

Kathleen Whitlock, Ph.D.

Professor

Centro Interdisciplinario de Neurociencia
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Education

University of Washington, Seattle, WA, Ph.D. Zoology 1993
State University of New York at Albany, M.S. Neurobiology 1987
State University of New York at Albany, B.S. Biology/Art 1985

Employment

2008- Director, *Ciencia al Tiro* Science Outreach Program, Valparaíso Chile
2006- Full Professor, Institute of Neuroscience, Faculty of Science, University of Valparaíso, Valparaíso, Chile
1998-06 Assistant Professor, Department of Molecular Biology & Genetics, Cornell University
1994-98 Postdoctoral Fellow, Institute of Neuroscience, University of Oregon, Eugene, Oregon, Dr. Monte Westerfield
1987-88 Laboratory Technician, Department of Zoology, University of Washington, Seattle WA; Freelance cellist, Seattle WA
1986-87 Veterinary Assistant, Rhode Island Animal Hospital, Newport, Rhode Island
1986/87 Laboratory Facilities Coordinator, Shoals Marine Laboratory, Cornell University, Isles of Shoals, Maine (summer).

Positions and Honors

2020 Videos de “*La alegría de la Ciencia*” selected for TVEduca Chile/TVN
2020-26 Board of Directors, International Society of Differentiation (ISD)
2019-22 Board of Directors, International Zebrafish Society (IZFS)
2015-20 Board of Directors, Fulbright Commission
2018 Premio Instituto Chileno Norteamericano de Cultura de Valparaíso: conmemoración de “Women’s History Month”
2015 Premio Anual Innovación en Educación Científica: Educación Científica No Formal Fundación Ciencia Joven / UNESCO,
2015 Premio Ciudad, Fundación Futuro; *Ciencia al Tiro*/Dra. Kathleen Whitlock
2014 Medalla Universidad de Valparaíso
2010 Premio Chile Verde *Ciencia al Tiro*
2010 Recognition Award, University of Valparaíso for *Ciencia al Tiro*
2008 Founder, *Ciencia al Tiro* Science Outreach Program, Valparaíso Chile
2002-2005 Faculty Senate, Cornell University, At Large Member, Elected position
2002 Merrill Presidential Scholar Faculty Designate for Outstanding Educator
1999-2001 Basil O'Connor Starter Research Scholar, March of Dimes
1994-1996 Muscular Dystrophy Association Research Fellowship
1991-1993 Eloise Gerry Fellowship, Sigma Delta Epsilon/Graduate Women in Science

1989-1992 NIH Trainee (Competitive Award) in Neurobiology, University of Washington

Other Experience and Professional Memberships (5 years)

