

## CURRICULUM VITA

**Stacia A. Sower**, Professor Emeritus  
Director of the Center for Molecular and Comparative Endocrinology;  
Professor Emeritus of Molecular, Cellular and Biomedical Sciences;  
Professor of School for Marine Biology;  
Affiliate Professor of Neuroscience

**WEB SITE:** <http://www.unhsowerlab.com>

**Email Address:** sasower@unh.edu

### Education

- B.A. University of Utah, Salt Lake City, Utah, 1973
- M.S. Oregon State University, Corvallis, Oregon, 1978
- Ph.D. Oregon State University, Corvallis, Oregon, 1980

### Professional Appointments

- 1973-1975 Fisheries Biologist, Peace Corps, Venezuela
- 1976-1980 Graduate Research Assistant, Oregon State University, Corvallis, Oregon.
- 1980-1983 Post-doctoral Research Associate, University of Washington, Seattle, Washington.
- 1984-1985 Visiting Professor, University of Cape Town Medical School, South Africa.
- 1982-1987 Assistant Professor, University of New Hampshire, Durham, New Hampshire.
- 1985-1992 Director for the UNH Protein Sequencing and Synthesis Facility
- 1987-1992 Associate Professor, University of New Hampshire, Durham, New Hampshire.
- 1992 Visiting Professor, Kitasato University, Japan.
- 1994 Visiting Professor, MacQuarie University, Sydney, Australia.
- 1996-1997 NSF IPA Rotating Program Director, Integrative Animal Biology Program, Washington, D.C.
- 1996-1997 Chair of BIO-POWRE Program, National Science Foundation, Washington, DC.
- 1999-2002 Arthur K. Whitcomb Professor
- 1984-present Director, Anadromous Fish and Aquatic Research Laboratory
- 1992-2016 Professor, Department of Biochemistry and Molecular Biology, University of New Hampshire, Durham, New Hampshire (departmental name changed to Department of Molecular, Cellular and Biomedical Sciences—July 1, 2008)
- 2002-2005 Appointed Director and PI of NIH COBRE Center of Developmental and Neural Endocrinomics
- 2004-2016 Adjunct Professor, Dept of Physiology, Dartmouth Medical School
- 2005-2007 Interim Associate Dean of Research and Interim Associate Director of Agricultural Experimental Station, College of Life Sciences and Agriculture, UNH
- 2007 Interim Associate Dean of Research and Graduate Studies, College of Life Sciences and Agriculture, UNH
- 2008-2018 Director of the Center for Molecular and Comparative Endocrinology
- May, 2016- Professor Emeritus, Department of Molecular, Cellular, and Biomedical Sciences

### Awards and Honors

- International Atlantic Salmon Foundation Fellowship (1980)
- Liberal Arts Faculty Research Support Grant, UNH (1985)
- Biomedical Research Support Grant (NIH) (1985)
- Biomedical Research Support Grant (NIH) (1988)
- NSF Career Development Award (1988-1989)
- UNH Award for Excellence in Public Service (1991)
- NSF Faculty Award for Women Scientists and Engineers (1991-1996)
- Visiting Scientist Fellowship from Kitasato University, Japan (1992)

Biomedical Research Support Grant (NIH) (1993)  
 UNH College of Life Science Teaching Excellence Award (1998)  
 NSF Director's Award for Collaborative Integration (1998)  
 Arthur K. Whitcomb Professorship (1999-2002)  
 Distinguished Graduate Award, Oregon State University (2004)  
 Elected a Fellow of the American Association for the Advancement of Science (2012)  
 Invited member of the NSF Biological Sciences Advisory Committee (2014-2017)  
 Recipient of a Certificate of Excellence in Reviewing, General and Comparative Endocrinology (2013)  
 NSF Accomplishment Based Renewal (2013-2018)  
 UNH Award for Excellence in Research (2016)  
 Bargmann-Scharrer Distinguished Lecture (International Congress of Comparative Endocrinology, 2017)  
 Stacia Sower: Profiles in Comparative Endocrinology, "Origins of Vertebrate Neuroendocrine Circuits"  
 (GCE, August, 2018)

### **Professional Affiliations**

The Endocrine Society  
 Society for Neuroscience  
 Society for Integrative and Comparative Biology  
 American Association for the Advancement of Science  
 North American Society for Comparative Endocrinology  
 Member of NSF Regulatory Biology/Physiological/Neuroscience Panels (1988-2016)  
 Member of American Heart Association New Hampshire Affiliate Research Committee  
 (1991-1994)  
 Member of the American Institute of Biological Sciences (AIBS) Peer Review Panel of  
 the NOAA National Sea Grant College Program Marine Biotechnology  
 Proposals, 1994  
 Member of NSF-Academic Research Infrastructure Program Panel, 1994, 1996  
 Member of NSF-Neuroendocrinology Panel (1995)  
 Member of the US National Committee for the International Union of Biological  
 Sciences (National Academy of Sciences) (1995-2001)  
 Program Director of NSF Integrative Animal Biology Panel (1996-1997)  
 Chair of Biological Sciences NSF Biological Sciences POWRE Panel (1997)  
 Member of NSF-Integrative Graduate Education and Research Training Panel (1997)  
 Member, Board of Editors, General and Comparative Endocrinology (1998-2018)  
 Program Officer, Society of Integrative and Comparative Biology (2002-2004)  
 Chair-Elect, Division of General Comparative Endocrinology, Society of Integrative and Comparative  
 Biology (2006-2008)  
 Chair, Division of General Comparative Endocrinology, SICB (2008-2010)  
 Member of USDA NRI Reproductive Panel (2004-2006)  
 Member of NSF MRI Panel (Spring, 2008, Fall 2009)  
 Editorial Board of Endocrinology (Jan, 2007-Jan, 2011)  
 Editorial Board of International Journal of Endocrinology (2008-2014)  
 Editorial Board of Frontiers in Neuroendocrine Research (2010-2018)  
 Candidate for President of the Society of Integrative and Comparative Biology (Spring, 2010)  
 Member of NSF Integrative Organismal Biology Panel (2011-2015)  
 Associate Editor of General and Comparative Endocrinology (2011-2017)  
 Member of Editorial Board of Frontiers in Experimental Endocrinology Section of Frontiers in  
 Endocrinology (2014-2018)

### **Teaching Experience**

Comparative Endocrinology/Endocrinology, upper division and graduate course (45-55  
 students)  
 General Biology, non-major introduction course (150-200 students)

Biology, major introductory year core course (100-120 students)  
 Biology, Honors Introductory course (27-30 students)  
 Biochemical Endocrine Techniques Laboratory course (12-20 students)  
 Fish Aquaculture, Division of Continuing Education  
 Ocean Technology Course (4-9 students)  
 Biochemistry Graduate Seminar (22 students)  
 Graduate Molecular and Biochemical Neuroendocrinology Course (7-9 students)  
 Graduate Endocrine Disruptors Course (8-12 students)  
 Undergraduate Honors thesis and Independent Investigations (71 students).  
 Undergraduate students trained in my laboratory (264). 1983-2018  
 Health Professions Seminar (60-75 students)  
 Graduate Seminar (Fall, Spring) (65 students)

