

H. Joseph Yost, Ph.D., FAAA
CURRICULUM VITAE
(updated March 2019)

I. PERSONAL DATA

Position: Vice Chairman for Basic Science Research, Department of Pediatrics
Richard L. Stimson Presidential Endowed Chair in Medicine
Professor, Department of Neurobiology & Anatomy

Address: University of Utah Molecular Medicine Program
Eccles Institute of Human Genetics, Bldg. 533, Room 3160
15 North 2030 East, Salt Lake City, UT 84112-5330

Office Phone: 801-585-6110

Admin. Assistant: 801-585-0384

Fax: 801-585-5470

Email: jyost@genetics.utah.edu

Lab Website: <http://yost.genetics.utah.edu>

Pediatrics Research

Enterprise Website: <http://medicine.utah.edu/pediatrics/research/>

Citizenship: U. S. A.

II. EDUCATION

1977-1980 B.S. *cum laude*, Biology and Honors Program (emphasis on History and Philosophy), Creighton University, Omaha, NE

1981 Undergraduate Research Program, Argonne National Laboratories, IL

1981-1987 Ph.D., Committee on Genetics, The University of Chicago, Chicago, IL
Thesis Advisor: Susan L. Lindquist Thesis title: The effects of heat shock and heat shock proteins on RNA processing (in *D. melanogaster* and *S. cerevisiae*)

1988-1991 Postdoctoral Fellow, Dept. of Molecular and Cell Biology, University of California, Berkeley, CA (National Institutes of Health Postdoctoral Research Fellow; American Cancer Society Senior Postdoctoral Fellow)
Postdoctoral Advisor: John C. Gerhart

2002 U. Utah School of Business, Administration for Physician Executives Certificate

2017 American Museum of Natural History Lepidoptera Course

III. HONORS

2019 University of Utah Distinguished Mentor Award

2017 Henry Gray Scientific Achievement Award, "American Association of Anatomists highest scientific honor recognizes unique and meritorious contributions to and achievements in anatomical sciences by a distinguished AAA member."

FAAA: Fellow, American Association of Anatomists (elected 2017)

Richard L. Stimson Presidential Endowed Chair in the School of Medicine (2015-present).

"Heart of Gold" Award, American Heart Association (2013) "for continued dedication to lifesaving research in the fight against heart disease."

Established Investigator American Heart Association (1996 - 2001)

McKnight Land-Grant Professorship, University of Minnesota (1994-1996)

IV. PROFESSIONAL EXPERIENCE

A1. CURRENT ACADEMIC LEADERSHIP POSITIONS

Vice Chairman for Basic Science Research, Department of Pediatrics (11/13 – current)

Pediatrics is one of the largest departments at the University of Utah, with over 310 faculty encompassing a broad range of research activities. Our Research Enterprise mission is to build research, training and outreach programs that are relevant to children's health. We foster a team approach to research development, implementation, and management. Our infrastructure provides faculty mentoring and career development, grant writing workshops, grant proposal preparation, grants budgeting and reporting, human subjects IRBs and animal welfare IACUC protocol development, clinical trials and network expertise, data development and analysis, and biostatistical support. In addition, we are enhancing the pipeline for the next generation of biomedical scientists with unique education outreach programs at all levels, including a Mentored Program in Pediatric Research for medical students, a Native American Summer Research Internship (NARI) program for undergraduates, an Academic Associates program for undergraduates, BioEyes outreach programs for 4th-12th grade students in local schools with underrepresented populations, and a recently awarded NIH R25 "Genomics Summer Research for Minorities: A Pathway to Promote Diversity in Science Research" (GSRM) program for underrepresented minority college students.

Director, Cardiovascular Development Research Center (9/09 – current).

This Center brings together a collaborative group of pediatric cardiologists and surgeons, zebrafish developmental biologists, cardiac physiologists, stem cell biologists, and experts in proteomics, chromatin structure, genome-wide gene network profiling, bioengineering and bioinformatics at the University of Utah. Building this center, and bringing together researchers from a discovery, translational and clinical sciences, positioned the University of Utah to be one of only two institutions nationwide to be awarded all three consortia (Cardiovascular Development Consortium, Pediatric Cardiac Genomics Consortium, Pediatric Heart Network) in the NIH "Bench-to-Bassinet" initiative.

Director, Developmental Biology Training Program (5/11 - current).

This NICHD T32 training program builds on the strengths of the developmental biology community at the University of Utah, providing fellowships for seven predoctoral and two postdoctoral fellows per year, selected from several departments and diverse backgrounds. The program provides trainees an outstanding environment and unique opportunities for career development.

A2. PREVIOUS ACADEMIC LEADERSHIP POSITIONS

Interim co-Director, University of Utah Molecular Medicine Program (3/2017 – 6/2018).

U2M2 has 28 faculty and a research portfolio over \$12M, and is the key multidisciplinary and interdisciplinary engine for laboratory research in clinical departments. U2M2 investigators lead research programs that advance translational science by catalyzing the development, testing, and implementation of new diagnostics and therapeutics for a variety of human diseases and conditions. U2M2 core faculty lead the Research Education Core of the CTSA, the MD-PhD program, the Summer Medical Research program, the HHMI Med to Grad PhD track, the NIH Heart Failure Clinical Research Network, the T-32 in Cardiovascular Research, the T-32 in Metabolism, and the T-32 in Developmental Biology.

Director, Center for Children, Huntsman Cancer Institute (7/01 - 6/07).

We invigorated research programs in childhood cancers, and increased public outreach, education and awareness of children's cancer research and treatment. We built bridges with clinical and basic science departments that have interests in children's cancers, successfully recruited and mentored physician-scientist faculty with expertise in sarcoma, T-cell development and leukemia. Our fund-raising efforts generated over \$4 MM donations targeted for children's cancer research.

Program Leader, NCI Pediatric Cancers Program (7/01 - 6/05) Cancer Center Support Grant, Huntsman Cancer Institute

Program Co-Leader, NCI Cell Response Program (7/05 - 11/06) Cancer Center Support Grant, Huntsman Cancer Institute

A3. TENURE-TRACK ACADEMIC APPOINTMENTS

- 7/91 - 6/97 Assistant Professor, Cell Biology and Neuroanatomy, U. Minnesota, Minneapolis,
- 1/94 - 7/97 Member, Institute of Human Genetics, University of Minnesota
- 7/94 - 6/96 McKnight Land Grant Professor, University of Minnesota
- 7/97 - 8/97 Associate Professor (tenured), Cell Biology and Neuroanatomy, University of Minnesota, Minneapolis, MN
- 7/96 - 6/01 American Heart Association Established Investigator
- 8/97 - 6/01 Associate Professor (tenured), Oncological Sciences, University of Utah
- 8/97 - 6/07 Investigator, Huntsman Cancer Institute, University of Utah
- 8/97 - 7/02 Adjunct Associate Professor, Pediatrics, University of Utah
- 7/01 - 6/07 Professor (tenured), Oncological Sciences, University of Utah
- 7/02 - current Adjunct Professor, Pediatrics, University of Utah
- 7/07 - current Professor (tenured), Neurobiology & Anatomy, University of Utah

B. PART-TIME ACADEMIC POSITIONS

- 1997 External Examiner, Ph.D. Dissertation Committee (N. Nascone), Department of Cell Biology, Harvard Medical School
- 1998 External Examiner, Ph.D. Dissertation Committee (M. Levin), Department of Genetics, Harvard Medical School
- 1999 Visiting Lecturer, Department of Cell Biology and Anatomy, University of North Carolina at Chapel Hill, NC
- 2008 External Examiner, Ph.D. Dissertation (Milena Bastos Furtado), Developmental Biology Program, University of New South Wales, Australia
- 2011 External Examiner, Ph.D. Dissertation Committee, Department of Genetics, Yale University, New Haven, CT
- 2016 External Examiner, Ph.D. Dissertation Committee, Department of Genetics, Yale University, New Haven, CT

C. EDITORIAL EXPERIENCE

- 2002 - current Associate Editor, *Developmental Dynamics* (manage 30-60 papers/yr)
- 2008 – 2016 Developmental Biology Faculty, *Faculty of 1000*
- 1997 - current Editorial Board member, *Developmental Biology*
- 2008 Guest Editor, *Seminars in Cell and Developmental Biology*,
- 1998 Guest Editor, *Developmental Genetics*

D. JOURNAL REFEREE

ACS Chemical Biology
Anatomical Record
American Journal of Human Genetics
American Journal of Medical Genetics
American Journal of Physiology (Heart and Circulatory Physiology)
Biology Open
BMC Developmental Biology
Cell
Current Biology
Circulation
Circulation Research
Development
Development, Genes and Evolution
Developmental Biology
Developmental Cell
Developmental Dynamics
Developmental Genetics
Disease Models and Mechanisms
eLife
Genes and Development
Genetics
Human Genetics
Journal of Cell Biology

Journal of Experimental Zoology
Journal of Clinical Investigation
Matrix Biology
Mechanisms of Development
Molecular Biology of the Cell
Molecular Cell
Molecular Medicine Today
Nature
Nature Communications
Nature Cell Biology
Nature Genetics
Nature Reviews
PLOS One
PLOS Biology
PLOS Genetics
Proceedings of the National Academy of Sciences
Roux's Archives of Developmental Biology
Science
Teratology
Trends in Cell Biology
Trends in Genetics
Trends in Microbiology

V. RESEARCH FUNDING

A. CURRENT RESEARCH AWARDS AND GRANTS

“Genome-wide Analysis of Cardiac Development in Zebrafish” 2UM1HL098160 Cardiovascular Development Consortium (NIH/ NHLBI Bench-to-Bassinet)

PI: H. J. Yost (9/30/2009 – 8/31/2015; Direct Costs \$5,499,408; 9/01/2015 – 8/31/2020, \$2,500,000). This grant established a multidisciplinary Zebrafish Cardiovascular Development Research Center, with a collaborative group of zebrafish developmental biologists, cardiac physiologists, and experts in chromatin structure, genome-wide gene network profiling, bioengineering and bioinformatics at the University of Utah, as part of the national Cardiovascular Development Consortium (CvDC) within the Bench-to-Bassinet Consortium

“CvDC Utah Genomic Data Sharing Hub” 54901523 subcontract under U01HL098160

PI: H. J. Yost (6/1/2011-12/31/2018, with option to renew; annual DC \$180,581). This subcontract establishes a bioinformatics core, computer server hardware, web-based bioinformatics software, and development of novel multi-organism genomics analysis programs at the University of Utah for use by the national consortium.

“Bridging the Gap between Genomics and Clinical Outcomes in CHD” 1UM1HL128711 Pediatric Cardiac Genomics Consortium (NIH/NHLBI Bench-to-Bassinet)

MPI: M. Tristani-Firouzi, M. Yandell, H.J. Yost (9/01/2015 – 8/31/2020, DC \$1,375,000). This multidisciplinary program leverages novel bioinformatics tools for analysis of human genome sequences, patient phenotypes and pedigrees to discover the genetic basis for differential clinical outcomes in Congenital Heart Disease.

“Integrating Genomic and Clinical Approaches to Sudden Death in the Young (SDY)” U01HL131698 (NIH/NHLBI)

MPI: M. Tristani-Firouzi, M. Yandell, Col: H.J. Yost (04/01/2016-03/31/2020)

This Utah SDC Center uses innovative concepts and collaborative methodologies to define the genomic basis for autopsy-negative sudden death in SDY; functionally characterize candidate disease-causing variants in zebrafish; and facilitate evaluation of relatives of SDY victims.

“Developmental Biology Training Program” 5T32HD007491 (NIH/NICHD)

PI: H. J. Yost (9/29/1995 – 04/30/2022; annual DC \$253,526). This Program has a 23-year track record of training exceptional predoctoral and postdoctoral scientists in the field of Developmental Biology. The Program consists of individualized research training for seven predoctoral and two postdoctoral fellows annually, under the guidance of 41 faculty members from six Ph.D. degree-granting departments. Trainees take a Scientific Ethics course and learn scientific critical thinking and communication skills by participating in a Journal Club and presenting a seminar in the Developmental Biology Discussion Group, giving a research-based talk at an Annual Training Program Retreat, and hosting outside seminar speakers.

“Leveraging Big Data Science to Link Genomics, Epigenetics and the Family to Improve the Health of Children with CHD.” 17SFRN33630041 (American Heart Association Strategically Focused Research Network)

PI: M. Tristani-Firouzi; Col: M. Yandell, R. Silver, A. Fagerlin, H.J. Yost (\$3.7M, 07/01/2017-06/30/2021). The team uses machine-learning data mining algorithms to approach congenital heart disease as a family disease, to look at causes, as well as the impact of maternal-fetal environment on health, and is developing new tools to improve decision-making between

parents and physicians. Dr. Yost serves as co-Investigator and Director of SFRN Training Program.

“Genomics Summer Research for Minorities: A Pathway to Promote Diversity in Science Research” (NIH National Human Genome Research Institute)

PI: H. J. Yost (9/1/2018 – 8/31/2023; DC \$1,214,250). The overall goals of this program are to provide minority undergraduate participants with quality research opportunities in genomics fields, including training in bioinformatics, analysis of genomic datasets, and overall professional development, to increase the pipeline of underrepresented minority students in bioscience and genomics research careers.

B. CURRENT FELLOWSHIPS AND AWARDS TO POSTDOCS IN YOST LAB

“Roles of KMT2D in Vasculogenesis”

American Heart Association
Awarded to: María de los Angeles (Angie) Serrano
Period: 07/01/2018 – 6/30/2020, Total Costs: \$106,532

“CvDC Collaborative Postdoctoral Fellow”

NHLBI CvDC Bench-to-Bassinet Collaborative Postdoctoral Fellowship
Awarded to: Chelsea Herdman
Period: 01/01/2018 – 12/31/2018, Total Costs: \$123,012

C. COMPLETED RESEARCH AWARDS AND GRANTS

“Zebrafish Swim Tunnel Respirometer”

University of Utah Research Instrumentation Fund
Period: 2018, Direct Costs \$28,701.49
Principal Investigator: H. Joseph Yost

“BioEyes Utah”

Society for Developmental Biology
Period: PI: 04/15/2016 – 04/14/2017; Direct Costs: \$5,000
Principal Investigator: H. Joseph Yost, Co-PI: Judith Neugebauer
BioEYES is an outreach program with a mission to energize and inspire under represented groups into pursuing Science, Technology, Engineering, and Math (STEM) fields, by bringing zebrafish into the classroom. We have taught >5200 students in 17 schools in SLC District.

“Program Project Grant: Positional Identity in the Zebrafish Embryo”

National Institute of Health, 1 P01 HD048886
Period: 03/15/07 – 03/14/13, Direct Costs for Yost PI Project II: \$791,343
Project II: “Patterning and Morphogenesis of Kupffer’s Vesicle by Transcriptional Networks” Director: H. Joseph Yost (10% effort)
Principal Investigator: David Grunwald

“CvDC Pilot Project”

National Institutes of Health, 54902185 subcontract under U01 HL098188
Period: 01/01/2016-02/28/2017; Direct Costs: \$156,847
Principal Investigator: H. Joseph Yost

“Genetic Regulation of Left-Right Organ Asymmetry” (Zebrafish)

National Institutes of Health, R01 HL66292
Period: 07/01/01 – 06/30/05, Direct Costs: \$800,000
Renewal: 07/01/05-06/30/11, Direct Costs: \$1,000,000

- Principal Investigator: H. Joseph Yost (15% effort)
- “CvDC Zebrafish Model Organism Core”**
National Institutes of Health, 54901587 subcontract under U01HL098160
Period: 6/1/2010-11/28/2015; Direct Costs: \$1,200,000
Principal Investigator: M. Tristani-Firouzi, Co-PI H. Joseph Yost (5% effort)
- “Cardiovascular Development Consortium National Steering Committee Chairman”**
NERI Subcontract 54901621 under U01 HL098188
Period: 6/1/2011 - 5/30/2012, Direct Costs: \$6790
Principal Investigator: H. Joseph Yost (5% effort)
- “Molecular Roles of Syndecans in Development”**
National Institute of Health, R01 HL075472
Period: 01/01/04 – 12/31/09, Direct Costs: \$1,250,000
Principal Investigator: H. Joseph Yost
- “APC and Retinoids in Zebrafish Enterocyte Development”**
National Institute of Health/National Cancer Institute 1 R01 CA116468
Period: 07/01/05 – 6/30/10, Direct Costs: \$225,000
Principal Investigator: David Jones
Collaborating Co-Investigator: H. Joseph Yost (5% effort)
- “Molecular Pathway of Cardiac Left-Right Development” (Xenopus)**
National Institute of Health, R02 HL 57840-08
Period: 04/01/97 – 03/31/01, Direct Costs: \$569,137
Renewed: 07/01/01 – 06/31/08, Direct Costs: \$1,000,000
Principal Investigator: H. Joseph Yost
- “Gene Targeting in Zebrafish”**
National Institute of Health, R21 HD052078
Period: 04/01/06 - 3/31/08, Direct Costs \$275,000
Principal Investigator: H. Joseph Yost
- “Zebrafish Research Core Facility”**
National Institutes of Health, G20 RR14285-01
Period: 05/15/01 – 05/14/06, Direct Costs: \$547, 196
Co-Directors: David J. Grunwald and H. Joseph Yost
- “Zebrafish Mutation Screen Facility”**
University of Utah Incentive Seed Grant
Period: 7/01/03-6/30/05, Direct Costs: \$51,240
Principal Investigator: H. Joseph Yost
- “Cancer Center Support Grant”**
National Institute of Health/National Cancer Institute P30 CA42014
7/01/01- 6/30/05 Program Leader: Pediatric Cancers Program (10% effort)
7/01/05-11/03/06 Program Co-Leader: Cell Response Program (5% effort *pro-bono*)
Principal Investigator: consecutively Steve Prescott, Randy Burt, Mary Beckerle
- “Molecular Determinants of Pediatric Heart Disease” (SCOR)**
National Institutes of Health, P01 HL61006-02
Period: 01/01/99 – 12/31/03, Direct Costs (for Yost project): \$750,000
Project Director: H. Joseph Yost (20% effort)
Principal Investigator: Arnold Strauss, then Dan Kelly, Washington University, St. Louis
- “Roles of Syndecans in Cardiac Left-Right Development”**
National Institute of Health, R01 HL 61465-01 (returned to participate in above SCOR)
Period: 01/01/99 – 12/31/03, Direct Costs: \$800,801
Principal Investigator: H. Joseph Yost
- “Established Investigator Award”**,
American Heart Association, 96002420