- 2020: Selected Talk: *Aquaponics and Education: The future is knowledge*. International Aquaponics Congress (18-27 November) Virtual Meeting hosted Mexico.
- 2020: Selected Talk; *The olfactory epithelia: A novel neural immune tissue*. 11th European Zebrafish Meeting, Virtual Meeting (Prague, CK, 26-27 October, 2020)
- 2019: Strategic Conference for Zebrafish Investigators. Plenary Talk: *Neural Immune Interactions in the Olfactory Epithelia: Implications for Olfactory Imprinting and Immune Response*. Asilomar CA, (12-16 January 2019)
- 2018: Invited Speaker/Instructor. 13th International Congress on the Biology of Fish, Symposium Sensing the Environment: Molecules to Populations: Integrating all Senses. Calgary Canada (July 15-19 2018)
- 2018: Invited Speaker/Instructor. ICGEB-LAZEN Latina American Zebrafish Network Course and Symposium, Cuernavaca Mexico (May 4-12, 2018)
- 2018: EMBO International Practical Course in Developmental Biology. Quintay Chile. Faculty Genetics and Development (January 2018)
- 2017: Sociedad de Biología Celular Chile, presentation; posters. Puerto Varas, Chile (22-26 Oct).
- 2017: Strategic Conference for Zebrafish Investigators. *A new perspective on olfactory sensory system development and function*. (14-18 January) Asilomar CA, USA
- 2016: Invited Speaker: Educando contra viento y marea, CHARLAS D-MENTES, La Festival Internacional de Innovación Social, fiiS (17-19 Nov)
- 2016: *LIDERAZGO, Impacto en mí, impacto en el entorno*, II Congreso de Educación, Kosmopolitis, Santiago Chile (5 Septiembre, 2016)
- 2016: Experto Especialista al Programa de Diplomado en Educación, Creatividad e Innovación, Laboratorio de Educación del Centro de Investigación y Desarrollo de Talentos de la Universidad Católica del Norte (20 Agosto, 2016)
- 2016: Invited Speaker: Taller Ciencia Al Tiro, Escuela Caracoles, Sierra Gorda, Región de Antofagasta, Chile (19 Agosto 2016)
- 2016: Invited Speaker: Institut de Genetique et de Biologie Moleculaire et celulaire, Strasbourg, France (6 May 2016)
- 2016: invited Speaker: Neurobiology and Development CNRS Research Center Gif-sur-Yvette, France (9 May 2016)
- 2016: 21st Biennial Meeting of the International Society for Developmental Neuroscience, Antibes, France, (11-14 May)
- 2016: Invited Speaker: Los Olores de la Vida, Puerto de Ideas, Antofagasta, Chile, 9 Abril 2016)
- 2016: Invited Speaker: Taller Ciencia Al Tiro, Programa DeLTA UCN, Antofagasta Chile (9 Abril 2016)
- 2015: Invited Speaker: Nexos Chile-USA, David Rockefeller Center for Latin American Studies (DRCLAS), Harvard University, USA, Nov 6-7.
- 2015: Invited Speaker: 8th Meeting of the Latin American Society for Developmental Biology, Santos, Brazil, October 20-23.
- 2015: Co-Organizer of the Midwest Zebrafish Meeting, Bi-annual Midwest Zebrafish Conference, Washington University School of Medicine USA, June.
- 2015: Chair Educational Workshop, Bi-annual Midwest Zebrafish Conference, Washington University School of Medicine USA, June.
- 2014: Organizer of the III Latin American Zebrafish Network: Course and Symposium, Valparaíso, Chile, April.

- 2014: Coordinator & Instructor for Zebrafish Development: International Course in Developmental Biology, CIMARQ, Chile, January 2014
2013: Invited Speaker at the XXI Annual Ethological Meeting, Sao Paulo, Brazil Nov. 10-13.
2013: Invited Speaker at the meeting on Getting into Shape: Visualization and Manipulation of Organismal Morphogenesis, Heidelberg Center for Latin America, Santiago Chile.

Selected Peer-reviewed Publications

Journal Articles:

- Palominos, M. and **Whitlock, K.E.** (2021). The olfactory organ is populated by neutrophils and macrophages during early development. *Front. Cell Dev. Biol.*, 18 January 2021, doi.org/10.3389/fcell.2020.604030
- Ceriani, R., Calfun, C and **Whitlock, K.E.** (2020). *phoenixin(smim20)*, a gene coding for a novel reproductive ligand, is expressed in the brain of developing and adult zebrafish. *Gene Expr Patterns*. Dec 29;39:119164. doi: 10.1016/j.gep.2020.119164.
- Torres-Paz, J., Tine, E. M., and **Whitlock, K.E.** (2020). Dissecting the neural divide: A continuous neurectoderm gives rise to both the olfactory placode and olfactory bulb. *International Journal of Developmental Biology*, Aug 25. doi: 10.1387/ijdb.200097
- Whitlock, K.E.** (2020) Evolutionarily conserved peptides coordinate lunar phase and metabolism. *PNAS*, Jan 14;117(2):805-807. doi: 10.1073/pnas.1920432117.
- Whitlock, K.E.**, Postlethwait, J., and Ewer, E. (2019) Neuroendocrinology of reproduction: Is gonadotropin-releasing hormone (GnRH) dispensable? *Frontiers in Neuroendocrinology*, Feb 22. pii: S0091-3022(19)30008-1. doi: 10.1016/j.yfrne.2019.02.002.
- Calfún, C. Dominguez, C. Perez-Acle, T and **Whitlock, KE** (2016). Changes in olfactory receptor expression are correlated with odor exposure during early development in the zebrafish (*Danio rerio*). *Chem Senses*. May;41(4):301-12.
- Cortes-Campos, C, Letelier, J, Ceriani, R, and **Whitlock, KE** (2015). Zebrafish adult-derived hypothalamic neurospheres generate gonadotropin-releasing hormone (GnRH) neurons. *Biol Open*. Jul 24. pii: bio.010447.
- Torres-Paz, J and **Whitlock, K.E.** (2014). Olfactory sensory system develops from coordinated movements within the neural plate. *Dev Dyn*. Dec;243(12):1619-31.
- Whitlock KE.** (2014). Zebrafish invade Valparaíso: third meeting and symposium of the latin American zebrafish network. *Zebrafish*. Dec;11(6):580-2.
- Boric, K., Orió, P., Viéville, T., and **Whitlock, K.E.** (2013). Quantitative analysis of cell migration using optical flow. *PLoS One*. Jul 31;8(7).
- Harden M.V., Pereiro, L., Ramialison, M., Wittbrodt, J., Prasad, M.K., McCallion, A.S., and **Whitlock, K.E.** (2012). Close association of olfactory placode precursors and cranial neural crest cells does not predestine cell mixing. *Dev Dyn*, Jul;241(7): 1143-54
- Stephenson, J.F., Partridge, J.C. and **Whitlock, K.E.** (2012) Food and conspecific chemical cues modify zebrafish, *Danio rerio*, visual behaviour. *Zebrafish*, Jun;9(2):68-73.
- Stephenson, J.F., **Whitlock, K.E.**, Partridge, J.C. (2011) Zebrafish Preference for Light or Dark Is Dependent on Ambient Light Levels and Olfactory Stimulation. *Zebrafish*, Mar;8(1):17-22. citations:
- Paul, T.A., Rovnak, J., Quackenbush, S.L., **Whitlock K.**, Zhan, H., Gong, Z., Spitsbergen, J., Bowser, P.R., Casey, J.W. (2010). Transgenic Expression of Walleye Dermal Sarcoma Virus rv-cyclin (orfA) in Zebrafish does not Result in Tissue Proliferation. *Mar Biotechnol (NY)*. 2010 Mar 28.
- Flanagan, C.A. Chen, C-C, Coetsee, M., Mamputha, S., **Whitlock, K.E.**, Bredenkamp, N., Grosenick, L. Fernald, R.D., and Illing, N. (2007). Expression, structure, function and