### **Graduate Students and Postdoctoral Research Associates:**

I trained 45 Graduate Students, 82 Undergraduates in projects/Honors thesis, and 13 Postdoctoral Fellows Advisees:

#### *Recent Postdoctoral Associates*

Wayne Decatur (*Research Scientist, SUNY Upstate Medical University, Syracuse, NH, and Associate Bioinformatics Consultant to my lab*)  
 Jeffrey Hall (*Research Scientist, UNH*)

#### *Recent Graduate Students:*

Krist Hausken, Ph.D. Student (May, 2018); Current Position, Postdoctoral Fellow at The Hebrew University of Jerusalem  
 Shannon Barton, M.S. (May 2017)  
 James Gargan, M.S. (Dec14)  
 Sabah Ul-Hasan, M.S. (August, 2014); Attending PhD Program, UC Merced)  
 Takayoshi Kosugi, Ph.D. (2014)  
 Scott Kavanaugh, Ph.D., 2010; Current Position: Postdoctoral Fellow at University of Colorado, Boulder, CO  
 Matt Silver, Ph.D., 2005; Current Position: Principal Scientist, Global Clinical Biomarkers and Companion Diagnostics, MA  
 Emily LaFiandra Lent, Ph.D. (co-advisor), 2007; Current Position: Researcher and Toxicologist, US Army Medical Command, MD  
 Mike Baron, M.S. Student, 2006; High School Science Teacher, Connecticut  
 Mihael Freamat, Ph.D., 2008; Postdoc 2009-2011, Boston University; Visiting Faculty, UNH  
 Piyada Ngermsoungnern (co-international advisor), Ph.D., 2007, Current Position: Assistant Professor, Suranaree University of Technology, Thailand  
 Geoffry Bushold, M.S. Student, 2008; Current Position: Research Associate II at Novartis, Boston, MA  
 Apichart Ngermsoungnern (co-international advisor), Ph.D., 2008; Current Position: Assistant Professor, Suranaree University of Technology, Thailand

### **Patents**

Sower S.A. and Silver M.R. Novel polynucleotide encoding lamprey GnRH-III, Patent #6949365. Filed on Jun. 12, 2002, as Appl. No. 10/170,096. Patent Issued on Sept. 27, 2005

Sower, S.A., N.V. Nucci and M.R. Silver. Cloning and Expression of Gonadotropin-Releasing Hormone (GnRH) Receptors, Patent # 7459310, Filed on April, 2005, as Appl. No. 11/103,082. Patent Issued on December 2, 2008.

Sower, S.A. and M.R. Silver, Lamprey GnRH-III polypeptides and methods of making thereof, Patent

#7521057, Filed on June 30, 2005, as Appl. No. 11/172,274. Patent Issued on April 21, 2009.

Sower, S.A., N.V. Nucci and M.R. Silver. Cloning and expression of gonadotropin-releasing hormone (GnRH) receptors. Filed on Dec 1, 2008 as Application No. 12/315,229. United States Patent 7,666,994. Patent issued on Feb 23, 2010.

### **Internal Research Support:**

- 1988-** UNH Hubbard Endowment Fund, "Characterizations of the cDNA for the Precursor of Lamprey GnRH", 1988-1989, \$21,000, Principal Investigator.  
 NH Agricultural Experiment Station (Hatch #332), "Multiple Forms of GnRH", 1989-1991, \$21,500, Principal Investigator.  
 Sea Grant Development Grant, "Sterilization in Salmonids by Use of GnRH Analogs", 1991-1992, \$5,900, Principal Investigator.  
 NH Agricultural Experiment Station (Hatch), "Hormonal Control of Reproduction in Salmon", 1992-1993, \$3,500, Principal Investigator .
- 1993-** NH Agricultural Experiment Station, (Hatch 332) "Endocrine Control of Reproduction in Lampreys", 1993-1996, \$22,500, Principal Investigator .  
 NH Agricultural Experiment Station, (Hatch) "Endocrine Control of Reproduction in Lampreys", 1996-1999, \$22,500, Principal Investigator .  
 Sea Grant Development Grant, "Sexual Development of Hagfish", 1993, \$1500.  
 Sea Grant Development Grant, "Hagfish Reproductive System," \$750, 1995.
- 1996-** UNH Hubbard Funds, Characterization of Reproductive Hormones in Hagfish, 1996-1997, \$12,500, Principal Investigator.  
 UNH Discretionary Funds, "Effects of Endocrine Disruptors on Reproduction in the Golden Shiner", \$6,500, Principal Investigator,  
 UNH Hubbard Marine Program Endowment, "Effects of Endocrine Disruptors and Biotoxins on Reproduction, Growth and Survival in the Golden Shiner," \$10,000, Principal Investigator with Jim Haney, as Co-PI.  
 UNH Sustainability Program, 1997-1998, "Frog Endocrine Disruptor Studies," 7,500.
- 1999-** NH Agricultural Experiment Station, (Hatch) "Endocrine Control of Reproduction in Lampreys", 1999-2002, \$27,000 Principal Investigator.  
 Sustainability Program, Office of the Dean of COLSA, and VP Research. "Limb Deformities and Abnormal Sex Hormone Concentrations in Frogs, \$7500 Principal Investigator and Kim Babbitt as Co-Investigator. 1998-1999  
 UNH Hubbard Marine Program Endowment, "Characterization of the GnRH Receptor in Lampreys", \$6,000. Principal Investigator. 1999-2000  
 UNH Marine Biology Program, "Travel Funds to SICB Meetings, Denver, Co," \$300, 1999.
- 2001-** UNH Hubbard Marine Program Endowment, "Infrastructure Support: Seawater Chillers and Filters at the AFAIR LAB", \$4, 1450. Principal Investigator. 2001.  
 UNH Marine Biology Program, "Travel Funds to Intl Comparative Endocrinology Congress, Sorrento, Italy," \$800, 2001  
 NH Agricultural Experiment Station, (Hatch 332) "Endocrine Control of Reproduction", 2002-2005, \$30,000 Principal Investigator,
- 2005-** NH Agricultural Experiment Station, (Hatch 332) "Endocrine Control of Reproduction", 2005-2008, Principal Investigator, \$30,000.
- 2006-** UNH Provost's Strategic Initiative Fund. "Bioinformatics iNquiry System." \$40,000. 2006-2007.
- 2008-** NH Agricultural Experiment Station, (Hatch 332) "Endocrine Control of Reproduction", 2008-2011, Principal Investigator, \$22,000. (There is an addition of a NH AES Graduate RA support for 2 years)
- 2010-** NH Agricultural Experiment Station. Equipment - Milli-Q Integral 5 Water Purification System, Principal Investigator, \$18,621. 2010.  
 NH Agricultural Experiment Station. Equipment – Agilent Mx300P Real-time PCR System, Principal Investigator-Louis Tisa, \$29,622 (co-PIs, Stacia Sower, Vaughn Cooper, Estelle Hrabak,