- Period: 07/01/96 – 06/30/01, Direct Costs: \$298,750
Principal Investigator: H. Joseph Yost (40% effort)
- “Regulation of Vertebrate Development by Maternal mRNA”**
National Institutes of Health, R29 GM489200
Period: 08/01/92 – 09/30/98, Direct Costs: \$350,000
Principal Investigator: H. Joseph Yost
- “Left-Right Cardiac Development: Genetic Analysis of Novel Laterality Mutations in Zebrafish”**
American Heart Association Minnesota Affiliate
Period: 07/01/96 – 06/30/98, Direct Costs: \$96,000
Principal Investigator: H. Joseph Yost
- “Molecular Roles of HSPGs in Cardiac Left-Right Development”**
American Heart Association National, 94013920
Period: 07/01/94 – 6/30/97, Direct Costs: \$120,000
Principal Investigator: H. Joseph Yost
- “Biological Left-Right Asymmetry”**
McKnight Land-Grant Professorship
Period: 07/01/94 – 06/30/96, Direct Costs: \$61,500
Principal Investigator: H. Joseph Yost
- “Regulation of Cardiac Asymmetry by Peptide Growth Factors”**
American Heart Association Minnesota Affiliate
Period: 07/01/92 - 06/30/94, Direct Costs: \$45,900
Principal Investigator: H. Joseph Yost
- “Control of Early Vertebrate Development by Localized Maternal mRNA”**
American Cancer Society Institutional Research Grant, 0685-5656
Period: 01/01/92 – 12/31/92, Direct Costs: \$8,000
- “AHA Senior Postdoctoral Research Fellowship”**
American Heart Association, California Affiliate
Period: 04/01/1991 – 07/31/1991 (completed upon move to faculty position)
Principal Investigator: H. Joseph Yost
- “ACS Senior Postdoctoral Research Fellowship”**
American Cancer Society
Period: 1991 (returned upon award of AHA fellowship)
Principal Investigator: H. Joseph Yost
- “National Institutes of Health Postdoctoral Fellowship”**
National Institutes of Health
Period: 04/01/1988 – 03/31/1991
Principal Investigator: H. Joseph Yost

D. COMPLETED FELLOWSHIPS AND AWARDS TO POSTDOCS IN YOST LAB

- “Exploring the role of Kmt2d in vasculogenesis”**
American Association of Anatomists Postdoctoral Fellowship
Awarded to: María de los Angeles (Angie) Serrano
Period: 01/01/2018 – 6/30/2018, Total Costs: \$10,000
- “CvDC Collaborative Postdoctoral Fellow”**
NHLBI CvDC Bench-to-Bassinet Collaborative Postdoctoral Fellowship
Awarded to: Bushra Gorski
Period: 07/01/2016 – 12/31/2018, Total Costs: \$119,438
- “Cardiac Neural Crest Cells”**

- National Institutes of Health, 5T32HL007576-30 (Cardiovascular Training Grant)
Awarded to: Sarah Abdul-Wajid, Ph.D.
Period: 10/06/2015- 10/05/2018, Direct Costs: \$110,240
- “Functions of Heparan Sulfate Proteoglycans in Axon guidance and Degeneration”***
NIH NINDS K99/R00 NS083714
Awarded to: Fabienne Poulain, Ph.D.
Period: 07/01/2013 - 06/30/2018, Total Costs: \$984,646
- “Elucidating the Gene Regulatory Network in the Embryonic Atrio-ventricular Canal”***
NIH NHLBI F32HL115881
Awarded to: Jonathon Hill
Period: 09/01/2013 - 08/31/2016, Total Costs: ~\$156,570
- “Genome-wide analysis of subpopulation of cardiomyocytes to infer gene regulatory networks in chamber identity”***
American Heart Association, 12POST12030301
Awarded to: Bushra Gorski
Period: 07/01/2012 - 06/30/2014, Total Costs: \$140,000
- “Novel technology for analysis of cardiac & BMP-specific gene expression profiling”***
National Institutes of Health, 1F32HL114181
Awarded to: Todd Townsend
Period: 05/01/2012 - 04/30/2015, Total Costs: ~\$171,000
- “Establishing Left-Right Asymmetry in Vertebrates”***
National Institutes of Health, 1K08HD062638
Awarded to: Cam Arrington
Period: 02/01/2010 - 01/31/2015, Total Costs: \$685,800
- “A Transcriptional Pathway Regulating Ventricular Morphogenesis”***
American Heart Association Western Affiliate
Awarded to: Luca Brunelli
Period: 07/01/09 - 06/30/11, Total Costs: \$140,000
- “Syndecan and FGFs in Cardiovascular Development”***
National Institutes of Health, 5T32HL007576 (Cardiovascular Training Grant)
Awarded to: Annita Peterson, Ph.D.
Period: 07/01/2009- 06/30/2011, Direct Costs: \$82,000
- “A novel 3-OST/FGF signaling pathway in cardiac left-right development”***
American Heart Association Postdoctoral Fellowship 09POST2260423
Awarded to: Todd Townsend, Ph.D.
Period: 07/01/2009- 06/30/2011, Direct Costs: \$81,000
- “Molecular Role of Syndecan-2 in Cardiac Left-Right Development”***
American Academy of Pediatrics Section on Cardiology Research Fellowship (only one awarded nationally each year)
Awarded to: Cammon B. Arrington, M.D., Ph.D.
Period: 07/01/2007- 06/30/2009, Direct Costs: \$135,000
- “Role of Dorsal Forerunner Cells in Left/Right Patterning”***
National Institutes of Health, 1 F32 HL076055-01
Awarded to: Jeffrey Amack, PhD
Period: 01/22/2004-01/21/2007, \$139,200
- “Function and Molecular Regulation of Cardiac Neural Crest in Zebrafish”***
American Heart Association Postdoctoral Fellowship, 0120025Y
Awarded to: Mariko Sato, M.D.
Period: 07/01/2001- 06/30/2004, Direct Costs: \$135,000
- Trainee on “Multidisciplinary Cancer Research Training Program”***
National Institutes of Health, 5T32CA093247

Awarded to: John Parant, PhD.
Period: 01/01/04-06/31/06

“2004 Susan Cooper Jones Memorial Research Award”

Annual award given by Huntsman Cancer Foundation to outstanding postdoctoral fellow
Awarded to: Ken Kramer, Ph.D.

“Molecular Roles of Xlefty in Pancreas Development”

National Institutes of Health Postdoctoral Fellowship, 1 F32 DK59713
Awarded to: William Branford, Ph.D.
Period: 07/01/01- 06/30/04, Direct Costs: \$131,328

“Molecular Roles of Syndecans in Early Heart Development”

National Institutes of Health Postdoctoral Fellowship, 1 F32 HL10382
Awarded to: Ken Kramer, Ph.D.
Period: 07/01/00- 06/30/2003, Direct Costs: \$119,796

“Patterning of Left-Right Asymmetry in Xenopus Heart”

American Heart Association Western States Affiliate Postdoctoral Fellowship
Awarded to: Ann Ramsdell, Ph.D.
Period: 07/01/98 – 06/30/00, Direct Costs: \$64,600

“Molecular Mechanisms of Cardiac Development”

Sixtieth American Academy of Pediatrics Section on Cardiology Research Fellowship
(only one awarded nationally each year)
Awarded to: J.L. Lohr, M.D.
Period: 07/01/96 – 06/30/97, Direct Costs: \$30,000

“Mechanisms of Maternal Dorsal mRNA Localization”

National Institutes of Health Postdoctoral Fellowship, 1 F32 HL10382-01
Awarded to: J.L. Boore, Ph.D.
Period: 10/01/92 – 03/31/96, Direct Costs: \$72,000

E. COMPLETED FELLOWSHIPS AND AWARDS TO STUDENTS IN YOST LAB

“Defining the role of fgf8 in the left-right pathway and lateral plate mesoderm development” American Heart Association Western States Affiliate Predoctoral Fellowship

Awarded to: Judith Neugebauer
Period: 07/01/05 – 06/30/07, Direct Costs: \$43,000

Trainee on “Developmental Biology Training Grant”

Awarded to: Kristel Raelson (Graduate Fellowship)
Period: 11/01/04-10/31/05, Direct Costs: \$44,000

“The Role of Ubiquitin Conjugation Enzyme In Left-Right Development”

American Heart Association Western States Affiliate Predoctoral Fellowship
Awarded to: Xinghao Wang (Graduate Fellowship, returned upon moving to Kansas)
Period: 07/01/01 – 06/30/03, Direct Costs: \$43,000

“The Role of Dorsal Forerunner Cells in Embryonic Patterning of the Left-Right Axis”

American Heart Association Western States Affiliate Predoctoral Fellowship
Awarded to: Molly Wagner Nyholm (Graduate Fellowship, returned upon graduation)
Period: 07/01/00 – 06/30/02, Direct Costs: \$43,000

“AHA Undergraduate Summer Research Fellowship”

American Heart Association Western States Affiliate Undergraduate Fellowship
Awarded to: Colby Fernelius
Period: Summer 2001

“HCI Summer Undergraduate Research Fellowship”

Huntsman Cancer Institute Undergraduate Research Fellowship
Awarded to: Erin Prewitt

Agency: Huntsman Cancer Foundation
Period: Summer 2001

“AHA Undergraduate Summer Research Fellowship”

American Heart Association Western States Affiliate Undergraduate Fellowship
Awarded to: Victoria Alimov
Period: Summer 2000

“HCI Summer Undergraduate Research Fellowship”

Huntsman Cancer Institute Undergraduate Research Fellowship
Awarded to: Patrick Sullivan
Period: Summer 2000

“Doctoral Dissertation Fellowship”

Maria Danos (Ph.D. Student in Yost Laboratory)
Agency: University of Minnesota Graduate School
Period: 07/01/96 – 06/30/97

“1996 Bacaner Research Award in the Basic Medical Sciences”

Awarded to: Kathleen Schroeder (Ph.D. Student in Yost Laboratory)
Agency: Minnesota Medical Foundation

“Howard Hughes Medical Institute Predoctoral Fellowship”

Awarded to: Amy Teel (Ph.D. Student in Yost Laboratory)
Agency: Howard Hughes Medical Institute
Period: 10/01/92 – 06/30/96

VI. UNIVERSITY ADMINISTRATIVE EXPERIENCE AND ACTIVITIES

SERVICE AT UNIVERSITY OF UTAH (Current)

1997 – current Graduate Faculty member, Combined Program in Molecular Biology
2000 – current Member, M.D./Ph.D. Program Steering & Admissions Committee
2001 – current Internal Advisory Board, Children’s Health Research Center (CHRCDA)
2001 – current CZAR (Centralized Zebrafish Animal Research) Scientific Advisory Board
2008 – current Member, Health Sciences Research Core Facilities Scientific Advisory Board
2009 – current Member, HCI Genomics & Bioinformatics Faculty Advisory Steering Committee
2009 – current Member, Executive Committee, T32 in Cardiovascular Research
2011 – current Director, NICHD Developmental Biology Training Program
2014 – current Member, Heritage 1K Scientific Advisory Board
2015 – current Member, Utah Genome Project (UGP) Scientific Advisory Board
2015 – current Member, Advisory Committee, Women’s Reproductive Health Research (Ob-Gyn K12)
2015 – current Member, selection committee, Burton Pilot Project, College of Nursing
2015 – current Member, Advisory Committee, Building Interdisciplinary Research Careers in Women's Health (Ob-Gyn K12)
2015 – current Member, Heart Center Concept Committee
2015 – current Member, Center for Clinical & Translational Science (CCTS) selection
2016 – current Member, Model Organisms Advisory Committee (MOAB)
2016 – current Member, Utah Integrative Science Committee
2017 – current V Foundation Pediatric Cancer Translational Award selection committee
2017 – current Health Sciences Research Forum, Scientific Advisory Board
2018 – current Member, Search Committee for Division Chief, Pediatric Cardiology, Department of Pediatrics
2018 – current Member, Executive Committee, University of Utah Molecular Medicine (U2M2) Program
(current) Multiple junior faculty advisory committees

SERVICE AT UNIVERSITY OF UTAH (Completed)

- 1998 – 2003 Organizer, Faculty Chalk Talk Seminar Series, Dept. Oncological Science
1999 – 2003 Member, Health Sciences Research Cores Advisory Committee
2000 – 2002 Organizer, Research in Progress Seminar Series, Dept. Oncological Science
2000 – 2001 Director of Graduate Curriculum, Dept. Oncological Science
2000 – 2001 Member, Graduate Curriculum Committee, Program in Molecular Biology
2000 – 2001 Member, equipment redistribution committee, Huntsman Cancer Institute
2000 – 2003 Senator, University of Utah Academic Senate
2001 – 2007 Director, Center for Children, Huntsman Cancer Institute
2001 – 2003 Chairman, Retention, Promotion, Tenure Committee, Dept. Oncological Sciences
2001 – 2012 Review Panel, Primary Children's Research Foundation
2001 – 2005 Program Leader, Pediatric Cancers, NCI Cancer Center Support Grant
2004 Review Panel, U. Utah Funding Incentive Seed Grant Program
2005 – 2006 Program Co-Leader, Cell Response Program, NCI Cancer Center Support Grant
2002 – 2008 Member, NIH Genetics Training Grant Steering Committee
2002 – 2006 Member, School of Medicine Retention, Promotion and Tenure Committee
2004 – 2006 Chairman, School of Medicine Retention, Promotion and Tenure Committee
2003 – 2006 Member, HCI Informatics Steering Committee
2004 – 2006 Member (Dept Rep), Molecular Biology Graduate Program Steering Committee
2005 – 2007 Chairman, HCI Seminar Committee
2005 – 2006 Member, Search Committee for Chair, Department of Pharmaceutics and
Pharmaceutical Chemistry and George S. and Dolores Doré Eccles Presidential
Endowed Chair in Pharmaceutics and Pharmaceutical Chemistry, U. Utah
(successful recruit of Dr. David Grainger)
2006 Chairman, Departmental RPT committee (promotion of Susan Mango)
2009 – 2010 Member, USTAR search committee
2012 – 2013 Chairman, University Research Integrity Investigation Committee
2015 Chairman, School of Medicine Researcher Development & Investment Task
Force
2013 – 2017 Member, School of Medicine Research Advisory Committee
2012 – 2018 Member, Benning Society Seminar Committee
2016 – 2018 Chairman, MD/PhD Program Executive board

SERVICE AT UNIVERSITY OF MINNESOTA (1991 – 1997)

- 1991 – 1994 Departmental Seminar Committee
1991 – 1997 Graduate Faculty, MCDB&G Program (fusion of previous Cell & Developmental
Biology Program and Genetics Program)
1991 – 1994 Medical School Admissions interviewer
1992 – 1997 All-University Radiation Protection Advisory Committee
1992 Research Mentor, High School Minority Research Apprentice Program
1992 – 1993 Search Committee, "Martin Lenz Harrison Chair in Developmental Biology"
(successful recruits of Dr. Christopher Wylie and Dr. Janet Heasman)
1993 – 1997 Graduate Faculty, NIH Medical Scientist Training Program
1993 - 1995 Graduate Admissions Committee, Cell & Developmental Biology and Genetics
1993 – 1994 Faculty Search and Recruiting Committee, Developmental Biology Assistant
Professorships (resulting hires: Dr. David Zarkower and Dr. Vivian Bardwell)
1994 – 1997 Co-organizer, Center for Developmental Biology Research Meetings
1994 – 1997 Executive Committee, Center for Developmental Biology
1994 – 1996 University of Minnesota Pew Roundtable
1994 – 1997 Written Prelim Exam Grader, MCDB&G Graduate Program
1995 – 1997 Graduate Faculty, NIH Dental-Scientist Program

- 1995 Basic Science Research Space Task Force (to assign space in new building)
- 1995 – 1997 Executive Committee, U. M. Child Health Research Center
- 1995 – 1996 Chairman, Graduate Admissions Committee, Molecular, Cell, Developmental Biology & Genetics Graduate Program
- 1996 – 1997 Institute of Human Genetics Executive Committee
- 1996 – 1997 Medical School Dean's Research and Scholarship Advisory Committee

VII. PROFESSIONAL COMMUNITY ACTIVITIES

A. NATIONAL ADVISORY BOARDS AND POLICY PANEL LEADERSHIP

- 1999 Co-Chairman (ad hoc), National Peer Review Committee, American Heart Association
- 2000 -2002 Chairman, American Heart Association Western Affiliate Peer Review Panel
- 2000 -2004 American Heart Association Western Affiliate Research Policy Committee
- 2001 -2002 NIH Task Force on Pediatric Cardiovascular Disease
- 2001-2011 Member, Weinstein Cardiovascular Development Steering Committee
- 2002 -2005 Board of Directors, Society for Developmental Biology (nationally elected)
- 2004 Chairman, NIH Hematology Special Emphasis Panel
- 2004-2009 External Advisory Board, Nevada Idea Network for Biomedical Research Excellence
- 2005 -2008 Board of Directors, Society for Developmental Biology (nationally re-elected)
- 2008 Co-Chairman, American Heart Association National Peer Review Panel
- 2008-2010 Chairman, American Heart Association National Peer Review Panel
- 2009 Chairman, NIH Special Emphasis Panel “Tools for Zebrafish Research”
- 2009 Chairman, NIH Special Emphasis Panel “Zebrafish Genetic Screens”
- 2009-2010 Chairman, American Heart Association National Peer Review Committee
- 2010 Chairman, NIH Special Emphasis Panel ZHD1
- 2011-2012 Chairman, NHLBI Cardiovascular Development (CvDC) Steering Committee
- 2012-2015 National Public Affairs Committee, American Association of Anatomists
- 2012-2013 Chairman (interim), NIH Cardiovascular Development and Disease (CDD) Panel
- 2014-2016 Science Policy Committee, Federation of American Societies for Experimental Biology (FASEB)
- 2014-2015 Chairman, National Public Affairs Committee, American Association of Anatomists
- 2014-current Coalition for Pediatric Medical Research (national organization of pediatric hospitals)
- 2015-current National Scientific Advisory Committee, American Association of Anatomists
- 2017-current Public Affairs Committee, Society for Developmental Biology
- 2019-current Chairman, NHLBI Cardiovascular Development (CvDC) Steering Committee