- evolution of GnRH receptors GnRH-R1SHS and GnRH-R2PEY in the teleost, *Astatotilapia burtoni*. *Endocrinology*. 2007 Oct;148(10):5060-71.
- Harden, M.R., Newton, L.A., Lloyd, R and **Whitlock, K.E.** (2006). Olfactory imprinting is correlated with changes in gene expression in the olfactory epithelia of the zebrafish *Danio rerio*. *Journal of Neurobiology*, Nov;66(13):1452-66
- Whitlock KE**, Illing N, Brideau NJ, Smith KM, Twomey S. (2006). Development of GnRH cells: Setting the stage for puberty. *Mol. Cell. Endocrinol.*. Jul 25; 254-255:39-50.
- Whitlock, K.E.**, Smith, K., Kim, H. and Harden, M.R. (2005). A role for *foxd3* and *sox10* in the differentiation of Gonadotropin-Releasing Hormone (GnRH) cells in the zebrafish, *Danio rerio*. *Development*. 2005 Dec; 132(24):5491-502
- Vitebsky*, A., Reyes*, R., Sanderson, M., Michel, W.C., and **Whitlock, K.E.** (2005). Isolation and characterization of the *laure* olfactory behavior mutant in the zebrafish *Danio rerio*. *Developmental Dynamics*, Aug 5;234(1):229-242.
- Gopinath, A., Tseng, L. A., and **Whitlock, K. E.** (2004). Temporal and spatial expression of gonadotropin Releasing hormone (GnRH) in the brain of developing zebrafish (*Danio rerio*). *MOD: Gene Expression Patterns*, Jan; 4(1): 65-70.
- Sanders, L. H. and **Whitlock, K.E.** (2003) Phenotype of the zebrafish *masterblind* (*mb1*) mutant is dependent on genetic background. *Developmental Dynamics*, 227, 291-300
- Whitlock KE**, Wolf CD, Boyce ML. (2003). Gonadotropin-releasing hormone (GnRH) cells arise from cranial neural crest and adenohypophyseal regions of the neural plate in the zebrafish, *Danio rerio*. *Developmental Biology*. May 1;257(1):140-52.
- Paul, T.A., Burns, J.C., Shike, H., Getchell, R., Bowser, P.R., Whitlock, K.E., and **Casey, J.W.** (2001). Assessment of promoter activity in the context of pantropic retroviral infections of fish. *Marine Biotechnology*, 3, S81-S87.
- Whitlock, K. E.** and Westerfield, M. (2000). The olfactory placodes of the zebrafish form by convergence of cellular fields at the edge of the neural plate. *Development* 127: 3645-3653.
- Whitlock, K. E.** and Westerfield, M. (1998). A transient population of neurons pioneers the olfactory pathway in the zebrafish. *J. Neurosci.* 18: 8919-8927.
- Whitlock, K. E.** and Palka, J. (1995). Development of the wing sensory axons in the central nervous system of *Drosophila* during metamorphosis. *J. Neurobiol.*, 26: 189-204
- Whitlock, K. E.** (1993). Development of *Drosophila* wing sensory neurons in mutants with missing or modified cell surface molecules. *Development*, 117: 1251-1260.
- Palka, J.**, Whitlock, K. E. and Murray, M. A.. (1992). Guidepost Cells. *Curr. Opinion Neurobiol.*, 2: 48-54.

Chapters/Reviews:

- Whitlock, KE (2015)** The loss of scents: Do defects in olfactory sensory neuron development underlie human disease? Birth Defects Research Part C: Embryo Today: Reviews, in press
- Spinelli Oliviera, E., Cantano L. M. R., Baptista, T., Boere, V., Ferrari, H. R., Francescoli, G., Josens, R., Klein, W., Monticelli, P. F., Whitlock, K., **Santos, W. F.** (2014). A Glimpse at Ethology in Latin America. *Revista de Etologia* 2014, Vol.13, N°1, 10-27
- Whitlock, KE** , (2010) Olfactory Behavior: Making Scents of a Changing World. In : Zebrafish Models in Neurobehavioral Research, *Neuromethods* 52, Edited by Allan V. Kaleuff & Jonathan M. Cachat, Springer Science-Business Media LLC New York. Book Chapter.
- Whitlock, K.E.** (2009) Evolution of the Terminal Nerve. In: Marc D. Binder, Nobutaka Hirokawa, Uwe Windhorst (Eds) *Encyclopedia of Neuroscience*. Vol. 2. Berlin, Heidelberg: Springer GmbH. 1431-1436.

