

## CURRICULUM VITAE

**Mark Alan Peifer**

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### Primary appointment

Michael Hooker Distinguished Professor  
Department of Biology  
CB#3280, Coker Hall  
University of North Carolina  
Chapel Hill NC 27599-3280

### Other appointments

Faculty Member  
Curriculum in Genetics and Mol. Biology  
Curriculum in Neurobiology  
Curriculum in Cell Biology and Physiology  
Member, Lineberger Comprehensive Cancer Center

### Academic and research record

St. Olaf College, Northfield, MN

B.A. Biology, 1980

Research Associate- The structure of zein genes in corn  
Lab of Dr. Irwin Rubenstein, Univ. of Minnesota, St. Paul, MN

1980-1981

Ph. D. Dissertation- Regulation of the bithorax complex  
Lab of Dr. Welcome Bender, Harvard University, Boston, MA

1981-1988

Postdoctoral Fellow, Lab of Dr. Eric Wieschaus  
Princeton University, Princeton NJ

1988-1991

Assistant Professor of Biology  
Associate Professor of Biology  
Professor of Biology  
George and Alice Welsh Distinguished Term Professor

1992-1997  
1997-2002  
2002-present  
2001-2006

Michael Hooker Distinguished Professor  
University of North Carolina-Chapel Hill

2006-present

### Fellowships, Awards, Professional Duties

J. Carlyle Sitterson Award for Excellence in Freshman Teaching 2012

Elected Fellow, American Society for Cell Biology (ASCB) 2020

Elected Fellow, American Association for the Advancement of Science 2010

Editorial Board, Journal of Cell Biology 2001-present

Editorial Board, Journal of Cell Science 2006-present

Editorial Board, Developmental Biology 2007-2014

Member, Center for Scientific Review Advisory Council 2019-2022

Member, National Advisory General Medical Sciences Council 2015-2018

Member, NIH CDF4/ICI Study Section 2004-2008

Member, College of CSR Reviewers 2010-2012

Ad-hoc Member, National Advisory General Medical Sciences Council, May 2014

Ad-hoc Member, NIH ICI 2011; NIH CDF4 Study Section, 1999, 2003, 2004; NIH CDF-5 2002  
NIH Program Project or Special Emphasis Panels: NIH/NCI 2000, 2010; 2012; CDF-5 2001; CDF2 2002  
Chair NIH ZRG1 Special Emphasis Panel, 2009; NCI Site visit 2021

Member, ASCB Council 2012-2014

Member, Public Policy Committee of the ASCB: 2018-present

Member, Education Committee of the ASCB: 2014-2017

Member, International Affairs Committee of the ASCB:	2006-2010
President, Fly Board (represents Drosophila community and organizes North American Drosophila Conference)	2019-2020
Co-PI and Steering Committee member of the Promoting Active Learning and Mentoring (PALM) Network, an NSF funded program to increase the use of active learning in undergraduate lecture courses by creating funded matches between experienced mentors and fellows. 2014-2019	
Co-PI and co-Director of the NSF-funded Summer Undergraduate Research Experience (SURE-REU) Program in Biological Mechanisms at UNC-Chapel Hill	2021-present
Presented the Keynote Lecture, Gordon Conference, Cell Contact and Adhesion	June 2011
Hooker Distinguished Professor	July 2006-present.
George and Alice Welsh Distinguished Term Professor	2001-2006
Presented the Keynote Lecture, Keystone Symposium, Intercellular Junctions	February 2000
Recipient of 1999 Phillip and Ruth Hettleman Prize for Artistic and Scholarly Achievements by Young Faculty at UNC-CH	1999
US Army Breast Cancer Research Program Career Development Award	1998-2002
Searle Scholar	1992-1995
National Institutes of Health Postdoctoral Fellowship	1988-1991
National Science Foundation Predoctoral Fellowship	1981-1984
Graduated Summa cum laude, Phi Beta Kappa, and with Departmental Distinction in Biology	May 1980

Ongoing Research and Training Support

1 R35 GM118096 (Mark Peifer, P.I) July 2016-August 2026

NIH/NIGMS

Regulating cell fate and shaping the body plan during morphogenesis and their alteration during oncogenesis

\$ 2,918,225 total costs \$386,556 Direct Costs per year

This award is part of the new MIRA Program and thus does not have specific Aims. It supports all of our lab's work in studying cell adhesion, cytoskeletal regulation, Wnt signaling and genome stability. It thus replaced both of the NIH R01 Awards below.

NSF 19-582 2048087 (Mark Peifer, co-PI) 03/01/21-2/29/24 0.09 Calendar

National Science Foundation

REU Site: Summer Undergraduate Research Experience in Biological Mechanisms

\$122,710 Direct Costs per year

This grant supports an NSF Research Experience for Undergraduates (REU) Program at UNC-Chapel Hill, of which Dr. Peifer is co-PI. It funds 10 slots for undergraduates from other Universities to carry out summer research in labs doing biological research at UNC. It focuses on providing slots for students from groups underrepresented in science, or at colleges and universities without major research opportunities. Dr. Peifer's lab receives no funds from this grant. Program rules require that co-PIs receive a small amount of salary support. This is set as 0.09 calendar months. -

Past Research Support

5 R01 GM47857-23

Mark Peifer, P.I.

January 2013-December 2017

NIH/NIGMS

Cell adhesion, signal transduction, and cytoskeletal regulation in *Drosophila*.

The major goals of this project were to determine how cadherin-based cell adhesion is regulated, and how adhesion and cytoskeletal dynamics are coordinated.

