

Alexis Tapanes-Castillo, Ph.D.

St. Thomas University
School of Science
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EDUCATION

Doctor of Philosophy in Molecular Biology: 2004

Cornell University

Biochemistry, Structural Biology, Cell Biology, Developmental Biology and Molecular Biology (BCMB) Allied Program
Weill Graduate School of Medical Sciences
New York, NY

Bachelor of Science: 1998

University of Miami

Coral Gables, FL

Major: Biology, Minor: Chemistry

Magna Cum Laude, General Honors, Departmental Honors in Biology, Phi Beta Kappa, Senior Thesis in Ecology

Additional Training:

Marine Biological Laboratory

Woods Hole, MA

Embryology: Concepts and Techniques in Modern Developmental Biology Course, 2004

POSITIONS AND EMPLOYMENT

Assistant Professor of Biology: August 2016-present Lab Director and Safety Officer: 2014-present Summer Research Institute Director: 2017-present Research Assistant Professor of Biology: 2009-2016	St. Thomas University School of Science Miami Gardens, FL
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Current Research Projects

- Studying the molecular and cellular biology of autism using human neural progenitor cells, Collaborator: Dr. Derek Dykxhoorn (University of Miami Miller School of Medicine, Hussman Institute for Human Genomics)
- Characterizing potential anticancer properties of medicinal plants, Collaborators: Dr. Maria Pina, Dr. Luis Fernandez-Torres, and Dr. Pilar Maul (St. Thomas Univ.)
- The effect of Hedgehog signaling on *in vivo* neuronal morphogenesis

Previous Research Projects

- The effect of sialyltransferase expression levels on the invasive behavior of breast cancer cells, Collaborator: Dr. Séverine Van Slambrouck (South Dakota State Univ.)
- Axon growth and regeneration in zebrafish, PI: Dr. Jeffery Plunkett (St. Thomas Univ.)

Teaching

- Biochemistry I lecture and writing in the discipline laboratory
- Biochemistry II lecture and laboratory
- Special Topics: Advanced Physiology
- Principles of Biology II lecture, Principles of Biology I and II laboratory
- Microbiology for Nursing lecture, Microbiology laboratory
- Cell Biology Laboratory
- Introduction to Research, Research I and II, Advanced Research I and II, Undergraduate Senior Thesis
- Teaching Strategies for Hands-On STEM Education

Grants Management

- Summer Research Institute Director: U.S. Dept. of Education STEM-SPACE grant P03C1160161 for undergraduate STEM research (in collaboration with Miami Dade College): 2017-present.

University Service

- Life Sciences South Florida Committee member: 2015-present
- Quality Enhancement Plan steering committee member: 2012-present
- STEM Education Outreach Programs for K-12 students and teachers: 2010-present

Postdoctoral Associate: 2004-2009 <i>Laboratories of Dr. Vance Lemmon and Dr. John Bixby</i>	Miami Project to Cure Paralysis University of Miami Miller School of Medicine Miami, FL
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Research Projects

- Mapping modifier loci that contribute to L1 cell adhesion molecule (CAM) X-linked hydrocephalus
- High content screening of bioactive compounds that regulate cell adhesion molecule-mediated neuronal morphogenesis

Graduate Research Assistant: 1998-2004 <i>Laboratory of Dr. Mary Baylies</i>	Sloan-Kettering Institute Memorial Sloan-Kettering Cancer Center New York, NY
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Doctoral Thesis: *Notch signaling and the patterning of Drosophila mesodermal segments.*

PUBLICATIONS

Conference Papers on Current Projects

- Trokhymchuk, V., Planchart, C., Peterson, A., Reytor, A., Maul, D.P., Pina, M., Fernandez-Torres, L., Tapanes-Castillo, A. (2017) Evaluating medicinal plants for anticancer properties: testing plant extracts for cytotoxicity. *Proceedings of the MOL2NET International Conference on Multidisciplinary Sciences; Sciforum Electronic Conference Series* (3) 05095. <http://sciforum.net/conference/mol2net-03/paper/5095>.
- Tapanes-Castillo, A., Mulero, M., Ramos, L., Pierre, R., Genao, J., Canales, C., Rodriguez, Y., Dykxhoorn, D.M. (2016) Studying the role of DLGAP1 transcripts in autism using human neural progenitor stem cells. *Proceedings of the MOL2NET International Conference on Multidisciplinary Sciences; Sciforum Electronic Conference Series* (2) 07008, <http://sciforum.net/conference/mol2net-02/paper/3802>.
- Ramos, L., Tapanes-Castillo, A. (2016) The effect of Hedgehog signaling on *in vivo* neuronal morphogenesis. *Proceedings of the MOL2NET International Conference on Multidisciplinary Sciences; Sciforum Electronic Conference Series* (2) 07005, <http://sciforum.net/conference/mol2net-02/paper/3774>.
- Russo, D., Balisteri C., Tapanes-Castillo, A., Maul, D., Pina, M. (2016) Analysis of Oyster plant (*Tradescantia spathacea*) extracts via maceration, Soxhlet extraction, thin layer chromatography, and cytotoxicity assays. (2016) *Proceedings of the MOL2NET International Conference on Multidisciplinary Sciences; Sciforum Electronic Conference Series* (2) 07007, <http://sciforum.net/conference/mol2net-02/paper/3801>.