- Whitlock, K.E.** (2008). Developing a sense of scents: Plasticity in olfactory placode formation. Invited Paper Brain Res Bull. Mar 18;75(2-4):340-7.
- Whitlock, K.E.** (2006). The Sense of Scents. *Zebrafish*, 3: 203-213. Invited Review.
- Whitlock, K.E.** (2005). Origin and Development of GnRH neurons. *Trends in Endocrinology and Metabolism*, Invited Review, Volume 16, Issue 4, 135-197
- Whitlock, K.E.** (2004) A new model for olfactory placode development. In: *Brain Behavior and Evolution*, 64: 1-11. Invited Review
- Whitlock, K.E.** (2004). Development of the terminal nerve: Origin and migration. In: *Microscopy Research and Techniques Sep 1;65(1-2):2-12*. Invited Review
- Whitlock, K.E.** (2004). Making Scents: Development and Function of the Olfactory Sensory System. In: Fish Developmental Biology and Genetics, Molecular Aspects in Fish and Marine Biology. World Scientific, Singapore. pg. 216-260, *Book Chapter*.

Books Science Education

- Whitlock, K.E.** and Ciencia al Tiro (2014) *La alegría de la Ciencia*. Impreso en Chile: Andros Impresores, Santiago. ISBN 978-956-358-304-5
- Bayo, A, Flores, V., Jaffé, Y., Rojas, C., and Whitlock, K.E. (2020) *Bestiario Astromarino*. Editorial Catalonia: en revision: Lanzamiento Diciembre 2020

C. Research Support

Pending

Kathleen Whitlock: Author

Agency: Consejo Nacional de la Cultura y las Artes, Folio 592222

Title: *La alegría de los sentidos*

Goals: Present simple experiments to explore the sensory systems and better understand how these sensory systems are used by animals in the natural world.

Kathleen Whitlock: Director

Agency: National Geographic Society, USA

Title: “*The Tale of Two Paradises: a story of conservation through the eyes of children*”:

Goals: Ciencia Al Tiro and the students of Escuela Basico Pacifico will narrate “The Tale of Two Paradises” as they learn about conservation Ahuenco Park and their region of Valparaíso. We will create a video and a short “mini-folding book” with the tale of Ahuenco and Valparaíso.

Kathleen Whitlock PI; Dates: 3/2021-3/2025

Agency: FONDECYT; Total direct costs; CLP 200M

Title: The olfactory sensory system: A complex neural-immune interface that gives rise to neurons, glia and neuroendocrine cells. FONDECYT Regular, Proyecto N° 1212057

Goals: Elucidate mechanisms and cell types of the neural immune interface in the developing olfactory sensory system.

Current

Kathleen Whitlock, Co-Director, Line: Genetics and Development of the Nervous System, (Ramon Latorre, Ph.D., Director); Dates: 3/2016-3/2021

Agency: MIDEPLAN/World Bank; Total direct costs; CLP \$700M/year

Title: “Centro Interdisciplinario de Neurociencia de Valparaíso (CINV)”

Goals: This “Center grant” award funds research that seeks to understand how the CNS produces behavior, from biophysics to behavior genetics.

Completed

Kathleen Whitlock PI; Dates: 3/2016-3/2020

Agency: FONDECYT; Total direct costs; CLP 200M

Title: Extrinsic and intrinsic factors controlling neural development in vertebrates"

FONDECYT Regular No. 1160076

Kathleen Whitlock Director; Dates: 3/2016-2017

Agency: Fundacion Chileno-Americana, Washington DC, USA Total direct costs; CLP \$3M

Ciencia Al Tiro: Proyecto Talleres de Ciencia en escuelas vulnerables de Valparaiso.

Kathleen Whitlock Director; Dates: 8/2016-2018

Agency: XX Concurso Nacional de Proyectos EXPLORA de Valoración y Divulgación de la Ciencia y la Tecnología

Total direct costs: 30M CLP

Title: Proyecto “La alegría de la ciencia” CÓDIGO ED20-0051,

Kathleen Whitlock Director; Dates: 3/2016-3/2017

Agency: CORFO: INNOVACIÓN EN PRODUCTOS Y PROCESOS (PROTOTIPO)“

Total direct costs; CLP \$65.270.000

Title: Introducción de sistema de acuaponía altamente eficiente en el uso de energía renovable” código: 15ITE1-57257.