2 RO1 GM672365-09

Mark Peifer, PI

August 2013-July 2018

NIH/NIGMS

A model system to study the tumor suppressor APC

The major goals of this grant were to examine the roles of *Drosophila* APC2 in Wntless signaling and cytoskeletal regulation.

### Publications

162. Perez-Vale, K.Z.\*, Yow, K.D.\*, Gurley, N. J., Greene, M., and Peifer, M. (2023) Rap1 regulates apical contractility to allow embryonic morphogenesis without tissue disruption and acts in part via Canoe-independent mechanisms. *Molecular Biology of the Cell* 34, doi.org/10.1091/mbc.E22-05-0176
161. Peifer, M. (2022). To condense or not to condense: Wnt regulation by centrosome-nucleated biomolecular condensates. *Proceedings of the National Academy of Sciences-USA* 119, e2213905119.
160. Bischoff, M.C., and Peifer, M. (2022) Cell biology: Keeping the epithelium together when your neighbor divides. *Current Biology* 32, R1025-R1027.
159. Fernandez-Gonzalez, R., and Peifer, M. (2022) Powering morphogenesis: multiscale challenges at the interface of cell adhesion and the cytoskeleton. *Molecular Biology of the Cell* 33, doi.org/10.1091/mbc.E21-09-0452.
158. Yu-Kemp, H.-C., Szymanski, R.A., Cortes, D.B., Gadda, N.C., Lillich, M.I., Maddox, A.S., and Peifer, M. (2021) Micron-scale supramolecular myosin arrays help mediate cytoskeletal assembly at mature adherens junctions. *Journal of Cell Biology* 221: e202103074.
157. Perez-Vale, K.Z., Yow, K.D., Johnson, R. I., Byrnes, A.E., Finegan, T.M., Slep, K.C., and Peifer, M. (2021) Multivalent interactions make adherens junction-cytoskeletal linkage robust during morphogenesis. *Journal of Cell Biology* 220: e202104087.
156. Peifer, M. (2021). Looking back on a life of unacknowledged privilege and a call to action. *Molecular Biology of the Cell* 32:1081-1085 .
155. Rogers, E.M., Allred, S.C., and Peifer, M. (2021). Abelson kinase's intrinsically disordered region plays essential roles in protein function and protein stability. *Cell Communication and Signaling* 9:27. doi: 10.1186/s12964-020-00703-w.
154. Perez-Vale, K.Z., and Peifer, M. (2020). Orchestrating morphogenesis: building the body plan by cell shape changes and movements. *Development* 147, dev191049.
153. Schmidt, A., and Peifer, M. (2020). Scribble and Dlg organize a protection racket to ensure apical-basal polarity. *Proc. Nat. Acad. Sci. USA* 117, 13188-13190.
152. Schaefer, K.N., Pronobis, M., Williams, C.E., Zhang, S., Bauer, L., Goldfarb, D., Yan, F., Major, M.B., Peifer, M. (2020). Wnt Regulation: Exploring Axin-Disheveled interactions and defining mechanisms by which the SCF E3 ubiquitin ligase is recruited to the destruction complex. *Molecular Biology of the Cell* 31, 992-1014.
151. Yu-Kemp, H.-C., and Peifer, M. (2020). Good fences make good neighbors: Crumbs regulates Rho-kinase dynamics to assemble a tissue boundary. *Developmental Cell* 52, 255-256.
150. Peifer, M. (2020). "The Eighth Day of Creation": looking back across 40 years to the birth of molecular biology and the roots of modern cell biology. *Molecular Biology of the Cell* 31, 81-86.
149. Bonello, T.T., Choi, W., and Peifer, M. (2019). Scribble and Discs-large direct initial assembly and positioning of adherens junctions during establishment of apical-basal polarity. *Development* 146, pii: dev180976.
148. Spracklen, A.J., Thornton-Kolbe, E.M., Bonner, A.N., Florea, A., Compton, P.J., Fernandez-Gonzalez, R., and Peifer, M. (2019). The Crk adapter protein is essential for *Drosophila* embryogenesis where it regulates multiple actin-dependent morphogenic events. *Molecular Biology of the Cell* 30, 2399-2421.
147. Manning, L.A., Perez-Vale, K.Z., Schaefer, K.N., Sewell, M.T., Peifer, M. (2019). The *Drosophila* Afadin and ZO-1 homologs Canoe and Polychaetoid act in parallel to maintain epithelial integrity when challenged by adherens junction remodeling. *Molecular Biology of the Cell* 30, 1938-1960.
146. Poulton, J.S., McKay, D.J., Peifer, M. (2019). Centrosome Loss Triggers a Transcriptional Program To Counter Apoptosis-Induced Oxidative Stress. *Genetics* 212, 187-2011. doi: 10.1534/genetics.