B. NATIONAL SCIENTIFIC PEER REVIEW COMMITTEE MEMBERSHIP

- 1995 NIH National Institute of Heart, Lung and Blood RFA Panel
- 1995-1997 American Heart Association, Minnesota Affiliate Peer Review Committee

1996-2000 American Heart Association, National Peer Review Committee
1996-2000 National Science Foundation, Developmental Biology Peer Review Panel
1998 National Institutes of Health, Cell Biology and Physiology -1 Study Section
1999-2002 American Heart Association, Western Regional Affiliate Peer Review Panel
2000 NIH National Institute of Heart, Lung and Blood PPG review panel
2000 NIH National Institute of Child Health and Human Development PPG Panel
2001-2012 Primary Children's Medical Foundation Research Review Panel
2001-2005 National Science Foundation, Developmental Biology Peer Review Panel
2002 National Institutes of Health, ad hoc R01 panel
2003-2007 Charter Member, National Institutes of Health DEV-1 Peer Review Panel
2004 Review Panel, U. Utah Funding Incentive Seed Grant Program
2004 NIH RFA HL-04-008 "Molecular mechanisms underlying Diamond-Blackfan Anemia and other congenital bone marrow syndromes"
2004 NIH Special Emphasis (P01) Panel
2005 NIH Cardiovascular Differentiation and Development Study Section, ad hoc
2009 NIH SBIR Peer Review Panel
2009 NIH CMBK Cellular and Molecular Biology of the Kidney Study Section
2009 NIH ZRG1 BDA-A Center for Scientific Review Special Emphasis Panel 10
2009 NIH ZRG1 CVRS-B RFA-OD-09-003: Challenge Grants Panel 19
2009-2012 Pennsylvania Department of Health Review Panel
2011 NIH Editorial Review ZRG1 CVRS-B (02) M
2011 NSF Animal Developmental Mechanisms Review Panel
2011 NIH Special Emphasis Panel ZRG1 CB-Z (02) M
2012-2016 NIH CDD Cardiovascular Differentiation and Development Review Panel
2015 Terry Fox Research Institute Program Project Review & Site Visit
2016, 2017 Department of Defense (DoD) Peer Reviewed Medical Research Program (PRMRP) Focused Program Award (FPA) committee.
2018 NIH DEV-1 Peer Review Panel

C. NATIONAL AND INTERNATIONAL, AD HOC EXTERNAL REVIEWER

1995-98, 2003-4, 06 March of Dimes Foundation
1995-1999 Israel Science Foundation, Israel Academy of Sciences and Humanities
1995 Natural Sciences and Engineering Research Council of Canada
1995 Medical Research Council of Canada
1996, 2001,06,12,14 National Science Foundation, Developmental Biology
1999,2000,02,04,06,15 Wellcome Trust Fund, United Kingdom
1999-00, 2005 Medical Research Council, United Kingdom
2000 National Science Foundation, Developmental Neuroscience
2003 Eli & Edythe L. Broad Foundation, Inflammatory Bowel Disease Grants
2003 W.M. Keck Foundation
2005 Vanderbilt University Intramural Discovery Grant Program
2005 Israeli-German Cooperation Program in Cancer Research
2005, 06, 09, 10 Human Frontier Science Program
2007 An Bord Taighde Sláinte, Ireland
2010 VolkswagenStiftung, Germany
2011 Netherlands Organisation for Scientific Research (NWO)
2012 Fundação para a Ciência e a Tecnologia (Portuguese Foundation for Science and Technology)
2014 CardioVasculair Onderzoek Nederland (Netherlands)

2015 Oak Ridge Associated Universities Cancer Research Program
2016 Foundation for Polish Science
2016, 2017 Cell and Developmental Biology, Agence Nationale de la Recherche
(ANR; France)

D. SYMPOSIUM ORGANIZER, NATIONAL OR INTERNATIONAL

1. 2013 Organizer, Society for Developmental Biology, SW Regional, Salt Lake City
2. 2012 Organizer, NHLBI Cardiovascular Development Consortium symposium, Chicago IL
3. 2012 Co-organizer, NHLBI Bench-to-Bassinet symposium, Philadelphia, PA
4. 2003 Co-organizer, Conference on "Stem Cells Therapies: From Test Tube to Current Clinical Trials" Huntsman Cancer Institute, Salt Lake City, UT
5. 2002 Organizer, 12th Weinstein Cardiovascular Development Conference, Salt Lake City
6. 1997 Co-organizer, Cold Spring Harbor Banbury Center, International Workshop on Handedness, Cold Spring Harbor Laboratory, NY
7. 1994 Chairman, Organizing Committee, 3rd Annual Symposium on Developmental Biology, Minneapolis, MN
8. 1993 Member, Organizing Committee, 2nd Annual Symposium on Developmental Biology, Minneapolis, MN
9. 1992 Member, Organizing Committee, 1st Annual Symposium on Developmental Biology, Minneapolis, MN

E. SYMPOSIUM SESSION CHAIRMAN, NATIONAL OR INTERNATIONAL

1. 4/23/18 "Stem Cells, CRISPR, Organoids" American Association of Anatomists Annual Meeting, Experimental Biology, San Diego, CA
2. 5/01/15 22nd Weinstein Cardiovascular Development Conference, Boston, MA
3. 2/16/13 "Genetic Disease Models" Southwest Regional Meeting, Society for Developmental Biology, Salt Lake City, UT
4. 1/19/13 "New Therapeutic Approaches for Myocardial Recovery" Utah Cardiac Recovery Symposium (UCARS), Salt Lake City, UT
5. 12/05/12 "Developmental Models of Disease" Personalized Medicine: Research and Care in Oncology and Beyond. Huntsman Cancer Institute, Salt Lake City, UT
6. 7/09/12 "Developmental Biology" Session, Proteoglycans Gordon Research Conference, Andover, NH
7. 5/06/11 "Cardiac Cell Signaling" Session, Weinstein Cardiovascular Development Conference, Cincinnati, OH
8. 3/17/09 Eunice Kennedy Shriver National Institute of Child Health and Human Development 6th Postdoctoral Fellow Workshop, Maritime Institute, Linthicum Heights, MD
9. 7/27/08 "Morphogenesis" Symposium, 67th Annual Meeting, Society for Developmental Biology, Philadelphia, PA
10. 6/27/08 "Emerging Gene Knockout Technology" Workshop, 8th International Meeting on Zebrafish Development & Genetics, Madison, WI
11. 5/16/08 "Signaling Pathways in Cardiogenesis" Weinstein Cardiovascular Development Conference, Houston, TX
12. 9/03/05 15th International Society of Developmental Biologists Congress, Sydney, Australia
13. 04/11/05 CDB Symposium "Origin and Development of the Vertebrate Traits" Kobe, Japan
14. 3/11/04 Keystone Symposia "Cardiac Development and Congenital Heart Disease" Keystone, CO

15. 2/6/04 "Translocations in Sarcoma, Molecular to Clinical Implications" Huntsman Cancer Institute, Salt Lake City, UT
16. 9/21/03 3rd International Conference on Proteoglycans "Pathobiology of Proteoglycans" Parma, Italy
17. 9/12/03 West Coast Zebrafish Conference, Salt Lake City, UT
18. 12/01/02 6th International Symposium on Congenital Heart Disease, Tokyo, Japan
19. 6/4/01 Juan March Foundation International Symposium, Madrid, Spain.
20. 6/9/00 10th Weinstein Cardiovascular Development Conference, St. Louis, MO
21. 5/29/98 8th Weinstein Cardiovascular Development Conference, Nashville, TN
22. 12/15/97 "Left-right asymmetry: From Molecules to Clinic" Session, American Society for Cell Biology, Washington, DC
23. 11/8/97 "Positional Information in the Developing Heart," American Heart Association 70th Scientific Symposium, Orlando, FL
24. 6/8/96 6th Weinstein Cardiovascular Development Conference, Philadelphia, PA
25. 10/10/95 4th Annual University of Minnesota Symposium in Developmental Biology, St. Paul, MN
26. 3/28/92 Cell Biology, 6th National Conference on Undergraduate Research, Minneapolis, MN

VIII. MEMBERSHIP IN PROFESSIONAL SOCIETIES

American Association for the Advancement of Science
 American Association of Anatomists
 American Heart Association: Council on Basic Cardiovascular Sciences
 American Heart Association: Council on Cardiovascular Disease in the Young
 American Society for Cell Biology
 American Society for Matrix Biology
 The Lepidopterists' Society
 Society for Developmental Biology
 Society for Glycobiology

IX. TEACHING RESPONSIBILITIES

A. COURSES TAUGHT

2018 - 2019 (University of Utah)

ANAT 7760 Stem Cells Workshop (1 lecture)
 Medical Student Summer research program (1 lecture)
 MDCRC 6530 "Utilization of Animal Models in the Development of Clinical Models"
 Pediatrics Grant Writing Workshop, intensive three-day retreat twice per year, to mentor grant writing by approximately twelve junior faculty from several departments

2017 - 2018 (University of Utah)

SOM Year 2 Phase 2 Facilitator: Circulation, Respiration and Regulation (7 sessions)
 HGEN 6481 Cell Biology - Signal Transduction (1 lecture)
 ANAT 7760 Stem Cells Workshop (1 lecture)
 OncSci6700-001 "Utilization of Animal Models in the Development of Clinical Models" (1 lecture, one discussion session)
 Pediatrics Grant Writing Workshop, intensive three-day retreat twice per year, to mentor grant writing by approximately twelve junior faculty from several departments

2016 - 2017 (University of Utah)

SOM Year 2 Phase 2 Facilitator: Circulation, Respiration and Regulation (7 sessions)

HGEN 6481 Cell Biology - Signal Transduction (1 lecture)
OncSci6700-001 "Utilization of Animal Models in the Development of Clinical Models" (2 lectures, one discussion session)
Pediatrics Grant Writing Workshop, intensive three day retreat twice per year, to mentor grant writing by approximately twelve junior faculty from several departments

2015 - 2016 (University of Utah)

SOM Year 3 Pediatrics Clinical Clerkship, 3 lectures on congenital heart defects, clinical diagnosis, human genetics and developmental biology.
SOM Year 2 Phase 2 Facilitator: Circulation, Respiration and Regulation (6 sessions)
HGEN 6481 Cell Biology II - Signal Transduction (1 lecture)
OncSci6700-001 "Utilization of Animal Models in the Development of Clinical Models" (2 lectures, one discussion session)
Pediatrics Grant Writing Workshop, intensive three day retreat twice per year, to mentor grant writing by approximately twelve junior faculty from several departments

2014 - 2015 (University of Utah)

SOM Year 3 Pediatrics Clinical Clerkship, 3 lectures on congenital heart defects, clinical diagnosis, human genetics and developmental biology.
SOM Year 2 Phase 2 Facilitator: Circulation, Respiration and Regulation (11 sessions)
HGEN 6481 Cell Biology II - Signal Transduction (2 lectures)
OncSci6700-001 "Utilization of Animal Models in the Development of Clinical Models" (2 lectures, one discussion session)
Pediatrics Grant Writing Workshop, intensive three day retreat twice per year, to mentor grant writing by approximately twelve junior faculty from several departments

2013 - 2014 (University of Utah)

SOM Year 3 Pediatrics Clinical Clerkship, 3 lectures on congenital heart defects, clinical diagnosis, human genetics and developmental biology.
HGEN 6481 Cell Biology II - Signal Transduction (2 lectures)
OncSci6700-001 "Utilization of Animal Models in the Development of Clinical Models" (2 lectures, one discussion session)

2012 - 2013 (University of Utah)

SOM Year 2 Phase 2 Facilitator: Circulation, Respiration and Regulation. "This 11-week unit runs from October to mid-December. This unit is designed to help students develop the clinical medicine skills and medical science knowledge to be able to propose rational differential diagnoses and diagnostic and treatment strategies for clinical problems affecting the circulatory, respiratory, and renal organ systems."
SOM Year 3 Pediatrics Clinical Clerkship, 3 lectures on congenital heart defects, clinical diagnosis, human genetics and developmental biology.
HGEN 6481 Cell Biology II - Signal Transduction (2 lectures)
OncSci6700-001 "Utilization of Animal Models in the Development of Clinical Models" (2 lectures, one discussion session)

2011 - 2012 (University of Utah)

SOM Year 3 Pediatrics Clinical Clerkship, 3 lectures on congenital heart defects
HGEN 6481 Cell Biology II - Signal Transduction (2 lectures)
OncSci6700-001 "Utilization of Animal Models in the Development of Clinical Models" (2 lectures, one discussion session)

2010 - 2011 (University of Utah)

SOM Year 3 Pediatrics Clinical Clerkship, 3 lectures on congenital heart defects
HGEN 6481 Cell Biology II - Signal Transduction (2 lectures)
OncSci6700-001 "Utilization of Animal Models in the Development of Clinical Models" (2 lectures, one discussion session)

2009 - 2010 (University of Utah)

Anat7740 Cell polarity and axis formation (journal and grant writing course)
HGEN 6481 Cell Biology II - Signal Transduction (2 lectures)
OncSci6700-001 "Utilization of Animal Models in the Development of Clinical Models" (2 lectures, one discussion session)

2008 - 2009 (University of Utah)

Human Embryology, 1st year Medical School, Cardiovascular Development (two lectures)
Anat7740 Cell polarity and axis formation (journal and grant writing course)
HGEN 6481 Cell Biology II - Signal Transduction (2 lectures)
OncSci6700-001 "Utilization of Animal Models in the Development of Clinical Models" (2 lectures, one discussion session)

2007 - 2008 (University of Utah)

Human Embryology, 1st year Medical School, Cardiovascular Development (two lectures)
MB6480 Cell Biology Graduate course (2 lectures)
OncSci6700-001 "Utilization of Animal Models in the Development of Clinical Models" (2 lectures, one discussion session)

2006 - 2007 (University of Utah)

Human Embryology, 1st year Medical School, Cardiovascular Development (two lectures)
K-30 course on Animal Models, one lecture

2005 - 2006 (University of Utah)

Cell Biology (MB6480), Course co-director and lecturer (four lectures)
Pediatrics Grand Rounds "Stem Cells: Current Scientific Perspective"
Molecular Biology Faculty Research Seminar
K-30 course on Animal Models, one lecture

2004 - 2005 (University of Utah)

Cell Biology I (MB6480), two lectures
K-30 course on Animal Models, one lecture
Faculty participant, Developmental Biology Journal Club
Molecular Biology Faculty Research Seminar

2003 - 2004 (University of Utah)

Cell Biology I (MB6480), two lectures
Faculty participant, Developmental Biology Journal Club
Molecular Biology Faculty Research Seminar

2002 - 2003 (University of Utah)

Course co-Director, Stem Cell Journal Club (First year elective)
Animal models in Medical Research
Faculty participant, Developmental Biology Journal Club
Molecular Biology Faculty Research Seminar

2001 - 2002 (University of Utah)

Course Co-Director, lectures and discussions, Advanced Developmental Genetics (OncSci 6300)

Lecture, Undergraduate Biology 2870

Faculty participant, Developmental Biology Journal Club

Molecular Biology Faculty Research Seminar

2000 – 2001 (University of Utah)

Course Director, lectures and discussions, Wnts in Cancer and Development (OncSci 6700)

Faculty participant, Developmental Biology Journal Club

Molecular Biology Faculty Research Seminar

1999 - 2000 (University of Utah)

Course Co-Director, lectures and discussions, Advanced Developmental Genetics (OncSci 6300)

Lecture, Undergraduate Developmental Biology (UNC, Chapel Hill)

Faculty participant, Developmental Biology Journal Club

Molecular Biology Faculty Research Seminar

1998 - 1999 (University of Utah)

Faculty participant, Developmental Biology Journal Club

Molecular Biology Faculty Research Seminar

1997 –1998 (University of Utah)

Faculty participant, Developmental Biology Journal Club

Molecular Biology Faculty Research Seminar

1996 – 1997 (University of Minnesota)

Course Director, Molecular and Cellular Basis of Development (CBN 8215)

Lectures and Lab Instruction, Human Histology (CBN 5203)

Organizer, Developmental Biology Journal Club

1995 - 1996 (McKnight Sabbatical release from teaching)

Lectures and Lab Instruction, Itasca MCDB&G Graduate Course

Organizer, Developmental Biology Journal Club

1994 – 1995 (University of Minnesota)

Course Director, Molecular and Cellular Basis of Development (CBN 8215)

Lectures, Biochemistry, Molecular and Cell Biology (CBN 5204)

Lab Instruction, Human Histology (CBN 5203)

Lecture & Discussion, Developmental Neurobiology (CBN 8210)

Lectures and Lab Instruction, Itasca MCDB&G Graduate Course

Organizer, Developmental Biology Journal Club

Lecture, Undergraduate Biology Colloquium (BIO 1950)

1993 – 1994 (University of Minnesota)

Course Director, Molecular and Cellular Basis of Development (CBN 8215)

Lectures, Biochemistry, Molecular and Cell Biology (CBN 5204)

Lab Instruction, Human Histology (CBN 5203)

Lecture & Discussion, Developmental Neurobiology (CBN 8210)

Lectures and Lab Instruction, Itasca MCDB&G Graduate Course
Lecture, Cell Cycle Control (GCB 8060)
Lecture, Cell and Developmental Biology Graduate Program (GCB 8920)
Organizer, Developmental Biology Journal Club

1992 – 1993 (University of Minnesota)

Course Director, Molecular and Cellular Basis of Development (CBN 8215)
Lectures and Recitations, Biochemistry, Molecular and Cell Biology (CBN 5204)
Lectures and Lab Instruction, Itasca MCDB&G Graduate Course
Lecture and Discussion, Developmental Neurobiology (CBN 8210)
Lecture, Neuroscience Symposium for Neurology Residents
Lecture, Cell and Developmental Biology Graduate Program (GCB 8920)
Lecture, MD/Ph.D. Program
Lecture, Genetics Graduate Program
Organizer, Developmental Biology Journal Club

1991 – 1992 (University of Minnesota)

Lectures, Biochemistry, Molecular and Cell Biology (CBN 5204)
Lectures and Lab Instruction, Itasca MCDB&G Graduate Course
Lecture, Cell Cycle Control (GCB 8060)
Lecture, Developmental Biology (GCB 5061)
Lecture, Neuroscience Graduate Program
Organizer, Developmental Biology Journal Club

B. STUDENT RESEARCH SUPERVISED

Graduate Student Thesis Research in Yost Lab

Kathleen Elizabeth Schroeder (B.S., Univ. Wisconsin, Oshkosh)
Thesis Title: "Translational regulation of maternal mRNAs along the dorsal-ventral axis in early *Xenopus* development" 3/92 - 6/96.
Ph.D. awarded June 1996. Subsequently, MBA awarded at Duke University, 1998.
Current Employment: Drug Discovery and Market Analyst, Covance Inc.

