

CURRICULUM VITAE

Lawrence K. Duffy

September 2015

CURRENT POSITION:

Director, Resilience and Adaptation Program
Professor of Chemistry & Biochemistry
Department of Chemistry & Biochemistry
University of Alaska Fairbanks
Fairbanks, Alaska 99775-6160

BIOGRAPHICAL:

Date & Place of Birth: February 1, 1948
Brooklyn, New York

Marital Status & Children:

Wife: Geraldine A. Sheridan
Children: Anne Marie
Kevin Michael
Ryan Sheridan

Address: 2712 Tall Spruce
Fairbanks, AK 99708

Military Status: Lieutenant USNR
Active Duty: 1971-1973

EDUCATION:

Fordham University, Bronx, New York	1969	Chemistry	B.S.
University of Alaska, Fairbanks, Alaska	1971	Organic Chemistry	M.S.
University of Alaska Fairbanks, Institute of Arctic Biology	1977	Biochemistry	Ph.D.

HONORS:

Allied-Signal Corporation and ADRDA Faculty Scholar Award, 1987
ACS Analytical Chemistry Award, Fordham University, 1969
NSF Summer Traineeship, Department of Chemistry, University of Alaska, 1971
J.W. McLaughlin Fellow, 1980-82
Sigma Xi
Phi Lambda Upsilon
Who's Who in America (53rd Edition)
W.F. Milton Scholar, 1983
UAF Carol Feist Outstanding Advisor Award 1993-94, 1996-97, 2004-05
NIDCD Minority Research Mentoring Award 1996
Certified Professional Chemist, American Institute of Chemists, 1997
Fellow, American Institute of Chemists, 1998
US Army, Navy and Air Force's Faculty Award for Excellence in Scientific Instruction, 1998
North Star Borough School District Award for Outstanding Service, 1998
Member, Editorial Board "The Science of the Total Environment", 1999
UAF Alumni Award for Professional Achievement, 1999
Associate Editor, Journal of Alzheimer's Disease, 2000

Emil Usibelli Distinguished Research Award, 2002
 President, American Institute of Chemists, 2004
 Wildlife Society, Wildlife Publications Award – Outstanding Monography, 2004
 Who's Who in Science Higher Education (WWSHE), 2006
 Sigma Xi, Alaska Chapter, Exemplary Service Award, 2006
 Sven Ebbesson Award for Excellence in Neuroscience, 2007
 Fellow, Arctic Institute of North America, 2007
 Honorary Member Golden Key Society, 2007
 Science Leadership Fellow, National Center for Science and Civic Engagement, 2008
 President, American Society for Circumpolar Health, 2008-2009
 Effie Kokrine FFA Chapter Supporter Award, 2011
 University of Alaska Chancellor's Diversity Award, 2011
 Excellence in Interdisciplinary Science Award, WAISC, 2012
 Ambassador Award, Fairbanks Convention and Visitors Bureau, 2013
 Irish Education 100 Award, 2013
 Faculty Awards.org, Most Helpful to Students Award

ADDITIONAL STUDIES:

FEBS Adv. Course in Protein Sequencing, Prague, Czechoslovakia (1980)
 Molecular Approaches to the Nervous System. Society for Neuroscience Short Course, Boston, MA (1983)
 LKB Workshop on Isoelectric Focusing, Framingham, MA (1984)
 Hybridomas in Biotechnology and Medicine, Harvard Medical School (1986)
 Beckman Amino Acid Workshop, Palo Alto, CA (1987)
 Chemical Challenges in Immunology, ACS Short Course (1992)
 Pharmacology for Chemists, ACS Short Course (1994)
 Toxicology for Chemists, ACS Short Course (1996)
 Workshop on Teaching Research Ethics, Indiana University (1997)
 Statistical Analysis of Laboratory Data, ACS Short Course (1998)
 Ethics of Research with Humans: Past, Present and Future (2000), UW Short Course
 Workshop on Teaching Survival Skills and Ethics (2001), Snowmass, CO
 Guidelines for the Assessment of Microbiological Contamination in Indoor Environments, AIHA, Fairbanks, AK (2002)
 How to Supervise People, Fred Pryor Seminars, Fairbanks, AK (2002)
 IRB 101 By Public Responsibility in Medicine and Research (2002)
 How to Edit, Fred Pryor Seminars (2003)
 IACUC Workshop, Fairbanks, AK (2004)
 Responsible Conduct in Research Workshop, Fairbanks, AK (2004)
 Ethical Issues in International Health Research, Harvard School of Public Health (2006)
 IRB 101, University of Alaska Fairbanks, Fairbanks, AK (8/2012)

RECENT ADMINISTRATIVE EXPERIENCE

As Department Head (Chemistry and Biochemistry)

Developed and initiated approval of an undergraduate minor in Biochemistry.
 Initiated and coordinated ACS approval of an undergraduate Environmental Chemistry Option for UAF Chemistry majors.
 Assumed direct responsibility for the staffing and offering of summer programs in Chemistry and Biochemistry.
 Coordinated the development of assessment protocols and standards for Chemistry and Biochemistry undergraduate majors.
 Managed Environmental Chemistry Ph.D. program. Approved by Board of Regents.
 Assumed responsibility and managed 5 year ACS re-accreditation for B.S. program in the Department of Chemistry and Biochemistry
 Broadened the Chemistry and Biochemistry Department's focus by hiring new faculty

Increased private donations to the Department.

As Associate Dean (CSEM/CNSM)

Assisted in the development of the CSEM Partners in Science Component of the Rural Systemic Initiative.

Initiated the placement of the Howard Luke Science Fair at CSEM, UAF.

Assisted in the development of the CSEM Summer Science Camp, ASRA.