145. Schaefer, K.N., and Peifer M. (2019). Wnt/Beta-catenin signaling regulation and a role for biomolecular condensates. *Developmental Cell* 48, 429-444.
144. Bonello, T.T. and Peifer, M. (2019). Scribble: A master scaffold in polarity, adhesion, synaptogenesis and proliferation. *Journal of Cell Biology* 218, 742-756.
143. Manning, L.A., and Peifer, M. (2019). Getting into shape: tissue tension drives oriented cell divisions during organogenesis. *EMBO Journal* 38, e101246.
142. Perez-Vale, K.Z., and Peifer, M. (2018). Modulating Apical-Basal Polarity by Building and Deconstructing a Yurt. *Journal of Cell Biology* 217: 3772-3773.
141. Schaefer, K.N., Bonello, T.T., Zhang, S., Williams, C.E., Roberts, D.M., McKay, D.J, and Peifer, M. (2018). Supramolecular assembly of the beta-catenin destruction complex and the effect of Wnt signaling on its localization, molecular size, and activity in vivo. *PLoS Genetics* 14:e1007339.
140. Fadero, T.C., Gerbich, T.M., Rana, K., Suzuki, A., DiSalvo, M., Schaefer, K.N., Heppert, J.K., Boothby, T.C., Goldstein, B., Peifer, M., Allbritton, N.L., Gladfelter, A.S., Maddox, A.S., Maddox P.S. (2018). LITE microscopy: Tilted light-sheet excitation of model organisms offers high resolution and low photobleaching. *Journal of Cell Biology* 217, 1869-1882.
139. Bonello, T.T., Perez-Vale, K.Z., Sumigray, K.D., and Peifer, M. (2018) Rap1 acts via multiple mechanisms to position Canoe/Afadin and adherens junctions and mediate apical-basal polarity establishment. *Development* 145, dev157941.
138. Peifer M. (2017). The argument for diversifying the NIH grant portfolio. *Molecular Biology of the Cell* 28(22):2935-2940.
137. Gladfelter, A.S., and Peifer M. (2017). What your PI forgot to tell you: why you actually might want a job running a research lab. *Molecular Biology of the Cell* 28, 1724-1727.
136. Poulton, J.S., Cuningham, J.C., and Peifer, M. (2017). Centrosome and Spindle Assembly Checkpoint Loss Leads to Neural Apoptosis and Reduced Brain Size. *Journal of Cell Biology* 216, 1255-1265.
135. Pronobis, M.I., Deutch, N., Posham, V., Mimori-Kiyosue, Y. and Peifer, M. (2017). Reconstituting regulation of the canonical Wnt pathway by engineering a minimal  $\beta$ catenin destruction machine. *Molecular Biology of the Cell* 28:41-53
134. Pronobis, M.I., Deutch, N., and Peifer, M. (2016). The Miraprep: A protocol that uses a Miniprep kit and provides Maxiprep yields. *PLoS One* 11, e0160509.
133. Rogers, E.M., Spracklen, A.J., Bilancia, C.G., Sumigray, K.D., Allred, S.C., Nowotarski, S.N., Schaefer, K. N., Ritchie, B.J., and Peifer, M. (2016). Abelson kinase acts as a robust, multifunctional scaffold in regulating embryonic morphogenesis. *Molecular Biology of the Cell* 27, 2613-2631.
132. Choi, W., Acharya, B.R., Peyret, G., Fardin, M-A. Mège, R-M., Ladoux, B., Yap, A.S., Fanning, A.S., Peifer, M. (2016). Remodeling the zonula adherens in response to tension and the role of afadin in this response. *Journal of Cell Biology* 213, 243-60.
131. Spracklen, A.J., and Peifer, M. (2015). Actin and Apical Constriction: Some (Re)-Assembly Required. *Developmental Cell* 35, 662-4.
130. Pronobis, M.I., Rusan, N.M., and Peifer, M. (2015). A novel GSK3-regulated APC:Axin interaction regulates Wnt signaling by driving a catalytic cycle of efficient  $\beta$ catenin destruction. *eLife* 4, e08022
129. Lerit, D.A., Jordan, H.A., Poulton, J.S., Fagerstrom, C.J., Galletta, B.J., Peifer, M., and Rusan, N.M. (2015). Interphase centrosome organization by the PLP-Cnn scaffold is required for centrosome function. *Journal of Cell Biology* 210, 79-97.
128. Poulton, J.S., Cuningham, J.C., and Peifer, M. (2014). Acentrosomal *Drosophila* epithelial cells exhibit abnormal cell division, leading to cell death and compensatory proliferation. *Developmental Cell* 30,731-45.
127. Nowotarski, S.H., McKeon, N., Moser, R.J., and Peifer, M. (2014). The actin regulators Enabled and Diaphanous direct distinct protrusive behaviors in different tissues during *Drosophila* development. *Molecular Biology of the Cell* 25, 3147-65.
126. Nowotarski, S.H., and Peifer, M. (2014). Cell Biology: A tense but good day for actin at cell-cell junctions. *Current Biology* 24, R688-90
125. Winkelman, J.D., Bilancia, C.G. Peifer, M., and Kovar, D.R. (2014). Ena/VASP Enabled is a highly processive actin polymerase tailored to self-assemble parallel-bundled F-actin networks with Fascin. *Proceedings of the National Academy of Science USA* 111, 4121-6.
124. Bilancia, C.G. ,Winkelman, J.D., Tsygankov, D., Nowotarski, S.H. , Sees, J.A., Comber, K., Evans, I., Lakhani, V., Wood, W., Elston, T.C., Kovar, D.R., and Peifer, M. (2014). Enabled negatively regulates Diaphanous-driven actin dynamics in vitro and in vivo. *Developmental Cell* 28, 394-408.

