

CURRICULUM VITAE

Antonio J. Giraldez, Ph.D.
 Professor, Department of Genetics, Yale Stem Cell Center, Yale Cancer Center.
 Yale University School of Medicine

B.S. Chemistry. University Autonoma of Madrid (Spain) 1998
 Ph.D. Developmental Biology, European Molecular Biology Laboratory, (Germany) 2002

CAREER/ACADEMIC APPOINTMENTS

2014-present Professor of Genetics.
 Genetics Department. Yale University School of Medicine.

2012-present Director of Graduate Studies.
 Genetics Department. Yale University School of Medicine.

2013-2014 Associate Professor (*with tenure*).
 Genetics Department. Yale University School of Medicine.

2011-2012 Associate Professor.
 Genetics Department. Yale University School of Medicine.

2006-2011 Assistant Professor.
 Genetics Department. Yale University School of Medicine.

2003-2006 Postdoctoral Research,
 Skirball Institute. New York University/ MCB Harvard University

1998-2002 Ph.D
 European Molecular Biology Laboratory. Heidelberg. Germany.

PROFESSIONAL HONORS & RECOGNITION

2014 Vilcek Prize for Creative Promise in Biomedical Sciences

2008 Pew Scholar in Biomedical Sciences

2009 Kavli Frontiers of Science Speaker

2007 Lois E. and Franklin H. Top, Jr., Yale Scholar Award

2007 John Kendrew Young investigator Award EMBL, Heidelberg

2007 NYAS Blavatnik Young Investigator Award (Finalist)

2006 Keystone Symposia Scholarship.

2005 Keystone Symposia Scholarship.

2004 HFSP Postdoctoral Fellowship

2003 EMBO Postdoctoral Fellowship

1998 EMBL PhD fellowship

1998 3rd National Prize in Chemistry Degree. Ministry of Science. Spain

1997 Undergraduate Research Fellowship. CBMSO. Universidad Autonoma Madrid.

University

2007-2010 Lois E. and Franklin H. Top, Jr., Yale Scholar Award

GRANT HISTORY**Active Grants**

R01 GM081602-06A1 Giraldez (PI) 09/01/2013-08/31/2017
NIH/NIGMS
Title: The Role of MicroRNAs in Vertebrate Development

R01 GM101108-03 Giraldez (PI) 05/01/2012-02/29/2016
NIH/NIGMS
Title: Molecular Characterization of the microRNA Processing Pathways

R01GM102251-02 Giraldez (PI) 08/10/2012-05/31/2016
NIH/NIGMS
Title: Molecular mechanisms of miRNA mediated regulation

R01GM103789-02 Giraldez (PI) 09/01/2012-08/31/2016
NIH/NICHHD
Title: Analysis of the gene networks regulating the maternal to zygotic transition

R01HD074078-02 Giraldez (PI) 08/15/2012-04/30/2017
NIH/NIGMS
Title: Functional analysis of the zebrafish genome through RNA-seq and ribosome profile

R21HD073768-02 Giraldez (PI) 07/01/2012-06/31/2014
NIH/NICHHD
Title: Development of RNA interference in zebrafish

#1-FY12-230 Giraldez (PI) 06/01/2012-05/31/2015
MOD
Title: The role of microRNAs during vertebrate development

INVITED SPEAKING ENGAGEMENTS, PRESENTATIONS, SYMPOSIA & WORKSHOPS

- 2014 Frontiers of development. Santa Cruz Developmental Biology Meeting.
- 2014 Non-coding RNA - From Basic Mechanisms to Cancer, DKFZ, Germany
- 2014 Biochemistry Department, Northwestern University, Chicago, USA
- 2014 Department of Biochemistry, University of Washington, Seattle, USA