Developed a Survival Skills and Ethics Program for CSEM and UAF

Directed initiation of Alaska Basic Neuroscience Program

Established Outstanding Graduate Student Advisor Awards

Developed CSEM Graduate Student Dismissal Policy

Led development of CSEM TA training and orientation program

Director Engineering, Science and Technology Experiment Station (ESTES), 2004-2007

Director, Special Neuroscience Research Project (SNRP), 2000-present

Worked to develop Amchitka Consortium, 2007- 2010

As Interim Dean of the Graduate School

Revised the strategic plan for the growth of the graduate school and the interdisciplinary program, resulting in increased staffing, budget and PhD graduates.

Acted as to establish graduate studies area for UARCTIC as UAF increased its effort to internationalize its programs, and formed a graduate association for international students at UAF.

Expanded graduate student recruitment efforts, especially for minority students, both statewide and nationally.

Worked to improve compliance training program and courses for graduate students.

Worked to establish the Graduate School as the "home base" for post doctoral fellows in regard to career development.

Aided the development of Indigenous Studies PhD program and Construction Management program.

Co-organized ODNI Center of Excellence Forum

Initiated Peace Corps Fellow/USA Program at UAF and created Office of Peace Corps graduate programs.

Assisted in expanding Interdisciplinary Programs with a general studies option and minor.

As Director of the Resilience and Adaptation Program

Developed a Graduate Certificate Program for RAP (under review)

Initiated an NSF funded undergraduate fellowship program (RAVENS)

TEACHING EXPERIENCE:

1. University of Alaska Fairbanks

1987-89	Fall	General Biochemistry (Chem 451) 3 credits
1995,97,98,99, 01,02,03, 13	Fall	General Biochemistry (Chem 451) 3 credits
1988-1989	Spring	Biochemistry Lab. (Chem 452) 1 hr lecture with 6 hours lab. 4 credits.
1993-1996	Spring	Biochemistry Lab. (Chem 452) 1 hr lecture with 6 hours lab. 4 credits.
1998-2000	Spring	Biochemistry Lab. (Chem 452) 1 hr lecture with 6 hours lab. 4 credits.
1989	Spring	Advanced Biochemistry Course (Chem 652) 3 credits. 15 lectures on proteins.
1989	Fall	General Chemistry (Chem 105) 4 credits
1998	Spring	General Chemistry (Chem 105) 4 credits
2007	Summer	General Chemistry (Chem 106) 4 credits
1990-96, 01, 02, 06	Spring	Introduction to Biochemistry (Chem 104) 4 credits.
2000, 2015	Summer	Introduction to Biochemistry (Chem 104) 4 credits
2011, 2012	Fall	Macromolecules (Chem 450).

1990,92,94	Fall	Protein Structure and Function (Chem 654) 3 credits
1991-96, 00, 01, 13,14,15	Fall/Spring	Basic General Chemistry (Chem 103) 4 credits.
2000	Summer	Basic General Chemistry (Chem 103) 4 credits.
1993	Spring	Comparative Biochemistry (Chem 693) 1 credit
1994, 95, 97	Spring	Environmental Biochemistry and Biotechnology
00, 02, 04	Fall	Environmental Biochemistry and Biotechnology (Chem 655) 3 credits. Also as independent study
1996, 97, 98, 03, 04, 05, 06	Spring	Chemistry in Complex Systems (Chem 100) 4 credits.
10,11, 12, 14		
1998, 99, 02, 03, 05, 08, 09	Fall	Developed on-line course 2012, offered also as a FHS section
11, 12		
1996	Fall	Introduction to Toxicology (Chem 293) 1 credit
1997	Spring	Research Ethics (Biol 493) 3 credits
1998	Spring	Research Ethics (Chem 300) 3 credits
2001, 03, 05	Fall	Research Ethics (Chem/Biol 300) 3 credits
2004, 05, 07	Fall, Summer	Natural Resources, Land and Environment, (Chem 393, BCS 312, LAS 393) 3 credits
2015	Summer	Undergraduate Research (URSA 195)
2007, 2008	Fall Spring	Environmental Radioactivity, Stewardship and People of the North (Chem 493)
2009	Winter	Demystifying Biotechnology (LAS 293, 2 credits)
2009, 2010, 2011, 13,14,15	Summer	Chem 100 RAHI
2010, 2011		Independent Study courses: Global Environmental Health; Water Chemistry; Environmental Justice
2011, 2012, 2013, 2014	Fall/Spring	Responsible Conduct of Research (LAS 601)

2. **Harvard Medical School**

1983-1986 Medical School Advanced Biochemistry Course (700B) 1 Conference Section/week.

1. **Roxbury Community College (Evening Division)**

1984 Fall Organic Chemistry (Chem 210) 3 hours of lecture and 2 hours of lab/week.
1985-1987 Fall Organic Chemistry (Chem 210) 3 hours of lecture and 2 hours of lab/week.

4. **Middlesex Community College (Continuing Education Division)**

1983 Fall . General Chemistry I and Laboratory (Chem SC150). 3 hours of lecturer and 3 hours of lab/week.

5. **University of Texas Medical Branch**

1980 - 1982 Interdisciplinary laboratory for first year medical students: Human Genetics Counseling lab. 2 lectures.
1981 Spring Graduate Course BIOC 6305. Advance Amino Acids and Proteins. 2 Lectures/Course.
1981- 1982 Fall Medical School Biochemistry Course. 3 Lectures/Course.
1982 Fall Biochemical Methods BIOC 6304. Supervised one week of experiments

6. **Galveston College**

1982 Fall General Chemistry and Laboratory. 3 hours of lecture and 3 hours of lab per week.

7. **University of Alaska**

1969 - 1976

Laboratory Sections in General Chemistry, Contemporary Chemistry, Organic Chemistry and Biochemistry.

