

BIOGRAPHICAL SKETCH

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NAME H. Joseph Yost	POSITION TITLE Professor of Oncological Sciences; Director, Huntsman Cancer Institute Center for Children		
eRA COMMONS USER NAME josephyost			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Creighton University, Omaha, NE	B.S.	1981	Honors Program & Biol.
The University of Chicago, Chicago, IL	Ph.D.	1987	Genetics
The University of Chicago, Chicago, IL	(post-doc)	1988	Molecular Biology
University of California, Berkeley, CA	(post-doc)	1991	Developmental Biology

A. Positions and Honors

Positions

- 9/81 - 8/87 Ph. D., Committee on Genetics (Advisor: Dr. Susan L. Lindquist) The University of Chicago, Chicago, IL.
- 8/87 - 3/88 Postdoctoral Research Associate (Advisor: Dr. Susan L. Lindquist) Department of Molecular Genetics and Cell Biology The University of Chicago, Chicago, IL.
- 4/88 - 3/91 NIH Postdoctoral Research Fellow (Advisor: Dr. John C. Gerhart) Department of Molecular and Cell Biology University of California, Berkeley, CA.
- 4/91 - 6/91 American Cancer Society Senior Postdoctoral Fellow (Advisor: Dr. John C. Gerhart) Department of Molecular and Cell Biology, University of California, Berkeley, CA.
- 7/91 - 6/97 Assistant Professor, Dept. Cell Biology and Neuroanatomy, U. Minnesota, Minneapolis, MN.
- 7/94 - 7/96 McKnight Land-Grant Professorship, University of Minnesota.
- 5/94 - 7/97 Member, Institute of Human Genetics, U. Minnesota.
- 7/97 - 8/97 Associate Professor (tenure), Dept. Cell Biology and Neuroanatomy, U. Minnesota.
- 7/96 - 6/02 American Heart Association Established Investigator.
- 8/97 - 6/01 Associate Professor (tenure), Dept. Oncological Sciences, University of Utah, Salt Lake City, UT
- 8/97 - 6/02 Adjunct Associate Professor, Dept. Pediatrics, University of Utah, Salt Lake City, UT.
- 8/97 - present Investigator, Huntsman Cancer Institute, University of Utah, Salt Lake City, UT.
- 7/01 - present Professor, Dept. Oncological Sciences, University of Utah, Salt Lake City, UT.
- 7/01 - present Director, Center for Children, Huntsman Cancer Institute, Salt Lake City, UT.
- 7/02 - present Adjunct Professor, Dept. Pediatrics, University of Utah, Salt Lake City, UT.
- 7/01 - present Program Leader, NCI Cancer Center, University of Utah, Salt Lake City, UT

Honors

Scholarships, Awards and Honors: Board of Directors, Society for Developmental Biology (2002-05; 2005-08); Associate Editor, *Developmental Dynamics* (2002-present); Editorial Board, *Developmental Biology* (1997-present); Guest Editor, *Developmental Genetics* (1998); American Heart Association Established Investigators (1996-2001); University of Minnesota McKnight Land-Grant Professorship (1994 - 1996); AHA California Affiliate Senior Research Fellowship (1991); American Cancer Society Senior Postdoctoral Fellowship (1991); NIH Postdoctoral Fellowship (4/88-3/91). **Grant Advisory Committee Service:** NIHHLB Task Force on Cardiovascular Development (2001) PANELS: Inaugural member, NIH DEV-1 (2002-2006); NIH/NIHLB PPG (2000); NSF Developmental Biology (2001-2005; 1996-2000); NIH Cell Biology and Physiology -1 Study Section, ad hoc (1998); American Heart Association, National (1996-2000); panel chairman, AHA, Western Affiliate (1999-2002); NIH National Institute of Heart, Lung and Blood RFA (1995); AHA, MN Affiliate (1995-1997). **External Reviewer:** Welcome Trust Fund, UK; Medical Research Council, UK; National Science

Foundation; Israel Science Foundation, Israel Academy of Sciences and Humanities; Natural Sciences and Engineering Research Council of Canada; Medical Research Council of Canada; March of Dimes.