123. Tsygankov, D., Bilancia, C.G., Vitriol, E.A., Hahn, K.M., Peifer, M.\*, Elston, T.C.\* (\*=co-corresponding). (2014) CellGeo: a Computational Platform for the Analysis of Shape Changes in Cells with Complex Geometries. *Journal of Cell Biology* 204, 443-460,
122. Manning A.J., Peters, K.A., Peifer, M.\*, and Rogers, S.L.\*. (\*=co-corresponding) (2013) Regulation of Epithelial Morphogenesis by the G-Protein Coupled Receptor Mist and its Ligand Fog. *Science Signaling* 6, ra98.
121. Poulton, J.S., Mu, F.W., Roberts, D.M., and Peifer, M. (2013). APC2 and Axin promote mitotic fidelity by facilitating centrosome separation and cytoskeletal regulation. *Development* 140, 4226-4236.
120. Ellis, S.J., Goult, B.T., Fairchild, M.J., Harris, N.J., Long, J., Lobo, P., Czerniecki, S., Van Petegem, F., Schöck, F., Peifer, M., Tanentzapf, G. (2013) Talin autoinhibition is required for morphogenesis. *Current Biology* 23, 1825-33.
119. Choi, W., Harris, N. J., Sumigray, K.D., and Peifer, M. (2013). Rap1 and Canoe/afadin are essential for establishment of apical-basal polarity in the *Drosophila* embryo. *Molecular Biology of the Cell* 24, 945-963.
118. Gao, L., Shao, L., Higgins, C.D., Poulton, J.S., Peifer, M., Davidson, M.W., Wu, X., Goldstein, B., and Betzig, E. (2012) Noninvasive Imaging of Three-Dimensional Dynamics in Thickly Fluorescent Specimens Beyond the Diffraction Limit. *Cell* 151, 1370-1385.
117. Sumigray, K.D. and Peifer, M. (2012) Cell shape by coercion: Par1 and aPKC put the squeeze on junctions. *Developmental Cell* 22, 907-908.
116. Roberts, D.M., Pronobis, M.I., Poulton, J.S., Kane, E.G., and Peifer, M. (2012) Regulation of Wnt signaling by the tumor suppressor APC does not require ability to enter the nucleus nor a particular cytoplasmic localization. *Molecular Biology of the Cell*, 23, 2041-56.
115. Pronobis, M.I., and Peifer, M. (2012) Wnt signaling: The many interfaces of  $\beta$ -catenin. *Current Biology* 22, R137-139.
114. Roberts, D.M., Pronobis, M.I., Alexandre, K.M., Rogers, G.C., Schneider, D.E., Jung, K.-C., Poulton, J.S., McKay, D. J., and Peifer, M. (2012) Defining components of the  $\beta$ catenin destruction complex and exploring its regulation and mechanisms of action during development. *PLoS One* 7: e31284.
113. Choi, W. , and Peifer, M. (2011). Arranging a Cellular Checkerboard. *Science* 333, 1099-110.
112. Sawyer, J.K., Choi, W. , Jung, K.-C., He, L., Harris, N.J., and Peifer, M., (2011). A contractile actomyosin network linked to adherens junctions by Canoe/afadin helps drive convergent extension. *Molecular Biology of the Cell* 22: 2491-2508.
111. Choi, W. , Jung, K.-C., Nelson, K.S., Bhat, M.A., Beitel, G.J., Peifer, M., and Fanning, A.S. (2011). The single *Drosophila* ZO-1 protein Polychaetoid regulates embryonic morphogenesis in coordination with Canoe/Afadin and Enabled. *Molecular Biology of the Cell* 22: 2010-2030.
110. Roberts, D.M., Pronobis, M.I., Poulton, J.S., Waldmann, J.D., Stephenson, E.M., Hanna, S., and Peifer, M. (2011). Deconstructing the  $\beta$ catenin destruction complex: mechanistic roles for the tumor suppressor APC in regulating Wnt signaling. *Molecular Biology of the Cell* 22:1845-63.
109. Homem, C.C.F., and Peifer, M. (2009). Exploring the roles of Diaphanous and Enabled activity in shaping the balance between filopodia and lamellipodia. *Molecular Biology of the Cell* 20, 5138-5155.
108. Sawyer, J.K, Harris, N. J, and Peifer, M. (2009) Morphogenesis: Multitalented GTPases seeking new jobs. *Current Biology* 19, R985-7..
107. Roeth, J.F., Sawyer, J.K., Wilner, D.A., and Peifer, M. (2009). Rab11 Helps Maintain Apical Crumbs and Adherens Junctions in the *Drosophila* Embryonic Ectoderm. *PLoS One* 4, e7634. .
106. Gates, J., Nowotarski, S.H., Yin, H., Mahaffey, J.P., Bridges, T., Herrera, C., Homem, C.C.F., Janody, F., Montell, D.J. and Peifer, M. (2009) Enabled and Capping protein play important roles in shaping cell behavior during *Drosophila* oogenesis. *Developmental Biology* 333:90-107.
105. Cadigan, K.M., and Peifer, M. (2009) Wnt Signaling from Development to Disease: Insights from Model Systems. *Cold Spring Harb Perspect Biol* 1, a002881 doi: 10.1101/cshperspect.
104. Sawyer, J.K., Harris, N.J., Slep, K.C., Gaul, U., and Peifer, M. (2009) The *Drosophila* afadin homolog Canoe regulates linkage of the actin cytoskeleton to adherens junctions during apical constriction. *Journal of Cell Biology* 186:57-73.
103. Harris, T.J.C., Sawyer, J.K., and Peifer, M. (2009). How the cytoskeleton helps build the embryonic body plan: Models of morphogenesis from *Drosophila*. *Current Topics in Developmental Biology* 89, 55-85.
102. Rogers, G.C., Rusan, N.M., Roberts, D.M., Peifer, M., and Rogers, S.L. (2009). The SCF<sup>Slimb</sup> ubiquitin-ligase regulates Plk4/Sak levels to block centriole reduplication. *Journal of Cell Biology* 184, 225-239.