Graduate Students Supervised:

Lars Ebbesson	MS	1994
Joe Boger	MA	1994
Xiaohong Zhao	PhD	1994
Sandip Vyas	PhD	1995
Sherri Smith	MS	1996
Yancy Bodenstein	MS	1997
Ying Xu	MA	1998
Jon Menough	MS	1998
Christopher Taylor	MS	1999
Kim Clapp-Lilly	PhD	2000
Jane LeBlond	MS	2000
Peggy Crane	MAT	2000
Janet Ricker	MS	2000
Kerrie Beckett	MA	2000
Margaret Isbell	PhD	2000
Xiaoming Zhang	MS	2001
Lars Hansen	MAT	2002
Shelli Stewart	MS	2003 (co-Chair)
Anna Godduhn	MA	2003
Kriya Dunlap	MS	2003
Catherine Humphries	MS	2003 (co-Chair)
Nicole South	MA	2003
Anne Whitehead	MA	2004
Bing Shi	PhD	2004 (co-Chair)
Scott Kemp	MS	2005
Roger Rothschild	MS	2005
Kryia Dunlap	PhD	2007
Richard Hallock	MA	2007
Emma Flores Mayfield	MA	2009
Linda Nicholas-Figueroa	MA	2009
Greg Van Doren	PhD	2010
Anna Godduhn	PhD	2011
Dinara Tamabayeva	MS	2012
Jinghui Zheng	MS	2013
Seetha Murugesan	PhD	2013
Lisa Schwarzburg	PhD	2014
Theresa Vertigan	MS	2015

PROFESSIONAL EXPERIENCE:

- 1969 - 1971 Laboratory Instructor, Department of Chemistry, University of Alaska, Fairbanks, Alaska.
Research: Photochemistry of organic pesticides. Supervisor, Dr. G. W. Smith.
- 1974 - 1976 Research Assistant, Institute of Arctic Biology, University of Alaska Fairbanks, Fairbanks, Alaska. Research: Function and Structure of Hemoglobins from Arctic Animals.
Supervisors, Dr. C. T. Genaux and Dr. P R. Morrison.

- 1977 - 1978 Post-doctoral Fellow, Boston University, Boston, Massachusetts with Dr. R. A. Laursen.
Research: Structure of EF-Tu.
- 1978 - 1980 Post-doctoral Fellow, Department of Physiological Chemistry, Roche Institute of Molecular Biology, Nutley, New Jersey with Dr. C. Y. Lai. Research: Chemical Modification of Cholera Toxin.
- 1980 - 1981 James W. McLaughlin Fellow, Department of Human Biological Chemistry and Genetics, The University of Texas Medical Branch, Galveston, Texas.
- 1982 - 1983 Research Assistant Professor, Department of Biological Chemistry and Genetics, The University of Texas Medical Branch, Galveston, Texas.
- 1983 - 1984 Instructor of Chemical Sciences, Middlesex Community College, Division of Continuing Education.
- 1983 - 1985 Assistant Biochemist, McLean Hospital, Belmont, MA.
- 1983 - 1987 Assistant Professor of Biochemistry (Neurology), Harvard Medical School.
- 1984 - 1987 Science and Organic Chemistry Instructor, Roxbury Community College, Division of Continuing Education.
- 1985 - 1987 Associate Biochemist, Brigham and Women's Hospital.
- 1986 - 1987 Research Associate, Duke University Center for the Study of Primate Biology and History.
- 1987 - Present Professor of Chemistry and Biochemistry, University of Alaska Fairbanks.
- 1987 - 1990 Coordinator, Program in Biochemistry and Molecular Biology.
1992 - 1993
- 1988 - 1998 Coordinator, Summer Undergraduate Research Intern Program in Chemistry and Biochemistry, University of Alaska Fairbanks.
- 1987 - 1990 Adjunct Researcher, Center for Neurologic Diseases, Brigham and Women's Hospital, Boston, MA.
- 1995 - 1998 Affiliate Professor, Center for Alcohol Addiction Studies, UAA
- 1994 - 1999 Head, Department of Chemistry and Biochemistry.
- 1996 - 2000 Coordinator of the RSI Scientist-in-Residence Program (CSEM)
- 1999 (Summer) Instructor, Rural Alaska Honors Institute (RAHI)
- 2000 – 2007 Assoc. Dean for Graduate Programs and Outreach (CSEM/CNSM)
- 2000 – Present Director, Alaska Basic Neuroscience Program
- 2004 – 2007 Director, CNSM Engineering, Science and Technology Experiment Station
2007 - 2012 Interim Dean, Graduate School, University of Alaska Fairbanks
2012- Present Director, UAF Resilience and Adaptation Program

MEMBERSHIP IN SCIENTIFIC SOCIETIES:

American Society of Biological Chemists & Molecular Biologists
 American Chemical Society
 American Society of Zoologists
 American Society for Circumpolar Health
 New York Academy of Sciences
 International Society of Toxicology
 Massachusetts Association of Adult and Continuing Education
 Fellow, American Institute of Chemists
 American Society for Neurochemistry
 American Society for Circumpolar Health
 International Society for the Study of Xenobiotics (ISSX)
 Society of Environmental Toxicology and Chemistry
 American Aging Association
 Sigma Xi
 American Association for the Advancement in Science
 Association for Environmental Studies and Sciences

PROFESSIONAL SERVICE:

Program Committee, American Chemical Society, Southeastern Section (1982)
 Membership Committee, ACS, Northeastern Section (1983)
 Chairman, Membership Committee, ACS, Northeastern Section (1985)
 ACS Congressional Advisor, District 5, MA (1983)
 Chemical Education Committee (Norris Summer Scholars), ACS, Northeastern Section (1984)
 Public Affair Committee, ACS, Northeastern Section (1985)
 Fellow, Professional Program Committee, American Institute of Chemists (1988)
 Secretary/Treasurer, Sigma Xi Alaska Club (1988-90, 1994-01) President, Sigma Xi Alaska (1991-92)
 Counselor, Alaska Section, 1991: (1989-1990)
 AIC-Non AIC Award Nomination Committee (1991)
 OxyFuel Task Force, Fairbanks North Star Borough (1992)
 Program Chair, 1994 Northwest Regional ACS meeting, Anchorage, AK.
 AFAR National Scientific Advisory Council (1995-present)
 Member, Regional Sigma Xi Nominating Committee (1998-2001)
 Member, Board of Directors, American Society for Circumpolar Health (1999-00, 2003)
 National Chemistry Olimpiad Alaska Coordinator (2000-01)
 Associate Regional Director, Sigma Xi Board of Governors (2000-03)
 AIC Board of Directors (2001- 2005); Board Secretary (2003); President-Elect (2004)
 North Star Borough Schools Curriculum Advisory Committee (2002-04)
 AMAP METALS Working Group (2001-03)
 Amchitka Stewardship Policy Oversight Committee (CRFSP) (2003)
 Executive Director Arctic division AAAS (2004 – Present)
 AIC Representative to AAAS Section on Societal Impacts of Science and Engineering (2004)
 North Star Borough, Pollution Control Commission (2003-05)
 Program Chair, 60th Northwest Regional ACS Meeting (2005)
 Co-Chair of Ethics Committee, Council of Science Society Presidents (2006)
 Alaska State Advisory Committee on Fish Consumption (2006 – 2013)
 Leadership Council SENCER Center of Innovation – West (2008)
 President, American Society for Circumpolar Health (2008)
 Member, Strategies to Increase Participation of Diverse Populations (NICHD, 2009)
 AAAS Council Delegate (2009-Present)
 Member, Ilisagvik Tribal College Science Advisory Committee (2011- 2013)
 Instructor, Summer Climate Change Camp, Ilisagvik Tribal College (2011- 2014)

Editor, American Journal of Biochemistry and Biotechnology, 2015

UNIVERSITY SERVICE AND GOVERNANCE:

UAF Faculty Senate, Representative (1988-21, 1993-95, 1997-01)
 UAF Faculty Senate Curriculum Affairs Committee (1989-92)
 UAF Faculty Senate Curriculum Review Committee, chair (1991-92)
 UAF Faculty Senate Graduate Council, Chair (1993-94)
 UAF Faculty Senate Administrative Committee, chair (1999-01)
 Graduate Admissions Committee, Department of Chemistry, UAF (1988-89)
 UAF Human Experimentation Review Committee (1988-89), IRB (1999-01)
 IAB Safety Committee (1992), Chairman, IAB Research Advisory Committee (1992)
 UAF Student Success Committee (1992)
 CSEM, New College Administration Organization Committee (1995)
 UAF Student Support Services Advisory Board (1996)
 UAF Graduate Student Travel Committee, Chairman (1997)
 UAF Graduate School Advisory Committee, Chairman (1998-99)
 UAF Center for Global Change Steering Committee (1998)
 UAF Faculty Senate, President (2000-01)
 UA Faculty Alliance, Chair (2000-03)
 CSEM Accreditation Writing Team (2000-01)
 UAF Standard Four (Faculty) Accreditation Working Group, Chair (2000-01)
 Task Force on Department Chairpersons, Chair (1989-91)
 Ad Hoc Committee on Compensation & Workload (1994-95)
 Committee to Nominate Commencement Speaker & Honorary Degree Recipients (1996-2008), Chair (2003-2007)
 Chair, UAF Biosafety Committee (2001-2003)
 Chair, UAF Chemical Safety Committee (2002-04)
 UAF Task Force on Joint PhD degrees between MAUs (2001)
 College of Fellows of the University of Alaska Foundation (2001)
 Science Steering Committee, Center for Global Change (2000-2004)
 UAF University of Arctic Steering Committee (2004-05)
 UAF Interdisciplinary Programs Review Committee (2003-2004)
 UAF BICS User Committee (2001)
 UAF BIOS Research/Teaching User Committee (2004)
 UAF Chair Faculty Senate Appeals and Oversight Committee (2005)
 UAF Search Committee for Vice Chancellor for Research (2006)
 IUCH 2012 Local Organizing Committee Member (2007- 2012)
 CANHR Internal Advisory Committee (2008)
 Member, UAF Appeals Board (2008 alternate, 2009 member)
 Member INRA Board of Directors (2009-2010)
 Member, UA Biomedical Summit (2010)
 Member UA Pharmacy Education Committee (2010)
 Representative for UAF for the Murdock Foundation's "Partners in Science" Program (2011)
 Member, UAF Director of Diversity and EEO Search Committee (2011)
 Member, Chancellor's Academic Sub-cabinet (2011)
 Member, UAF Strategic Plan Committee (2012)
 Member, UAF Interdisciplinary Admissions and Education Committee (2013)
 Member UAF Sustainability Master Plan Committee (2014 – present)
 Member UAF Faculty Senate Core Curriculum Review Committee (2014-15)

CIVIC and COMMUNITY SERVICE

Alzheimer's Association of Alaska
 Fairbanks Community Homes Board of Directors (2011 - 2014)
 Fairbanks Community Behavioral Health Center (Secretary, 2011- 2014)

Member, North Star Borough Air Pollution Control Commission (2009-present)

RESEARCH FUNDING:

Over 30 years in research, funding for both research and students has been obtained from NSF, NIH, NOAA, USDA, various foundations and industry, totaling over 20 million dollars.