Amy Lea Teel (B.S., Univ. Washington, Seattle)
Thesis Title: "Characterization of Syndecans, a family of heparan sulfate proteoglycans, in early *Xenopus* development" 7/93 - 6/96.
Ph.D. awarded June 1996.
Current Employment: Research Associate Professor, Dept. of Civil and Environmental Engineering, Washington State Univ., Pullman, WA.

Maria Christina Danos Breitenfeldt (B.S., Yale University)
Thesis Title: "Regulation of Cardiac Left-Right Asymmetry in *Xenopus laevis*" 7/93 – 5/97.
Ph.D. awarded May 1997.
Current Employment: Research Director, R&D Systems, Minneapolis, MN

Brian Allen Hyatt (B.S., Bethel College)
Thesis Title: "Molecular induction of the left-right axis" 7/95 – 11/98.
Ph.D. awarded November 1998
Subsequent Employment: Postdoctoral Fellow, University of Cincinnati
Current Employment: Professor, Bethel University, St. Paul, MN

Molly Kristine Wagner Nyholm (B.A., Luther College)
M.S. awarded May 2000 (Ph.D. University of Wisconsin 2011)
Current Employment: Senior Cell Biology Scientist, Promega Inc, Madison, WI

Kristel Raelson (B.S. Purdue University, Indiana, 2002)
M.S. awarded 2005, Molecular Biology Program
Current Employment: Genetic Counselor

Patricia Sacayon (B.S. U.C. Santa Cruz, 1998)
M.S. awarded October 2006, Molecular Biology Program
Current Position: Associate Scientist, Cholestech, San Francisco, CA

Adam Cadwallader (B.S. Duquesne University, PA, 1999)
Thesis Title: The Heparan Sulfate O-Sulfation Pathway in Embryonic Development
Ph.D. Awarded June 2007
Current Employment: Research Associate, University of Colorado, Boulder

Xinghao Wang (B.S. XheJiang University, P.R. China, 1993; M.S. University of Kansas 2003)
Thesis Title: Roles of Vg1 in Zebrafish Left-Right Development
Ph.D. Awarded August 2008; obtained JD from University of Minnesota Law School
Current Employment: Patent Attorney at Hamre, Schumann, Muller & Larson

Judith Neugebauer (B.S. U.C. Davis, 2002)
Thesis Title: FGF Signaling Regulates Multiple Steps in Left-Right Development
Ph.D. Awarded May 2009
Current Employment: Program Manager and Outreach Educator for BioEYES Utah

Stephen George (B.A. University of Pennsylvania, 2001; M.S. University of Montana, 2003)
M.D. / Ph.D. Awarded June 2009
Current Employment: Internal Medicine Residency, U Texas Southwestern Medical Center

Erin Cadwalader (B.S. University of Wisconsin, 2003)
Ph.D. Awarded December 2010
Current Employment: Government Relations Associate at Lewis-Burke Associates LLC;
previous Phoebe S. Leboy Public Policy Fellow 2012-2013, Association for Women in
Science, Washington DC

Shiela Samson (B.S. University of the Philippines, 2002)
Ph.D. Awarded May 2010
Current Employment: Postdoctoral Fellow, National Institute for Medical Research, London

Bhawika Sharma Lamichhane (B.S. Biochemistry, Idaho State University 2012)
Joined lab 6/2012

Luke Sanders (B.S. Biology)
Joined lab 2018

Graduate Student Rotation Research in Yost Lab

Kathleen Gibbons (Genetics rotation student), Spring 1992
Maria Danos (Genetics rotation student), Fall 1992

Julie Eschenlauer (Genetics rotation student), Winter 1993
Denise Robb (CDB rotation student), Spring 1993
Doug Bornemann (CDB rotation student), Spring 1993
Amy Teel (CDB rotation student), Summer 1993
Catherine Benson (Genetics rotation student), Fall 1993
Mike Zuck (M.D./Ph.D. rotation student), Winter 1994
Catherine Benson (Genetics rotation student), Spring 1994
Brian Hyatt (MCDBG rotation student), Summer 1994
Caroline Spike (MCDBG rotation student), Fall 1994
Gaunghui Chen (MCDBG rotation student), Winter 1995
Karl Clark (MCDBG rotation student), Fall 1995
Molly Wagner (Molecular Biology rotation student) Spring 1998
Chris Ricker (Molecular Biology rotation student) Fall 1999
Xhinghao Wang (Molecular Biology rotation student) Fall 1999
Bree Hill (Molecular Biology rotation student) Spring 1999
Andrew Pittman (Neuroscience rotation student) Fall 1999
Mark Smith (Molecular Biology rotation student) Spring 2000
Geoff Whitehead (Molecular Biology rotation student) Spring 2000
Lincoln Nadauld (MD/PhD Program rotation student) Summer 2000
Scott Witt (MD/PhD Program rotation student) Summer 2000
Mark Palfreyman (Molecular Biology rotation student) Summer 2000
Patricia Sacayon (Molecular Biology rotation student) Spring 2001
Hillary Crandell (MD/PhD Program rotation student) Summer 2001
Candice Kendell (Medical Student rotation) Summer 2001
Lei Wang (Molecular Biology rotation student) Winter 2003
Kristel Raelson (Molecular Biology rotation student) Spring 2003
Judith Neugebauer (Molecular Biology rotation student) Fall 2003
Josie Johnson (Molecular Biology rotation student) Fall 2003
Rui Wang (Molecular Biology rotation student) Fall 2003
Erin Cadwalader (Molecular Biology rotation student) Fall 2003
Jinjin Cai (Molecular Biology rotation student) Spring 2004
Timothy Dahlem (Molecular Biology rotation student) Spring 2004
Kelli Turner (Molecular Biology rotation student) Spring 2004
Hideaki Tomita (Molecular Biology rotation student) Spring 2004
Anna Verdina (Medical Student) Summer 2004
Stephen George (M.D./Ph.D. Program) Summer 2004
Maria Elias (Molecular Biology rotation student) Winter 2004
Megan Senchuck (Molecular Biology rotation student) Winter 2004
Wang Xu (Molecular Biology rotation student) Fall 2005
Matthew Terry (Molecular Biology rotation student) Spring 2008
Daria Drobysheva (Molecular Biology rotation student) Spring 2010
Sean Merrill (Molecular Biology rotation student) Fall 2010
Erin Young (Molecular Biology rotation student) Fall 2010
Satish Ghimire (Molecular Biology) Fall 2013
Bhawika Sharma Lamichhane (Molecular Biology) Spring 2014
Ben Jussila (Molecular Biology) Fall 2014
Thomas Carter (Molecular Biology) Spring 2015
Luke Sanders (Molecular Biology) Spring 2018

Graduate Student Ph.D. Thesis Committees

Wenhao Xu (CDB), thesis defense, 9/4/92

Brian McAdams (Neurobiology), thesis proposal exam, 7/9/92; thesis defense, 12/18
David Wade (Neurobiology), thesis proposal exam, 8/5/92
Maura McGrail (Genetics), thesis proposal exam, 3/4/93; thesis defense, 9/19/96
Scott Fahrenkrug (Genetics), thesis proposal exam, 5/10/93; thesis defense, 10/10/96
Mindy Mosley (CDB), thesis proposal exam, 5/11/93
Mark Pirner (MD/Ph.D.), thesis proposal exam, 10/20/93, thesis defense 6/95
Kathleen Schroeder (MCDBG), thesis proposal exam, 6/14/94; thesis defense, 6/4/96
Christopher Kaufman (MCDBG), thesis proposal exam, 6/27/94, 12/14/94
Luann Klemme (MD/Ph.D.), thesis proposal exam, 12/1/94; thesis defense, 5/20/96
Amy Teel (MCDB&G), thesis proposal exam, 4/26/95; thesis defense, 5/29/96
Maria Danos (MCDB&G), thesis proposal exam, 6/9/95
Brian Hyatt (MCDB&G), thesis proposal exam, 11/13/96; thesis defense, 11/98
Denise Robb (MCDB&G), thesis proposal exam, 10/20/95
Carla Finis (MCDB&G), thesis defense, 6/96
Michael Zuck (MD/Ph.D.), thesis proposal exam, 10/96
Chatchai Chinpaisal (Pharmacology), thesis proposal exam, 11/96
Lisa M. Goering (Molecular Biology Program), thesis 2/7/03
Xhinghai Li (Molecular Biology Program) thesis defense 10/12/01
Jill Howard (Molecular Biology Program) thesis defense 5/04/00
Clay Underwood (Molecular Biology Program) thesis defense 9/23/02
Mike Portereiko (Molecular Biology Program) thesis defense 6/02/03
Sarah Lange (Molecular Biology Program) M.S. Spring 2003
Caroline McKeown (Molecular Biology Program), thesis defense 5/6/04
Jennifer Rasmussen (Molecular Biology Program)
Terry Van Ray (Neurobiology), thesis defense 7/8/03
Dan Richardson (MB Program), thesis defense 10/13/03
Lincoln Nadauld (Jones Lab, M.D./Ph.D. Program), thesis defense 7/18/05
Dustin Updike (MB Program), thesis defense 12/13/05
Amy Prunuske (MB Program), thesis defense 1/27/06
Chris Sans (Molecular Biology), thesis defense 7/12/06
Lily Francis (Human Genetics) M.S. 6/06
Dawne Shelton (Jones Lab, MB Program), thesis defense 1/2007
Joshua Wythe (Grunwald Lab, MB Program), thesis defense 10/19/07
Kunal Rai (MB Program), thesis defense 7/18/06
Clint Jones (Pharmaceutics and Pharmaceutical Chemistry), thesis defense 8/2012
Magdalena Potok (Cairns Lab, MB Program), thesis defense 11/22/2013
Priya Choudhry (Trede Lab, MB Program), thesis defense 8/2011
Andres Romero-Carvajal (Piotrowski Lab, MB Program), thesis defense 6/2015
Kevin Breen (Vetter Lab, MD/PhD), thesis defense 5/2015
Ranajeet Singh Saund (Saijoh Lab, MB Program), thesis defense 12/2012
Marina Venero Galanternik (Piotrowski Lab, MB Program), thesis defense 5/8/2015
Mengyao Tan (Cairns Lab, MB Program), thesis defense 10/11/16
Uchenna Emechebe (Moon Lab, MB Program), thesis defense 11/2013
Matt Velinder (Jones Lab, MB Program)
Tiffanie Dahl (Wolfgang Baehr Lab, Neuroscience Program), thesis proposal 3/31/16
Alex Chagovetz (David Grunwald lab; Human Genetics)
Guang Yang (Alex Shcheglovitov lab; Neurobiology & Anatomy)
Sarah Lusk (Kristen Kwan lab; Human Genetics)
Autumn McKnite (Jan Christian Lab; Neurobiology & Anatomy)
Magnus Creed (Sarah Franklin Lab, CVRTI & Biochemistry)

Graduate Student Preliminary Examination Committees

1995

Doug Bornemann (MCDB&G)

1996

Brian Hyatt (MCDB&G)

Juan Abrahante-Llorens (MCDB&G)

1998

Mike Portereiko (Molecular Biol. Program)

Lisa Goering (MB Program)

Anna Paulson (MB Program)

Baird Ruch (MB Program)

1999

Dave Hutcheson (MB Program)

Matt Smith (MB Program)

Sarah Lange (MB. Program)

Terry Van Raay (Neuroscience Program)

Eric Hempel (MB Program)

2000

Yuanyuan Wu (MB. Program)

Miles Pufall (MB Program)

2001

Chris Sans (MB Program)

Mary Nelson (MB Program)

Xinghai Li (MB Program)

2002

Chris Pickett (MB Program)

Dustin Updike (MB Program)

Adam Cadwallader (MB Program)

Bargavi Thygarajan (MB Program)

April Sullivan (MB Program)

2003

Michelle Wallander

Hsiao-Fen Han

Dan Richardson

Sean Green

2004

Chris Peterson

Dawne Shelton

2005

Karyn Sheaffer

Jin Jin Cai

2006

Kin-Hoe Chow

Jingyu Huang

Natalie Dutrow

2009

Maria Elias

Stephen George

Sheila Sampson

Leah Owen

Chuck Meeker

Marc Elgort

Ranajeet Saund

Ramya Viswanathan

2010

Marina Venero Galanternik

Lisa Benko

2011

Yuanyuan Xie

2012

Blake Wilde

2013

Rajalekshmy Shyam

Undergraduate or High School Student Research Projects in Yost Lab

Sally Hed (GCB 5590 Honors Research) Winter 1992

Murisiku Raifu (Minority High School Student Research Apprenticeship) Summer 1992

Catherine Park (U. Minnesota Undergraduate Thesis) 1994 – 1997

Nghi Lu (University of Utah ACCESS Program) Spring 1998

Carley Maak (Stanford University Undergraduate) Summer 1998

Michael Rich (Harvard Undergraduate, HCI Undergraduate Fellowship) Summer 1999

Russell Ray (U. Utah Undergraduate, Rhodes Scholar) Summer 1999

Carley Maak (Stanford University Undergraduate) Summer 1999

Victoria Alimov (University of Utah, AHA Undergraduate Fellowship) Summer 2000

Patrick Sullivan (University of Utah, HCI Undergraduate Fellowship) Summer 2000

Chris Lee (University of Pennsylvania Undergraduate) Summer 2000

Colby Fernelius (University of Utah, AHA Undergraduate Fellowship) Summer 2001

Erin Prewitt (University of Utah, HCI fellowship) Summer and Fall 2001

Rebecca Burton (New York University, AHA Undergraduate Fellowship) Summer 2002, 03

Lane Brian McMahan (University of Utah, HCI Undergraduate Fellowship) Summer 2003-04

Anmy Tran (University of Utah, ACCESS Student) 2002-04
Anoush Emrazian (University of Utah, ACCESS Student) 2003-present
Brant Nikolaus (University of Utah, AHA Undergraduate Fellowship) Summer 2005
David Muhlestein (Brigham Young University, AHA Undergraduate Fellowship) Summer 2005
Devin Busby (Brigham Young University, AHA Undergraduate Fellowship) Summer 2008
Elaine Martini (U. Ohio, Pediatrics Dept Fellowship; AHA Fellowship) Summer 2008; 2009
Michael Armajo (Native American Student Internship) Summer 2010
Pfawnn Eskee (Native American Student Internship) Summer 2010
Jen Akiona (U. Utah) October 2010 – January 2012
Emily Means (U. Utah) 2012
Annie Marsden (University of Chicago) Summer 2012
Antona Yost (West High School) Summer 2013
Jason Chen (Stanford University) Summer 2013
Emily Graham (West High School) Summer 2014
Callie Housden (UVU undergraduate) 2017 – present
Trisheena Kills Pretty Enemy (Native American Research Intern program) Summer 2017
Katherine Morelli (Mogill University Undergraduate) Summer 2018
Tarilynn Tone-Pah-Hote (Native American Research Intern program) Summer 2018

C. Ph.D. or M.D. POSTDOCTORAL FELLOWS TRAINED IN YOST LAB

Jeffrey Boore (Ph.D., U. Michigan)
National Institutes of Health Postdoctoral Fellow, 10/92 - 4/96.
Current Employment: Department Head, Evolutionary Genomics, DOE Joint Genome Institute, Lawrence Berkeley National Laboratory; Adjunct Professor, UC Berkeley

Jamie L. Lohr (M.D., UC San Diego, 1988; A.B., University of California, Berkeley)
Child Health Research Center Research Postdoctoral Fellow, 8/95 – 8/97.
Current Employment: Associate Professor (tenured), Dept. Pediatrics, University of Minnesota, Minneapolis, MN

Jeffrey Essner (Ph.D., U. Minnesota, 1996; B.S. University of Iowa)
Postdoctoral Fellow, 8/96 - 10/96; Research Associate 8/97 – 6/02
2002-05 Director of Operations, Discovery Genomics, Minneapolis, MN
Current Employment: Professor (tenured), Iowa State University

Ann F. Ramsdell (Ph.D., Medical University of South Carolina 1996)
American Heart Association Postdoctoral Fellow, 8/97 – 5/00
Current Employment: Associate Professor, Dept. Regenerative Medicine & Cell Biology, Med. U. South Carolina, Charleston, S.C. and Associate Professor (tenured) U South Carolina, SC.

Wendy Thomas (Ph.D., University of California, Irvine, 1995; B.A., University of Colorado, Boulder)
Postdoctoral Associate, 11/97 – 4/99.

Anne Pollack (Ph.D., University of California, San Francisco, 1996)
American Heart Association Postdoctoral Fellow, 7/00 – 7/01
Current Employment: Assistant Professor, Cell Biology and Anatomy, University of Arizona, Tucson, AZ

Kazushi Yasuda (M.D. Nagoya City University Medical School, 1995)
Postdoctoral Fellow, AHA funded, 10/01 – 10/03

Current Employment: Private Practice physician, Japan

Kenneth L. Kramer (Ph.D., University of Cincinnati, 1998, B.S., University of Dayton)
National Institutes of Health Postdoctoral Fellow, 1/98 – 6/04
Previous Employment: Investigator, Developmental Biology, NHLBI, Bethesda, MD.
Current Employment: Assistant Professor, Creighton University School of Medicine.