- and Subhash Minocha), 2010
- 2011-** NH Agricultural Experiment Station (H571), "Endocrine Control of Reproduction", 2011-2014, Principal Investigator, \$36,000 (There is an addition of a NH AES Graduate RA support for 2 years) NH Agricultural Experiment Station. Equipment – Dual-Block Thermal Cycler System, Principal Investigator, Stacia Sower, \$14,180.38 (Co-PIs Louis Tisa and David Berlinsky), 2011 NH Agricultural Experiment Station. Equipment – Nanodrop200C Spectrophotometer System, Principal Investigator-Louis Tisa, \$14,528 (Co-PIs Stacia Sower, Vaughn Cooper, Aaron Margolin, Cheryl Whistler and Michael Lesser), 2011
- 2014-** NH Agricultural Experiment Station (H624), "Endocrine Control of Reproduction", 2014-2018, Principal Investigator, \$60,000 (There is an addition of a NH AES Graduate RA support for 3 years)
- 2014-2015-** NH Agricultural Experiment Station. Equipment – Nanodrop200C Spectrophotometer System, Principal Investigator-Anita Klein, \$12,748 (Co-Users Stacia Sower, Kirk Broders, Rick Cote, Iago Hale) NH Agricultural Experiment Station. Equipment-High Speed Avanti Centrifuge, Principal Investigator-Stacia Sower, \$54,373 (Co-PIs Clyde Denis, Rick Cote)

### **External Research Support:**

- 1980-** Washington Sea Grant Program, "Endocrine Control of Smoltification and Reproduction in Salmonids", 1983-1984, \$88,989, Co-Investigator.
- Great Lakes Fisheries Commission, "Factors Regulating Reproduction in Lampreys", 1980-1983, \$63,000, Co-Investigator.
- State of Washington Department of Fisheries, "Stages of Sexual Maturity of Ocean-Caught Chinook Salmon", 1982-1983, \$4800. Principal Investigator.
- NOAA Sea Grant Program, "Endocrine Control of Reproductive and Juvenile Development in External Research Support Salmonids", 1984-1986, \$115,000 (total costs), Principal Investigator.
- Great Lakes Fisheries Commission, "Use of Hormones and their Analogues to Control Reproduction and Metamorphosis in the Sea Lampreys", 1984-1988, \$77,800 (direct costs only), Principal Investigator.
- 1986-** National Science Foundation (Regulatory Biology), DCB-8602907, "Biological Action of GnRH in Lampreys", 1986-1989, \$150,000 (indirect costs included), Principal Investigator.
- National Science Foundation (Undergraduate Research Experience Site Proposal), 1987-1988, \$40,000 (Principal investigator, Dr. Don Green, Biochemistry Dept; one of several co-principal investigators).
- National Science Foundation (Regulatory Biology: Career Development Award) Grant, DCB-8808946, "GnRH and GTH in Agnathans", 1988-1989, \$59,558, Principal Investigator.
- New Hampshire Fish and Game, "The Timing of Juvenile River Herring Downstream Migration", 1987-1989, \$21,879 (direct costs only), Principal Investigator.
- NOAA Sea Grant Program, "Endocrine Control of Reproduction in Salmonids, 1987-1990, \$103,000 (indirect costs included), Principal Investigator.
- 1990-** Great Lakes Fisheries Commission, "Collection of Lamprey Tissues for Purification of Hormones", 1990, \$12,000, Principal Investigator.

- Great Lakes Fisheries Commission, "Hormonal and Environmental Cues in Metamorphosis of *Petromyzon marinus*", 1991-1993, \$238,625 Cdn, Co-Principal investigator. (Principal Investigator, John H. Youson, University of Toronto).
- National Science Foundation Supplemental Grant, "Research Experience for Undergraduates", 1991-1992, \$5,000.
- National Science Foundation (Physiological Processes), "Biological Action of GnRH in Agnathans", 1989-1994, \$496,000, Principal Investigator.
- NOAA, Protein Engineering Equipment for Center Development, 1991. \$250,000, Principal Investigator.
- 1993-** Great Lakes Fisheries Commission, "GnRH Neuronal Migratory Mechanisms During Lamprey Brain Development", 1993-1995, \$148,689, Co-Principal Investigator. (Principal Investigator, Stuart A. Tobet, E.K. Shriver Center).
- National Science Foundation Supplemental Grant, "Research Experience for Undergraduates", 1993-1994, \$5,000
- National Science Foundation (FAW), "Comparative Neuroendocrinology of Reproduction in Fish", 1991-1997, \$250,000, Principal investigator.
- Great Lakes Fisheries Commission, "Effects of Lamprey GnRH-I and -III on Reproductive Processes and Behavior of Male Sea Lampreys", 1994-1995, \$92,804. Principal Investigator.
- Great Lakes Fisheries Commission, "Hormonal Sterilization of Early Lamprey Larvae," 1994-1996, \$17,000. Principal Investigator.
- National Science Foundation (Endocrinology/Neuroscience), "Biological Action of GnRH in Lamprey", 1994-1997, \$334,130, Principal investigator.
- National Science Foundation Supplemental Grant, "Research Experience for Undergraduates," 1995-1997, \$15,000.
- 1997-** Great Lakes Fisheries Commission, "Potential Use of GnRH Analogs for Sterilizing Male Sea Lampreys," 1997-2000, \$229,023. Principal Investigator.
- National Science Foundation, "Molecular and Functional Investigations of Gonadotropin and Gonadotropin Releasing Hormone in Lamprey Reproduction, 1997-2001, \$330,000. Principal Investigator.
- National Science Foundation Supplemental Grant, "Research Experience for Undergraduates", 1997-2000, \$30,000 (\$10,000 per year).
- 2000-** Great Lakes Fisheries Commission, "Collection of Lamprey Brains and Pituitaries for Purification of Hormones," \$9188. 2000-2001. Principal Investigator.
- National Science Foundation, "A Molecular Imager for Studies in Signal Transduction, \$68,550 (Clyde Denis, Principal Investigator with four co-investigators: Laue, Schaller, Sower and Tisa), 1999-2000
- National Science Foundation, "Upgrading the Core Facility for DNA Sequencing at the University of New Hampshire," \$164,390 (Tom Kocher, Principal Investigator with Ann Bucklin and Stacia Sower as major users)

Center for Conservation Medicine “Frog Endocrine Disruptor Studies”, 1999-2000, Rosalind Rolland, Tufts Veterinary School, principal investigator with Stacia Sower and Kim Babbitt as co-principal investigators, \$68,800

National Science Foundation, International Division-Japan (NSF #0509011), “ Phylogeny of Brain/Pituitary Hormones of Agnathans,” 1999-2003, \$22,813.

National Science Foundation, "Molecular Investigations of GnRH and GTH in Agnathan Reproduction, 2001-2004, \$301,000. Principal Investigator.

National Institute of Children’s Health and Development, “Multiple Forms of GnRH in Primates, 2000-2003, \$144,000. Principal Investigator,

NOAA Sea Grant Program, "Age, Growth and Reproduction in Atlantic Hagfish,” 2001-2003, \$173,000, Principal Investigator.

Great Lakes Protection Fund, “Utilizing a sex pheromone to increase the efficacy of the sterile male release program of the Great Lakes, “2001-2003, \$324,362, Weiming Li, Principal Investigator, Michigan State University, Co-principal Investigator

NHRC/Bentley Pharmaceuticals, Inc., “GnRH in Primates,” 2001-2003, \$92,469, Principal Investigator.