RESEARCH ACTIVITIES (Selected):

Principal Investigator

"Characteristics of Alaskan Microtus Hemoglobins," Grant by U.S. Center for Disease Control (administered by the University of Alaska, 1976)

James W. McLaughlin Foundation. "Bacterial Toxins and their Mechanism of Action," 9/1/80-8/31/82

American Cancer Society Institutional Research Grant. "Monoclonal Antibodies to Vinculin as a Probe to the Interaction of Fibronectin and Vinculin," 6/15/82-12/14/82

American Philosophical Society. "Structure of Lemur Hemoglobins," 12/1/82-12/1/83

William F. Milton Fund. "Antigenic Structure of Alzheimer Brain 200K Neurofilament," 2/1/84-2/1/85

RO-1, NIH Grant, "Structural Studies of Alzheimer 200K Neurofilament," 8/1/84-7/31/87

American Federation for Aging Research Grant. "Monoclonal Antibodies to Age Related Abnormal Proteins," 7/1/86-6/31/87

NSF Grant. "Aging & Biochemistry of a New Receptor Protein in the Brain," 3/1/88-2/27/90

Whitehall Foundation. "Molecular Investigation of the Phylogenetic Position of the Cheirogaleidae," 1988-89

NSF Grant. "A Chemistry and Biochemistry Summer Undergraduate Intern Program in Alaska," 5/1/88-4/30/93.

NSF Grant. "Purchase of an Amino Acid Analyzer for Research in Alaska," 7/1/89

WRC-UAF. "Environmental Biotechnology Studies on the Use of Monoclonal Antibodies to Detect Toxins and Pollutants in Water Systems," 7/1/89-8/30/91

NIH Grant. "Aging and Alzheimer Amyloid Protein Chemistry." 4/1/90 - 3/31/93

Murdock Charitable Trust. "Biopolymer Facility." 5/1/91 - 4/30/92

UAF Mellon Faculty Development Award "Rural Science Education." 10/1/92-5/1/92

ACS Project Seed. Biochemistry Research for High School Students. 6/1/92

Monitoring Oxyfuel in Fairbanks, OFA, 9/1/93-6/30/94

Biomonitoring of Environmental Pollution, CMI-MMS, 6/1/94-5/30/96

NSF Grant, "Environmental Chemistry and Biochemistry in Alaska." 5/1/95-4/30/98

K-12, NIDCD Grant, "Olfactory Degeneration: A Salmon Model." 9/1/96-8/30/99

NIEHS Grant, "Mercury Analysis laboratory Equipment." 10/1/97-9/30/98

AZUR Grant, "Linkage of Microtox Chronic Toxicity Assay to Heat Shock protein in Grayling Eggs after Fertilization" 8/1/98-8/30/99

Water Research Center, "Mercury Levels in Alaskan Rivers" 3/1/00-8/1/01

NINDS Grant, "Alaska Basic Neuroscience Program" 8/30/00-9/01/05; 9/01/05-8/30/10

University of Alaska Foundation Lecturer Funding 3/1/02-3/10/02 and 5/1/04-9/1/04

DOE Subcontract, "CRESP II Research on Amchitka" 3/1/04-2/15/05

Burroughs Wellcome Fund, "6th Annual Special Neuroscience Research Conference" 1/1/06-12/30/06

Murdock Charitable Trust, Partners in Science, "Climate Change, Mercury and Reindeer Production", 4/1/06-3/30/07

NSF grant, "IPY: Adapting SENCER to the Arctic" 3/1/07-2/28/09

Murdock Charitable Trust, Partners in Science, "Effect of Exercise and Diet on Circulating VEGF", 4/1/-08 – 3/31/10

NSF grant, Doctoral Dissertation Improvement Grant: "Special Delivery: Transporting Inupiat Mothers and Babies in Northeast Alaska." 9/15/09-9/14/10.

NSF S-STEM grant "Resilience and Adaptation in Environmental and Natural Sciences" 4/1/14 – 3/31/19.

URSA ITE Award "Ethnobotany Tool Box" 4/13/15 – 9/3/15

Co-Investigator

Grant GM19039 NIH. "Human Fibronectin. Structure and Function." A. Kurosky - Principal Investigator, 4/1/81-3/31/82

Alzheimer Society Grant. "Monoclonal Antibodies to PHF". D. Selkoe - Principal Investigator - 6/1/83-6/1/84

NIH Grant. "Molecular Pathology of Alzheimer Disease". D. Selkoe - Principal Investigator - 12/1/83-11/30/85

NIH Grant. "Measurement of A Brain Protein by A Novel Microsensor". G. Bastians - Principal Investigator - 4/1/86

Whitaker Health Science Fund, "Alzheimer Amyloid and Plasma Proteins". Vernon Ingram - Co-Investigator

NIH Grant. Biopolymer Facility Equipment. E. Braunwald - Principal Investigator - 4/1/88

U of A Siberian/Alaskan Medical Research Program. "Addictive Behavior and Genetic Predisposition". Bernard Segal, Principal Investigator - 09/01/89

American Society for Biochemistry and Molecular Biology "High School Science Teacher Summer Research". Terry Krohe - Principal Investigator - 6/1/92

EVOS, "Nearshore Vertebrates". D. Roby - Principal Investigator - 7/1/95

"Nearshore Vertebrates." L. Duffy - Principal Investigator - 1996-97

"Responses of River Otters to Oil Contamination". Merau Ben-David – Principle Investigator – 11/1/97-9/30/99

Research Corporation. "Benzene and Carbon Monoxide as Air Pollutants in Fairbanks, AK". D. Jaffe – Principal Investigator – 3/3/97-9/30/98

CIFAR, "Human and Chemical Ecology of Arctic Pathways by Marine Pollutants". David W. Norton – Principal Investigator – 3/3/98-3/2/00

North Pacific Marine Research Program. "Concentrations of Mercury and Its Pathways in Marine Organisms of Eastern Bering Sea." A. Sathy Naidu – Principal Investigator – 7/1/99-6/30/02.