101. Duncan, M.C., and Peifer, M. (2008). Regulating polarity by directing traffic: Cdc42 prevents adherens junctions from Crumblin' aPart. *Journal of Cell Biology* 183: 971-974.
100. Rusan, N.M., Akong, K., and Peifer, M. (2008). Putting the model to the test: are APC proteins essential for neuronal polarity, axon outgrowth and axon targeting? *Journal of Cell Biology* 183, 203-212.
99. Rusan, N.M., and Peifer, M. (2008). Original CIN: reviewing roles for APC in chromosome instability. *Journal of Cell Biology* 181: 719-726.
98. Rogers, G.C., Rusan, N.M., Peifer, M. and Rogers, S.L. (2008). A Multi-Component Assembly Pathway Contributes to the Formation of Acentrosomal Microtubule Arrays in Interphase *Drosophila* cells. *Molecular Biology of the Cell* 19:3163-78.
97. Gottardi, C.J., and Peifer, M. (2008). Terminal regions of  $\beta$ -catenin come into view. *Structure* 16, 336-338.
96. Homem, C.C.F., and Peifer, M. (2008) Diaphanous regulates myosin and adherens junctions to control cell contractility and protrusive behavior during morphogenesis. *Development* 135, 1005-1018.
95. Stevens, T L., Rogers, E M., Koontz, L. M. , Fox, D. T., Homem, C. C.F., Nowotarski, S. H., Artabazon, N. B., and Peifer, M. (2008). Using Bcr-Abl to examine mechanisms by which Abl kinase regulates morphogenesis in *Drosophila*. *Molecular Biology of the Cell* 19 378-393.
94. Roberts, D.M., Slep, K.C., and Peifer, M. (2007). It takes more than two to tango: Dishevelled polymerization and Wnt signaling. *Nature Structural and Molecular Biology* 14, 463-465.
93. Gates, J., Mahaffey, J.P., Rogers, S.L., Emerson, M., Rogers, E.M., Sottile, S.L., Van Vactor, D., Gertler, F.B., and Peifer, M. (2007). Enabled plays key roles in Embryonic Epithelial Morphogenesis in *Drosophila*. *Development* 134, 2027-2039.
92. Harris, T.J.C., and Peifer, M. (2007). aPKC controls microtubule organization to balance adherens junction symmetry and planar polarity during development. *Developmental Cell* 12 727-738.
91. Rusan, N.M., and Peifer, M. (2007). A role for a novel centrosome cycle in asymmetric cell division. *Journal of Cell Biology* 177, 13-20.
90. Hayden, M.A., Akong, K., and Peifer, M. (2007). Novel roles for APC family members and Wingless/Wnt signaling during *Drosophila* brain development. *Developmental Biology*, 305, 358-376.
89. Fox, D.T., and Peifer, M. (2007). Abelson kinase and RhoGEF2 regulate actin organization during cell constriction in *Drosophila*. *Development* 134, 567-578.
88. Fox, D.T., and Peifer, M. (2007). Cell adhesion: Separation of p120's powers? *Current Biology* 17, R24-R27.
87. McCartney, B.M., Price, M.H., Webb, R., , Hayden, M.A., Holot, L., Zhou, M, Bejsovec, A., and Peifer, M. (2006). Testing hypotheses for the functions of APC family proteins using null and truncation alleles in *Drosophila*. *Development* 133 2407-2418.
86. Price, M.H., Roberts, D.M., McCartney, B.M., Jezuit, E., and Peifer, M. (2006). Cytoskeletal dynamics and cell signaling during planar polarity establishment in the *Drosophila* embryonic denticle. *Journal of Cell Science* 119: 403-415.
85. Gates, J., and Peifer, M. (2005). Can 1000 reviews be wrong? Actin, alpha-catenin and Adherens Junctions. *Cell* 123, 769-772.
84. Fox, D.T., Homem, C.C.F., Myster, S.H., Wang, F., Bain, E.E., and Peifer, M. (2005). Rho1 Regulates *Drosophila* Adherens Junctions Independently of p120ctn. *Development*, 132, 4819-4831.
83. Harris, T.J.C., and Peifer, M. (2005). The positioning and segregation of apical cues during epithelial polarity establishment in *Drosophila*. *Journal of Cell Biology* 170, 813-823.
82. McEwen, D.G., and Peifer, M. (2005). Puckered, a *Drosophila* MAPK phosphatase, ensures cell viability by antagonizing JNK-induced apoptosis. *Development* 132, 3935-3946.
81. Harris, T.J.C., and Peifer, M. (2005). Decisions, decisions:  $\beta$ -catenin chooses between adhesion and transcription. *Trends in Cell Biology* 15, 234-237.
80. Harris, T.J.C., and Peifer, M. (2004). Adherens junction-dependent and -independent steps in the establishment of epithelial cell polarity in *Drosophila*. *Journal of Cell Biology* 165, 135-147.
79. Myster, S.H., Wang, F., Cavallo, R., Christian, W., Bhotika, S., Anderson, C.T., and Peifer, M. (2004). Genetic and bioinformatic analysis of 41C and the 2R heterochromatin of *Drosophila melanogaster*: A window on the heterochromatin-euchromatin junction. *Genetics* 166, 807-22.
78. Grevengoed, E.E., Fox, D.T., Gates, J., and Peifer, M. (2003). Balancing different types of actin polymerization at distinct sites: Roles for Abelson kinase and Enabled. *Journal of Cell Biology* 163, 1267-1280.
77. Peifer, M., and Yap, A.S. (2003). Traffic control: p120-catenin acts as a gatekeeper to control the fate of classical cadherins in mammalian cells. *Journal of Cell Biology* 163 437-440.
76. McCartney, B.M., and Peifer, M. (2003). Stem Cells in the News: CNN and APC Make Headlines. *Developmental Cell* 5, 532-4.