Robert “Wyc” Cheatham (M.D. Mercer University, Macon 1999)
CHRC Research Fellowship, 7/02 – 7/04
Current Employment: Neonatologist, Intermountain Health Care

Brent Bisgrove (Ph.D., Indiana University, 1993; MSc. and B.Sc., University of Victoria)
Postdoctoral Fellow, 1/98 – 06/02
Current Employment: Senior Research Scientist, Yost Lab

William Branford (Ph.D., University of Cincinnati, 1997; B.S., University of Toledo)
National Institutes of Health Postdoctoral Fellow, 1/98 – 6/05
Current Employment: Assistant Professor, Wayne State University

Mariko Sato (M.D., Tohoku University, Sendai, Japan, 1987)
American Heart Association Postdoctoral Fellow, 1/99 – 6/06
Current Employment: Assistant Professor, Dept. Pediatrics, University of Iowa

Phillip Barnette (M.D./DVM Oregon Health Sciences University, Portland, 1997)
Hematology Research Training Grant, 7/01 – 6/04
Current Employment: Associate Professor of Pediatrics, University of Utah

Jeffrey Amack (Ph.D. University of Wisconsin, Madison 2001)
Postdoctoral Fellow, NRSA funded 9/02-8/07
Current Employment: Associate Professor (tenured), Cell and Developmental Biology, SUNY
Upstate Medical University, Syracuse, NY

John Parant (Ph.D., University of Texas, Houston 2001)
Postdoctoral Fellow, 9/03-10/10
Current Employment: Associate Professor (tenured), Department of Pharmacology and Toxicology,
University of Alabama, Birmingham, AL

Annita Peterson (Ph.D., Iowa State University, Ames 2004)
Postdoctoral Fellow, 6/05-5/15

Cammon Arrington (M.D./Ph.D. University of Iowa)
Assistant Professor of Pediatrics, Cardiology 10/05-05/2014
Current Employment: Stanford Hospitals & Clinics, San Jose, CA

Luca Brunelli (M.D. University of Genoa; Ph.D. University of Turin)
Assistant Professor of Pediatrics, Neonatology 07/08-11/2016
Current Employment: Division Chief, Neonatology, University of Nebraska, Omaha

Todd Townsend (Ph.D. Vanderbilt University 2008)
Postdoctoral Fellow, 11/08 – 10/14
Current Employment: Commissioner’s Fellow, U.S. Food and Drug Administration

Judith Neugebauer (B.S. U.C. Davis, 2002; Ph.D. U. Utah 2009)
Postdoctoral Fellow, 6/09 – 03/12
Current Employment: Director, BioEyes Program, University of Utah

Colin Maguire (Ph.D. in Cardiovascular Sciences, Baylor College of Medicine 2009)
Postdoctoral Fellow (shared/collaborating with M. Condic), 02/10 - present
Current Position: Director, CCTS Cellular Translational Research Core, U. Utah

Bushra Gorski (Ph.D., University of Manchester UK 2010)
Postdoctoral Fellow, 09/10 – 12/2017 (CvDC Collaborative Fellowship)
Current Position: Bioinformatics Fellow, Utah Center for Genomics Research

Jonathon Hill (Ph.D, Columbia University, 2010)
Postdoctoral Fellow, 09/10 – 6/15/15
Current Position: Assistant Professor (tenure track), Brigham Young University

Erin Cadwalader (B.S. University of Wisconsin, 2003; PhD U.Utah 2010)
Postdoctoral Fellow, 01/2011 – 12/2012; Phoebe S. Leboy Public Policy Fellow, Association for Women in Science (AWIS) 04/2012-04/2014
Current Position: Government Relations Associate, Lewis-Burke Associates, LLC

Shiela Samson (B.S. University of the Philippines, 2002; Ph.D. U. Utah 2011)
Postdoctoral Fellow, 06/2011 – 02/2013
Current Employment: Postdoctoral Fellow, MRC National Institute for Medical Research, Mill Hill, London

Fabienne Poulain (B.S. and Ph.D., University of Paris, France)
Postdoctoral Fellow, 12/2012 – 12/2014
Current Position: Assistant Professor (tenure track), University of South Carolina, Columbia, SC

Sarah Abdul-Wajid (B.Sc. University of Toronto, Ph.D. University of California Santa Barbara)
Current Position: Yost Lab Postdoctoral Fellow (T32 Cardiovascular Training Grant), 10/2015-9/2018

María de los Angeles Serrano (B.S. National University of Misiones, Ph.D. National University of Tucumán, Argentina, 2015)
Current Position: Yost Lab Postdoctoral Fellow, 05/2015 – present (AHA Fellowship)

Chelsea Herdman (B.Sc. U. Manitoba – Collège Universitaire de Saint-Boniface. Ph.D. Université Laval, 2017)
Current Position: Yost Lab Postdoctoral Fellow (CvDC Collaborative Fellowship)

Other Individuals mentored through collaborative research in Yost lab

Sungu Armagan, Ph.D. Dept. of Management (Currently Assistant Professor, Florida Int. Univ.)
Norman Hu, Research Assistant Professor, Department of Pediatrics
Susan Morelli, M.D., HHMI Fellow, Genetics and Neonatology, Department of Pediatrics
Masaaki Yoshigi, M.D., Research Associate Professor, Department of Pediatrics

X. PUBLICATIONS

A. ORIGINAL RESEARCH PUBLICATIONS IN PEER-REVIEWED JOURNALS

1. Abdul-Wajid S, Demarest BL, Yost HJ. Loss of embryonic neural crest derived cardiomyocytes causes adult onset hypertrophic cardiomyopathy in zebrafish. **Nat Commun**. 2018 Nov 2;9(1):4603. doi: 10.1038/s41467-018-07054-8.
2. Matsunami N, Shanmugam H, Baird L, Stevens J, Byrne JL, Barnhart DC, Rau C, Feldkamp ML, Yoder BA, Leppert MF, Yost HJ, Brunelli L. Germline but not somatic de novo mutations are common in human congenital diaphragmatic hernia. **Birth Defects Res**. 2018 Mar 23. doi: 10.1002/bdr2.1223. PMID: 29570242
3. Karanth S, Adams JD, Serrano MLA, Quittner-Strom EB, Simcox J, Villanueva CJ, Ozcan L, Holland WL, Yost HJ, Vella A, Schlegel A. A Hepatocyte FOXN3- α Cell Glucagon Axis Regulates Fasting Glucose. **Cell Reports**. 2018 Jul 10;24(2):312-319. doi: 10.1016/j.celrep.2018.06.039. PMID: 29996093
4. Jin SC, Homsy J, Zaidi S, Lu Q, Morton S, DePalma SR, Zeng X, Qi H, Chang W, Sierant MC, Hung WC, Haider S, Zhang J, Knight J, Bjornson RD, Castaldi C, Tikhonova IR, Bilguvar K, Mane SM, Sanders SJ, Mital S, Russell MW, Gaynor JW, Deanfield J, Giardini A, Porter GA Jr, Srivastava D, Lo CW, Shen Y, Watkins WS, Yandell M, Yost HJ, Tristani-Firouzi M, Newburger JW, Roberts AE, Kim R, Zhao H, Kaltman JR, Goldmuntz E, Chung WK, Seidman JG, Gelb BD, Seidman CE, Lifton RP, Brueckner M. Contribution of rare inherited and de novo variants in 2,871 congenital heart disease probands. **Nature Genetics**. 2017 Nov;49(11):1593-1601. doi: 10.1038/ng.3970. PMID: 28991257.
5. Bisgrove BW, Su YC, Yost HJ. Maternal Gdf3 is an obligatory cofactor in nodal signaling for embryonic axis formation in zebrafish. **eLife**. 2017 Nov 15;6. pii: e28534. doi: 10.7554/eLife.28534.
6. Hill JT, Demarest B, Gorski B, Smith M, Yost HJ. Heart morphogenesis gene regulatory networks revealed by temporal expression analysis. **Development**. 2017 Oct 1;144(19):3487-3498. doi: 10.1242/dev.154146. Epub 2017 Aug 14. PMID: 28807900
7. Shankaran SS, Dahlem TJ, Bisgrove BW, Yost HJ, Tristani-Firouzi M. CRISPR/Cas9-Directed Gene Editing for the Generation of Loss-of-Function Mutants in High-Throughput Zebrafish F0 Screens. **Curr Protoc Mol Biol**. 2017 Jul 5;119:31.9.1-31.9.22. doi: 10.1002/cpmb.42. PMID: 28678442
8. Lyozin GT, Kosaka Y, Bhattacharjee G, Yost HJ, Brunelli L. Direct Isolation of Seamless Mutant Bacterial Artificial Chromosomes. **Curr Protoc Mol Biol**. 2017 Apr 3;118:8.6.1-8.6.29. doi: 10.1002/cpmb.34. PMID: 28369677
9. Gittenberger-de Groot AC, Hoppenbrouwers T, Miquerol L, Kosaka Y, Poelmann RE, Wisse LJ, Yost HJ, Jongbloed MR, DeRuiter MC, Brunelli L. 14-3-3epsilon Controls Multiple Developmental Processes in the Mouse Heart. **Dev Dyn**. 2016 Aug 31. doi: 10.1002/dvdy.24440. PMID: 27580238 (featured cover photo)
10. Merchant SS, Kosaka Y, Yost HJ, Hsu EW, Brunelli L. Micro-Computed Tomography for the Quantitative 3-Dimensional Assessment of the Compact Myocardium in the Mouse Embryo. **Circ J**. 2016 Jul 25;80(8):1795-803. doi: 10.1253/circj.CJ-16-0180. Epub 2016 Jun 15. PMID: 27301409
11. Karanth S, Zinkhan EK, Hill JT, Yost HJ, Schlegel A. FOXN3 Regulates Hepatic Glucose Utilization. **Cell Rep**. 2016 Jun 21;15(12):2745-55. doi: 10.1016/j.celrep.2016.05.056. Epub 2016 Jun 9. PMID: 27292639
12. Bowles NE, Jou CJ, Arrington CB, Kennedy BJ, Earl A, Matsunami N, Meyers LL, Etheridge SP, Saarel EV, Bleyl SB, Yost HJ, Yandell M, Leppert MF, Tristani-Firouzi M, Gruber PJ. Exome analysis of a family with Wolff-Parkinson-White syndrome identifies a novel disease locus. **Am J Med Genet A**. 2015 Aug 18. doi: 10.1002/ajmg.a.37297. PMID: 26284702

13. Percival SM, Thomas HR, Amsterdam A, Carroll AJ, Lees JA, Yost HJ, Parant JM. Variations in dysfunction of sister chromatid cohesion in *esco2* mutant zebrafish reflect the phenotypic diversity of Roberts syndrome. **Dis Model Mech**. 2015 Aug 1;8(8):941-55. doi: 10.1242/dmm.019059. Epub 2015 Jun 4. PMID:26044958
14. Nash D, Arrington CB, Kennedy BJ, Yandell M, Wu W, Zhang W, Ware S, Jorde LB, Gruber PJ, Yost HJ, Bowles NE, Bleyl SB. Shared Segment Analysis and Next-Generation Sequencing Implicates the Retinoic Acid Signaling Pathway in Total Anomalous Pulmonary Venous Return (TAPVR). *PLoS One*. 2015 Jun 29;10(6):e0131514. doi: 10.1371/journal.pone.0131514. eCollection 2015. PMID:26121141
15. Lyozin GT, Bressloff PC, Kumar A, Kosaka Y, Demarest BL, Yost HJ, Kuehn MR, Brunelli L. Isolation of rare recombinants without using selectable markers for one-step seamless BAC mutagenesis. **Nature Methods**. 2014 Sep;11(9):966-70. doi:10.1038/nmeth.3030. Epub 2014 Jul 13. PubMed PMID: 25028895; PubMed Central PMCID: PMC4149595.
16. Hill JT, Demarest BL, Bisgrove BW, Su YC, Smith M, Yost HJ. Poly peak parser: Method and software for identification of unknown indels using sanger sequencing of polymerase chain reaction products. **Dev Dyn**. 2014 Aug 27. doi:10.1002/dvdy.24183. PubMed PMID: 25160973. PubMed Central PMCID: In Process
17. Neugebauer JM, Yost HJ. FGF signaling is required for brain left-right asymmetry and brain midline formation. **Dev Biol**. 2014 Feb 1;386(1):123-34. doi:10.1016/j.ydbio.2013.11.020. Epub 2013 Dec 12. PubMed PMID: 24333178; PubMed Central PMCID: PMC3970204.
18. Samson SC, Ferrer T, Jou CJ, Sachse FB, Shankaran SS, Shaw RM, Chi NC, Tristani-Firouzi M, Yost HJ. 3-OST-7 regulates BMP-dependent cardiac contraction. **PLoS Biol**. 2013 Dec;11(12):e1001727. doi: 10.1371/journal.pbio.1001727. Epub 2013 Dec 3. PubMed PMID: 24311987; PubMed Central PMCID: PMC3849020.
19. Arrington CB, Peterson AG, Yost HJ. *Sdc2* and *Tbx16* regulate *Fgf2*-dependent epithelial cell morphogenesis in the ciliated organ of asymmetry. **Development**. 2013 Oct;140(19):4102-9. doi: 10.1242/dev.096933. PubMed PMID: 24046323; PubMedCentral PMCID: PMC3775420.
20. Neugebauer JM, Cadwallader AB, Amack JD, Bisgrove BW, Yost HJ. Differential roles for 3-OSTs in the regulation of cilia length and motility. **Development**. 2013 Sep;140(18):3892-902. doi: 10.1242/dev.096388. Epub 2013 Aug 14. PubMed PMID: 23946439; PubMed Central PMCID: PMC3754482.
21. Peterson AG, Wang X, Yost HJ. *Dvr1* transfers left-right asymmetric signals from Kupffer's vesicle to lateral plate mesoderm in zebrafish. **Dev Biol**. 2013 Oct 1;382(1):198-208. doi: 10.1016/j.ydbio.2013.06.011. Epub 2013 Jun 17. PubMed PMID: 23791819; PubMed Central PMCID: PMC3888838.
22. Tay HG, Schulze SK, Compagnon J, Foley FC, Heisenberg CP, Yost HJ, Abdelilah-Seyfried S, Amack JD. Lethal giant larvae 2 regulates development of the ciliated organ Kupffer's vesicle. **Development**. 2013 Apr;140(7):1550-9. doi: 10.1242/dev.087130. PubMed PMID: 23482490; PubMed Central PMCID: PMC3596994.
23. Jurisch-Yaksi N, Rose AJ, Lu H, Raemaekers T, Munck S, Baatsen P, Baert V, Vermeire W, Scales SJ, Verleyen D, Vandepoel R, Tylzanowski P, Yaksi E, de Ravel T, Yost HJ, Froyen G, Arrington CB, Annaert W. *Rer1p* maintains ciliary length and signaling by regulating γ -secretase activity and *Foxj1a* levels. **J Cell Biol**. 2013 Mar 18;200(6):709-20. doi: 10.1083/jcb.201208175. Epub 2013 Mar 11. PubMed PMID: 23479743; PubMed Central PMCID: PMC3601348.
24. Maguire CT, Demarest BL, Hill JT, Palmer JD, Brothman AR, Yost HJ, Condic ML. Genome-wide analysis reveals the unique stem cell identity of human amniocytes. **PLoS One**. 2013;8(1):e53372. doi: 10.1371/journal.pone.0053372. Epub 2013 Jan 10. PubMed PMID: 23326421; PubMed Central PMCID: PMC3542377.
25. Hill JT, Demarest BL, Bisgrove BW, Gorski B, Su YC, Yost HJ. MMAPPR: mutation mapping analysis pipeline for pooled RNA-seq. **Genome Res**. 2013 Apr;23(4):687-97. doi:

- 10.1101/gr.146936.112. Epub 2013 Jan 8. PubMed PMID: 23299975; PubMed Central PMCID: PMC3613585.
26. Chang B, Gorbea C, Lezin G, Li L, Shan L, Sakai N, Kogaki S, Otomo T, Okinaga T, Hamaoka A, Yu X, Hata Y, Nishida N, Yost HJ, Bowles NE, Brunelli L, Ichida F. 14-3-3 ϵ gene variants in a Japanese patient with left ventricular noncompaction and hypoplasia of the corpus callosum. **Gene**. 2013 Feb 15;515(1):173-80. doi: 10.1016/j.gene.2012.12.049. Epub 2012 Dec 20. PubMed PMID: 23266643.
 27. Arrington CB, Bleyl SB, Matsunami N, Bowles NE, Leppert TI, Demarest BL, Osborne K, Yoder BA, Byrne JL, Schiffman JD, Null DM, DiGeronimo R, Rollins M, Faix R, Comstock J, Camp NJ, Leppert MF, Yost HJ, Brunelli L. A family-based paradigm to identify candidate chromosomal regions for isolated congenital diaphragmatic hernia. **Am J Med Genet A**. 2012 Dec;158A(12):3137-47. doi: 10.1002/ajmg.a.35664. Epub 2012 Nov 19. PubMed PMID: 23165927; PubMed Central PMCID: PMC3507422.
 28. Kosaka Y, Cieslik KA, Li L, Lezin G, Maguire CT, Saijoh Y, Toyo-oka K, Gambello MJ, Vatta M, Wynshaw-Boris A, Baldini A, Yost HJ, Brunelli L. 14-3-3 ϵ plays a role in cardiac ventricular compaction by regulating the cardiomyocyte cell cycle. **Mol Cell Biol**. 2012 Dec;32(24):5089-102. doi: 10.1128/MCB.00829-12. Epub 2012 Oct 15. PubMed PMID: 23071090; PubMed Central PMCID: PMC3510533.
 29. Cadwalader EL, Condic ML, Yost HJ. 2-O-sulfotransferase regulates Wnt signaling, cell adhesion and cell cycle during zebrafish epiboly. **Development**. 2012 Apr;139(7):1296-305. doi: 10.1242/dev.078238. Epub 2012 Feb 22. PubMed PMID: 22357927; PubMed Central PMCID: PMC3294434.
 30. Bisgrove BW, Makova S, Yost HJ, Brueckner M. RFX2 is essential in the ciliated organ of asymmetry and an RFX2 transgene identifies a population of ciliated cells sufficient for fluid flow. **Dev Biol**. 2012 Mar 1;363(1):166-78. doi: 10.1016/j.ydbio.2011.12.030. Epub 2011 Dec 29. PubMed PMID: 22233545; PubMed Central PMCID: PMC3347763.
 31. Lezin G, Kosaka Y, Yost HJ, Kuehn MR, Brunelli L. A one-step miniprep for the isolation of plasmid DNA and lambda phage particles. **PLoS One**. 2011;6(8):e23457. doi: 10.1371/journal.pone.0023457. Epub 2011 Aug 15. PubMed PMID: 21858126; PubMed Central PMCID: PMC3156146.
 32. Wythe JD, Jurynek MJ, Urness LD, Jones CA, Sabeh MK, Werdich AA, Sato M, Yost HJ, Grunwald DJ, Macrae CA, Li DY. Hadp1, a newly identified pleckstrin homology domain protein, is required for cardiac contractility in zebrafish. **Dis Model Mech**. 2011 Sep;4(5):607-21. doi: 10.1242/dmm.002204. Epub 2011 May 31. PubMed PMID: 21628396; PubMed Central PMCID: PMC3180224.
 33. Wang G, Cadwallader AB, Jang DS, Tsang M, Yost HJ, Amack JD. The Rho kinase Rock2b establishes anteroposterior asymmetry of the ciliated Kupffer's vesicle in zebrafish. **Development**. 2011 Jan;138(1):45-54. doi: 10.1242/dev.052985. Epub 2010 Nov 23. PubMed PMID: 21098560; PubMed Central PMCID: PMC2998165 (photo featured on journal cover).
 34. Parant JM, George SA, Holden JA, Yost HJ. Genetic modeling of Li-Fraumeni syndrome in zebrafish. **Dis Model Mech**. 2010 Jan-Feb;3(1-2):45-56. doi: 10.1242/dmm.003749. PubMed PMID: 20075382; PubMed Central PMCID: PMC2806900.
 35. Parant JM, George SA, Pryor R, Wittwer CT, Yost HJ. A rapid and efficient method of genotyping zebrafish mutants. **Dev Dyn**. 2009 Dec;238(12):3168-74. doi: 10.1002/dvdy.22143. PubMed PMID: 19890916; PubMed Central PMCID: PMC3888828.
 36. Arrington CB, Yost HJ. Extra-embryonic syndecan 2 regulates organ primordia migration and fibrillogenesis throughout the zebrafish embryo. **Development**. 2009 Sep;136(18):3143-52. doi: 10.1242/dev.031492. PubMed PMID: 19700618; PubMed Central PMCID: PMC2730369.
 37. Neugebauer JM, Amack JD, Peterson AG, Bisgrove BW, Yost HJ. FGF signalling during embryo development regulates cilia length in diverse epithelia. **Nature**. 2009 Apr

