

## PERSONAL DATA

Dr. Peter D. Vize

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Affiliation:

1. Department of Biological Sciences, University of Calgary, Alberta, Canada
2. Department of Biochemistry & Molecular Biology, University of Calgary, Alberta, Canada



## EDUCATION & EXPERIENCES

### Experience:

- 2018-present Professor Emeritus, Dept. of Biological Sciences, University of Calgary  
2018-11.2028 Faculty Professor, Dept. of Biological Sciences, University of Calgary  
2018-present Professor of Marine Genomics (Adjunct), NMSC, Southern Cross University, Australia  
2016 Visiting Academic, University of Queensland (January-August)  
2014-2020 Full Member, Alberta Children's Hospital Research Institute  
2005-2018 Professor of Marine Ecology, University of Calgary.  
2005-2020 Professor of Computer Science (Adjunct), Faculty of Science, University of Calgary. 2001-2005 Associate Professor of Biological Sciences (with tenure) and AHFMR Senior Scholar, University of Calgary.  
1999-2001 Associate Professor of Molecular Cell and Developmental Biology (with tenure), University of Texas at Austin.  
1993-1999 Assistant Professor of Zoology (tenure track), University of Texas at Austin.  
1990-1992 Postdoctoral Fellow, Department of Biochemistry & Molecular Biology, Harvard University with Professor Douglas Melton.  
1988-1989 Postdoctoral Scientist, MRC, Mill Hill, London with Dr. Michael Sargent.

### Academic education:

- 1983 B.Sc. Hons.- Genetics & Biochemistry, Monash University, Melbourne Australia  
1987 Ph. D.- Molecular Biology, University of Adelaide, Australia  
1988-89 Postdoc- Developmental Biology, MRC, Mill Hill, London  
1990-92 Postdoc- Developmental Biology, Harvard University

## RESEARCH INTERESTS

1. Marine Ecology
2. Computer Science

## GRANTS AND AWARDS:

- 07.23-06.2028 NIH P41 Echinobase Joint-PI, P41HD095831 US\$3.9 million  
06.21-05.2026 NIH P41 Xenbase; a Xenopus model organism database US\$8.7 million renewal, Joint Director. P41 HD064556  
07.18-06.2023 NIH P41 Echinobase Joint-PI, P41HD095831 US\$3 million  
04.17-04.2023 NSERC Discovery Grant- PI RGPIN-2017-03882 CN\$234,000 "Molecular clocks regulating coral spawning" (renewal)  
11.15-10.2021 NIH P41 Xenbase; a Xenopus model organism database US\$7 million renewal, Joint Director. P41 HD064556  
06.15-09.2015 NIH P41 Xenbase; a Xenopus model organism database US\$300,000 Administrative supplement. Joint Director.

10.12-10.2018 Wellcome Trust (UK) Database support for the EXRC UK£46,000 sub-contract 26657

05.12-04.2017 NSERC Discovery Grant- PI 288142-2012 CN\$131,000 “Molecular clocks regulating coral spawning” (renewal)

06.11-05.2016 NIH R01 GM099149 (USA) US\$2 million “Transcriptome profiling and targeted genic improvement of *X. tropicalis* genome” co-PI with M. Khokha (Yale) and M. Gilchrist (MRC, UK)

04.10-03.2011 NSERC Discovery Grant - PI CN\$29,000 “Molecular clocks regulating coral spawning”

05.10-05.2015 NIH P41 HD064556 (USA, Joint Director with A.Zorn) US\$4.7 million “Xenbase: a *Xenopus* model organism database”

06.08-06.2011 BBSRC (UK), subcontract to EXRC CN\$150,000

10.07-10.2008 Wellcome Trust (UK), subcontract to EXRC CN\$80,000

04.05-03.2010 NIH R01 HD45776 (USA)- PI US\$2 million “Xenbase: a *Xenopus* model organism database”

05.04-04.2007 Japanese Society for the Promotion of Science US\$450,000 (with N.Ueno and K.Cho) “*Xenopus* functional genomics”

01.03-01.2006 Canadian Institutes of Health Research-PI MOP-67152 CN\$302,100 “Embryonic kidney development”

10.02-10.2003 Canadian Institutes of Health Research-PI IHD - 61223 CN\$128,000 “Role of p63 in regulating cell specification, division and apoptosis”

09.01-08.2003 ANPI Bioinformatics databases CN\$400,000 09.01-06.2006 AHFMR Senior Scholarship 200000536 CN\$470,000 “Developmental models of organogenesis and tumorigenesis”

09.01-08.2003 AHFMR Establishment Grant 200000537 CN\$250,000

09.01-06.2006 AHFMR Research Prize 200100305 CN\$100,000

09.01-08.2002 AHFMR Major Equipment Award 200000538 CN\$175,000

02.00-02.2002 National Science Foundation IBN 9983061 PI US \$312,000 “Molecular regulation of pronephric development” renewal