- 2014 University of California Berkeley, Division of Cell & Developmental Biology, USA
- 2014 MicroRNA workshop. McGill University's Bellairs Research Station, Barbados
- 2014 Keystone Symposium RNA silencing, Seattle, Washington. USA
- 2013 RNA Program in Academia Sinica (RPAS), Taipei, Taiwan
- 2013 Molecular Biology Society of Japan, Kobe, Japan
- 2013 RNA Symposium: Nobel Forum Karolinska Institute, Stockholm, Sweden
- 2013 EMBO|EMBL Symposium: Non-Coding Genome, Heidelberg, Germany
- 2013 EMBO, Protein Synthesis and Translational Control, Heidelberg, Germany
- 2013 Gordon Conference in Developmental Biology, Il Ciocco, Italy
- 2013 Cellular aspects of mRNA fate, Université Pierre et Marie Curie, Paris, France
- 2013 Micro Symposium, IMP, Vienna.
- 2013 National Institute of Child Health and Human Development, NIH, Bethesda, ME
- 2013 Keystone Meeting, Noncoding RNAs in Development and Cancer, Vancouver, CA
- 2012 Cincinnati Children's Hospital Medical Center, Cincinnati, OH.
- 2012 Annual Developmental Biology symposium, McGill University, Montreal, CA.
- 2012 CRG, Centre de Regulacio Genomica, Barcelona, Spain.
- 2012 FMI, Friedrich Miescher Institute for Biomedical Research , Basel, Switzerland.
- 2012 RIKEN, Center for Developmental Biology, Kobe, Japan.
- 2012 Max Plank Institute for Biochemistry, Munich, Germany.
- 2012 Institute of Molecular Biology, Mainz, Germany.
- 2012 EMBL, Developmental Biology Department, Heidelberg, Germany
- 2012 Keystone Meeting, RNA Silencing, Vancouver, CA
- 2012 Department of Developmental and Molecular Biology, Albert Einstein, NY.
- 2011 Microsymposium on small RNAs. IMP. Vienna. Austria.
- 2011 Non-coding RNAs and Cancer Symposium. UCL Cancer Institute. London, England.
- 2011 Department of Medicine. New York University School of Medicine. New York.
- 2011 Keystone Symposium on Mechanism and Biology of Silencing, Monterey, California.
- 2010 Genetics department. Skirball Institute. NYU. New York.
- 2010 EMBO/EMBL Non Coding Genome Symposium. Heidelberg. Germany
- 2010 Regulatory roles of small RNAs. Weizmann Institute of Science. Rehovot, Israel.
- 2010 Santa Cruz Developmental Biology Meeting. Santa Cruz. California.
- 2009 4th Barossa Meeting. Cell signaling in Cancer and Development. Adelaide, Australia.
- 2009 Twenty-first Annual Kavli Frontiers of Science symposium. Irvine California.
- 2009 International PhD program, Gulbenkian Institute, Oeiras. Portugal
- 2009 Institute of Molecular Medicine, Lisbon, Portugal
- 2009 European Zebrafish meeting. Rome. Italy
- 2009 The Biology of RNA silencing. Keystone meeting. Victoria, British Columbia. Canada.
- 2009 Pew Meeting on Biomedical Sciences. Puerto Rico.

- 2009 Center for Research on Reproduction. University of Pennsylvania. Philadelphia.
- 2009 Strategic Conference of Zebrafish Investigators. Asilomar, CA. USA.
- 2008 48th Annual Meeting of the American Society for Cell Biology. San Francisco, CA.
- 2008 University of Connecticut Health Center. Farmington, CT. USA.
- 2008 European Molecular Biology Laboratory. Heidelberg. Germany
- 2008 MicroRNA Symposium. Vienna, Austria.
- 2008 Regulatory RNA Symposium. Symposium. Toronto, Canada.
- 2008 National Center for Biological Sciences. Bangalore, India.
- 2008 Temasek Life Science Laboratory, Singapore.
- 2008 Institute of Molecular and Cell Biology. Singapore.
- 2008 Vanderbilt University, Nashville, Tennessee, USA
- 2007 Keystone Symposia. MicroRNAs and cancer. Keystone, Colorado. USA
- 2007 Molecular Biology Society of Japan Spring Symposium, Awajishima Island, Japan.
- 2007 New York Academy of Sciences. RNAi discussion group. New York. USA
- 2007 Keystone Symposia 'miRNAs and siRNAs' at Keystone, Colorado. USA
- 2007 Strategic Conference of Zebrafish Investigators. Asilomar, CA. USA.
- 2006 Keystone Symposia. RNAi and Related Pathways. Vancouver, BC, Canada.
- 2006 Department of Physiology. Columbia University. New York
- 2006 Cold Spring Harbor Laboratory. Cold Spring Harbor. New York.
- 2006 Genetics Department. Yale University School of Medicine. New Haven Connecticut.
- 2006 Department of Biology. New York University. New York.
- 2006 Department of Gene expression. UMASS Medical School. Worcester, Massachusetts
- 2006 Center for RNA. Case Western Reserve University. Cincinnati, Ohio.
- 2006 Department of Biochemistry. UMASS Medical School. Worcester, Massachusetts.
- 2005 CSHL RNAi meeting. Cold Spring Harbor Laboratory, New York.
- 2005 New York Academy of Sciences. RNAi discussion group. New York.
- 2005 Keystone Symposia Meeting. Beaver Run Resort Breckenridge, Colorado. USA
- 2002 ELSO 2002. Nice, France.