- 2;458(7238):651-4. doi: 10.1038/nature07753. Epub 2009 Feb 25. Erratum in: *Nature*. 2010 Jan 21;463(7279):384. PubMed PMID: 19242413; PubMed Central PMCID: PMC2688717.
38. Wang X, Yost HJ. Initiation and propagation of posterior to anterior (PA) waves in zebrafish left-right development. **Dev Dyn**. 2008 Dec;237(12):3640-7. doi: 10.1002/dvdy.21771. PubMed PMID: 18985756; PubMed Central PMCID: PMC2858685.
39. Wolman MA, Sittaramane VK, Essner JJ, Yost HJ, Chandrasekhar A, Halloran MC. Transient axonal glycoprotein-1 (TAG-1) and laminin-alpha1 regulate dynamic growth cone behaviors and initial axon direction in vivo. **Neural Dev**. 2008 Feb 20;3:6. doi: 10.1186/1749-8104-3-6. PubMed PMID: 18289389; PubMed Central PMCID: PMC2278142. (photo featured on journal cover)
40. Kwan KM, Fujimoto E, Grabher C, Mangum BD, Hardy ME, Campbell DS, Parant JM, Yost HJ, Kanki JP, Chien CB. The Tol2kit: a multisite gateway-based construction kit for Tol2 transposon transgenesis constructs. **Dev Dyn**. 2007 Nov;236(11):3088-99. PubMed PMID: 17937395.
41. Amack JD, Wang X, Yost HJ. Two T-box genes play independent and cooperative roles to regulate morphogenesis of ciliated Kupffer's vesicle in zebrafish. **Dev Biol**. 2007 Oct 15;310(2):196-210. Epub 2007 Jun 4. PubMed PMID: 17765888.
42. Luo W, Peterson A, Garcia BA, Coombs G, Kofahl B, Heinrich R, Shabanowitz J, Hunt DF, Yost HJ, Virshup DM. Protein phosphatase 1 regulates assembly and function of the beta-catenin degradation complex. **EMBO J**. 2007 Mar 21;26(6):1511-21. Epub 2007 Feb 22. PubMed PMID: 17318175; PubMed Central PMCID: PMC1829374.
43. Tsai IC, Amack JD, Gao ZH, Band V, Yost HJ, Virshup DM. A Wnt-CKIvarepsilon-Rap1 pathway regulates gastrulation by modulating SIPA1L1, a Rap GTPase activating protein. **Dev Cell**. 2007 Mar;12(3):335-47. PubMed PMID: 17336901; PubMed Central PMCID: PMC1857327.
44. Takeuchi JK, Lickert H, Bisgrove BW, Sun X, Yamamoto M, Chawengsaksophak K, Hamada H, Yost HJ, Rossant J, Bruneau BG. Baf60c is a nuclear Notch signaling component required for the establishment of left-right asymmetry. **Proc Natl Acad Sci U S A**. 2007 Jan 16;104(3):846-51. Epub 2007 Jan 8. PubMed PMID: 17210915; PubMed Central PMCID: PMC1783402.
45. Tsai IC, Woolf M, Neklason DW, Branford WW, Yost HJ, Burt RW, Virshup DM. Disease-associated casein kinase I delta mutation may promote adenomatous polyps formation via a Wnt/beta-catenin independent mechanism. **Int J Cancer**. 2007 Mar 1;120(5):1005-12. PubMed PMID: 17131344.
46. Cadwallader AB, Yost HJ. Combinatorial expression patterns of heparan sulfate sulfotransferases in zebrafish: III. 2-O-sulfotransferase and C5-epimerases. **Dev Dyn**. 2007 Feb;236(2):581-6. PubMed PMID: 17195182.
47. Cadwallader AB, Yost HJ. Combinatorial expression patterns of heparan sulfate sulfotransferases in zebrafish: II. The 6-O-sulfotransferase family. **Dev Dyn**. 2006 Dec;235(12):3432-7. PubMed PMID: 17075883.
48. Cadwallader AB, Yost HJ. Combinatorial expression patterns of heparan sulfate sulfotransferases in zebrafish: I. The 3-O-sulfotransferase family. **Dev Dyn**. 2006 Dec;235(12):3423-31. PubMed PMID: 17075882.
49. Sato M, Tsai HJ, Yost HJ. Semaphorin3D regulates invasion of cardiac neural crest cells into the primary heart field. **Dev Biol**. 2006 Oct 1;298(1):12-21. Epub 2006 Jun 2. PubMed PMID: 16860789.
50. Nadauld LD, Chidester S, Shelton DN, Rai K, Broadbent T, Sandoval IT, Peterson PW, Manos EJ, Ireland CM, Yost HJ, Jones DA. Dual roles for adenomatous polyposis coli in regulating retinoic acid biosynthesis and Wnt during ocular development. **Proc Natl Acad Sci U S A**. 2006 Sep 5;103(36):13409-14. Epub 2006 Aug 28. PubMed PMID: 16938888; PubMed Central PMCID: PMC1569177.

51. Bisgrove BW, Snarr BS, Emrazian A, Yost HJ. Polaris and Polycystin-2 in dorsal forerunner cells and Kupffer's vesicle are required for specification of the zebrafish left-right axis. **Dev Biol**. 2005 Nov 15;287(2):274-88. Epub 2005 Oct 7. PubMed PMID: 16216239.
52. Yoshigi M, Hoffman LM, Jensen CC, Yost HJ, Beckerle MC. Mechanical force mobilizes zyxin from focal adhesions to actin filaments and regulates cytoskeletal reinforcement. **J Cell Biol**. 2005 Oct 24;171(2):209-15. PubMed PMID: 16247023; PubMed Central PMCID: PMC2171187.
53. Nadauld LD, Shelton DN, Chidester S, Yost HJ, Jones DA. The zebrafish retinol dehydrogenase, rdh11, is essential for intestinal development and is regulated by the tumor suppressor adenomatous polyposis coli. **J Biol Chem**. 2005 Aug 26;280(34):30490-5. Epub 2005 Jun 20. PubMed PMID: 15967793.
54. Essner JJ, Amack JD, Nyholm MK, Harris EB, Yost HJ. Kupffer's vesicle is a ciliated organ of asymmetry in the zebrafish embryo that initiates left-right development of the brain, heart and gut. **Development**. 2005 Mar;132(6):1247-60. Epub 2005 Feb 16. PubMed PMID: 15716348.
55. Nadauld LD, Sandoval IT, Chidester S, Yost HJ, Jones DA. Adenomatous polyposis coli control of retinoic acid biosynthesis is critical for zebrafish intestinal development and differentiation. **J Biol Chem**. 2004 Dec 3;279(49):51581-9. Epub 2004 Sep 8. PubMed PMID: 15358764.
56. Amack JD, Yost HJ. The T box transcription factor no tail in ciliated cells controls zebrafish left-right asymmetry. **Curr Biol**. 2004 Apr 20;14(8):685-90. PubMed PMID: 15084283.
57. Chen Y, Mironova E, Whitaker LL, Edwards L, Yost HJ, Ramsdell AF. ALK4 functions as a receptor for multiple TGF beta-related ligands to regulate left-right axis determination and mesoderm induction in *Xenopus*. **Dev Biol**. 2004 Apr 15;268(2):280-94. PubMed PMID: 15063168.
58. Swiatek W, Tsai IC, Klimowski L, Pepler A, Barnette J, Yost HJ, Virshup DM. Regulation of casein kinase I epsilon activity by Wnt signaling. **J Biol Chem**. 2004 Mar 26;279(13):13011-7. Epub 2004 Jan 13. PubMed PMID: 14722104.
59. Liang P, Jones CA, Bisgrove BW, Song L, Glenn ST, Yost HJ, Gross KW. Genomic characterization and expression analysis of the first nonmammalian renin genes from zebrafish and pufferfish. **Physiol Genomics**. 2004 Feb 13;16(3):314-22. PubMed PMID: 14645735.
60. Yoshigi M, Clark EB, Yost HJ. Quantification of stretch-induced cytoskeletal remodeling in vascular endothelial cells by image processing. **Cytometry A**. 2003 Oct;55(2):109-18. PubMed PMID: 14505316.
61. Sato M, Yost HJ. Cardiac neural crest contributes to cardiomyogenesis in zebrafish. **Dev Biol**. 2003 May 1;257(1):127-39. PubMed PMID: 12710962.
62. Kramer KL, Barnette JE, Yost HJ. PKCgamma regulates syndecan-2 inside-out signaling during *xenopus* left-right development. **Cell**. 2002 Dec 27;111(7):981-90. PubMed PMID: 12507425.
63. Branford WW, Yost HJ. Lefty-dependent inhibition of Nodal- and Wnt-responsive organizer gene expression is essential for normal gastrulation. **Curr Biol**. 2002 Dec 23;12(24):2136-41. PubMed PMID: 12498689.
64. Essner JJ, Vogán KJ, Wagner MK, Tabin CJ, Yost HJ, Brueckner M. Conserved function for embryonic nodal cilia. **Nature**. 2002 Jul 4;418(6893):37-8. PubMed PMID: 12097899.
65. Morgan D, Goodship J, Essner JJ, Vogán KJ, Turnpenny L, Yost HJ, Tabin CJ, Strachan T. The left-right determinant inversin has highly conserved ankyrin repeat and IQ domains and interacts with calmodulin. **Hum Genet**. 2002 Apr;110(4):377-84. Epub 2002 Mar 2. PubMed PMID: 11941489.
66. Kramer KL, Yost HJ. Ectodermal syndecan-2 mediates left-right axis formation in migrating mesoderm as a cell-nonautonomous Vg1 cofactor. **Dev Cell**. 2002 Jan;2(1):115-24. PubMed PMID: 11782319.
67. Hu N, Yost HJ, Clark EB. Cardiac morphology and blood pressure in the adult zebrafish. **Anat Rec**. 2001 Sep 1;264(1):1-12. PubMed PMID: 11505366. (featured on journal cover)

68. Li X, Yost HJ, Virshup DM, Seeling JM. Protein phosphatase 2A and its B56 regulatory subunit inhibit Wnt signaling in Xenopus. **EMBO J**. 2001 Aug 1;20(15):4122-31. PubMed PMID: 11483515; PubMed Central PMCID: PMC149155.
69. Liu J, Stevens J, Rote CA, Yost HJ, Hu Y, Neufeld KL, White RL, Matsunami N. Siah-1 mediates a novel beta-catenin degradation pathway linking p53 to the adenomatous polyposis coli protein. **Mol Cell**. 2001 May;7(5):927-36. PubMed PMID: 11389840.
70. Hu N, Sedmera D, Yost HJ, Clark EB. Structure and function of the developing zebrafish heart. **Anat Rec**. 2000 Oct 1;260(2):148-57. PubMed PMID: 10993952. (featured on journal cover)
71. Bisgrove BW, Essner JJ, Yost HJ. Multiple pathways in the midline regulate concordant brain, heart and gut left-right asymmetry. **Development**. 2000 Aug;127(16):3567-79. PubMed PMID: 10903181.
72. Branford WW, Essner JJ, Yost HJ. Regulation of gut and heart left-right asymmetry by context-dependent interactions between xenopus lefty and BMP4 signaling. **Dev Biol**. 2000 Jul 15;223(2):291-306. PubMed PMID: 10882517
73. Angelo S, Lohr J, Lee KH, Ticho BS, Breitbart RE, Hill S, Yost HJ, Srivastava D. Conservation of sequence and expression of Xenopus and zebrafish dHAND during cardiac, branchial arch and lateral mesoderm development. **Mech Dev**. 2000 Jul;95(1-2):231-7. PubMed PMID: 10906469.
74. Essner JJ, Branford WW, Zhang J, Yost HJ. Mesendoderm and left-right brain, heart and gut development are differentially regulated by pitx2 isoforms. **Development**. 2000 Mar;127(5):1081-93. PubMed PMID: 10662647.
75. Ramsdell AF, Yost HJ. Cardiac looping and the vertebrate left-right axis: antagonism of left-sided Vg1 activity by a right-sided ALK2-dependent BMP pathway. **Development**. 1999 Dec;126(23):5195-205. PubMed PMID: 10556046.
76. Schroeder KE, Condic ML, Eisenberg LM, Yost HJ. Spatially regulated translation in embryos: asymmetric expression of maternal Wnt-11 along the dorsal-ventral axis in Xenopus. **Dev Biol**. 1999 Oct 15;214(2):288-97. PubMed PMID: 10525335.
77. Bisgrove BW, Essner JJ, Yost HJ. Regulation of midline development by antagonism of lefty and nodal signaling. **Development**. 1999 Jun;126(14):3253-62. PubMed PMID: 10375514.
78. Hyatt BA, Yost HJ. The left-right coordinator: the role of Vg1 in organizing left-right axis formation. **Cell**. 1998 Apr 3;93(1):37-46. PubMed PMID: 9546390.
79. Lohr JL, Danos MC, Groth TW, Yost HJ. Maintenance of asymmetric nodal expression in Xenopus laevis. **Dev Genet**. 1998;23(3):194-202. PubMed PMID: 9842714.
80. Lohr JL, Danos MC, Yost HJ. Left-right asymmetry of a nodal-related gene is regulated by dorsoanterior midline structures during Xenopus development. **Development**. 1997 Apr;124(8):1465-72. PubMed PMID: 9108363.
81. Hyatt BA, Lohr JL, Yost HJ. Initiation of vertebrate left-right axis formation by maternal Vg1. **Nature**. 1996 Nov 7;384(6604):62-5. PubMed PMID: 8900277.
82. Teel AL, Yost HJ. Embryonic expression patterns of Xenopus syndecans. **Mech Dev**. 1996 Oct;59(2):115-27. PubMed PMID: 8951790.
83. Danos MC, Yost HJ. Role of notochord in specification of cardiac left-right orientation in zebrafish and Xenopus. **Dev Biol**. 1996 Jul 10;177(1):96-103. PubMed PMID: 8660880. (featured on journal cover)
84. Schroeder KE, Yost HJ. Xenopus poly (A) binding protein maternal RNA is localized during oogenesis and associated with large complexes in blastula. **Dev Genet**. 1996;19(3):268-76. PubMed PMID: 8952069.
85. Yost HJ, Phillips CR, Boore JL, Bertman J, Whalon B, Danilchik MV. Relocation of mitochondria to the prospective dorsal marginal zone during Xenopus embryogenesis. **Dev Biol**. 1995 Jul;170(1):83-90. PubMed PMID: 7601317.
86. Danos MC, Yost HJ. Linkage of cardiac left-right asymmetry and dorsal-anterior development in Xenopus. **Development**. 1995 May;121(5):1467-74. PubMed PMID: 7789276.

87. Galeazza MT, Garry MG, Yost HJ, Strait KA, Hargreaves KM, Seybold VS. Plasticity in the synthesis and storage of substance P and calcitonin gene-related peptide in primary afferent neurons during peripheral inflammation. **Neuroscience**. 1995 May;66(2):443-58. PubMed PMID: 7477885.
88. Yost HJ. Regulation of vertebrate left-right asymmetries by extracellular matrix. **Nature**. 1992 May 14;357(6374):158-61. PubMed PMID: 1579165.
89. Yost HJ, Lindquist S. Heat shock proteins affect RNA processing during the heat shock response of *Saccharomyces cerevisiae*. **Mol Cell Biol**. 1991 Feb;11(2):1062-8. PubMed PMID: 1899282; PubMed Central PMCID: PMC359779.
90. **Yost HJ**. Inhibition of proteoglycan synthesis eliminates left-right asymmetry in *Xenopus laevis* cardiac looping. **Development**. 1990 Nov;110(3):865-74. PubMed PMID: 2100995.
91. Yost HJ, Lindquist S. Translation of unspliced transcripts after heat shock. **Science**. 1988 Dec 16;242(4885):1544-8. PubMed PMID: 3201243.
92. Yost HJ, Lindquist S. RNA splicing is interrupted by heat shock and is rescued by heat shock protein synthesis. **Cell**. 1986 Apr 25;45(2):185-93. PubMed PMID: 2421918.
93. Martinez-Arias A, Yost HJ, Casadaban MJ. Role of an upstream regulatory element in leucine repression of the *Saccharomyces cerevisiae* *leu2* gene. **Nature**. 1984 Feb 23-29;307(5953):740-2. PubMed PMID: 6321998.