Natural Resources Fund. "Wetlands as Sources of Toxic Hg Compounds." Mark Hines - Principal Investigator – 5/1/2000 – 4/30/2002.

Natural Resources Fund. "Noninvasive Environmental Monitoring of natural resources development in Alaska." 5/1/2001-4/30/2002.

NIH Minority Supplemental Grant. "The Function of AVP and PKC beta1 in the SCN of Mice." 4/1/2001-5/1/2002.

NSF "Sustainability and Stewardship in Alaska" C. Gerlack – Principal Investigator - 09/01/04-08/31/05.

NSF "Subsistence Choices, Mercury Bioaccumulation and Ecosystem Change" M. Murray – Principal Investigator – 9/01/05-08/31/07.

USDA "AK Blueberries Bioassay Development" C. Lewis – Principal Investigator – 9/01/05-08/31/07

NIH- NCRR "Alaska BioPREP" G. Happ – Principal Investigator 9/01/08 – 08/31/11

A.W. Mellon Foundation "Dissertation Fellowship Program for Alaska Natives Committed to Advancement of Indigenous Studies" S. Henrichs – Principal Investigator 7/01/08 – 6/30/11

Murdock Trust "Supplement to Climate Change" J. Lokken – Principal Investigator – 6/01/08 – 5/30/09
USDA "Screens to Nature Workshop" M. Lila – Principal Investigator – 9/1/11 – 8/30/12

CLA Collaborative Arts Council "Sub Arctic Haze: Visualizing". Anne Duffy, Principal Investigator. 12/1/14 – 3/30/15.

Consultant:

Integrated Chemical Sensors, 1985-86
Athena Neurosciences, 1986-87
Interior Alaska Beekeepers Association, 1989
Alaska Biotechnology Consultants, 1989
Jenson, Harris and Ross, 1989
Neuromedical Inc., 1991

North Coast Natural Resources Consultants Inc, 1998
 Saylor Foundation, 2013
 Bridgeport Education, 2014

Reviewer:

Journals:

Biochemistry
 The Chemist
 Neuroscience
 Journal of Chemical Education
 Archives of Biochemistry and Biophysics
 Journal of Mammology
 Proceed. 8th International Cold Regions Eng.
 Journal of Alzheimer's Disease, (Editorial Board, 2001)
 Journal of Neurochemistry
 Journal of Neuroscience Research
 Comparative Biochemistry and Physiology
 Dirasat
 Science of the Total Environment (Editorial Board)
 Environmental Monitoring and Assessment
 International Journal of Circumpolar Health
 Mediterranean Journal of Chemistry (Editorial Board)
 Journal of Functional Biomaterials
 Journal of Biotech Research
 International Journal of Ecosystems
 Journal of Environment International

Textbooks:

Chemistry 2004, a high school text (published by Holt)
 ACS Symposium Series: "Sustainability in Chemistry Curriculum"

Proposals:

Alzheimer Society
 American Federation of Aging Research
 Alaska Science and Technology Foundation
 NSF - OSTI/ARI Facilities Panel, also Arctic Division/Contaminants Proposals
 Center for Indoor Air Research
 Philip Morris External Research Program
 NSF – Biocomplexity Program
 International FSU Research Proposals
 Global Change Center, UAF Student Proposals
 King Abdulaziz City for Science and Technology (KACST) Proposals (AAAS)
 Program Reviewer for AAAS 2012 - 2014 annual meetings

INVITED LECTURES:

1. Roche Institute of Molecular Biology, Nutley, NJ, May, 1981
2. IV International Conference on Methods in Protein Sequence Analysis, Brookhaven National Laboratory September, 1981
3. LaFayette College, Department of Chemistry, Easton, PA, April, 1982
4. Mini-Symposium on HPLC Applications at UTMB, Galveston, TX, May, 1982
5. FEBS "Hemoglobin Symposium," Brussels, Belgium, July, 1983
6. University of Alaska, Institute of Arctic Biology, Fairbanks, AK, October, 1984
7. Harvard Medical School, Department of Biochemistry, Boston, MA, October, 1985

8. Boston Glycoprotein Group, Boston, May, 1987
9. Southeastern Mass. Univ., Department of Chemistry, Fall River, January 26, 1988
10. Alaskan-Siberian Exchange, Inst. of Clinical and Experimental Medicine, Novosibirsk, USSR, October, 1988
11. Palmer Agricultural Research Station, UAF, March, 1989
12. Institute of Marine Science, UAF, September, 1989
13. Alzheimer Society Workshop, September, 1990
14. Department of Chemistry, University of Alaska Anchorage, March, 1991
15. Regional Center for Alcoholism, Fairbanks, AK, July, 1991