PROFESSIONAL SERVICE

Peer Review Groups/Grant Study Sections

2007-2008 NIH Molecular Neurogenetics study section. Ad hoc committee member

Journal Service

Reviewer for Cell, Nature, Nature Genetics, Science, eLife, Current Biology, Cell Metabolism, Developmental Cell, EMBO Journal, EMBO Reports, Genome Biology, Nature Molecular Structural Biology, PLoS ONE, Proceedings of the National Academy of Sciences, BMC Genomics, RNA,

Professional Organizations

2004-present New York Academy of Science

Administrative positions

2012-present Director of Graduate Studies Genetics Department. Yale University School of Medicine. New Haven, Connecticut. USA

Peer Review Groups/Grant Study Sections

2007-2008 NIH Molecular Neurogenetics study section. Ad hoc committee member

BIBLIOGRAPHY

Peer-Reviewed Original Research

1. Bazzini AA[#], Johnstone TG[#], Christiano R, Mackowiak SD, Obermayer B, Fleming ES, Vejnar CE, Lee MT, Rajewsky N[‡], Walther TC and **Giraldez AJ[‡]**. Identification of smallORFs in animals using ribosome footprinting and evolutionary conservation. **EMBO J**. 2014 Apr 4.
2. Lee MT[#], Bonneau AR[#], Takacs CM, Bazzini AA, DiVito KR, Fleming ES, **Giraldez AJ[‡]**. Nanog, SoxB1 and Pou5f1/Oct4 regulate widespread zygotic gene activation during the maternal-to-zygotic transition. **Nature**, 2013 Sep 22. doi: 10.1038/nature12632.
3. Yoda M[#], Cifuentes D[#], Izumi N, Sakaguchi Y, Suzuki T, **Giraldez AJ[‡]** and Tomari Y[‡]. PARN mediates 3'-end trimming of Argonaute2-cleaved precursor microRNAs. **Cell Reports**, 2013, 5, 1–12, November 14,
4. Lewellis SW, Nagelberg D, Subedi A, Staton A, LeBlanc M, **Giraldez AJ**, and Knaut H. Precise SDF1-mediated cell guidance is achieved through ligand clearance and microRNA-mediated decay. **J Cell Biol**. 2013 Feb 4;200(3):337-55.
5. Stahlhut C, Suarez Y, Lu J, Mishima Y[‡], and **Giraldez AJ[‡]**. miR-1/206 regulate angiogenesis by modulating Vegf-A expression. **Development**, 2012.
6. Bazzini AA, Lee MT, **Giraldez AJ[‡]**. Ribosome Profiling Shows That miR-430 Reduces Translation Before Causing mRNA Decay in Zebrafish. **Science** 13 April 2012: 233-23
7. Staton AA, **Giraldez AJ[‡]**. Use of target protector morpholinos to analyze the physiological roles of specific miRNA-mRNA pairs in vivo. **Nature Protocols**. 2011 Dec 1;6(12):2035-49. doi: 10.1038/nprot.2011.423.
8. Zhu C, Smith T, McNulty J, Rayla AL, Lakshmanan A, Siekmann AF, Buffardi M, Meng X, Shin J, Padmanabhan A, Cifuentes D, **Giraldez AJ**, Look AT, Epstein JA, Lawson ND, Wolfe SA. Evaluation and application of modularly assembled zinc-finger nucleases in zebrafish. **Development**. 2011 Oct;138(20):4555-64.
9. Staton AA, Knaut H and **Giraldez AJ[‡]**. miRNA regulation of SDF1 chemokine signaling provides genetic robustness to germ cell migration. **Nature Genetics**. Mar;43(3):204-11. Epub 2011 Jan 23
10. Zhu C, Smith T, McNulty J, Rayla AL, Lakshmanan A, Siekmann AF, Buffardi M, Meng X, Shin J, Padmanabhan A, Cifuentes D, **Giraldez AJ**, Look AT, Epstein JA, Lawson ND, Wolfe SA. Evaluation and application of modularly assembled zinc-finger nucleases in zebrafish. **Development**. 2011 Oct;138(20):4555-64.
11. Sander JD, Dahlborg EJ, Goodwin MJ, Cade L, Zhang F, Cifuentes D, Curtin SJ, Blackburn JS, Thibodeau-Beganny S, Qi Y, Pierick CJ, Hoffman E, Maeder ML, Khayter C, Reyon D, Dobbs D, Langenau DM, Stupar RM, **Giraldez AJ**, Voytas DF, Peterson RT, Yeh JR, Joung JK. Selection-