Kathleen Whitlock, Co-PI (Ramon Latorre, Ph.D., Director); Dates: 3/2011-3/2016

Agency: MIDEPLAN/World Bank; Total direct costs; CLP \$700M/year

Title: “Centro Interdisciplinario de Neurociencia de Valparaíso (CINV)”

Goals: This “Center grant” award funds research that seeks to understand how the CNS produces behavior, from biophysics to behavior genetics.

Kathleen Whitlock, Director; Dates: 3/2015-3/2016

Agency: Fundacion Chileno-Americana, Washington DC, USA: Total direct costs; CLP \$3M

Ciencia Al Tiro: Proyecto Capacitación de Profesores en Escuelas Publicas de Valparaíso

Kathleen Whitlock PI; Dates: 3/2010-3/2013

Agency: FONDECYT Regular No. 1111046; Total direct costs; CLP \$140M

Title: Environmental effects on the development of the olfactory sensory system

Goal: Investigate environmentally induced changes in gene expression in olfactory neuron differentiation

Kathleen Whitlock, Director; Dates: 2012

Agency: MIDEPLAN/World Bank; total direct costs; CLP 20M

Title: Proyección al Medio Externo; Ciencia Al Tiro, Talleres Cientificas

Kathleen Whitlock PI; Dates: 3/2007-3/2010

Agency: FONDECYT Regular No. 1071071; Total direct costs; CLP \$123M

Title: Neural differentiation and plasticity in the olfactory sensory system of the zebrafish

Goal: Investigate environmentally induced changes in gene expression in olfactory neuron differentiation

Kathleen Whitlock, PI; Dates: 4/2005-4/2011

Agency National Institutes of Health; R01 NIH/NICHD50820 Total Direct Costs: \$\$1,489,852 USD

Title: " Development of the gonadotropin releasing hormone cells"

Goals: Determine whether origin of endocrine GnRH cells lies within developing hypothalamic anlage

Kathleen Whitlock, Co-PI (Miguel Allende, Ph.D., Director); Dates: 3/2007-3/2010

Agency: MIDEPLAN/World Bank; total direct costs; CLP450M

Title: "Center for Genomics of the Cell"

Goals: This "Center grant" award funded research aimed at understanding how cells and organisms develop, using a variety of model organisms and approaches.

Kathleen Whitlock, Director; Dates: 2010

Agency: MIDEPLAN/World Bank; total direct costs; CLP 10M

Title: Proyección al Medio Externo; Ciencia Al Tiro, Talleres Cientificas

Kathleen Whitlock, Director; Dates: 2009

Agency: MIDEPLAN/World Bank; total direct costs; CLP 10M

Title: Proyección al Medio Externo; Ciencia Al Tiro, Talleres Cientificas

Kathleen Whitlock, PI; Dates: 3/2000-3/2006

Agency National Institutes of Health NIHDCDR01DC004218: Total Direct Costs: \$1,452,367 USD

Title: Development of the olfactory system in the zebrafish.

Goals: Investigate interactions of olfactory placode and neural crest in development of olfactory system

Estudiantes:

MAGISTER:

Nombre del Autor o Autores de la Tesis: Carola Maturana

Año en que dirigió la Tesis: 2010

Título de la Tesis: Rol de c-fos en respuesta olfatorio de pez cebras

Nombre del Programa de Magíster en el cual dirigió esta Tesis: Magister Neuroscience

Tutor: Dr. Kathleen Whitlock

Nombre del Autor o Autores de la Tesis: Jessica Stephenson

Año en que dirigió la Tesis: 2010

Título de la Tesis: Behavioral analysis of vision and olfaction in the zebrafish

Nombre del Programa de Magíster en el cual dirigió esta Tesis: Magister Zoology, U.Bristol