16. Department of Chemistry and Biochemistry, Cal. State Fullerton, March, 1992
17. Workshop on Arctic Contamination, IARPC, Anchorage, AK, May, 1993
18. Symposium on Human Ecology in Extreme Environments, Vladivostok, September, 1994
19. NIDCD Partnership Program for Research in Human Communication, Rockville, MD, September, 1996.
20. Community Forum on Environmental Research, YKHC Bethel, AK. August, 1997.
21. "Research Ethics" to Polaris Group: Project on Leading Alaska Restructuring in Science, October 3-4, 1997, Anchorage, AK.
22. Kachemak Bay Conference, "Developing Sentinel Species and Biomarkers for Kachemak Bay" April 25, 1998, Homer, AK.
23. "Mercury and Health Risks in Western Alaska" to Y-K Health Corp., OEHE and Hospital Staff, March 31, 1999.
24. Pathways to Aging Meeting. "The Role of Amyloid Beta Protein in Progressive Neurodegeneration" April 22-23, 1999, Egan Convention Center, Anchorage, AK.
25. 1999 Fall Forum for Alzheimer's Disease. "Alaska's Role in Current Alzheimer's Disease Research," Nov 1999, Juneau, Fairbanks and Anchorage.
26. "A Case Study of Community Directed Research on Mercury in Western Alaska," Alaska Pacific University, Dec. 8, 1999.
27. Arctic Council Panel on "Contaminants in the North," April 2000.
28. US EPA International workshop on "Trends and Effects of Heavy Metals in the Arctic," McLean, VA June 2001.
29. NOAA Workshop on Steller Sea Lions, Anchorage, AK September 2001
30. AISES, Alaska Chapter "Salmon, Mercury and Neurobiology" November 2001
31. YKHC Bethel Hospital Grand Rounds "Antioxidants, Mercury and Nutrition", July 2003
32. UA Leadership Seminar Series: "The Art of Leadership Exercised by Department Chairs", Oct 2003
33. ADAK Community Meeting "Radioactivity and Amchitka," June 2004
34. Chemical Heritage Foundation, "Robert McNeil, Jr. and Tylenol," June 2005
35. AKDPH Subsistence Foods and Contaminants Meeting, "Mercury in Wildlife", May 2006
36. Alaska, Food, Mercury and Neurogenesis, Univ. of Rochester Environ Health Seminar, Nov. 2006
37. Monitoring for Changes in Environmental and Human Health, NPRB Contaminants Panel, Jan 2007
38. Research Ethics and Professionalism, student section AADE, Nov. 2007,
39. Alaska Health Summit on Impact of Climate Change, "Climate and Mental Health", Dec 2007
40. Adapt and Adopt: Developing a New SENCER Course, WAISC, April 2008
41. North Pacific Exposure: Neuroscience, Melatonin, and Behavioral Health in the North Pacific, AAAS Pacific Division, June 2008
42. The Responsible Conduct of Research Involving Indigenous Cultures. Western Association of Graduate Deans, March 2009
43. Approaches to Community Engagement: The Northway Project. Council of Graduate Schools, December 2009.
44. Shared Interests: The UARCTIC Graduate Area. Western Association of Graduate Schools, March 2010.
45. Using culture and Traditional Knowledge to Improve Engagement in Science Courses (2012). SENCER Summer Institute, Santa Clara, University of California
46. Relating Traditional Knowledge to Biochemistry and Health (2013). Iisagvik Tribal College.
47. Using Climate Change to broaden chemistry curriculum boundaries: An Arctic example. (2014) ACS

National Meeting, San Francisco.

Community Activities:

Civil Defense Coordinator, Warren County, NJ, 1979
 Youth Commission, Treasurer, Town of Acton, 1984
 Community Education Advisory Committee, Town of Acton, 1986
 Fairbanks Alzheimer Support Group, 1988-1998
 Institutional Review Board, Fairbanks Memorial Hospital Foundation, 1990
 Member of Board of Directors, Alzheimer's Disease Association of Alaska (Vice President - 1993; President-1995, 1998- 99; 00-04).
 Regional Delegation to Alzheimer Society 1995
 Member, Ft. Wainwright Restoration Advisory Board, 1998-2000
 Corp of Engineers Working Group on Dredging Standards in Alaska, 2000-2003
 AMAP Working Group on Metals in the Arctic, 2000-03
 NSB Board of Education Curriculum Advisory Committee (2002-2004)
 NSB Pollution Control Commission (2004 - present)
 Board Member, Fairbanks Community Homes Board (HUD) (2007 to present), Secretary 2011-2014

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A. Theses:

1. Duffy, L.K. 1972. Photo-hydrolysis of chlorophenoxyacetic acid compounds, M.S. Thesis. University of Alaska Fairbanks, AK.
2. Duffy, L.K. 1977. A comparison of the primary structure of hemoglobins from two microtine tribes. Microtini and Lemnini, Ph.D. Dissertation. Institute of Arctic Biology, University of Alaska Fairbanks, AK.

B. Articles in Journals: (peer reviewed; superscript 1 indicates undergraduate or high school author)

1. Stratton, L.P. and Duffy, L.K. 1976. Hemoglobin polymorphism in *Microtus pennsylvanicus*. *Comp. Biochem. Physiol.* 54B:413-419.
2. Duffy, L.K., Genaux, C.T. and Stratton, L.P. 1976. Amino acid differences between the β -chains from two hemoglobins of the yellow-cheeked vole. *Biochem. Genetics.* 14:809-821.
3. Stratton, L.P., Duffy, L.K. and Porchet, A.L. 1977. Comparative solubilities and electrophoresis of microtine hemoglobin. *Comp. Biochem. Physiol.* 56B:321-327.
4. Duffy, L.K. and Genaux, C.T. 1977. The primary structure of the hemoglobin β -chain of *Microtus xanthognathus*. *Comp. Biochem. Physiol.* 56B:143-146.
5. Morrison, P.R., Duffy, L.K., Ramakrishnan, P. and Genaux, C.T. 1977. Comparison to the tryptic peptides from two cricetid genera. *Peromyscus* and *Calomys*. *Biochem. Systematics and Ecology.* 5:309-317.
6. Duffy, L.K., Genaux, C.T. and Morrison, P.R. 1978. Amino acid differences between major and minor hemoglobins from lemmings (*Lemmus* and *Dicrostonyx*). *Comp. Biochem. Physiol.* 61B:521-532.