75. Grevengoed, E.E., and Peifer, M. (2003). Cytoskeletal connections: Building strong cells in new ways. *Current Biology* 13, R568-70.
74. Myster, S.H., Cavallo, R., Anderson, C.T., Fox, D.T., and Peifer, M. (2003). *Drosophila* p120catenin plays a supporting role in cell adhesion but is not an essential adherens junction component. *Journal of Cell Biology* 160, 433-449.
73. Peifer, M. (2002). Developmental Biology: Colon construction. *Nature* 420 274-276.
72. Macara, I.G., Baldarelli, R., Field, C.M., Glotzer, M., Hayashi, Y., Hsu, S.-C., Kennedy, M.B., Kinoshita, M., Longtine, M., Low, C., Maltais, L.J., McKenzie, L., Mitchison, T.J., Nishikawa, T., Noda, M., Petty, E.M., Peifer, M., Pringle, J.R., Robinson, P.J., Roth, D., Russell, S.E.H., Stuhlmann, H., Tanaka, M., Tanaka, T., Trimble, W.S., Ware, J., Zeleznik-Le, N.J., Zieger, B. (2002). Mammalian septins nomenclature. *Molecular Biology of the Cell* 13, 4111-4113.
71. Akong, K., McCartney, B.M., and Peifer, M. (2002). *Drosophila* APC2 and APC1 have overlapping roles in the larval brain despite their distinct intracellular localizations. *Developmental Biology* 250, 71-90.
70. Akong, K., Grevengoed, E.E., Price, M.H., McCartney, B.M., Hayden, M.A., DeNofrio, J.C., and Peifer, M. (2002). *Drosophila* APC2 and APC1 play overlapping roles in Wingless signaling in the embryo and imaginal discs. *Developmental Biology* 250, 91-100.
69. Peifer, M., and McEwen, D.G. (2002). The ballet of morphogenesis: Identifying the hidden choreographers. *Cell* 109: 271-274.
68. Shih, H-P., Hales, K. G., Pringle, J.R., and Peifer, M. (2002). Identification of Septin-interacting Proteins and Characterization of the Smt3/SUMO-conjugation System in *Drosophila*. *Journal of Cell Science* 115, 1259-1271.
67. Grevengoed, E.E., Loureiro, J.J., Jesse, T.L., and Peifer, M. (2001). Abelson kinase regulates epithelial morphogenesis in *Drosophila*. *Journal of Cell Biology* 155, 1185-1197.
66. Myster, S.H., and Peifer, M. (2001) Wingless can't fly so it hitches a ride with dynein. *Bioessays* 23, 869-872.
65. McCartney, B.M., McEwen, D.G., Grevengoed, E., Maddox, P., Bejsovec, A., Peifer, M. (2001) *Drosophila* APC2 and Armadillo participate in tethering mitotic spindles to cortical actin. *Nature Cell Biology* 3, 933-938.
64. McEwen, D.G., and Peifer, M. (2001) Wnt signaling: The Naked Truth? *Current Biology* 11: R524-R526.
63. Loureiro, J.J., Akong, K., Cayirlioglu, P., Baltus, A.E., DiAntonio, A., and Peifer, M. (2001) Activated Armadillo/ $\beta$ -catenin does not play a general role in cell migration and process extension in *Drosophila*. *Developmental Biology* 235: 33-44.
62. Simcha, I., Kirkpatrick, C., Sadot, E., Shtutman, M. Plevoy, G., Geiger, B., Peifer, M., and Ben-Ze'ev, A. (2001). Cadherin Sequences that Inhibit  $\beta$ -catenin Signaling: a Study in Yeast and Mammalian Cells. *Molecular Biology of the Cell* 12: 1177-88.
61. Tepass, U., Truong, K., Godt, D., Ikura, M., Peifer, M. (2000). Cadherins in embryonic and neural morphogenesis.. *Nature Reviews: Molecular Cell Biology* 1: 91-100.
60. Adam, J.C., Pringle, J.R., and Peifer, M. (2000). Evidence for functional differentiation among *Drosophila* septins in cytokinesis and cellularization. *Molecular Biology of the Cell* 11: 3123-3135.
59. Peifer, M. (2000). Travel bulletin: traffic jams cause tumors. *Science* 289, 67-69.
58. McEwen, D.G., Cox, R.T., and Peifer, M. (2000). The canonical Wg and JNK signaling cascades collaborate to promote both dorsal closure and ventral patterning. *Development* 127, 3607-3617.
57. McEwen, D.G., and Peifer, M. (2000). Wnt signaling: Moving in a new direction. *Current Biology* 10, R562-R564.
56. Cox, R.T., McEwen, D.G., Myster, D.G., Duronio, R.J., Loureiro, J., and Peifer, M. (2000). A screen for mutations that suppress the phenotype of *Drosophila armadillo*, the  $\beta$ -catenin homolog. *Genetics* 155, 1725-1740.
55. McCartney, B.M., and Peifer, M. (2000). Teaching tumor suppressors new tricks. *Nature Cell Biol.* 2, E58-60.
54. Peifer, M., and Polakis, P. (2000). Wnt signaling in oncogenesis and embryogenesis: A look outside the nucleus. *Science* 287, 1606-1609.
53. Peifer, M., and Tepass, U. (2000). Cell Biology: Which way is up? *Nature* 403, 611-612.
52. McCartney, B., Dierick, H.A., Kirkpatrick, C., Moline, M.M., Baas, A., Peifer, M., and Bejsovec, A. (1999). *Drosophila* APC2 is a cytoskeletally-associated protein that regulates Wingless signaling in the embryonic epidermis. *J. Cell Biol.* 146, 1303-1318.
51. Peifer, M. (1999). Signal transduction: Neither straight nor narrow. *Nature* 400, 213-215.

