

# CURRICULUM VITAE

## Hebe Guardiola-Diaz

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### ***Education***

1984-1988	<i>University of Puerto Rico,</i>	B.S., Chemistry
1988-1994	<i>University of Michigan,</i>	Ph.D., Biological Chemistry
1994-1996	<i>Karolinska Institute, Sweden</i>	Postdoctoral fellow
1996-1997	<i>University of Michigan</i>	Postdoctoral fellow

### ***Academic Appointments***

1997 spring	<i>Washtenaw Community College</i>	Instructor
1997-1998	<i>University of Michigan</i>	Lecturer I
1998-2005	<i>Trinity College</i>	Assistant Professor
2005- present	<i>Trinity College</i>	Associate Professor
2005 fall	<i>Moi University, Kenya</i>	Visiting Professor of Medical Biochemistry
2009-2010	<i>U. of Conn Medical School</i>	Visiting Faculty Neuroscience Department

### ***Courses***

Washtenaw Community College: Human Biology

University of Michigan: Introduction to Biochemistry

Trinity College:

- Beautiful Minds (FYSM 115)
- Body of Knowledge (FYSM 123)
- Food Science and Culture (FYSM 144)
- Food Biology (FYSM 144)
- Phage Hunt (FYSM 170)
- The Brain (NESC 101)
- Cells Metabolism and Heredity (BIOL 153L)
- Cellular Basis of Life (BIOL 153)
- Genome Analysis (BIOL 175)
- Introduction to Neuroscience; Neurobiology (NESC 201)
- Metabolic Health (Biol/Nesc 207, scheduled for spring 2024)
- Introduction to Neuroscience Methods (NESC 301)
- Biochemistry I (BIOL 317L)
- Biochemistry II (BIOL 318)
- Molecular and Cellular Neurobiology (NESC 402)
- Bioinformatics (BIOL 428)
- Nutrition and Brain Health (BIOL/NESC 432)
- Topics in Biochemistry (BIOL 443)

### ***Professional Memberships***

American Society for Biochemistry and Molecular Biology  
Genome Consortium for Active Teaching  
Society for Neuroscience

## Faculty for Undergraduate Neuroscience

### **Honors & Awards**

- 1986-1988 M.A.R.C. (Minorities Access to Research Careers) Honor Program
- 1989 American Society for Cell Biology Travel Fellowship
- 1988-1992 Minority Merit Fellowship
- 1992 Society for Neuroscience Travel Fellowship
- 1994 Swedish Medical Research Council Fellowship
- 1996 Wenner Gren Foundation Fellowship
- 1999 Green Circle Award, State of Connecticut Department of Environmental Protection
- 2000 Green Circle Award, State of Connecticut Department of Environmental Protection

### **Grants**

- 1999 Pfizer Grant (\$10,000)
- 1999 Kellogg Foundation / Trinity College-Community Innovation Fund (\$37,000)
- 1999 A.S.B.M.B. (American Society for Biochem. and Molecular Biology) Travel Award
- 1999-2000 Trinity College Faculty Research Grant (\$3,500)
- 1999-2000 Trinity Research Assistant Grants (Shaukat Khan '00 and Darren Mushrush'00)
- 1999-2002 Trinity College Faculty Research Grant (\$10,000)
- 2000 Council for Undergraduate Education Summer Research Fellowship (Suma Magge '01)
- 2000-2001 Trinity Research Assistant Grant (Darren Mushrush '00)
- 2001 Pfizer Undergraduate Summer Fellowship (Nicholas Kwiatkowski '03)
- 2001 National Institutes of Health AREA Grant (\$100,000 NOT FUNDED)
- 2001-2002 Trinity Research Assistant Grants (Matthew Fishel '02, Allison Zanno '04)
- 2002 A.S.B.M.B. (American Society for Biochem. and Molecular Biology) Travel Award
- 2002 National Science Foundation CCLI Grant (\$98,000 NOT FUNDED)
- 2005 Trinity College's FRC and HHMI-funded student research assistantships
- 2005 National Institutes of Health AREA Grant (\$150,000 NOT FUNDED)
- 2006 Trinity College's FRC and HHMI-funded student research assistantships
- 2010-2011 Trinity College Faculty Research Committee

### **Research Interests**

Biochemistry and molecular biology of myelination; regulation cell-signaling during oligodendrocyte development.

### **Refereed Publications (Trinity students designated in bold text)**

Casellas, A. M., DeJesus, S., Guardiola, H. & Renaud, F. L. (1988) Naloxone-reversible inhibition by opioids of phagocytosis in *T. thermophila* and mouse peritoneal macrophages. *Puerto Rico Health Sciences Journal*. 7(2), 103-5.

Casellas, A. M., Guardiola, H. & Renaud, F. L. (1991) Inhibition by opioids of phagocytosis in peritoneal macrophages. *Neuropeptides*, 18, 35-40.

Guardiola-Diaz, H. M., Boswell, C. & Seasholtz, A. F. (1994) The cAMP responsive element in the human corticotropin-releasing hormone gene mediates regulation by depolarization in PC-12 cells. *Journal of Biological Chemistry*, 269(20), 14784.

***Refereed Publications (cont., Trinity students designated in bold text)***

Guardiola-Diaz, H. M., Kolinske, J. S., Gates, L. & Seasholtz, A. F. (1996) Negative glucocorticoid regulation of cyclic adenosine 3',5' monophosphate-stimulated corticotropin-releasing hormone-reporter expression in AtT-20 cells. *Molecular Endocrinology*, 10(3), 317-329.