7. Laursen, R.A. and Duffy, L.K. 1978. The evolution of elongation factors Tu and G by gene duplication. *FEBS Lett.* 92:200-202.
8. Duffy, L.K. and Lai, C.Y. 1979. Involvement of arginine residues in the binding site of cholera toxin subunit B. *Biochem. Biophys. Res. Commun.* 91:1005-1010.
9. Ara, K., Clark, B.F.C., Duffy, L., Jones, M.D., Kaziro, Y., Laursen, R.A., L'Italien, J., Miller, D.L., Nagarkatti, S., Nakamura, S., Nielson, K.M., Peterson, T.E., Takahasis, K. and Wade, M. 1980. Primary structure of elongation factor Tu from *Escherichia coli*. *Proc. Natl. Acad. Sci. USA.* 77:1326-1330.
10. Duffy, L.K., Gerger, L., Johnson, A.E. and Miller, D.L. 1981. Identification of a histidine residue near the amino acyl-tRNA binding site of elongation factor Tu. *Biochemistry.* 20:4663-4666.
11. Duffy, L.K., Kurosky, A. and Peterson, J.W. 1981. Characterization of cholera toxin precursor. *FEBS Lett.* 126:187-190.
12. Lai, C.Y., Cancedda, F. and Duffy, L.K. 1981. ADP-ribosyl transferase activity of cholera toxin polypeptide A1, and the effect of limited trypsinolysis. *Biochem. Biophys. Res. Commun.* 102:1021-1027.
13. Duffy, L.K., Kurosky, A. and Peterson, J.W. 1981. Covalent structure of the β -chain of the A subunit of cholera toxin. *J. Biol. Chem.* 256:12252-12256.
14. Fader, R.C., Duffy, L.K., Davis, C.P. and Kurosky, A. 1982. Purification and chemical characterization of Type 1 Pili Isolated from *Klebsiella Pneumoniae*. *J. Biol. Chem.* 257:3301-3305.
15. Duffy, L.K., McDonel, J.S., McClane, B.A. and Kurosky, A. 1982. *Clostridium Perfringens* Type A Enterotoxin: Characterization of the amino terminal region. *Infection and Immunity.* pp386-388.
16. Coppenhaver, D.H., Dixon, J.D. and Duffy, L.K. 1983. Prosimian hemoglobins I. The primary structure of the β -globin chain of Lemur *Catta*. *Hemoglobin.* 7:1-14.
17. Lett-Brown, M.A., Thueson, D.O., Plank, D.E., Duffy, L.K. and Grant, J.A. 1984. Histamine releasing activity (HRA) V. Characterization and purification using HPLC. *Cellular Immunol.* 87:445-451.
18. Duffy, L.K. and Coppenhaver, D.H. 1984. Citrate agar electrophoresis of Lemur hemoglobins: Relationship to DPG binding. *Hemoglobin.* 8:427-432.
19. Kosik, K.S., Duffy, L.K., Dowling, M., Abraham, C., McCluskey, A. and Selkoe, D.J. 1984. Monoclonal antibody against MAP2 recognizes Alzheimer neurofibrillary tangles. *Proc. Natl. Acad. Sci. USA.* 81:7941-7945.
20. Selkoe, D.J., Abraham, C., Rassol, C.G., McCluskey, A., Kosik, K.S. and Duffy, L.K. 1985. Paired helical filaments in human neurons: Relationship to neurofilaments. In: *Intermediate filaments* (Wang, E., ed.), *Ann. N.Y. Acad. Sci.* 445:583-596.
21. Duffy, L.K., Kurosky, A. and Lai, C.Y. 1985. Predicted secondary structure of cholera toxin "A" subunit. *Arch. Biochem. Biophys.* 239:549-555.

22. Duffy, L.K. and Lai, C.Y. 1986. A Note on the predicted secondary structures of the active chains of cholera and diphtheria toxins. *Toxicon*. 24:204-206.
23. Duffy, L.K., Genaux, C.T. and Florant, G.L. 1986. A Reinvestigation of hemoglobin Alterations in ground squirrels while in various hibernation activity states. *Comp. Biochem. Physiol.* 83B:797-800.
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25. Kosik, K.S., Bakalis, S.F.¹, Selkoe, D.J., Pierce, M.W. and Duffy, L.K. 1986. High molecular weight microtubule associated proteins: Purification by electro-elution and amino-acid compositions. *J. Neurosci. Res.* 15:543-553.
26. Duffy, L.K., Ehrhardt, M.M., Buettner-Janusk, J. and Coppenhaver, D.H. 1986. Prosimian Hemoglobins III. The structural difference responsible for the hemoglobin phenotype of Lemur Catta. *Amer. J. Primat.* 13:187-193.
27. Coppenhaver, D.H., Buettner-Janusk, J., Ehrhardt, M.M. and Duffy, L.K. 1986. Prosimian hemoglobin IV: The primary structures of the Lemur variegatus duplicated β -globin chains. *Biochem. Biophys. Acta.* 873:372-378.
28. Duffy, L.K., Ehrhardt, M.M., Genaux, C.T. and Florant, G.L. 1987. The primary structure of arctic ground squirrel hemoglobin β -chain. *Comp. Biochem. Physiol.* 87B:189-193.
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30. Duffy, L.K., Ehrhardt, M.M., *Romano, M.¹, Florant, G.L. 1987. A note comparing the primary structure of hemoglobin β -chains of the arctic ground squirrel and the yellow-bellied marmot. *Can. J. Zoology.* 65:3197-3200.
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53. Duffy, L.K., Bowyer, R.T., Testa, J.W. and Faro, J.B. 1994. Chronic effects of the Exxon Valdez oil spill on blood and enzyme chemistry of river otters. *Environ. Toxicol. Chem.* 13:643-647.
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