A2. BioRxiv PREPRINT SUBMISSIONS (also submitted for peer review publication)

94. Gorski B, Mosbrugger T, Smith M, Hill J, Yost HJ. Nkx2.5-dependent alterations of the embryonic heart DNA methylome identify novel cis-regulatory elements in cardiac development. BioRxiv doi: <https://doi.org/10.1101/186395>
95. Abdul-Wajid S, Demarest B, Yost HJ. Loss of embryonic neural crest cardiomyocytes causes adult hypertrophic cardiomyopathy. BioRxiv doi: <https://doi.org/10.1101/270652>
96. Maria de los Angeles Serrano, Bradley L. Demarest, Tarlynn Tone-Pah-Hote, Martin Tristani, H. Joseph Yost. Inhibition of Notch signaling rescues cardiovascular development in Kabuki Syndrome. bioRxiv 489757; doi: <https://doi.org/10.1101/489757>
97. Colin T. Maguire, Ryan Sunderland, Bradley L Demarest, Bushra Gorski, Joshua Jackson, Angelica Lopez-Izquierdo, Martin Martin Tristani-Firouzi, H. Joseph Yost, Maureen L Condic. Deriving Cardiomyocytes from Human Amniocytes. bioRxiv 475624; doi: <https://doi.org/10.1101/475624>

B. INVITED REVIEWS IN JOURNALS

98. Poulain FE, Yost HJ. Heparan sulfate proteoglycans: a sugar code for vertebrate development? **Development**. 2015 Oct 15;142(20):3456-67. doi: 10.1242/dev.098178. PMID:26487777
99. Wang G, Yost HJ, Amack JD. Analysis of gene function and visualization of cilia-generated fluid flow in Kupffer's vesicle. **J Vis Exp**. 2013 Mar 31;(73). doi: 10.3791/50038. PubMed PMID: 23567922; PubMed Central PMCID: PMC3641804.
100. Yost HJ. Coordinating the development of bilateral symmetry and left-right asymmetry. **Semin Cell Dev Biol**. 2009 Jun;20(4):455. doi: 10.1016/j.semcdb.2009.05.005. Epub 2009 May 31. PubMed PMID: 19490950.
101. Bisgrove BW, Yost HJ. The roles of cilia in developmental disorders and disease. **Development**. 2006 Nov;133(21):4131-43. Epub 2006 Oct 4. Review. PubMed PMID: 17021045.
102. Branford WW, Yost HJ. Nodal signaling: Cryptic Lefty mechanism of antagonism decoded. **Curr Biol**. 2004 May 4;14(9):R341-3. Review. PubMed PMID: 15120085.
103. Yost HJ. Left-right asymmetry: nodal cilia make and catch a wave. **Curr Biol**. 2003 Oct 14;13(20):R808-9. Review. PubMed PMID: 14561422.

104. Kramer KL, Yost HJ. Heparan sulfate core proteins in cell-cell signaling. **Annu Rev Genet.** 2003;37:461-84. Review. PubMed PMID: 14616070.
105. Bisgrove BW, Morelli SH, Yost HJ. Genetics of human laterality disorders: insights from vertebrate model systems. **Annu Rev Genomics Hum Genet.** 2003;4:1-32. Epub 2003 Apr 21. Review. PubMed PMID: 12730129.
106. Prescott SM, Yost HJ. The COXes of Danio: from mechanistic model to experimental therapeutics. **Proc Natl Acad Sci U S A.** 2002 Jul 9;99(14):9084-6. Epub 2002 Jul 1. Review. PubMed PMID: 12093922; PubMed Central PMCID: PMC123094.
107. Kramer KL, Yost HJ. Cardiac left-right development: are the early steps conserved? **Cold Spring Harb Symp Quant Biol.** 2002;67:37-43. Review. PubMed PMID: 12858521.
108. Bisgrove BW, Yost HJ. Classification of left-right patterning defects in zebrafish, mice, and humans. **Am J Med Genet.** 2001 Jul 15;101(4):315-23. PubMed PMID: 11471153.
109. Yost HJ. Establishment of left-right asymmetry. **Int Rev Cytol.** 2001;203:357-81. Review. PubMed PMID: 11131521.
110. Wagner MK, Yost HJ. Left-right development: the roles of nodal cilia. **Curr Biol.** 2000 Feb 24;10(4):R149-51. Review. PubMed PMID: 10704402.
111. Lohr JL, Yost HJ. Vertebrate model systems in the study of early heart development: *Xenopus* and zebrafish. **Am J Med Genet.** 2000 Winter;97(4):248-57. Review. PubMed PMID: 11376436.
112. Yost HJ. Specification of cardiac mesenchyme and heart morphogenesis in vitro. **Methods Mol Biol.** 2000;136:39-43. Review. PubMed PMID: 10840695.
113. Yost HJ. Diverse initiation in a conserved left-right pathway? **Curr Opin Genet Dev.** 1999 Aug;9(4):422-6. Review. PubMed PMID: 10449359.
114. Ramsdell AF, Yost HJ. Molecular mechanisms of vertebrate left-right development. **Trends Genet.** 1998 Nov;14(11):459-65. Review. PubMed PMID: 9825674.
115. Yost HJ. The genetics of midline and cardiac laterality defects. **Curr Opin Cardiol.** 1998 May;13(3):185-9. Review. PubMed PMID: 9649941.
116. Yost HJ. Left-right development in *Xenopus* and zebrafish. **Semin Cell Dev Biol.** 1998 Feb;9(1):61-6. Review. PubMed PMID: 9572115.
117. Yost HJ. Left-right development from embryos to brains. **Dev Genet.** 1998;23(3):159-63. Review. PubMed PMID: 9842710. (featured artwork on journal cover)
118. Yost HJ. Vertebrate left-right development. **Cell.** 1995 Sep 8;82(5):689-92. Review. PubMed PMID: 7671297.
119. Bowers PN, Brueckner M, Yost HJ. The genetics of left-right development and heterotaxia. **Semin Perinatol.** 1996 Dec;20(6):577-88. Review. PubMed PMID: 9090782.
120. Yost HJ. Development of the left-right axis in amphibians. **Ciba Found Symp.** 1991;162:165-76; discussion 176-81. PubMed PMID: 1802642.
121. Yost HJ, Petersen RB, Lindquist S. RNA metabolism: strategies for regulation in the heat shock response. **Trends Genet.** 1990 Jul;6(7):223-7. Review. PubMed PMID: 1697106.

C. BOOKS, BOOK CHAPTERS AND BOOK REVIEWS

122. Cadwallader AB and Yost HJ (2013). "The Glycocode: Translating Heparan Sulfate Fine Structure into Developmental Function" In "Extracellular Matrix in Development" (D. DeSimone and R.P. Mecham, eds). Springer-Verlag. p3-18.
123. Amack JD and Yost HJ (2008). Establishing cardiac left-right asymmetry. In "Heart Development and Regeneration" (R. P. Harvey and N. Rosenthal, eds). Academic Press, San Diego.
124. Neugebauer JM and Yost HJ (2007) Divergent Roles of Hedgehog and Fibroblast Growth Factor Signaling in Left-Right Development. Cardiovascular Development (Rolf Bodmer, ed). Academic Press.

125. Yost HJ (2005) Microenvironment Provides Left-Right Instructions to Migrating Precardiac Mesoderm. In Cardiovascular Development and Congenital Malformations: Molecular and Genetic Mechanisms (Michael Artman, D Woodrow Benson, Deepak Srivastava and Makoto Nakazawa, eds.) Blackwell Publishing, p 3 – 5.
126. Sato M, Yost HJ (2005) Neural Crest Cells Contribute to Heart Formation and Cardiomyogenesis in Zebrafish. In Cardiovascular Development and Congenital Malformations: Molecular and Genetic Mechanisms (Michael Artman, D Woodrow Benson, Deepak Srivastava and Makoto Nakazawa, eds.) Blackwell Publishing, p 150 - 152.
127. Hu N, Yost HJ, Barker LF, Clark EB (2005) Spatial Correlation of Conduction Tissue in the Ventricular Trabeculae in Developing Zebrafish. In Cardiovascular Development and Congenital Malformations: Molecular and Genetic Mechanisms (Michael Artman, D Woodrow Benson, Deepak Srivastava and Makoto Nakazawa, eds.) Blackwell Publishing, p 95 - 97.
128. Tran A, Sato M, Yost HJ (2003) Morphological Analysis of Cardiac Defects in Neural Crest Deficient Zebrafish Embryos. Proceedings NCUR 2003. Univ. of North Carolina, Asheville, NC. Volume 3, 73.
129. Yost HJ (2003) Halpern Explores Asymmetry Using Zebrafish as Model Organism. **American Association of Anatomists** 12 (2), 12-13.
130. Yost HJ (2003) Special Issue: Zebrafish as a model system. (featured cover photo) **Developmental Dynamics** 228, number 7.
131. Ramsdell AF and Yost HJ (2001). Cardiac looping and the left-right axis: integrating morphological, molecular and genetic analyses of vertebrate left-right development. In Development of the Cardiovascular System, Volume 1 (R. J. Tomanek and R. Runyon, eds.) JAI Press, Greenwich, CT.
132. Opitz JM, Yost HJ and Clark EB (2000). Syndromes, developmental fields and human congenital cardiovascular malformations. In "Etiology & Morphogenesis of Congenital Heart Disease: Twenty Years of Progress in Genetics and Developmental Biology" (E.B. Clark, M. Nakazawa, A. Takao, eds.) Futura, N.Y., p 311 - 320.
133. Yost HJ (2000). Axes, situs and the vertebrate body plan. In "Etiology & Morphogenesis of Congenital Heart Disease: Twenty Years of Progress in Genetics and Developmental Biology" (E.B. Clark, M. Nakazawa, A. Takao, eds.) Futura, N.Y., p 3 - 10.
134. Yost HJ (1998). Establishing cardiac left-right asymmetry. In "Heart Development" (R. P. Harvey and N. Rosenthal, eds). Academic Press, San Diego. p 373-389.
135. Yost HJ (1997). Embryo left from right (featured cover photo). **Journal of NIH Research** 9, 1.
136. Bowers PN, Brueckner M and Yost HJ (1996). Laterality Disturbances. in "The Genetics of Congenital Cardiovascular Disease" (M. E. Pierpont and J. A. Towbin, Eds.) **Progress in Pediatric Cardiology** 6, 53-62.
137. Yost HJ (1995). Breaking Symmetry: Left-Right Cardiac Development in *Xenopus laevis*. in "Fourth International Symposium on Etiology & Morphogenesis of Congenital Heart Disease - Developmental Mechanisms" (M. M. Markwald, E. B. Clark, A. Takao, eds.) Futura, N.Y., p 505-511.
138. Yost HJ (1992). *Xenopus*: Getting Reorganized. (Review of "The Early Development of *Xenopus laevis*: An Atlas of the Histology" by P. Hausen and M. Riebessell) **Trends in Genetics** 8, 186.
139. Yost HJ, Petersen RB and Lindquist S (1990). Posttranscriptional regulation of heat shock protein synthesis in *Drosophila*. In "Stress Proteins in Biology and Medicine" (R. I. Morimoto, A. Tissieres, and C. Georgopoulos, Eds.). Cold Spring Laboratory Press, p. 379-409.

D. PATENTS

1. Copyright licensed software (2012) Mutation Mapping Analysis Pipeline for Pooled RNA-seq (MMAPPR)

2. Provisional Patent (2010): Identification of Tumor Suppressor Genes in Zebrafish and a novel p53 Mutant as a Model for Cancer

XI. INVITED SYMPOSIUM AND KEYNOTE LECTURES (1991 - PRESENT)

1. 05/05/18 Plenary Speaker, Pediatric Academic Societies (PAS) & Asian Society for Pediatric Research, Toronto, Canada
2. 01/11/2018 Speaker, "Adult heart failure: a developmental genetics perspective" 6th Annual Utah Cardiac Recovery Symposium, Salt Lake City, UT
3. 11/01/17 Plenary Speaker, Fifth Zebrafish Meeting of China: Developmental Genetics and Disease Models, Wuzhen, Shanghai, China
4. 07/07/17 Speaker, Susan Lindquist Memorial Symposium, Whitehead Institute, Massachusetts Institute of Technology, Cambridge, MA
5. 04/25/17 The 2017 Henry Gray Scientific Achievement Lecture, American Association of Anatomists, Experimental Biology Meeting, Chicago, IL
6. 06/02/16 Keynote Speaker, Frontiers of Developmental Biology (49th Annual meeting moved from Kumomoto due to earthquake), Japanese Society of Developmental Biologists, Tokyo, Japan
7. 05/20/16 Symposium speaker, Fifth International Multiple Hereditary Exostoses (MHE) Research Conference, West Palm Beach, FL
8. 10/03/15 Symposium Speaker, Society for Developmental Biology Southwest Regional Meeting, Dallas, TX
9. 05/02/15 Symposium Speaker, 22nd Weinstein Cardiovascular Conference, Boston, MA
10. 03/01/15 Symposium speaker, Gordon Research Conference on *Glycobiology: Glycans as mediators of interactions between molecules, cells and organisms*, Lucca (Barga), Italy
11. 05/05/14 Symposium Speaker, Pediatric Academic Societies (PAS) & Asian Society for Pediatric Research, Vancouver, Canada
12. 04/28/14 Symposium Chairman "From the Lab to the Capitol: A Scientist's Guide to Advocacy" FASEB, San Diego, CA.
13. 01/16/14 Keynote Speaker, AHA Heart of Gold recipient, First Annual AHA Utah Research Reception, Salt Lake City, Utah
14. 06/15/13 Symposium speaker, "Making and breaking the left-right axis: laterality in development and disease" Satellite Symposium, 17th International Congress of Developmental Biology, Cancun, Mexico
15. 6/01/13 Symposium speaker, Syndecans in Cell Regulation and Disease, Leuven, Belgium
16. 1/22/13 Symposium speaker, 5th Strategic Conference of Zebrafish Investigators, Asilomar, CA
17. 11/4/12 Symposium speaker, Fourth International Multiple Hereditary Exostoses (MHE) Research Conference, Philadelphia, PA
18. 4/29/12 Symposium speaker, VI International Meeting of the Latin American Society for Developmental Biology, Montevideo, Uruguay
19. 6/20/11 Symposium speaker, Developmental Biology Gordon Conference, Proctor Acad., NH
20. 3/18/11 Symposium speaker, Cardiovascular, Hypertension and Diabetes Symposium, University of Utah, Salt Lake City, UT
21. 10/24/10 Symposium speaker, Society for Glycobiology Symposium, American Society for Matrix Biology Meeting, Charleston, S.C.
22. 6/23/10 Symposium speaker, 43rd Annual Meeting, Japanese Society of Developmental Biologists, Kyoto, Japan
23. 3/16/10 Symposium speaker, Gordon Research Conference on *Fibroblast Growth Factors in Development and Disease*, Ventura, CA

24. 2/23/10 Symposium speaker, Keystone Symposium on *Cilia, Signaling and Human Disease*, Monterey, CA
25. 12/21/09 Symposium speaker, Lubkin Fund for MHE Research, San Diego, CA
26. 11/13/09 Symposium speaker, Society for Glycobiology, San Diego, CA
27. 10/31/09 Symposium speaker, 3rd International Multiple Hereditary Exostoses Conference, Boston, MA
28. 9/5/09 International Society for Developmental Biology, Edinburgh, Scotland
29. 5/7/09 National Committee member, Weinstein Cardiovascular Development Conference, San Francisco, CA
30. 3/17/09 Keynote speaker, Eunice Kennedy Shriver National Institute of Child Health and Human Development 6th Postdoctoral Fellow Workshop, Maritime Institute, Linthicum Heights, MD
31. 3/10/09 Symposium speaker (canceled), Vascular Biology Gordon Research Conference, Venura, CA
32. 7/27/08 Board of Directors, 67th Annual Meeting Society of Developmental Biology, Philadelphia, PA
33. 7/08/08 Symposium speaker, Proteoglycan Gordon Research Conference, NH
34. 7/02/08 Symposium speaker, Teratology Society Annual Symposium, Monterey, CA
35. 6/27/08 Symposium workshop chairman, 8th International Meeting on Zebrafish Development and Genetics, Madison, WI
36. 5/16/08 National Committee member, Weinstein Cardiovascular Development Conference, Houston, TX
37. 9/16/07 Symposium speaker, Fifth International Conference on Proteoglycans, Rio de Janeiro, Brazil
38. 8/4/07 Symposium speaker, FASEB Symposium: The Biology of Cilia and Flagella, Saxtons River, VT (canceled for lab move)
39. 2/02/07 2nd Strategic Conference of Zebrafish Investigators, Asilomar, CA.
40. 8/29/06 Symposium speaker, McLaughlin Research Institute Annual Biomedical Research Workshop, Great Falls, MT
41. 5/19/06 Symposium speaker, "Is Asymmetry the Biological Ground State?" Developmental Dynamics Annual Symposium, Salt Lake City, UT
42. 10/28/05 Keynote speaker, Southwest Regional Developmental Biology Symposium, Boulder, CO
43. 9/03/05 Symposium speaker, 15th International Society of Developmental Biologists Congress, Sydney, Australia
44. 4/11/05 Symposium speaker, 3rd Annual Cell and Developmental Biology Symposium: Origin and Development of the Vertebrate Traits, Kobe, Japan
45. 3/07/05 Symposium speaker, Gordon Research Conference on Glycobiology, Ventura, CA
46. 9/16/04 Symposium speaker, International Xenopus Meeting, Woods Hole, MA
47. 6/14/04 Symposium speaker, Membrane Biology Gordon Conference, Bristol, RI
48. 6/04/04 Symposium speaker, Developmental Biology Symposium, University of California, San Francisco, CA
49. 3/11/04 Symposium speaker, Keystone Symposia-Cardiac Development and Congenital Heart Disease, Keystone, CO
50. 2/15/04 Symposium speaker, 15th Utah Conference on Pediatric Cardiovascular Disease, Deer Valley, UT
51. 2/6/04 Symposium speaker, Translocations in Sarcoma, Molecular to Clinical Implications, Huntsman Cancer Institute, Salt Lake City, UT
52. 12/4/03 Symposium speaker, Society for Glycobiology, San Diego, CA
53. 10/21/03 Symposium speaker, Third Annual Cardiovascular Symposium, UTSW, Dallas, Tx