- free zinc-finger-nuclease engineering by context-dependent assembly (CoDA). **Nature Methods**. 2011 Jan;8(1):67-9. Epub 2010 Dec 12.
12. Cifuentes D, Xue H, Taylor DW, Patnode H, Mishima Y, Cheloufi S, Ma E, Mane S, Hannon GJ, Lawson N, Wolfe S, **Giraldez AJ‡**. A novel miRNA processing pathway independent of Dicer requires Argonaute2. **Science**. 2010, Jun 25;328(5986):1694-8. Epub 2010 May 6
 13. Mishima Y, Abreu-Goodger C, Staton AA, Stahlhut C, Shou C, Cheng C, Gerstein M, Enright AJ and **Giraldez AJ‡**. Zebrafish miR-1 and miR-133 shape muscle gene expression and regulate sarcomeric actin organization. **Genes & Development**. 2009 Mar 1;23(5):619-32. Epub 2009 Feb 24. PMID: 19240126
 14. Choi PS, Zakhary L, Choi WY, Caron S, Alvarez-Saavedra E, Miska EA, McManus M, Harfe B, **Giraldez AJ**, Horvitz RH, Schier AF, and Dulac C. Members of the miRNA-200 Family Regulate Olfactory Neurogenesis. **Neuron**. 2008. Jan 10, 57, 1–15.
 15. Choi WY, **Giraldez AJ‡**, Schier AF‡. Target Protectors Reveal Dampening and Balancing of Nodal Agonist and Antagonist by miR-430. **Science**. 2007. Oct 12;318(5848):271-4. ‡Corresponding authors.
 16. Mishima Y[#], **Giraldez AJ[#]**, Takeda Y, Fujiwara T, Sakamoto H, Schier AF and Inoue K. Differential regulation of germline mRNAs in soma and germ cells by zebrafish miR-430. **Current Biology**, 2006. Nov 7;16(21):2135-42.
 17. **Giraldez AJ‡**, Mishima Y, Rihel J, Grocock R, van Dongen S, Inoue, K, Enright A, and Schier AF‡. Zebrafish miR-430 promotes deadenylation and clearance of maternal mRNAs. **Science**. 2006 Apr 7;312(5770):75-9.
 18. **Giraldez AJ‡**, Cinalli RM, Glasner ME, Enright A, Thomson JM, Baskerville S, Hammond SM, Bartel D, and Schier AF‡. MicroRNAs regulate brain morphogenesis in zebrafish. **Science**. 2005 May 6;308(5723):833-8.
 19. Le Good JA, Joubin K[#], **Giraldez AJ[#]**, Ben-Haim N[#], Beck S, Chen Y, Schier AF and Constam DB. Nodal stability determines signaling range. **Current Biology**. 2005 Jan 11;15(1):31-6.
 20. Kreuger J, Perez L, **Giraldez AJ**, Cohen SM. Opposing activities of Dally-like glypican at high and low levels of Wingless morphogen activity. **Developmental Cell**. 2004 Oct;7(4):503-12.
 21. **Giraldez AJ**, Cohen SM. Wingless and Notch signaling provide cell survival cues and control cell proliferation during wing development. **Development**. 2003 Dec;130(26):6533-43.
 22. **Giraldez AJ**, Perez L, Cohen SM. A naturally occurring alternative product of the mastermind locus that represses notch signaling. **Mechanisms of Development**. 2002 Jul;115(1-2):101-5.
 23. **Giraldez AJ**, Copley RR, Cohen SM. HSPG modification by the secreted enzyme Notum shapes the Wingless morphogen gradient. **Developmental Cell**. 2002 May; 2(5):667-76.

‡ Corresponding authors.

Equal contribution

Reviews, Chapters, Books

1. Lee MT‡[#], Bonneau AR[#], **Giraldez AJ‡**. Activation of the zygotic genome during the maternal to zygotic transition in animals. **Annual Reviews in Cell and Developmental Biology** 2014. In press.
2. Bazzini AA, **Giraldez AJ‡**. MicroRNAs sculpt gene expression in embryonic development new insights from plants. **Dev Cell**. 2011 Jan 18;20(1):3-4.

3. **Giraldez AJ†**. microRNAs, the cell's Nepenthe: clearing the past during the maternal-to-zygotic transition and cellular reprogramming. **Curr Opin Genet Dev.** **2010**. Volume 20, Issue 4, August 2010, Pages 369-375 (Review)
4. Takacs CM, **Giraldez AJ†**. MicroRNAs as genetic sculptors: Fishing for clues. **Semin Cell Dev Biol.** **2010** Epub 2010 Feb 10. (Review)
5. Staton, A.A. and **Giraldez AJ†**. MicroRNAs in development and disease. **Encyclopedia of Life Sciences.** **2008**. pp. 1–10. (Review)
6. Mishima Y, Stahlhut C, **Giraldez AJ†**. miR-1-2 gets to the heart of the matter. **Cell.** **2007** Apr 20;129(2):247-9. (Review).
7. Schier AF, **Giraldez AJ**. MicroRNA function and mechanism: insights from zebra fish. **Cold Spring Harb Symp Quant Biol.** **2006**. 71:195-203. (Review).