08.96-01.2000 National Science Foundation IBN 9630621 PI US \$339,000 “Molecular regulation of pronephric development”

07.1996 National Kidney Foundation Young Investigator Award US \$ 50,000

01.94-12.1995 Texas Advanced Research Program. (#187) PI US \$160,000 “Role of the WT1 gene in kidney induction”

1989-1991 Jane Coffin Childs Memorial Fund for Medical Research Postdoctoral Fellow. page , Curriculum Vitae; Peter D. Vize 2

1984-1987 Commonwealth Postgraduate Research Award

1983 First Class Honours in Genetics.

## **EDITORIAL BOARD/ACADEMIC REFEREE**

### **1. Associate Editor:**

Genesis, The Journal of Genetics and Development, 2015

Biology of the Cell, 2005-2007

### **2. Editorial Board:**

Biology of the Cell (2005-2010)

### **3. Manuscript Reviewer:**

*Acta Anatomica*  
*Biochemistry and Cell Biology*  
*BMC Developmental Biology*  
*Development*  
*Development Genes and Evolution*  
*eLife*  
*Genesis*  
*G3*  
*JASN*  
*J. Physiology*  
*Marine Ecology Prog Ser.*  
*Molecular Ecology*  
*Nature Communications*  
*Plankton and Benthos Research*  
*Proc. Natl. Acad. Sci. USA*  
*Trends in Cell Biology*

*Biological Bulletin*  
*Bioinformatics*  
*BMC Evolutionary Biology*  
*Developmental Biology*

*Frontiers Marine Biol.*  
*Genome Biology*  
*Int. J. Dev. Bio.*

*JoVE*  
*Molecular Ecology*  
*Molec. Genetics & Genomics*  
*Nephron*  
*Phil. Trans. Royal Soc. B.*  
*Science*

*Biology of the Cell*  
*BMC Genomics*  
*BMC Research Notes*  
*Developmental Dynamics*

*Gene Expression Patterns*  
*Gulf of Mexico Science*  
*Journal of Cell Biology*

*Kidney International*  
*Mechanisms of Development*  
*Nature*  
*Nucleic Acids Research*  
*PLoS One*  
*Scientific Reports*

## **PUBLICATIONS (2014-2024)**

- Alliance of Genome Resources Consortium [inc. P.Vize]. (2024). Updates to the Alliance of Genome Resources. *Genetics* 227: iyae049.  
<https://doi.org/10.1093/genetics/iyae049>
- Telmer, C.A., Karimi, K., Chess, M., Agalakov, S., Arshinoff, B.I., Lotay, V., Wang, D.Z., Chu, S., Pells, T.J., Vize, P.D., Hinman, V.F., Ettensohn, C.A. (2024). Echinobase: a resource to support the echinoderm research community. *Genetics* 227: iyae002.  
<https://doi.org/10.1093/genetics/iyae002>
- Vize, P.D. (2023). A beautiful, complex simplicity; the origins of nephron segmentation uncovered by single cell sequencing of the pronephros. *Kidney International* 103: 23-25. <https://doi.org/10.1016/j.kint.2022.09.013>
- McCarthy, F.M., Jones, T.E., Kwitek, A.E., Smith, C.L., Vize, P.D., Westerfield, M. and Bruford, E.A. (2023). The case for standardising gene nomenclature across vertebrates. *Nature (Matters Arising)*; 614: E31-E32. doi: 10.1038/s41586-022-05633-w.
- Fisher, M., James-Zorn, C., Ponferrada, V., Bell, A.J., Sundararaj, N., Segerdell, W., Chaturvedi, P., Bayyari, N., Chu, S., Pells, T., Lotay, V., Agalakov, S., Qang, D.Z., Ashinoff, B.I., Foley, S., Karimi, K., Vize, P.D. and Zorn, A.M. (2023). Xenbase: Key features and resources of the *Xenopus* model organism knowledgebase. *Genetics*, 224(1): iyad018. doi: 10.1093/genetics/iyad018
- Maters, B.R., Stevenson, E. and Vize, P.D. (2022) Embryonic and glomerular kidney development in the bay pipefish, *Syngnathus leptorhynchus*. *PLoS One*. 17(5): e0267932. <https://doi.org/10.1371/journal.pone.0267932> bioRxiv/2021/456591.
- Zahn, N., James-Zorn, C.H., Ponferrada, V.G., Adams, D.S., Grzymkowski, J.K., Buchholz, D.R., Nascone-Yoder, N.M., Horb, M., Moody, S.A., Vize, P.D. and Zorn, A.M. (2022). Normal Table of *Xenopus* development: a new graphical resource. *Development*, 149(14): dev200356. <https://doi.org/10.1242/dev.200356>
- Fisher, M.E., Segerdell, E., Matentzoglou, N., Nenni, M.J., Fortrede, J.D., Chu, S., Pells, T.J., Chaturvedi, P., James Zorn, C., Sundararaj, N., Lotay, V.S., Ponferrada, V.G., Wang, D.Z., Kim, E., Agalakov, S., Arshinoff, B.I., Karimi, K., Vize, P.D. and Zorn, A.M. (2022) The *Xenopus* Phenotype Ontology: bridging model organism phenotype data to human health and development. *BMC Bioinformatics*, 23(1):99. doi: 10.1186/s12859-022-04636-8.
- Arshinoff, B., Cary, G., Karimi, K., Foley, S., Agalakov, S., Delgado, F., Lotay, V., Ku, C., Pells, T., Betman, T., Kim, E., Cameron, R.A., Vize, P.D., Telmer, C., Croce, J., Ettensohn, C. and Hinman, V. (2022). Echinobase: leveraging an extant model