54. 9/21/03 Symposium speaker, 3rd International Conference on Proteoglycans, "Pathobiology of Proteoglycans," Parma, Italy
55. 9/19/03 Keynote Address, Southwest Regional Developmental Biology Meeting, Salt Lake City, UT
56. 4/14/03 Symposium speaker, FASEB/AAA Symposium on "Gastrulation", San Diego, CA
57. 4/12/03 Symposium speaker, FASEB/EB Symposium "Zebrafish plumbing: heart and vessels" session, San Diego, CA
58. 3/21/03 Keynote speaker, West Coast Regional Developmental Biology Meeting, Friday Harbor Marine Biology Laboratory, WA
59. 12/01/02 Symposium speaker, 6th International Symposium on Congenital Heart Disease, Tokyo, Japan
60. 11/18/02 Symposium speaker, American Heart Assoc. 75th Scientific Symposium, Chicago, IL
61. 8/14/02 Organizer and Moderator, American Heart Association Western Affiliate Undergraduate Round Table, Salt Lake City, UT
62. 7/8/02 Symposium speaker, Gordon Conference on Proteoglycans, Andover, NH
63. 6/12/02 Symposium speaker, 5th International Conference on Zebrafish Development and Genetics, Madison, WI
64. 5/30/02 Symposium speaker, Cold Spring Harbor Symposium on Quantitative Biology, NY
65. 8/14/01 Organizer and Moderator, American Heart Association Western Affiliate Undergraduate Round Table, Salt Lake City, UT
66. 7/23/01 Symposium speaker, West Coast Zebrafish Meeting, Seattle, WA.
67. 7/9/01 Symposium speaker, "The TGF-beta superfamily: signaling and development" FASEB Symposium, Tuscon, AZ.
68. 6/4/01 Symposium speaker, Juan March Foundation International Symposium, Madrid, Spain.
69. 5/18/01 Symposium Speaker, 11th Weinstein Cardiovascular Development Conf., Dallas, TX.
70. 4/2/01 Symposium speaker, "Patterning during Development: Insights from Zebrafish," American Association of Anatomists, Orlando, FL.
71. 3/22/01 Symposium Speaker, "Early Cardiac Development and Cardiac Laterality" Cardiovascular Development Symposium, Charleston, SC.
72. 3/2/01 Symposium speaker, 32nd Annual March of Dimes Clinical Genetics Conference, Miami, FL.
73. 11/12/00 Symposium speaker, "Model Organisms and Congenital Disease" American Heart Association 73rd Scientific Symposium, New Orleans, LA.
74. 9/30/00 Symposium speaker, 10th Robert J. Gorlin Conference on Dysmorphology, Minneapolis, MN.
75. 9/11/00 Symposium speaker, 4th Scientific Meeting of the Heart Failure Society of America, Boca Raton, FL.
76. 8/8/00 Invited participant, American Heart Association Western Affiliate Undergraduate Round Table, Salt Lake City, UT.
77. 6/9/00 Symposium speaker, 10th Weinstein Cardiovascular Development Conference, St. Louis, MO.
78. 6/3/00 Symposium speaker, UCSF Developmental Biology Symposium, San Francisco, CA.
79. 5/6/00 Presenter, American Heart Association Research Symposium, Dallas, TX.
80. 11/15/99 Symposium speaker, Rachford International Symposium "Transcriptional Control of Embryogenesis", Children's Hospital Medical Center, Cincinnati, OH.
81. 11/9/99 Symposium speaker, "State-of-the-Art" Lecture, American Heart Association 72nd Scientific Symposium, Atlanta, GA.
82. 11/7/99 Symposium speaker, "The Genetic Basis of Heart Formation: From Normal Development to Congenital Disease," American Heart Association 72nd Scientific Symposium, Atlanta, GA.

83. 8/9/99 Symposium speaker, Gordon Research Conference on Human Molecular Genetics, Newport, RI.
84. 3/14/99 Symposium speaker, 6th International Workshop on Fetal Genetic Pathology, Dead Sea, Israel.
85. 12/8/98 Symposium speaker, 5th International Symposium on Etiology & Morphogenesis of Congenital Heart Disease - Developmental Mechanisms, Tokyo, Japan.
86. 10/28/98 Symposium speaker, "Left-Right Axis and Associated Malformations" Session, American Society of Human Genetics Annual Meeting, Denver, CO.
87. 6/7/98 Symposium speaker, FASEB Summer Research Conference on "Intracellular RNA Sorting, Transport, and Localization." Snowmass, CO.
88. 5/29/98 Symposium speaker, 8th Weinstein Cardiovascular Development Conference, Nashville, TN.
89. 4/18/98 Symposium speaker, Session on "Early Development", Experimental Biology/American Association of Anatomists, San Francisco, CA.
90. 12/15/97 Symposium speaker, "Left-right asymmetry: From Molecules to Clinic" Session, American Society for Cell Biology, Washington, DC.
91. 11/18/97 Symposium speaker, Cold Spring Harbor Banbury Center, Workshop on Handedness, Cold Spring Harbor Laboratory, NY.
92. 11/8/97 Symposium speaker, "Positional Information in the Developing Heart" American Heart Association 70th Scientific Symposium, Orlando, FL.
93. 7/12/97 Symposium speaker, 5th International Congress of Vertebrate Morph., Bristol, England.
94. 5/31/97 Symposium speaker, 11th Annual Biologic Basis of Pediatric Practice Symposium "Hearts, Hands, and Laterality: The Design of the Human Body" Deer Valley, UT.
95. 3/31/97 Symposium speaker, 61st Annual Scientific Meeting of Japanese Circulation Society, Tokyo.
96. 2/3/97 Workshop invited participant, Current Advances in Defining the Zebrafish Genome, Boston, MA.
97. 10/12/96 Symposium speaker, Symposium on Vertebrate Left-Right Asymmetry, Society for Pediatric Pathology, Houston, TX.
98. 8/21/96 Symposium speaker, American Heart Association Scientific Conference on the Molecular Biology of the Normal, Hypertrophied and Failing Heart, Snowbird, UT
99. 7/12/96 Symposium speaker, Gordon Research Conference on Motile & Contractile Systems, Heniker, NH.
100. 6/7/96 Symposium speaker, 6th Weinstein Cardiovascular Development Conference, Philadelphia, PA.
101. 6/26/95 Symposium speaker, Gordon Research Conference on Developmental Biology, Andover, NH.
102. 6/3/95 Symposium speaker, 5th Weinstein Cardiovascular Development Conference, University of Rochester, NY.
103. 3/27/95 Symposium speaker, American Heart Association Scientific Conference on the Molecular, Cellular, and Functional Aspects of Cardiovascular Development, New Orleans, LA.
104. 11/26/93 Symposium speaker, "Fourth International Symposium on Etiology & Morphogenesis of Congenital Heart Disease" Tokyo, Japan.
105. 6/25/92 Symposium speaker, Gordon Research Conference on Biological Regulatory Mechanisms, Holderness, NH.
106. 2/21/91 Symposium speaker, "Biological Asymmetries and Handedness "Ciba Foundation Symposium, London, UK.

XII. INVITED DEPARTMENTAL SEMINARS

1. 1/27/16 University of Minnesota School of Medicine, Lillehei Heart Institute Seminar, Minneapolis, MN
2. 11/2/15 Washington University School of Medicine, Department of Developmental Biology, St. Louis, MO
3. 1/29/15 University of Iowa, Interdisciplinary Graduate Program in Molecular & Cellular Biology, Iowa City, IA
4. 2/26/14 University of Arizona, Department of Cellular and Molecular Medicine, Tucson, AZ
5. 5/29/13 University of Minnesota, Lillehei Heart Institute, Minneapolis, MN
6. 4/16/13 University of Oregon, Department of Chemistry and Biochemistry, Eugene, OR
7. 1/14/13 University of Pennsylvania, Institute for Regenerative Medicine and Department of Cell & Developmental Biology, Philadelphia, PA
8. 9/27/12 University of California, Santa Barbara, Department of Molecular, Cellular, & Developmental Biology, Santa Barbara, CA
9. 2/23/11 Princeton University, Department of Molecular Biology, Princeton, NJ
10. 10/19/10 Vanderbilt University, Department of Pharmacology, Memphis, TN
11. 9/21/10 The University of Chicago, Committee on Development, Regeneration, and Stem Cell Biology, Chicago, IL
12. 4/21/10 University of Minnesota, Lillehei Heart Institute, Minneapolis, MN
13. 2/09/10 Yale University Department of Genetics, New Haven, CT
14. 5/08/08 University of Minnesota, Dept. Genetics, Cell Biology and Development, Minneapolis, MN
15. 3/17/08 U.C. San Francisco, Cardiovascular Research Institute and the Gladstone Institutes of Cardiovascular Diseases, San Francisco, CA
16. 2/28/08 Albert Einstein School of Medicine, Dept. Molecular Genetics, New York, NY
17. 11/19/07 University of Pennsylvania, Department of Cell & Developmental Biology, Philadelphia, PA
18. 10/15/07 Duke University (invited by grad students in Cell & Developmental Biology Program), Department of Biology, Durham, NC
19. 10/10/07 University of Utah, Department of Neurobiology & Anatomy, Salt Lake City, UT
20. 3/22/07 Texas A&M, Department of Biology, Collegeville, TX
21. 3/15/07 Dartmouth School of Medicine, Lebanon, NH
22. 2/16/07 University of Utah, Division of Pediatric Cardiology, Salt Lake City, UT
23. 12/06/06 University of Utah, Huntsman Cancer Institute and Department of Oncological Sciences, Salt Lake City, UT
24. 11/08/06 Harvard University School of Medicine, Department of Genetics & Boston Children's Hospital, Boston, MA
25. 3/23/06 Grand Rounds speaker "Stem Cells: Current Scientific Perspective" Department of Pediatrics, University of Utah, Salt Lake City, UT
26. 11/09/05 University of Michigan, Department of Internal Medicine, Ann Arbor, MI
27. 04/19/05 Blaffer Lecture, M.D. Anderson Cancer Center, Houston, TX
28. 03/01/05 The Burnham Institute, Division of Stem Cells & Regeneration, La Jolla, CA
29. 12/2/04 University of California, San Diego, Department of Cellular and Molecular Medicine, San Diego, CA
30. 4/1/04 Nora Eccles Treadwell Distinguished Lecture, Cardiovascular Research & Training Institute, University of Utah, Salt Lake City, UT
31. 3/29/04 European Molecular Biology Laboratory, Monterotondo (Roma), Italy
32. 2/11/04 The Samuel Lunenfeld Research Institute at Mt. Sinai Hospital, Toronto, Canada
33. 1/26/04 Johns Hopkins Medical School, Institute of Genetic Medicine, Baltimore, MD
34. 12/19/03 Huntsman Cancer Institute, inaugural lecture in "Lab Lights", Salt Lake City UT

35. 1/13/03 University of Texas Medical School, Department of Physiology, San Antonio, TX
36. 12/06/02 RIKEN Centre for Developmental Biology, Kobe, Japan
37. 12/03/02 University of Tokyo, Department of Cell Biology and Anatomy, Tokyo, Japan
38. 9/05/02 University of Colorado, Boulder, Department of Molecular, Cell and Developmental Biology, Boulder, CO
39. 12/14/01 University of California, San Diego, Department of Medicine, San Diego, CA
40. 11/28/01 University of Utah, Huntsman Cancer Institute Director's Series, Salt Lake City, UT
41. 10/25/01 University of Wisconsin, Department of Anatomy, Madison, WI
42. 5/16/01 Vanderbilt University School of Medicine, Department of Cell Biology, Nashville, TN
43. 04/05/01 Columbia University College of Physicians & Surgeons, Department of Biochemistry, New York, NY.
44. 3/28/01 University of Pennsylvania School of Medicine, Department of Medicine and Department of Cell and Molecular Biology, Philadelphia, PA.
45. 1/23/01 University of Utah, Department of Pediatrics, Salt Lake City, UT
46. 11/2/00 University of Rochester School of Medicine, Center for Human Genetics and Molecular Pediatric Disease, Rochester, NY.
47. 10/18/00 University of Utah, Department of Oncological Sciences, Salt Lake City, UT
48. 12/2/99 University of Arizona, Department of Biological Sciences, Tucson, AZ.
49. 9/27/99 University of Utah, Division of Pediatric Cardiology, Salt Lake City, UT.
50. 9/8/99 University of North Carolina School of Medicine, Department of Cell Biology and Anatomy, Chapel Hill, NC.
51. 4/16/99 University of Iowa, Department of Biological Sciences, Iowa City, IA.
52. 3/3/99 Stanford University, Dept. of Developmental Biology and Genetics, Palo Alto, CA.
53. 2/9/99 M.D. Anderson Cancer Center, Blaffner Seminar Series, Department of Molecular Genetics, Houston, TX.
54. 1/28/99 Washington University, Department of Cardiovascular Medicine, St. Louis, MO.
55. 11/18/98 Yale University, Department of Cell Biology, New Haven, CT.
56. 11/4/98 Harvard Medical School, Department of Genetics, Boston, MA.
57. 5/22/98 University of Utah, Department of Neurobiology and Anatomy, Salt Lake City, UT.
58. 5/9/97 University of Minnesota, Medical School Dean's Research Seminar, Minneapolis
59. 4/14/97 UT Southwest Medical Center, Hamon Center for Basic Cancer Research, Dallas
60. 4/10/97 Harvard Medical School, Department of Cell Biology, Boston, MA.
61. 4/1/97 Tokyo Women's College, Department of Pediatric Cardiology, The Heart Institute of Japan, Tokyo, Japan.
62. 1/16/97 University of Illinois Medical School, Department of Biochemistry, Chicago, IL.
63. 12/2/96 Washington University, Department of Pediatrics and Department of Molecular Biology and Pharmacology, St. Louis, MO.
64. 11/14/96 University of Colorado, Dept. Molecular, Cell & Developmental Biology, Boulder, CO.
65. 11/8/96 Baylor Medical School, Department of Pathology, Houston, TX.
66. 10/23/96 University of Utah, Department of Pediatrics and Department of Neurobiology and Anatomy, Salt Lake City, UT.
67. 6/25/96 Harvard Medical School, Department of Microbiology and Molecular Genetics and Molecular Medicine Unit, Beth Israel Hospital, Boston, MA.
68. 6/24/96 Harvard Medical School, Massachusetts General Hospital Cardiovascular Research Center, Charleston, MA.
69. 5/21/96 Mount Sinai School of Medicine, Brookdale Center for Molecular Biology, NY, NY.
70. 4/19/96 Medical University of South Carolina, Dept. Cell Biology and Anatomy, Charleston, SC.
71. 4/10/96 University of Pennsylvania Medical School, Dept. Cell and Developmental Biology, Philadelphia, PA.
72. 4/8/96 Fox Chase Cancer Center, Institute for Cancer Research, Philadelphia, PA.
73. 2/12/96 University of Maryland, Department of Biological Sciences, Baltimore, MD.

74. 1/5/96 University of Minnesota, Dept. of Cell Biology and Neuroanatomy, Minneapolis, MN.
75. 4/13/95 Macalester College, Department of Biology, St. Paul, MN.
76. 4/3/95 Cornell University Medical College, Dept Cell Biology and Anatomy, New York, NY.
77. 2/16/95 St. Cloud State University, Department of Biology, St. Cloud, MN.
78. 11/11/94 University of Wisconsin, Department of Zoology, Madison, WI.
79. 4/21/93 University of Minnesota, Department of Orthopedic Surgery, Minneapolis, MN.
80. 4/5/93 University of Minnesota, Lab. Medicine & Pathology, Minneapolis, MN.
81. 2/18/93 University of Minnesota, Institute of Human Genetics, Minneapolis, MN.
82. 2/5/93 Carleton College, Department of Biology, Northfield, MN.
83. 1/25/93 U. Minnesota, Center for Wound Healing and Reparative Medicine, Minneapolis, MN.
84. 10/8/92 University of Colorado, Dept Molecular, Cell & Developmental Biology, Boulder, CO.
85. 1/9/92 University of Minnesota, Department of Genetics & Cell Biology, St. Paul, MN.
86. 5/22/91 Yale University School of Medicine, Department of Genetics, New Haven, CT.
87. 4/8/91 Bay Area Research in Frogs, University of California, Berkeley, CA.
88. 4/3/91 Yale University School of Medicine, Department of Anatomy, New Haven, CT.
89. 3/13/91 University of Virginia, Department of Biology, Charlottesville, VA.
90. 3/7/91 Columbia University, College of Physicians and Surgeons, Department of Anatomy & Cell Biology, New York, NY.
91. 2/15/91 Cambridge University, Department of Zoology, Cambridge, UK.
92. 2/11/91 U. Minnesota, Department of Cell Biology & Neuroanatomy, Minneapolis, MN.
93. 2/4/91 University of Rochester, Department of Biology, Rochester, NY.
94. 2/1/91 Thomas Jefferson University, Department of Biochemistry & Molecular Biology, Philadelphia, PA.

OTHER PRESENTATIONS, PUBLIC OR EDUCATIONAL

- 6/01-6/07 Monthly patient and family tours, Huntsman Cancer Institute Center for Children
- 2006-2008 Faculty Advisor, "Piping Utes" University of Utah Bagpipe Club
- 9/9-12/2005 Teton Science School for 5th Grade Students, Jackson Hole, WY
- 2/3/03 Leap 3 undergraduate student program, lab tour
- various dates Science Fair Judge for middle schools
- 5/31/00 Lecture and lab tour, East High School AP Biology class, Salt Lake City, UT.
- 7/10 – 6/12 Secretary and founding Board Member, Utah Pibroch Society (non-profit organization to promote classical Piobaireachd music education)