US EPA STAR EaGLes Program Symposium, Duluth, MN.

13. 2004 "Biological Responses to Contaminants-Update", Pacific Estuarine Ecosystem Indicator Research Program, University of California, Santa Barbara.

14. 2004 "Biomarker responses in native species of San Francisco Bay: Linkage to sediment chemistry and population parameters", California Bay Delta Authority (CALFED) Annual Science Meeting.

15. 2004 "Role of ion channels in herring sperm motility" (Invited Speaker), International Symposium on "The Biology of Sperm Cell-From Basic to Clinical Aspects" Toyko, Japan.

16. 2005 "Biological Responses to Contaminants Component: Biomarkers of Exposure, Effect, and Reproductive Impairment", US EPA STAR EaGLes Program Symposium, Santa Barbara, CA.

17. 2005 "Environmental Stress and Development", 1 Week short course, International Course in Developmental Biology, Misaki Marine Biological Station, University of Tokyo.

18. 2005 "Developing Early Warning and Diagnostic Indicators for Native Fish & Crabs", National Estuary Program Web-based presentation.

19. 2005 "Pacific Herring (Clupea pallasi): Reproductive Adaption to an Estuarine Environment", Bodega Marine Laboratory Research Seminar.

20. 2006 "Indicators of Reproductive Impairment in a Resident Marsh Fish", California Department of Toxic Substances Control, Oakland, CA.

21. 2006 "Indicators of Reproductive Impairment in a Resident Marsh Fish: Endocrine Disruption", US EPA Biological Technical Advisory Group, San Francisco, CA.

22. 2006 "Pacific Estuarine Ecosystem Indicator Research (PEEIR), a UCD/UCSB collaboration: Integrated Indicators of Salt Marsh Condition", National Estuary Research Reserve, Morro Bay, CA.

23. 2006 "Marine toxicology research: Environmental Stress and development", NIEHS Undergraduate Program, Bodega Marine Lab.

24. 2007 "Effects of Environmental Stressors on Pacific Herring Reproduction in San Francisco Bay", University of California, Davis, Department of Animal Science.

25. 2007 "Marine toxicology research at UCD BML", NIEHS Undergraduate Program, Bodega Marine Lab.

26. 2008 "The Use of Developing Aquatic Organisms for Assessing Water Quality" (Invited Speaker), International Workshop on Environmental Health & Pollution Control in 2008, Nanjing University, Nanjing, China,.

27. 2008 "The Use of Developing Aquatic Organisms for Assessing Water Quality", Beijing University of Mining and Technology.

28. 2008 "Marine toxicology research at UCD BML", NIEHS Undergraduate Program, Bodega Marine Lab.

29. 2008 October, Co-Organizer, session chair, and presenter at "Environmental Health and Protection Conferences," School of the Environment, Nanjing University, Beijing Normal University.

30. 2009 "Oil and Water Do Not Mix: Impacts of Oil on Pacific Herring", Bodega Marine Laboratory Research Seminar.

31. 2009 "Marine toxicology research at UCD BML", NIEHS Undergraduate Program, Bodega Marine Lab.

32. 2010 July, Organize tours at BML and present to the Bohemian Club.

33. 2010 September, Co-Organizer of NCEAS (National Center for Ecological Analysis and Synthesis) Gulf Ecotoxicology Working Group, Dauphin Island Sea Lab.

34. 2010 October, Co-Organizer, session chair, and presenter at "Environmental Health and Protection Conferences," School of the Environment, Nanjing University, Beijing Normal University.

35. 2010 December, Co-Organizer of NCEAS (National Center for Ecological Analysis and Synthesis) Gulf Ecotoxicology Working Group, Santa Barbara, CA.

36. 2011 March, Communication Partnership for Science and the Sea (COMPASS). Participant in two day Training at the National Center for Ecological Analysis and Synthesis, Santa Barbara, CA.

37. 2011 July, Organize tours at BML and present to the Bohemian Club.

38. 2011 August, "Programs at the UC Davis Bodega Marine Laboratory" Presentation to the ARCS Foundation Fellows.

39. 2011 August, "The Bodega Marine Laboratory." Presentation to University of California Washington DC staff.

40. 2011 September, Invited Presenter at "UC Davis Sustainable Energy Systems Retreat," "Energy-Systems & Policy" : Coastal and Ocean Energy.

41. 2012 January, "The Bodega Marine Laboratory" Presentation to the Rancho Bodega Historical Society.

42. 2012 February, Presentation and Tour for UC Davis Foundation Trustees.

43. 2012 March, Trends in Ecological Analysis and Synthesis. Participant in workshop[p at National Center for Ecological Analysis and Synthesis.

44. 2012 May, "Oil and Embryos Do Not Mix: Impacts of the Cosco Busan Bunker Fuel Oil Spill on Pacific Herring." Presentation to NOAA National Marin Sanctuary Staff.

45. 2012 July, Organize tours at BML and present to the Bohemian Club.

46. 2012 November, “Defensins at the Interface of Sperm Function and Innate Immunity”, Tsukuba University, Japan.

47. 2012 November, “Defensins at the Interface of Sperm Function and Innate Immunity”, International Symposium on the Mechanisms of Sexual Reproduction in Animals and Plants. Nagoya, Japan.

48. 2012 November, Marine Nanotoxicology in the U.S.: The University of California Center for Environmental Implications of Nanotechnology (UC CEIN), 1st Marine Nanoecotoxicology Workshop, European Union Nanosafety Cluster, Palermo Italy.