US Geological Survey, Wash, “Lamprey Steroid Assays, 2001-2003, \$39,000, Principal Investigator.

National Science Foundation Supplemental Grant, "Research Experience for Undergraduates", 2002-2003, \$15,000.

National Science Foundation Supplemental Grant, "Research Experience for Undergraduates", 2003-2004, \$10,000.

**2004** National Science Foundation (IBN#0421923), "Molecular and Functional Investigations of GnRH in Lamprey Reproduction, 2004-2009, \$480,000. Principal Investigator.

National Science Foundation Supplemental Grant, "Research Experience for Undergraduates", 2005-2006, \$6,000.

National Science Foundation Supplemental Grant, "Research Experience for Undergraduates", 2006-2007, \$6,000.

NHRC/Bentley Pharmaceuticals, Inc., “GnRH in Primates,” 2005-2007, \$89,936, Principal Investigator.

National Science Foundation Supplemental Grant, "Research Experience for Undergraduates", 2007-2008, \$6,000.

National Science Foundation, Major Research Instrumentation 0618719, “Acquisition of a Confocal Microscope”, \$403,759. Principal Investigator (includes nine major users), 2006-2009

National Institute of Health, “Role of N-glycosylation in *C. Elegans* dauer switching.” 2004-2007. \$206,794. Stacia Sower (PI), UNH, replaced Charles E. Warren as PI as of Nov 2005 due to the death of Dr. Charles Warren.

**2008** National Institute of Health, “Insight from Lamprey Genome: Structure-Function studies of GnRH

Receptor and Novel GnRH receptors.” 2007-2010. National Institutes of Health NCR-R21, \$398,750.

National Science Foundation Supplemental Grant, "Research Experience for Undergraduates", 2008-2009, \$6000.

- 2010** National Science Foundation, “Insight from Lamprey Genome: Investigations of the GnRH-GTH System ” 2009-2013, \$420,000. Principal Investigator.

National Science Foundation, Symposium Proposal, “Symposium: Insights of Early Chordate Genomics,” August 1, 2009 and July 31, 2010. Principal Investigator, Stacia Sower, Co-PI, Linda Holland (UCSD). \$25,103.

National Science Foundation Supplemental Grant, "Research Experience for Undergraduates", 2009-2010, \$7500.

National Science Foundation Supplemental Grant, "Research Experience for Undergraduates", 2010-2011, \$6000.

National Science Foundation Supplemental Grant, “Research Experience for Undergraduates,” 2011-2012, \$6000.

- 2012** National Science Foundation, MRI: Acquisition of an Illumina HiSeq 2000. Principal Investigator, W. Kelley Thomas. \$930,000. 2012; One of several major users

National Science Foundation, “Accomplished Based Renewal (**ABR**): Novel Glycoprotein Hormone, Signaling Mechanisms and Transcriptome Profiling in a Basal Vertebrate,” **2013-2018**, \$750,000. Principal Investigator

- 2013** National Science Foundation, Supplement to “ABR: Novel Glycoprotein Hormone, Signaling Mechanisms and Transcriptome Profiling in a Basal Vertebrate,” 2013-2018, \$19,278.

- 2015** National Science Foundation, “Collaborative Research: The evolution of endocrine function; discovering the hormonal control of osmoregulation in basal vertebrates” 2016-2020, \$1,084,739, Stephen McCormick, Principal Investigator, (I am one of three major collaborators on proposal).

### **Publications (Refereed Articles):**

- 1982-** 1. Sower, S.A., C.B. Schreck, and E.M. Donaldson. 1982. Hormone induced ovulation of coho salmon (*Oncorhynchus kisutch*) held in seawater and fresh water. Can. J. Fish Aquat. Sci. 39:627-632.
2. Sower, S.A. and C.B. Schreck. 1982. Steroid and thyroid hormones during sexual maturation of coho salmon (*Oncorhynchus kisutch*) in seawater or fresh water. Gen. Comp. Endocrinol. 47:42-53.
3. Sower, S.A. and C.B. Schreck. 1982. *In vitro* induction of final maturation of oocytes from coho salmon. Trans. Amer. Fish. Soc. 111:399-403.
4. Sower, S.A. and C.B. Schreck. 1982. Sexual maturation of coho salmon (*Oncorhynchus kisutch*): accelerated ovulation and circulating steroid hormone and ion levels of salmon in freshwater and seawater. Proc. North Pacific Aquaculture Symp., Alaska; Oregon. Alaska Sea Grant Publication. 82-2 January, pp. 227-235.
- 1983-** 5. Sower, S.A., C.B. Schreck, and M. Evenson. 1983. Effects of steroids and steroid antagonists on



- growth, gonadal development, and RNA/DNA ratios in juvenile steelhead trout. *Aquaculture* 32:243-254.
6. Plisetskaya, E., S.A. Sower, and A. Gorbman. 1983. The effects of insulin insufficiency on plasma thyroid hormones and some metabolic constituents in Pacific hagfish, *Eptatretus stouti*. *Gen. Comp. Endocrinol.* 49:315-319.
  7. Martin, R.W., J. Myers, S.A. Sower, D. Phillips, and C. McAuly. 1983. Ultrasonic imaging, a potential tool for sex determination of live fish. *North American Journal of Fisheries Management* 3: 258-264.
  8. Sower, S.A., W.W. Dickhoff, A. Gorbman, J.E. Rivier, and W.W. Vale. 1983. Ovulatory and steroid responses in the lamprey following administration of salmon gonadotropin and agonistic and antagonistic analogues of GnRH. *Can. J. Zool.* 61:2653-2659.
- 1984-**
9. Sower, S.A., R.N. Iwamoto, W.W. Dickhoff, and A. Gorbman. 1984. Ovulatory and steroidal responses in coho salmon and steelhead trout following administration of salmon gonadotropin and D-Ala<sup>6</sup>,des Gly<sup>10</sup>gonadotropin-releasing hormone ethylamide (GnRH<sub>a</sub>). *Aquaculture* 43:35-46.
  10. Sower, S.A., W.W. Dickhoff, J. Mighell, T. Flagg, and C. Mahnken. 1984. Effects of estradiol and diethylstilbesterol on sex reversal and mortality in Atlantic salmon (*Salmo salar*). *Aquaculture* 43:75-82.
  11. Sower, S.A., C.V. Sullivan, and A. Gorbman. 1984. Changes in plasma estradiol and effects of triiodothyronine on plasma estradiol during smoltification of coho salmon, *Oncorhynchus kisutch*. *Gen. Comp. Endocrinol.* 54:486-492.
- 1985-**
12. Sower, S.A., E. Plisetskaya, and A. Gorbman. 1985. Changes in plasma steroid, thyroid hormones, and insulin during final maturation and spawning of the sea lamprey, *Petromyzon marinus*. *Gen. Comp. Endocrinol.* 58:259-269.
  13. Buckingham, J.C., J.H. Leach, E. Plisetskaya, S.A. Sower, and A. Gorbman. 1985. Corticotrophin-like bioactivity in the pituitary gland and brain of the Pacific hagfish, *Eptatretus stouti*. *Gen. Comp. Endocrinol.* 57:434-437.
  14. Dickhoff, W.W., S.A. Sower, and A. Gorbman. 1985. Hepatic estrogen binding during vitellogenesis in Pacific hagfish, *Eptatretus stouti*. *Current Trends in Comparative Endocrinology* (eds. B. Lotts and W. Holmes, Hong Kong University Press) 1:347-349.
  15. Sherwood, N.M. and S.A. Sower. 1985. A new family member for gonadotropin-releasing hormone. *Neuropeptides* 6:205-214.
  16. Sower, S.A., E. Plisetskaya, and A. Gorbman. 1985. Steroid and thyroid hormone profiles following a single injection of partly purified salmon gonadotropin or GnRH analogues in male and female sea lamprey. *J. Exp. Zoology* 235:403-408.
  17. Sower, S.A. and R.N. Iwamoto. 1985. The identification of the sex steroid, testosterone, in various commercial salmon diets. *Aquaculture* 49:11-17.
- 1986-**
18. Sherwood, N.M., S.A. Sower, D.R. Marshak, B.A. Fraser, and M.J. Brownstein. 1986. Primary structure of gonadotropin-releasing hormone in lamprey brain. *J. Biol. Chem.* 15:4812-4819.
- 1987-**
19. Sower, S.A., J.A. King, R.P. Millar, N.M. Sherwood, and D.R. Marshak. 1987. Comparative biological properties of lamprey gonadotropin-releasing hormone in vertebrates. *Endocrinology* 120:773-779.
  20. Linville, J., L. Hansen, and S.A. Sower. 1987. Endocrine events associated with spawning behavior in the sea lamprey (*Petromyzon marinus*). *Hormones and Behavior* 21:105-107.
  21. Sower, S.A. 1987. Biological action of lamprey gonadotropin-releasing hormone in lampreys. *Proceedings of the Third International Symp. Reprod. Physiol. of Fish. St. John's Newfoundland, Canada* 2-7, August, 1987 pg 40-41.
  22. Ho, M.S., D. Press and S.A. Sower. 1987. Identification of an estrogen receptor in the testis of the sea lamprey, *Petromyzon marinus*. *Gen. Comp. Endocrinol.* 67:119-125.