- organism database to build a knowledgebase supporting research on the genomics and biology of echinoderms. *Nucleic Acids Res.* 50(D1): D970-979. doi: 10.1093/nar/gkab1005
- Karimi, K., Agalakov, S. Telmer, C.A., Beatman, R., Pells, T.J., Arshinoff, B.I., Ku, C.J., Foley, S., Hinman, V.F., Ettensohn, C.A., Vize, P.D. 2021. Classifying domain-specific text documents containing ambiguous keywords. *Database (Oxford)*, 2021:Baab062. DOI: 10.1093/database/baab062
- Foley, S., Ku, C., Arshinoff, B., Lotay, V., Karimi, K., Vize, P.D., Hinman, V. 2021. Integration of 1:1 orthology maps and updated datasets into Echinobase. *Database* 2021:baab030, doi: 10.1093/database/baab030
- Forteide, J.D., Pells, T.J., Chu, S., Chaturvedi, P., Wang, DZ., Fisher, M.E., James-Zorn, C., Wany, Y., Nenni, M.J., Burns, K.A., Lotay, V.S., Ponferrada, V.G., Karimi, K., Zorn, A.M. and Vize, P.D. (2020) Xenbase: deep integration of GEO & SRA RNA-seq and ChIP-seq data in a model organism database. *Nucleic Acids Res.* 48(D1): D776-D782. <https://doi.org/10.1093/nar/gkz933>
- Wuitchik, D.M., Wang, D., Pells, T.J., Karimi, K., Ward, S. and Vize, P.D. (2019) Seasonal temperature, the lunar cycle and diurnal rhythms interact in a combinatorial manner to modulate genomic responses to the environment in a reef-building coral. *Mol. Ecol.* 28: 3629-3641. <https://doi.org/10.1111/mec.15173>
- Peshkin, L., Lukyanov, A., Kalocsay, M., Gage, R.M., Wang, DZ, Pells, T.J., Karimi, K., Vize, P.D., Wuhr, M., Kirschner, M.W. (2019) The protein repertoire in early vertebrate embryogenesis. *bioRxiv*; 571174. doi: <https://doi.org/10.1101/571174>
- Nenni, M.J., Malcolm E Fisher, Christina James-Zorn, Troy J Pells, Virgilio Ponferrada, Stanley Chu, Joshua D Fortriede, Kevin A Burns, Ying Wang, Vaneet S Lotay, Dong Zhou Wang, Erik Segerdell, Praneet Chaturvedi, Kamran Karimi, Peter D Vize, Aaron M Zorn (2019) Xenbase: Facilitating the use of Xenopus to Model Human Disease. *Frontiers in Physiology*. 26 February 2019 <https://doi.org/10.3389/fphys.2019.00154>
- de Bakker, B.S., van den Hoff, M.J., Vize, P.D. and Oostra, R.J. (2019). The pronephros; a fresh perspective. *Integrative and Comparative Biology* 59(1): 29-47. <https://doi.org/10.1093/icb/icz001>
- Karimi, K., Fortriede, J.D., Lotay, V.S., Burns, K.A., Wang, D.Z., Fisher, M.E., Pells, T.J., James-Zorn, C., Wang, Y., Ponferrada, V.G., Chu, S., Chaturvedi, P., Zorn A.M. and Vize, P.D. (2018). Xenbase: a genomic, epigenomic and transcriptomic model organism database. *Nucleic Acids Res.* 46(D): D861-868.
- Karimi, K., Wuitchik, D.M., Oldach, M. and Vize, P.D. (2018) Distinguishing species using GC contents in mixed DNA or RNA sequences. *Evolutionary Bioinformatics*, 14: 1176934318788866. <https://doi.org/10.1177/1176934318788866>
- Oldach, M.J. and Vize, P.D. (2018). De novo assembly and annotation of the *Acropora gemmifera* transcriptome. *Marine Genomics*, <https://doi.org/10.1016/j.margen.2017.12.007>
- James-Zorn, C., Ponferrada, V.G., Fisher, M.E., Burns, K., Fortreide, J., Segerdell, E., Karimi, K., Lotay, V., Wang, DZ., Chu, S., Pells, T., Wang, Y., Vize, P.D. and Zorn A. (2018). Navigating Xenbase: An integrated Xenopus genomics and gene expression database. In: Kollmar M. (eds) *Eukaryotic Genomic Databases. Methods in Molecular Biology*, vol 1757. Humana Press, New York, NY pp251-305
- Oldach, M.J., Workentine, M., Matz, M.V., Fan, T-Y., and Vize, P.D. (2017). Transcriptome dynamics over a lunar month in a broadcast spawning acroporid coral. *Molecular Ecology*, 26; 2514-2526.