B. Selected peer-reviewed publications (88 total):

1. H.J. Yost (1990). Inhibition of proteoglycan synthesis eliminates left-right asymmetry in *Xenopus laevis* cardiac looping. **Development** 110, 865-874.
2. H.J. Yost (1992). Regulation of vertebrate left-right asymmetries by extracellular matrix. **Nature** 357, 158-161.
3. H.J. Yost (1995). Vertebrate left-right development. **Cell** 82, 689-692.
4. B.A. Hyatt, J.L. Lohr and H.J. Yost (1996). Initiation of vertebrate left-right axis formation by maternal Vg1. **Nature** 384, 62-65.
5. B.A. Hyatt and H.J. Yost (1998). The Left-Right Coordinator: The role of Vg1 in organizing left-right axis formation. **Cell** 93, 37-46.
6. B.W. Bisgrove, J.J. Essner, H.J. Yost (1999). Regulation of midline development by antagonism of *lefty* and *nodal* signaling. **Development** 126, 3253-3262.
7. H.J. Yost (1999). Diverse Initiation in a Conserved Left-Right Pathway? **Current Opinions in Genetics and Development** 9, 422-426.
8. K.E. Schroeder, M.L. Condic, L.M. Eisenberg and H.J. Yost (1999). Spatially regulated translation in embryos: Asymmetric expression of maternal wnt-11 along the dorsal-ventral axis in *Xenopus*. **Developmental Biology** 214, 288-297.
9. B.W. Bisgrove, J.J. Essner, H.J. Yost (2000) Multiple pathways in the midline regulate concordant brain, heart and gut left-right asymmetry. **Development** 127, 3567-3579.
10. J. Liu, J. Stevens, C.A. Rote, H.J. Yost, Y. Hu, K.L. Neufeld, R.L. White, N. Matsunami (2001) Siah-1 mediates a novel B-catenin degradation pathway linking p53 to the Adenomatous Polyposis Coli protein. **Molecular Cell** 7, 927-936.
11. K. L. Kramer and H.J. Yost (2002) Ectodermal Syndecan 2 regulates left-right axis formation in migrating mesoderm as a cell non-autonomous Vg1 co-receptor. **Developmental Cell** 2, 115-124.
12. J.J. Essner, K.J. Vogan, M.K. Wagner, C.J. Tabin, H.J. Yost, M. Brueckner (2002). Conserved function for embryonic nodal cilia. **Nature** 418, 37-8.
13. W.W. Branford and H.J. Yost (2002) Lefty dependent antagonism of Nodal and Wnt signaling pathways is essential for normal gastrulation. **Current Biology** 12, 2136-2141.
14. K.L. Kramer, J.E. Barnette, and H.J. Yost (2002) PKC γ regulates syndecan-2 inside-out signaling during *Xenopus* left right development. **Cell** 111, 981-990.
15. M. Sato and H.J. Yost (2003). Cardiac neural crest contributes to cardiomyogenesis in zebrafish. **Developmental Biology**. 257, 127-139.
16. B.W. Bisgrove, S.H. Morelli, and H.J. Yost (2003). Genetics of Human Laterality disorders: Insights from vertebrate model systems. **Annual Review Genomics and Human Genetics**. 4, 1-32
17. J.D. Amack and H.J. Yost (2004) The T box transcription factor No Tail in ciliated cells controls zebrafish left-right asymmetry. **Current Biology** 14, 685-90
18. J.J. Essner, J.D. Amack, M.K. Nyholm, E.B. Harris, and H.J. Yost (2005) 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** 132, 1247-60.
19. L.D. Nadauld, D.N. Shelton, S. Chidester, H.J. Yost, and Jones, D. A. (2005) The zebrafish retinol dehydrogenase, rdh11, is essential for intestinal development and is regulated by the tumor suppressor adenomatous polyposis coli. **J. Biol Chem** 280, 30490-30495.
20. M. Yoshigi, L. M. Hoffman, C.C. Jensen, H.J. Yost, and M.C. Beckerle (2005) Mechanical force mobilizes zyxin from focal adhesions to actin filaments and regulates cytoskeletal reinforcement. **J. Cell Biol.** 171: 209-215.
21. B.W. Bisgrove, B.S. Snarr, A. Emrazian, H. J. Yost (2005) Polaris and Polycystin-2 in dorsal forerunner cells and Kupffer's vesicle are required for specification of the zebrafish left-right axis. **Developmental Biology**, 287(2):274-88.
22. M. Sato, H.-J. Tsai and H.J. Yost (2006). *Semaphorin3D* regulates invasion of cardiac neural crest cells into the primary heart field. **Developmental Biology** 289, 12-21.

23. B.W. Bisgrove and H.J. Yost (2006). The roles of cilia in developmental disorders and disease. **Development** 133, 4131-43.

C. Research Support. Current Research Support

R01 HL57840-10 (Yost) NIH/Heart, Lung and Blood 4/1/97 – 6/30/06

“Molecular pathway of cardiac left-right development”

This project analyzes the role of TGF beta family cell-cell signaling pathways in the initiation and maintenance of left-right axis formation in *Xenopus* and uses a high-throughput screen for novel genes in these pathways.

R01 HL66292-06 (Yost) NIH/Heart, Lung and Blood 8/1/01 – 6/30/10

“Genetic regulation of left-right organ discordance”

The major focus of this grant is to identify the genetic pathways in the embryonic midline (notochord and floorplate) that control the coordinated left-right development of the heart, brain and gut in zebrafish.

R01 HL075472-03 (Yost) NIH/Heart, Lung and Blood 1/01/04-12/31/08

“Molecular Roles of Syndecans in Development”

The long-term goal of this research is to significantly increase our understanding of the genes and mechanisms that control cardiovascular development, cell-cell signaling, extracellular matrix formation, and cell migration with a focus on proteoglycans. The principles derived from this research will be applicable to a wide range of cell-cell signaling events in development and disease.

R21 HD052078-01 (Yost) NIH/Child Health and Human Development 7/01/06 – 6/30/08

“Gene Targeting in Zebrafish”

This research is developing targeted mutagenesis, gene knock-out and gene knock-in technologies in zebrafish.

R01 CA116468-02 (PI: Jones; Yost 5%) NIH/National Cancer Institute 07/01/05 – 6/30/10

“APC and Retinoids in Zebrafish Enterocyte Development”

The long-term goal of this research is to identify pathways in gut development and GI cancers.

P01 HD048886-01 (PI: D. Grunwald; Project 2 PI: Yost) 12/01/07 – 11/30/12

Project 2: *“Patterning and Morphogenesis of Kupffer’s Vesicle by Transcriptional Networks”*

This program project grant explores transcriptional networks in mesoderm, cardiovascular and neural development.

P30 CA42014-14 (PI: M. Beckerle) NIH/National Cancer Institute 07/01/05 – 6/30/10

“Cancer Center Support Grant”

Cell Response Program Co-Leader: H. Joseph Yost

This CCSG provides core facilities support and administrative support for the cancer center.

Completed Research Support (selected)

P01 HL61006-02 (PI: Arnold Strauss and Dan Kelly, U. Washington) NIH 01/01/99 – 12/31/03

“Molecular Determinants of Pediatric Heart Disease” (SCOR)

G20 RR14285-01 (Grunwald/Yost) NIH 07/01/01 – 06/30/05

“Zebrafish Research Core Facility”