- 1988-** 23. Stopa, E.G., S.A. Sower, C.N. Svendsen, and J.C. King. 1988. Polygenic expression of gonadotropin-releasing hormone (GnRH) in human? *Peptides*. 9:419-423.
24. King, J. C., S.A. Sower, and E.L.P. Anthony. 1988. Neuronal systems immunoreactive with antiserum to lamprey gonadotropin-releasing hormone in the brain of *Petromyzon marinus*. *Cell Tissue Research*. 253:1-8.
25. Lane, T., H. Kawauchi, and S.A. Sower. 1988. Arginine vasotocin from the pituitary gland of the lamprey (*Petromyzon marinus*): Isolation and amino acid sequence. *Gen. Comp. Endocrinol.* 70:152-157.
26. Carolsfeld, J., N.M. Sherwood, H. Kreiberg, and S.A. Sower 1988. Induced sexual maturation of herring using GnRH "Quick Release" cholesterol pellets. *Aquaculture* 70:169-181.
- 1989-** 27. Sower, S.A. 1989. Effects of lamprey gonadotropin-releasing hormone and analogs on steroidogenesis and spermiation in male sea lampreys. *Fish Physiol. and Biochem.* 7:101-107.
28. Borghetti, J.R., R.N. Iwamoto, R.W. Hardy, and S.A. Sower. 1989. The effects of naturally-occurring androgens in practical diets fed to normal-sired and jack-sired progeny of coho salmon (*Oncorhynchus kisutch*). *Aquaculture* 77:51-60.
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- 2003** Freamat, M. and S.A. Sower. 2003. A putative gonadotropin hormone receptor from sea lamprey (*Petromyzon marinus*) testes. *Integr. Comp. Biol.* 43:812.
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- Sower, S.A., S.I. Kavanaugh, and M. Freamat. 2007. Insight from Lamprey Genomics: Brain and Pituitary Reproductive Hormones in Lampreys. *Integr. Comp. Biol* 47 (supple 1):e122 (O11.1)
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- 2009:** Musson, M., L.I. Jepeal, P.D. Mabray, S.I. Kavanaugh, I.V. Zhdanova, S.A. Sower, and M. M. Wolfe. 2009. Phylogeny of Glucose-Dependent Insulinotropic Polypeptide (GIP) Expression: Implications for Nutrient Efficiency and Obesity. *Gastroenterology*. Vol. 136. Issue:5. Pages A731-732. Suppl. 1. May, Abstract.
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- Tsutsui, K., V. S. Chowdhury, T. Osugi, T. Ubuka, G. E. Bentley, L. J. Kriegsfeld, T. Matsuzaki, T. Iwasa, M. Irahara, S. A. Sower and H. Vaudry. 2010. Discovery and functional significance of gonadotropin-inhibitory hormone (GnIH) in vertebrates: From comparative to general. *Endocrine Journal*. Vol. 57. Pages S234-S235. Suppl. 2. Published: MAR 2010. Abstract.
- Freamat, M. and S.A. Sower. 2010. Functional Divergence of Glycoprotein Hormone Receptors. *Integr. Comp. Biol.* Vol. 50. Issue 1. Pages: 110-123. Published: Jul 2010. Abstract.
- 2011:** Hall J., Aquilina-Beck A., Joseph N., MacDonald C., Decatur W.A., Kavanaugh S.I., Freamat M., Sower S.A. 2011. Expression and Functional Studies Of Two Novel Type III GnRH Receptors (2 And 3) In The Sea Lamprey, A Basal Vertebrate. *Front. Endocrin. Conference Abstract: NASCE 2011: The inaugural meeting of the North American Society for Comparative Endocrinology, University of Michigan, Ann Arbor, Michigan, 2011*
- Decatur W.A., Smith J.J., Hall J., Li W., Sower S.A. 2011. Annotation of the Neuroendocrine-Associated Genes of the Lamprey *Petromyzon Marinus* and the Implications for Evolution of Vertebrate Gonadotropin-Releasing Hormones. *Front. Endocrin. Conference Abstract: NASCE 2011: The inaugural meeting of the North American Society for Comparative Endocrinology, University of Michigan, Ann Arbor, Michigan, 2011*
- Sower S.A., K. Gazda, D. Daukss, T. Kosugi, T. Osugi and K. Tsutsui. 2011. Are Novel Rfamipe Peptides