Institución a la cual estaba adscrito el Magíster en el que dirigió la Tesis: Universidad de Valparaíso

Tutor: Dr. Julian Partridge; Co-Tutor: Dr. Kathleen Whitlock

DOCTORADO:

Terminado:

Nombre del Autor o Autores de la Tesis: Ricardo Ceriani:

Año en que dirigió la Tesis: 2019

Título de la Tesis: GnRH and testosterone treatment generate GnRH neurons in hypothalamus of adult zebrafish (*Danio rerio*)

Nombre del Programa de Doctorado en el cual dirigió esta Tesis: Doctorado Neurociencia
Universidad de Valparaíso

Tutor: Dr. Kathleen Whitlock

Nombre del Autor o Autores de la Tesis: Cristian Calfún

Año en que dirigió la Tesis: 2017

Título de la Tesis: Genomic plasticity in the olfactory epithelium mediated by odorant exposure in zebrafish (*Danio rerio*).

Nombre del Programa de Doctorado en el cual dirigió esta Tesis: Doctorado Neurociencia
Universidad de Valparaíso

Tutor: Dr. Kathleen Whitlock

Nombre del Autor o Autores de la Tesis: Jorge Torres-Paz

Año en que dirigió la Tesis: 2015

Título de la Tesis: The Role of Six4b And Dlx3b/4b in Olfactory Placode Development

Nombre del Programa de Doctorado en el cual dirigió esta Tesis: Doctorado Neurociencia
Universidad de Valparaíso

Tutor: Dr. Kathleen Whitlock

Nombre del Autor o Autores de la Tesis: Katica Boric

Año en que dirigió la Tesis: 2012

Título de la Tesis: Ethanol Exposure Disrupts Cranial Neural Crest Migration And Primary Cilia In Developing Zebrafish Embryos

Nombre del Programa de Doctorado en el cual dirigió esta Tesis: Doctorado Neurociencia
Universidad de Valparaíso

Tutor: Dr. Kathleen Whitlock

Nombre del Autor o Autores de la Tesis: Joaquin Letelier

Año en que dirigió la Tesis: 2012

Título de la Tesis: Disruption Of Zebrafish Prokineticin2 Signalling Causes Kallmann Syndrome Related Phenotypes

Nombre del Programa de Doctorado en el cual dirigió esta Tesis: Doctorado Neurociencia
Universidad de Valparaíso

Tutor: Dr. Kathleen Whitlock

En Proceso:

Maria Fernanda Palominos: Doctorado Neurociencia 2020

Neuro-Immune interactions in the olfactory epithelium of the zebrafish (*Danio rerio*)

Tutor: Dr. Kathleen Whitlock

Eugene Mbar Tine: Doctorado Neurociencia 2022

Evolution of neuroendocrine peptides

Tutor: Dr. Kathleen Whitlock

POST-DOCTORADOS

DR. CRISTIAN CALFUN: POST-DOCTORATE, SUPPORT Post-doctoral Fellowship Centro Interdisciplinario de Neurociencia. Olfactory epithelium as potential delivery pathway for mutagenesis by CRISPR/Cas9 system to study immune system function in the olfactory sensory system. ABRIL 2018- 2019

DR ISABEL BENJUMEDA: SUPPORT WHITLOCK GRANT NIH R01, FONDECYT GRANT Initiation of neural activity as reflected by genetically encoded calcium indicators in the olfactory sensory system of the zebrafish (*Danio rerio*). MAY 2013-15

DR. CHRISTIAN CORTES-CAMPOS: POST-DOCTORATE, SUPPORT WHITLOCK GRANT NIH R01: Hypothalamic origin of gonadotropin releasing hormone cells. JANUARY 2011-13

DR. LUISA PEREIRO: POST-DOCTORATE, SUPPORT FONDECYT Analysis of olfactory placode precursors and cranial neural crest cell development. OCTOBER 2008-10