Peer-reviewed Journal Articles

- Tapanes-Castillo, A., Shabazz, F., M'boge, M., Vajn, K., Oudega, M., and Plunkett, J.A. (2014) Characterization of a novel primary culture of adult zebrafish brainstem cells. *Journal of Neuroscience Methods* 223, 11-19.
- Vajn, K. Plunkett, J.A., Tapanes-Castillo, A., Oudega, M. (2013) Axonal regeneration after spinal cord injury in zebrafish and mammals: differences, similarities, translation. *Neuroscience Bulletin* 29 (4) 402-410.
- Tapanes-Castillo, A., Weaver, E.J., Smith, R.P., Kamei, Y., Caspary, T., Hamilton-Nelson, K.L., Slifer, S.H., Martin, E.R., Bixby, J.L. and Lemmon, V.P. (2010) A modifier locus on chromosome 5 contributes to *L1 cell adhesion molecule* X-linked hydrocephalus in mice. *Neurogenetics* 11 (1), 53-71.
- Tapanes-Castillo, A. and Baylies, M.K. (2004) Notch signaling patterns *Drosophila* mesodermal segments by regulating the bHLH transcription factor Twist. *Development* 131, 2359-2372.

Book Chapter

- Tapanes-Castillo, A., Cox, V. and Baylies, M.K. (2004) Conserved and divergent roles of Twist in gastrulation. In: *Gastrulation: From Cells to Embryos*, (ed. C.D. Stern), New York: Cold Spring Harbor Laboratory Press, 619-629.

LECTURES

- *A molecular approach to study autism biology in human neural progenitor cells.* (2017) Barry University, Dept. of Biology, Sigma Xi Guest Speaker, Miami Shores, FL.

SELECTED POSTER PRESENTATIONS

- Tapanes-Castillo, A., Muleros, M., Ramos, L., Cotto Gonzalez, G., Peterson, A. Dykxhoorn, D. (2018) Evaluating the role of DLGAP1 antisense RNAs in autism biology. *Molecular Mechanisms of Neuronal Connectivity*, poster, Cold Spring Harbor Laboratory, NY.
- Muleros, M., Ramos L., Trokymchuk, V., Tapanes-Castillo, A., Dykxhoorn, D. (2017) Using human neural progenitor stem cells and gene silencing to study the role of DLGAP1 transcripts in autism. Florida Academy of Sciences Annual Meeting, poster, Lakeland, FL. **Award: Outstanding Undergraduate Poster Presentation in the Medical Sciences.**
- Planchart, C., Trokymchuk, V., Peterson, A., Reytor, A., Maul, D.M., Pina, M., Fernandez-Torres, L., Tapanes-Castillo, A. (2017) Evaluating medicinal plants for anticancer properties: testing plant extracts for cytotoxicity. Southeastern Regional Meeting of the American Chemical Society, poster, Charlotte, NC.
- Ramos, L., Tapanes-Castillo, A. (2017) The effect of Hedgehog signaling on in vivo neuronal morphogenesis and circuit formation. Max Planck Florida Institute Neural Circuits Symposium Research Conference, poster, West Palm Beach, FL.
- Rodriguez, Y., Pierre, R., Canales C., Genao, J., Tapanes-Castillo, A., Dykxhoorn, D. (2016) Using gene silencing to study autism in cultured neurons derived from induced adult human stem cells. Life Sciences South Florida Undergraduate Research Symposium, poster, Coconut Creek, FL.
- Napoleon, S., Ramirez, C., Rodriguez, K., Pierre, R., Blanco, P., Jolicoeur, D., Cendan, L., Genao, J., Recchi-Krezwinski, M., Delannoy, P., McDonnell, S., Tapanes-Castillo, A., Van slambrouck, S. (2015) Is ST6GAL2 Sialyltransferase responsible for the metastatic behavior of breast cancer cells? Florida Academy of Sciences Annual Meeting, poster, Saint Leo, FL. **Award: Honorable Mention for Undergraduate Student Presentation in the Medical Sciences.**
- Hernandez, D., Muleros, M., Rodriguez, K., Rodriguez, Y., Cendan, L., Pierre, R., Canales, C., Rogers, I., Barthelemy, N., Jolicoeur, D., Ramos, L., Prensensieu, C., Pierre, W., Chambers, K., Genao, J., Chaves Fonnegra, A., Tapanes-Castillo, A., Lopez, J. (2015) Species specific microbiome analysis of *Cliona delitrix*, an excavating sponge that harms coral reefs. St. Thomas University, Summer Research Institute Symposium, poster, Miami Gardens, FL.
- Tapanes-Castillo, A., Shabazz, F., Chacon, I. Genao, J., Valls, A., Vajn, K., Oudega, M., Plunkett, J.A. (2013) Primary neuronal cultures from the brainstem of adult zebrafish: a novel *in vitro* tool to study axonal growth across inhibitory chondroitin sulfate proteoglycans. Keystone Symposia: Growing to Extremes: Cell Biology and Pathology of Axons, poster 2026, Tahoe City, CA. **NIGMS Ancillary Training Program Scholarship Recipient.**
- Tapanes-Castillo, A., Shabazz, F., Vajn K., Oudega, M., Plunkett, J.A. (2012) Characterization of putative stem and neural progenitor populations from adult zebrafish brainstem tissue. Keystone Symposia: The Life of a Stem Cell: From Birth to Death, poster 321 and poster teaser talk, Olympic Valley, CA. **Keystone Symposia Travel Scholarship.**
- Tapanes-Castillo, A., Staudenmaier, M., Wood, A., Shabazz, F., Vajn, K., Oudega, M., Plunkett, J. (2011) Receptor-type protein tyrosine phosphatase sigma expression in the central nervous system of adult zebrafish and brainstem-derived primary neuron cultures. American Society for Cell Biology 51st Annual Meeting, poster B700. Denver, CO. **Poster prize, Minorities Affairs Committee Travel Award.**