- Neuroregulators of the Lamprey Neuroendocrine System? Front. Endocrin. Conference Abstract: NASCE 2011: The inaugural meeting of the North American Society for Comparative Endocrinology, University of Michigan, Ann Arbor, Michigan, 2011
- Joseph NT, Morgan K, Millar R, Dunn I, Bedecarrats G and Sower S. 2011. Agnatha and Avian: Evolutionary Recruitment of GnRH Systems. Front. Endocrin. Conference Abstract: NASCE 2011: The inaugural meeting of the North American Society for Comparative Endocrinology. doi:10.3389/conf.fendo.2011.04.00149
- Sower, S.A. and M. Baron. 2011. The interrelationship of estrogen receptor and GnRH in a basal vertebrate, the sea lamprey. *Frontiers Endocrinol (Lausanne)*. 2:58.
- 2012:** Ellens, E.R.\*; Kittlison, J.D.; Sower, S.A.; Sheridan, M.A. 2012. Evolutionary Origin and Divergence of the Growth Hormone/Prolactin/Somatomedin Receptor Family: Insights from Studies in Sea Lamprey. *Integr. Comp. Biol.* (2012) 52(suppl 1)
- Sower S.A. \*, Osugi T., Dauks, D., Gazda K., Ubuka T., Kosugi T., Tsutsui K. Evolutionary Origin of Gonadotropin-Inhibitory Hormone (GnIH): Isolation, localization and Biological Activity of Lamprey GnIH Ortholog. *Integr. Comp. Biol.* (2012) 52 (suppl 2)

### **Professional Activities**

Invited to the following international meetings:

- North Pacific Aquaculture Symposium, Anchorage Alaska; Newport, Oregon, August, 1980
- International Symposium on Salmon and Trout Reproduction, Seattle, 1983.
- Endocrinology of Salmonid Development, Osmoregulation, Reproduction and Migration, 2 joint seminars between United States and Japan, Hawaii, 1984 (Unable to attend).
- Evolution of Primitive Fishes, Bamfield, Vancouver Island, Canada, 1985.
- 10th International Symposium on Comparative Endocrinology, Copper Mountain, Colorado, USA, 1985.
- Third International Symposium on Reproductive Physiology of Fish, St. John's, Newfoundland, Canada, 1987.
- First International Symposium on Fish Endocrinology, Edmonton, Canada, 1988.
- 11th International Symposium on Comparative Endocrinology, Malaga, Spain, 1989 (invited to present state-of-art lecture).
- Satellite Symposium on the "Endocrinology and Reproduction of Cyclostomes", Malaga, Spain, 1989.
- 2nd International Symposium in Fish Endocrinology, France, 1992.
- Advances of Fish Pituitary Hormone Research, Japan, 1992 (Invited to present state-of-the-art lecture)
- Symposium on Perspective of Fish Pituitary Hormone Research, Japan, 1992
- 12th International Symposium on Comparative Endocrinology, Toronto, Canada 1993
- 1995 Annual Meeting of Endocrinology, Washington, D.C. June, 1995 (Invited Symposium State-of-Art-Speaker)
- Sixth International Symposium on Reproductive Physiology of Fish, Texas, July, 1995 (Invited State-of-Art-Speaker)
- 3rd International Symposium on Fish Endocrinology, May 27-31, 1996, Hokodate, Hokkaido, JAPAN (Invited State-of-Art Speaker--Unable to Attend)
- 12th International Congress on Comparative Endocrinology, Yokohama, Japan Nov. 16-21, 1997.
- Satellite Congress, "Molecular Ancestry of Vertebrate Peptide Hormones, Japan, Nov, 1997 (invited to present state-of-art lecture).
- 4<sup>th</sup> International Symposium on Fish Endocrinology, July 31-Aug, 4, 2000. Seattle, Washington. Overview Speaker and Organizer of Agnathan-Chondrichthyes Symposium.
- Sea Lamprey International Symposium II, Aug 14-19, 2000, Saul St. Marie, Canada. Invited speaker.
- 13th International Congress on Comparative Endocrinology, Sorrento, Italy May, 2001.
- Second International Symposium on GnRH in Penang, Malaysia in May 2001 Invited State of the Art Speaker (unable to attend)
- Intl Congress of Comparative Biochemistry and Physiology, Chobe, Africa in July 2001. Invited State of the Art Speaker (unable to attend)
- Fish Biology Congress, Vancouver, BC, Canada, July, 2002 (Invited Speaker of Symposim)

- 5<sup>th</sup> International Symposium on Fish Endocrinology, 2004. Spain (Invited Speaker—unable to attend).
- 15<sup>th</sup> International Congress of Comparative Endocrinology, May, 2005 (Invited Plenary Speaker)
- 2005 Special Ceremony in Tokyo (Fish Endocrinology of the New Century), one of six invited plenary speakers, Dec. 2005, Tokyo Japan
- Howard Bern Lecturer, Jan. 2006, Annual Meeting of Society of Integrative and Comparative Biology, Orlando, Florida
- Key Note Speaker, BIOMAN07, Northeast Biomanufacturing Center and Collaborative, July 22-27, 2007 New Hampshire Community Technical College, Portsmouth, New Hampshire
- International Congress of the Biology of Fish, July 25-Aug 1, 2008, Portland, Oregon (Invited Symposium speaker)
- 6<sup>th</sup> International Symposium on Fish Endocrinology, June 22-28, 2008, Calgary Canada (Invited Symposium Speaker)
- 16<sup>th</sup> International Congress of Comparative Endocrinology, Invited Symposium Speaker: S.A. Sower A. Aquilina-Beck, T. Kosugi, S.I. Kavanaugh, M. Wilmot and M. Freamat. “Molecular Evolution of the Reproductive Neuroendocrine axis in Vertebrates.” Hong Kong. June 22-26, 2009.
- Annual Meeting of Society of Integrative and Comparative Biology, Jan 3 to Jan 7, 2010, Seattle, Washington (Invited Symposium speaker)
- 14th International Congress of Endocrinology: ICE2010 - March 26-30, 2010 Kyoto Japan (Invited Symposium Speaker)
- North American Society of Comparative Endocrinology 2011: July 13-16, 2011 Ann Arbor, Michigan (Invited Symposium Speaker)
- 7<sup>th</sup> International Symposium on Fish Endocrinology, Invited Symposium Speaker and Invited Satellite Symposium Speaker, Sept 1-8, 2012, Buenos Aires, Argentina
- 17<sup>th</sup> International Congress of Comparative Endocrinology, Invited Open Plenary Speaker, July 15<sup>th</sup>-19<sup>th</sup>, 2013, Barcelona Spain
- Japan Society for Pituitary Research, Invited Symposium Speaker, Aug. 7 to 9, 2013
- International Congress of the Biology of Fish, Aug 2-8, 2014, Edinburgh, Scotland (Invited Symposium Speaker)
- 27<sup>th</sup> Conference of European Comparative Endocrinologists, Rennes (France) Aug 25-29, 2014 (Invited Symposium State of the Art Speaker)
- North American Society of Comparative Endocrinology 2015: June 4-9, 2015, Ottawa, Canada (Invited Symposium speaker)
- Coevolution of Receptors and ligands. The Wenner-Gren Foundations International Symposium, Sept 9 to 12, 2015, Stockholm, Sweden
- 18<sup>th</sup> International Congress of Comparative Endocrinology, Invited Bargmann-Scharrer Lecture, June 4 to 9<sup>th</sup>, 2017

**Committee appointments (Regional, National and International):**

- Organizing Committee, Western Regional Conference on Comparative Endocrinology, Seattle, 1982.
- Co-organizer and Co-technical Program Chairperson, International Symposium on Salmon and Trout Reproduction, Seattle, 1983.
- Ad-Hoc Research Review Committee of Great Lakes Fisheries Commission Lamprey Research, Chicago, 1983.
- Co-organizer, 13th New England Endocrine Conference, Durham, New Hampshire, 1985.
- Chairperson, Committee to Evaluate the Best Student Paper for the Division of Comparative Endocrinology at the American Society of Zoology Meetings, December, 1986.
- Nominated and selected for Secretary, Division of Comparative Endocrinology, American Society of Zoology, December, 1987 (1988-1989; 2-year term).
- Member of NSF Physiological Processes Panel (1988-1992).
- Organizer and Chair, Cyclostome Workshop, First International Symposium of Fish Endocrinology, Edmonton, Alberta, June, 1988
- Member of Technical Program Committee for 2nd International Fish Endocrinology Symposium, France, 1992.