- Vize, P.D. and Zorn, A.M. (2017) *Xenopus* genomic data and browser resources. *Dev. Biol.* 426: 194-199.
- Session, A.M., Uno, Y., Kwon, T., Chapman, J.A., Toyoda, A., Takahashi, S., Fukui, A., Hikosaka, A., Suzuki, A., Kondo, M., van Heeringen, S.J., Quigley, I., Heinz, S., Ogino, H., Ochi, H., Hellsten, U., Lyons, J.B., Simakov, O., Putnam, N., Stites, J., Kuroki, Y., Tanaka, T., Michiue, T., Watanabe, M., Bogdanovic, O., Lister, R., Georgiou, G., Paranjpe, S.S., van Kruijsbergen, I., Shu, S., Carlson, J., Kinoshita, T., Ohta, Y., Mawaribuchi, S., Jenkins, J., Grimwood, J., Schmutz, J., Mitros, T., Mozaffari, S.V., Suzuki, Y., Haramoto, Y., Yamamoto, T.S., Takagi, C., Heald, R., Miller, K., Haudenschild, C., Kitzman, J., Nakayama, T., Izutsu, Y., Robert, J., Fortriede, J., Burns, K., Lotay, V., Karimi, K., Yasuoka, Y., Dichmann, D.S., Flajnik, M.F., Houston, D.W., Shendure, J., DuPasquier, L., Vize, P.D., Zorn, A.M., Ito, M., Marcotte EM, Wallingford JB, Ito Y, Asashima M, Ueno N, Matsuda Y, Veenstra GJ, Fujiyama A, Harland RM, Taira M, Rokhsar DS. (2016) Genome evolution in the allotetraploid frog *Xenopus laevis*. *Nature* 538(7625): 336-343.
- Hoadley, K.D., Vize P.D. and Pyott, S.J. (2016). Current understanding of the circadian clock within cnidaria. In "The Cnidaria, past present and future" Eds. S. Goffredo and Z. Dubinsky. Springer, NY.
- Brady, A.K., Willis, B.L. and Vize, P.D. (2015). Lunar light modulates circadian gene expression cycles in the broadcast spawning coral, *Acropora millepora*. *Biological Bulletin* 230; 130-142
- Vize, P.D. and Westerfield, M. (2015) Model Organism Databases. *Genesis* 53: 449. James-Zorn, C., Ponferrada, V.G., Burns, K., Fortreide, J., Lotay, V., Liu, Y., Karpinka, J.B., Karimi, K., Zorn, A.M. and Vize P.D. (2015). Xenbase; core features, data acquisition and data processing. *Genesis* 53: 486-497
- Vize, P.D., Liu, Y. and Karimi, K. (2015). Database and informatic challenges in representing both diploid and tetraploid *Xenopus* species in Xenbase. *Cytogenet. Genome Res.* 145: 278-282
- A.R.Deans et al. (inc. P.D. Vize), the Phenoscope Consortium. (2015) Finding our way through phenotypes. *PLoS Biology*, 13: e1002033.
- Karpinka, J.B., Fortreide, J.D., Burns, K.A., James-Zorn, C., Ponferrada, V.G., Lee, Jacqueline, Karimi, K., Zorn, A.M. and Vize, P.D. (2015). Xenbase, the *Xenopus* model organism database; new virtualized system, data types and genomes. *Nucleic Acids Res.* 43: D756-763
- Karimi, K. and Vize, P.D. (2014). The virtual Xenbase. *Database* 2014 ; doi: 10.1093/database/bau108
- Bhalla, N., Bentley, P.J., Vize, P.D. and Jacob, C. (2014). Staging the self-assembly process: inspiration from biological development. *Artif. Life* 20: 29-59.
- Reichman, J.R. and Vize, P.D. (2014). Separate introns gained within short and long soluble peridininchlorophyll a-protein genes during radiation of Symbiodinium (Dinophyceae) clade A and B lineages. *PLoS One* 9(10); e110608