50. Cox, R.T., Pai, L.-M., Kirkpatrick, C., Stein, J., and Peifer, M. (1999). Roles of the C-terminus of Armadillo in Wingless signaling in *Drosophila*. *Genetics*, 153, 319-332.
49. Cox, R.T., Pai, L.-M., Miller, J.R., Orsulic, S., Stein, J., McCormick, C.A., Audeh, Y., Wang, W., Moon, R.T., and Peifer, M. (1999). Membrane-tethered *Drosophila* Armadillo cannot transduce Wingless signal on its own. *Development* 126, 1327-1335.
48. Lu, Q., Paredes, M., Medina, M., Zhou, J., Cavallo, R., Peifer, M., Orecchio, L. and Kosik, K.S. (1999). Delta-catenin, an adhesive junction-associated protein which promotes cell scattering. *J. Cell Biol.* 144, 519-532.
47. van Es, J.H., Kirkpatrick, C., van de Wetering, M., Molenaar, M., Miles, A., Kuipers, J. Destrée, O., Peifer, M., and Clevers, H. (1999). Identification of APC2, a homologue of the adenomatous polyposis coli tumour suppressor. *Current Biology* 9, 105-108.
46. Cavallo, R.A., Cox, R.T., Moline, M.M., Roose, J., Polevoy, G.A., Clevers, H., Peifer, M., and Bejsovec, A. (1998). *Drosophila* TCF and Groucho interact to repress Wingless signaling activity. *Nature* 395, 604-608.
45. Loureiro, J., and Peifer, M. (1998). The roles of Armadillo, a *Drosophila* catenin, during central nervous system development. *Current Biology* 8, 622-632.
44. Peifer, M. (1998). Birds of a feather flock together. *Nature* 395, 324-325.
43. Cox, R.T., and Peifer, M. (1998). Wingless/Wnt signaling: The inconvenient complexities of life. *Current Biology* 8, R140-R144.
42. Pai, L.-M., Orsulic, S., Bejsovec, A. and Peifer, M. (1997). Negative regulation of Armadillo, a Wingless effector in *Drosophila*. *Development* 124, 2255-2266.
41. Cavallo, R., Rubenstein, D., and Peifer, M. (1997). Armadillo and dTCF: A marriage made in the nucleus. *Curr. Opin. Genet. Devel.* 7, 459-466.
40. van de Wetering, M., Cavallo, R., Dooijes, D., van Beest, M., van Es, J., Loureiro, J., Ypma, A., Hursh, D., Jones, T., Bejsovec, A., Peifer, M., Mortin, M., and Clevers, H. (1997). Armadillo co-activates transcription driven by the product of the *Drosophila* segment polarity gene *dTCF*. *Cell* 88, 789-799.
39. Peifer, M. (1997).  $\beta$ -catenin as oncogene-- the smoking gun. *Science* 275, 1752-1753.
38. Pai, L.-M., Kirkpatrick, C., Blanton, J., Oda, H., Takeichi, M., and Peifer, M. (1996).  $\alpha$ -catenin and DE-cadherin occupy distinct binding sites on *Drosophila* Armadillo that differ substantially in size. *J. Biol. Chem.* 271, 32411-32420.
37. Orsulic, S., and Peifer, M. (1996). Wingless lands at last. *Current Biology* 6, 1363-1367.
36. Orsulic, S., and Peifer, M. (1996). An in vivo structure-function study of Armadillo, the  $\beta$ -catenin homolog, reveals both separate and overlapping regions of the protein required for cell adhesion and for Wingless signaling. *J. Cell Biol.* 134, 1283-1301.
35. Cox, R., Kirkpatrick, C., and Peifer, M. (1996). Armadillo is required for adherens junction assembly, cell polarity and morphogenesis during *Drosophila* embryogenesis, *J. Cell Biol.* 134, 133-148.
34. Peifer, M. (1996). Regulating cell proliferation: as easy as APC (Perspective). *Science* 272, 974-975.
33. Bejsovec, A. and Peifer, M. (1996). The wingless/Wnt-1 signaling pathway - new insights into the cellular mechanisms of signal transduction. In: *Advances in Developmental Biology* Volume 4, p. 1-45 (P. Wassarman, ed.). JAI Press, Connecticut
32. Fares, H., Peifer, M., and Pringle, J.P. (1995). Localization and possible functions of *Drosophila* septins. *Mol. Biol. Cell* 6, 1843-1859.
31. Rauskolb, C., Smith, K., Peifer, M., and Wieschaus, E. (1995). *extradenticle* determines segmental identities throughout *Drosophila* development. *Development* 121, 3663-3673.
30. Peifer, M. (1995). Cell adhesion and signal transduction-- the Armadillo connection. *Trends Cell Bio.* 5, 224-229.
29. Kirkpatrick, C., and Peifer, M. (1995). Not just glue- cell-cell junctions as cellular signaling centers (review). *Curr. Opin. Genet. Devel.* 5, 56-65.
28. Peifer, M., Pai, L.-M., and Casey, M. (1994). Phosphorylation of the *Drosophila* adhesive junction protein Armadillo: roles for Wingless signal and Zeste white-3 kinase. *Dev. Biol.* 166, 543-556.
27. Peifer, M. (1994). The two faces of Hedgehog (Perspective). *Science* 266, 1492-1493.
26. Peifer, M., Berg, S., and Reynolds, A.B. (1994). A repeating amino acid motif shared by proteins with diverse cellular roles. *Cell* 76, 789-791.
25. Peifer, M., Sweeton, D., Casey, M., and Wieschaus, E. (1994). *wingless* signal and Zeste-white 3 kinase trigger opposing changes in the intracellular distribution of Armadillo. *Development* 120, 369-380.
24. Orsulic, S., and Peifer, M. (1994). A method to stain nuclei of *Drosophila* for confocal microscopy. *Biotechniques* 16, 441-447.
23. Peifer, M. (1993). Cancer, catenins, and cuticle patterning: a complex connection. *Science* 262, 1667-1668.