Member of Great Lakes Fishery Commission Sea Lamprey Integration Committee/Alternative Technology Task Force (1991-1993)

Organizer and Chair of Sex Differentiation/Determination Workshop in Chicago, March, 1992

Member of 1991-1994 Research Committee for the New Hampshire Affiliate American Heart Association

Member of the American Institute of Biological Sciences (AIBS) Peer Review Panel of the NOAA National Sea Grant College Program Marine Biotechnology Proposals, April 21-April 24, 1994

Member of NSF-Academic Research Infrastructure Program Panel, June 26-29, 1994; June 9-12, 1996

Co-chair and co-organizer, 22th New England Endocrine Conference, Durham, New Hampshire, October 15, 1994.

Member of the International Committee on Fish Endocrinology (1992-1997)

Invited Member of a committee to Review a Program Designed to Develop Information to Support the Approval of Chemicals and Drugs for Public Aquaculture, to be held in La Crosse, Wisconsin, May 15-16, 1995.

Member of NSF-Neuroendocrinology Panel, (1995)

Nominated and selected for Program Officer, Division of Comparative Endocrinology, American Society of Zoology, (1995-1997)

Nominated and selected as a member of the US National Committee for the International Union of Biological Sciences (National Academy of Sciences) (1995-2001)

Member of Program Committee for The Third International Symposium of Fish Endocrinology, May 27-31, 1996

Served as panel member for NSF sponsored workshop entitled "Integration of Research and Education: What are our Responsibilities?" at the Society for Integrative and Comparative Biology annual meetings, Dec. 26-30, 1996, Albuquerque, NM

Member of NSF-Academic Research Infrastructure Program Panel, June 9-12, 1996

Member of NSF-Integrative Graduate Education and Research Training Panel (1997)

Served as a panelist for NSF's Division of Undergraduate Education on NSF Collaboratives for Excellence in Teacher Preparation, April 23, 1997

Served as one of NSF IBN's representatives on BIO Issues Working Group, 1997.

Served as NSF IBN's representative on BIO Postdoctoral Working Group, 1996-1997.

Served as one of three representatives of NSF on the Committee on Environment and Natural Resources (CENR) working group on Endocrine Disruptor Research, 1996-1997.

Chair of NSF BIO POWRE (Professional Opportunities for Women in Research and Education) program and BIO's representative on NSF POWRE committee, 1997.

Member of Organizing Committee for Satellite Symposium, "Molecular Ancestry of Vertebrate Polypeptide Hormones and Neuropeptides, Nov. 22-24, 1997.

Co-Organizer of Symposium at the Annual Meetings of Society of Integrative and Comparative Biology, Jan., 1999

Member of Program Committee for Fourth International Symposium of Fish Endocrinology, 2000.

Co-Organizer of Symposium at the Fourth International Symposium of Fish Endocrinology, 2000.

Co-Chair and Co-Organizer of Symposium entitled, "Agnathan and Chondrichthyes Reproduction and Adaptation, held at the ISFE meeting, Seattle, 2000, Wa

Co-Chair and Co-Organizer of the 28<sup>th</sup> New England Endocrine Conference held Oct 28, 2000 at UNH.

Co-Chair of 14<sup>th</sup> International Congress of Comparative Endocrinology, Boston, May, 2005, Program Officer-Elect-2001, and Member of Executive Committee, Society of Comparative and Integrative Biology,

Program Officer and Member of Executive Committee, Jan 2002-2005, Society of Comparative and Integrative Biology

Co-Organizer of International Congress of Comparative Endocrinology, Boston, May 22-27, 2005

Chair of Satellite Conference to ICCE entitled: Reproductive Endocrine System in Agnathans and Protochordates: In Honor of Hiroshi Kawauchi, May 28 to 30, 2005

Member of Program Committee of International Congress of Comparative Endocrinology, Boston, 2005  
 Member of USDA NRICGP's Animal Reproduction Program review Panel 2004, 2005, 2006  
 Member of NSF Integrative Organismal Biology Review Panel, 2006, 2007  
 Member of NSF MRI Review Panel, 2008, 2009  
 Chair-Elect, Division of General and Comparative Endocrinology, Society of Integrative and Comparative Biology (2006-2008)  
 Chair, Division of General and Comparative Endocrinology, Society of Integrative and Comparative Biology (2008-2010)  
 Member of Scientific Committee for the 6th International Symposium on Fish Endocrinology, June 22-28, 2008, Calgary Canada  
 Co-Organizer of Symposium at 6<sup>th</sup> International Symposium on Fish Endocrinology, June 22-28, 2008, Calgary, Canada  
 Member of the Board of International Federation of Comparative Endocrinology, 2005-2013  
 Co-Organizer of Symposium at Annual Meeting of Society of Comparative Endocrinology, Jan 2-7, 2010 Seattle, Washington  
 Member of the North American Society for Comparative Endocrinology Council, March 2010-present  
 Member of the North American Society for Comparative Endocrinology 2011, 2013 Program Committee  
 SICB Division of Comparative Endocrinology Poster Naming Committee 2010-2011.  
 Member of NSF Integrative Organismal System Review Panel, 2011, 2012  
 Chair, NASCE Trainee Best Paper Award Committee, 2011  
 Chair, SICB Nomination Committee 2011-2012  
 Chair, New England Endocrine Conference Organizing Committee, 2012-2013  
 Co-Chair for Symposium, International Congress of the Biology of Fish, Aug 2-8, 2014, Edinburgh, Scotland  
 Co-Organizer for Symposium, North American Society of Comparative Endocrinology 2015: June 4-9, 2015, Ottawa, Canada  
 Member of NSF Integrative Organismal Biology Review Panels, (2010, 2011, 2012, 2013, 2014, 2015, 2016)

**Committee member for UNH departmental, college and university-wide committees:**

Chair, Department of Zoology Graduate Admissions Committee (1989-1991);  
 Chair of the Academic Senate Budget and Planning Committee (1990-1991);  
 Chair of Committee for UNH Planning Session, March 7, (1992)  
 Co-Chair of Biochemistry Department, (1993)  
 Chair of COLSA's Undergraduate Research Conference Committee (1993-1994)  
 Chair of COLSA's Undergraduate Research Conference Committee (1997-1999)  
 Chair of Ad-hoc Endocrine Disruptor Committee (1997-1998)  
 Chair of Ad-hoc Computer Proposal Committee (1997-1998)  
 Chair of subcommittee of IACUC to revise the Animal Care Documents. This was completed during the spring of 2001 and accepted and implemented July, 2001.  
 Chair of Departmental P&T Full Professor Committee (Fall, 2001).  
 Chair of Departmental P&T and Evaluation Committee (Spring, 2002)  
 Chair of College-Wide Planning Committee (2003-2004)  
 Graduate Coordinator, Biochemistry and Molecular Biology, (1999-2006)  
 Chair of the Organic Dairy Steering Committee (2006)  
 Chair of the Bioinformatics iNquiry System (2006-2008)  
 Chair of the COLSA Research Advisory Committee (2005-2007)  
 Chair of the COLSA AES Advisory Committee (2005-2007)  
 Chair of Search Committee to hire Confocal Scientist III (2006-2007)  
 Chair of Organic Dairy Planning Committee (April-Aug, 2007)  
 Chair of the COLSA-UIC Confocal Microscope Steering Committee (2006-2009)  
 Chair of the Pre-Professional Health Programs Advisory Committee (2013-2016)

Member of the following:

Administrative Budget Committee (1990-1991); Trustees Financial Affairs Committee (1990- 1991); Executive Committee on Parking (May-Sept. 1990); Commission on Research and Graduate Education (1989-1991); Health Benefits Committee (May-Oct. 23, 1990); President's Cabinet (1990-1991), Academic Affairs Council (1990-1991), Master Planning Committee (Fall Semester, 1990), Program Review Committee (1990-1991); Task Group for Allocation of Resources (1990-1992); COLSA representative to Academic Senate and Caucus (1990-1991; 1992-1993); Academic Senate Budget and Planning Committee (1987-1988; 1989-1991); Biology 1 and 2 Committee (1986-1987); College of Liberal Arts Representative to Academic Senate (1985-1987); College of Liberal Arts Policies Committee (1985-1986); Women in Science Committee (1983-1985); 2 Faculty Search Committees, Department of Zoology (1985-1986); Zoology Academic Committee (1983-1984); Zoology Executive Committee (1984-1985; 1986-1987; 1991-1992); Biological Science Task Force (1991); Zoology Graduate Examinations Committee (1985-1987); COLSA Strategic Planning Committee (1987-1988); IMSOE Communicator Search Committee (1987-1988); COLSA Equitable Education Committee (1987-1988); COLSA Biological Science Task Force (Spring and Fall, 1991); Advisory Committee on Allocation of State Appropriation (1991-1992). Sigma Xi Biochemistry Department Representative (1989-present); Biochemistry Facilities and Operations Committee (1992); Biochemistry Executive Committee (Spring, 1993); COLSA--Undergraduate Research Conference Committee (1992-96); --Allocation Space Committee (Spring 1993); Department of Biochemistry and Molecular Biology P& T Committees (1993-1994; 1994-1995); University-- ACRHM Radiation Safety Committee (1992-1996); Department of Biochemistry and Molecular Biology Search Committee (1994-1995); COLSA Student Development Task Force (1994-1995); Biology Program Executive Committee (1994-present); Faculty Marshall at 1995 Commencement; Special Commission of Previous Academic Senate Budget and Planning Chairs to Review Budget Status of UNH (Fall , 1995); University Travel Focus Committee (1996-1997); Chief Faculty Marshall at 1998 UNH Honors Convocation; Member of UNH's Technology, Society and Values Program (1997-1998); University System of NH Information Systems Steering Committee (1997-1998); Hubbard Endowed Chair Search (1998-1999; 2000-2001); Member of CoLSA Dean Search (1999-2000), Member of UNH's Technology, Society and Values Program (1997-2003); Departmental Contact for the Center for International Education Scholarship/Fellowship program; Ad-hoc committee to obtain benefits for Postdoc research associates (1999-2001); Member of Hubbard Proposal Review Committee (2001, 2002); Faculty group member for three different search committees: Director of Intellectual Property Management; Director of CINEMAR and Director of Marine Program; Member of Search Committee for the Student & Academic Infrastructure Support Manager position, 2000-2001; Member of Research Information System Steering Committee (1999-2001); Member of COLSA Reorganization Committee (2001); Member of IROP committee (2002-2006); Member of UNH's Institutional Animal Care and Use Committee (IACUC), 2000-2010; Ad-hoc planning committee for two-2003 CoLSA faculty retreats; Member of Search Committee for UNH A/V Director-04; Member of BsL3 Committee (2005-2006); Member of SURF/UROP Committee (2005-2015); Member of the Beckman Scholar Committee (2006); Member of the Radiation Safety Officer Search committee, 2008; Faculty Marshall for 2001-2003, 2005-present UNH Commencement; Pre-Dental and Premedical Committee (1984-1988; 1991-1996); Senate Non-Entity Committee (2011-2012); The Pre-professional Health Programs Advisory Committee (2011-present); UNH University Instrumentation Center User Group (2015-present); School of Marine Science and Ocean Engineering Facilities Committee (2014-present); MCBS Weeks Fellow Committee (2015); Member of the UNH Radiation Safety Committee (2014-present); Faculty Fellow (UNH NSF Career Proposals, 2015-present); Member of UNH University Instrumentation Microscopy User Group (2015-2017)

Other:

Center for Marine Biology (1983-2013); now School of Marine Science and Ocean Engineering (2013-):  
 Director of the Anadromous Fish and Aquatic Invertebrate Research Laboratory (AFAIR laboratory--fish hatchery) 1983-present.  
 Member, 1983-present

Protein Engineering Facility:

Director for the Protein Sequencing and Synthesis Facility (1985-1992).

Co-Advisor for the Protein Sequencing and Synthesis Facility (1992-1995)

Invited Research Seminars:

Bigelow Marine Laboratory, Maine; Department of Fisheries and Wildlife, Minnesota; University of Cape Town Medical School, South Africa; Department of Zoology, University of Rhode Island; Department of Anatomy and Cellular Biology, Tufts Medical School; Department of Physiology, Medical School, University of Alberta; Hatfield Marine Science Center, Oregon State University; Endocrine Forum, Oregon State University; Department of Biology, Portland State University; Department of Biology, North Dakota State University; Mt Holyoke College, Mass.; Brooklyn College, New York; Center College, Kentucky; MacQuarie University, Australia; Rutgers University; University of Toronto, Toronto, Canada; Harvard Reproductive Science Seminar Series, Mass General Hospital; Kitasato University, Japan; University of Virginia, University of Cincinnati, Ohio; Northern Arizona University; Uppsala University, Sweden; University of Washington; Washington State University; Dartmouth Medical School; Mahaidol University, Thailand; Univ. California, Fresno; Pennsylvania State University; University of Massachusetts Amherst (2011); Dartmouth Medical School (April 2011); Dartmouth College (August 2011); University of Denver (2018)

Other:

Guest Co-editor of a special issue on Salmonid Reproduction in the journal, Aquaculture, Vol. 43, 1984, and a Washington Sea Grant Publication (1985).  
Guest Co-editor of a special issue of Gen Comp Endocrinology, Vol 148, 2006.

Consultant:

OreAqua Foods, Inc. (private salmon sea ranching operation, subsidiary of Weyerhaeuser Corporation, Oregon) (1980-1982);  
Domsea Farms (private salmon aquaculture corporation, Washington) (1981-1983);  
Sea Run, Inc. (private salmon aquaculture, Maine) (1985-1988).