22. Peifer, M., Orsulic, S., Pai, L.-M., and Loureiro, J. (1993). A model system for cell adhesion and signal transduction in *Drosophila*. 1993 Development Suppl. 163-176.
21. Rauskolb, C., Peifer, M., and Wieschaus, E. (1993). *extradenticle*, a regulator of homeotic gene activity, is a homolog of the homeobox-containing human proto-oncogene PBX1. *Cell* 74, 1101-1112.
20. Peifer, M. (1993). The product of the *Drosophila* segment polarity gene *armadillo* is part of a multi-protein complex similar to the vertebrate adherens junction. *J. Cell Science* 105, 993-1000.
19. Peifer, M., Orsulic, S., Sweeton, D., and Wieschaus, E. (1993). A role for the *Drosophila* segment polarity gene *armadillo* in cell adhesion and cytoskeletal integrity during oogenesis. *Development* 118, 1191-1207.
18. Peifer, M., and Wieschaus, E. (1993). The *Drosophila melanogaster* segment polarity gene *armadillo* is highly conserved in sequence and expression in the house fly, *Musca domestica*. *J. Mol. Evol.* 36, 224-233.
17. Peifer, M., McCrea, P., Green K., Wieschaus, E., and Gumbiner, B. (1992). The vertebrate adhesive junction proteins  $\beta$ -catenin and plakoglobin and the *Drosophila* segment polarity gene *armadillo* form a multigene family with similar properties. *J. Cell Biology* 118, 681-691.
16. Peifer, M. and Bejsovec, A. (1992). Knowing your neighbors; cell interactions determine intrasegmental pattern in *Drosophila*. *Trends in Genetics* 8, 243-248.
15. Peifer, M., Rauskolb, C., Williams, M., Riggelman, B., and Wieschaus, E. (1991). The segment polarity gene *armadillo* affects the *wingless* signaling pathway in both embryonic and adult pattern formation. *Development* 111, 1028-1043.
14. Peifer, M., and Wieschaus, E. (1990). The segment polarity gene *armadillo* encodes a functionally modular protein that is the *Drosophila* homolog of human plakoglobin. *Cell* 63, 1167-1178.
13. Peifer, M., and Wieschaus, E. (1990). Mutations in the *Drosophila* gene *extradenticle* affect the way specific homeodomain proteins regulate segmental identity. *Genes Dev.* 4: 1209-1223.
12. Simon, J., Peifer, M., Bender, W., and O'Connor, M. (1990). Regulatory elements of the bithorax complex that control expression along the anterior-posterior axis. *EMBO J.* 4, 3945-3956.
11. O'Connor, M., Peifer, M., and Bender, W. (1989). Constructing large DNA segments in *E. coli*. *Science* 244: 1307-1312.
10. Bender, W., Simon, J., Karch, F., O'Connor, M.B., and Peifer, M. (1989). Segmental regulation of the Bithorax complex of *Drosophila*. In: *Molecular Genetics of Early Drosophila & Mouse Development*. (M. Cappechi, ed.). Cold Spring Harbor Laboratory Press, New York.
9. Peifer, M., and Bender, W. (1988). Sequences of the gypsy transposon of *Drosophila* necessary for its effects on adjacent genes. *Proc. Nat. Acad. Sci.* 85: 9650-9654.
8. Bender, W., and Peifer, M. (1987). Oncogenes take wing. (Minireview). *Cell* 50: 519-520.
7. Peifer, M., Karch, F., and Bender, W. (1987). The bithorax complex: control of segmental identity. *Genes Dev.* 1: 891-898.
6. Peifer, M., and Bender, W. (1986). The *anterobithorax* and *bithorax* mutations of the bithorax complex. *EMBO J.* 5: 2293-2303.
5. Bender, W., Weiffenbach, B., Karch, F., and Peifer, M. (1985) Domains of cis-interaction in the bithorax complex. *Cold Spring Harbor Symp. Quant. Biol.* 50: 173-180.
4. Karch, F., Weiffenbach, B., Peifer, M., Bender, W., Duncan, I., Celniker, S., Crosby, M., and Lewis, E.B. (1985). The abdominal region of the bithorax complex. *Cell* 43: 81-96.
3. Bender, W., Akam, M., Karch, F., Beachy, P.A., Peifer, M., Spierer, P., Lewis, E.B., and Hogness, D.S. (1983). Molecular genetics of the bithorax complex of *Drosophila melanogaster*. *Science* 221: 23-29.
2. Hu, N., Peifer, M., Heidecker, G., Messing, J., and Rubenstein, I. (1982). The primary structure of a genomic zein sequence of maize. *EMBO J.* 1: 1337-1342.
1. Geraghty, D., Peifer, M., Rubenstein, I., and Messing, J. (1981). The primary structure of a plant storage protein: zein. *Nucleic Acid Res.* 9: 5163-5174.