Mansen, A., Guardiola-Diaz, H. M., Rafter, J., Branting, C. & Gustafsson, J.-A. (1996) Expression of the peroxisome proliferator-activated receptor in the mouse colonic mucosa. *Biochemical and Biophysical Research Communications*, 222(3), 844-51.

Guardiola-Diaz, H. M., Rehnmark, S., Usuda, N., Albrektsen, T., Feltkamp, D., Gustafsson, J.-A. & Alexson, S. E. (1999) Rat peroxisome proliferator-activated receptors and brown adipose tissue function during cold acclimatization. *Journal of Biological Chemistry*, 274(33), 23368-23377.

Guardiola-Diaz, H. M., Foster, L.-A., **Mushrush, D.** & Vaz, A. (2001) Azole-antifungal binding to a novel cytochrome P450 from *Mycobacterium tuberculosis*: implications for treatment of tuberculosis. *Biochemical Pharmacology*, 61, 1463-1470.

**Magge, S. S.** & Guardiola-Diaz, H. M. (2002) Characterization of the mouse peroxisome proliferator-activated receptor  $\delta$  gene. *Biochemical and Biophysical Research Communications*, 290, 230-235.

**Zanno, A., Kwiatkowski, N.,** Vaz, A.D. & Guardiola-Diaz, H. M. (2005) MT FdxR: a ferredoxin reductase from *M. tuberculosis* that couples to MT CYP51. *Biochimica et Biophysica Acta*, 1707 (2-3):157-69.

Guardiola-Diaz, H. M. Ishii, A. & Bansal, R. (2011) Erk1/2 MAPK and mTOR signaling sequentially regulates progression through distinct stages of oligodendrocyte differentiation. *Glia*, 60(3):476-86.

Guardiola-Diaz H, **DiBenedictis BT, Ahamed S, Wark GM, Prendaj E,** & Bansal R. (2023) Diverse responses of oligodendrocytes to different FGF-family members: Uncoupling structure-function relationship within FGF subfamilies. *Manuscript in preparation*.

***Conference Presentations (Trinity students designated in bold text)***

Guardiola-Diaz, H. M., Boswell, C. & Seasholtz, A. F. (1991) Human corticotropin-releasing hormone gene: Positive and negative transcriptional regulation by glucocorticoids. *Abstracts of the 15<sup>th</sup> International Congress of Biochemistry*, 67.

Guardiola-Diaz, H. M., Boswell, C., Mesa, B. & Seasholtz, A. F. (1991) Differential stimulation of the human corticotropin-releasing hormone gene in JEG-3 and PC-12 cells. *Society for Neuroscience Abstracts*, Vol. 17(2), 1095 (oral presentation).

- Guardiola-Diaz, H. M. & Seasholtz, A. F. (1992) Synergistic positive transcriptional regulation of the human corticotropin-releasing hormone gene by cAMP and depolarization. *Society for Neuroscience Abstracts, Vol 18(1)*, 753 (oral presentation).
- Guardiola-Diaz, H. M. & Seasholtz, A. F. (1993) Mechanistic studies on the transcriptional regulation of the human corticotropin-releasing hormone gene by cAMP and glucocorticoids. *American Society for Biochemistry and Molecular Biology*.
- Guardiola-Diaz, H. M., Enmark, E. & Gustafsson, J.-A. (1995) Cloning and characterization of peroxisome proliferator-activated receptors (PPARs). *American Society for Biochemistry and Molecular Biology*.
- Mansen, A., Guardiola-Diaz, H. M., Rafter J. & Branting, C. (1995) Expression of the peroxisome proliferator-activated receptors (PPARs) in the colonic mucosa. *Nuclear Hormone Receptors: Novel Regulators in Physiology and Pathology. 7<sup>th</sup> International CBT Symposium, Huddinge, Sweden*, 99.
- Gustafsson, J.-A., Gottlicher, M., Albrektsen, T., Banner, C., Treuter, E., Corton, C., Bocos, C., Guardiola-Diaz, H. M., Teboul, M., Wiebel, F. & Enmark, E. (1995) Mechanism of signal transduction by PPAR. (1995) *Nuclear Hormone Receptors: Novel Regulators in Physiology and Pathology. 7<sup>th</sup> International CBT Symposium, Huddinge, Sweden*, 46.
- Guardiola-Diaz, H. M., Rehnmark, S., Alexson S. E. & Gustafsson, J.-A. (1995) Involvement of peroxisome proliferator-activated receptors (PPARs) in cold adaptation *Nuclear Hormone Receptors: Novel Regulators in Physiology and Pathology. 7<sup>th</sup> International CBT Symposium, Huddinge, Sweden*, 89.
- Guardiola-Diaz, H. M., Rehnmark, S., Gustafsson, J.-A. & Alexson, S. E. (1995) Involvement of peroxisome proliferator-activated receptors in cold adaptation. *Society for Neuroscience Abstracts, Vol. 21(2)*.
- Guardiola-Diaz, H. M., McGinnity, D. & Vaz, A. (1998). Cloning and characterization of an *M. tuberculosis* CYP51-like protein. *12<sup>th</sup> International Symposium on Microsomes and Drug Oxidations. Montpellier, France*.
- Guardiola-Diaz, H. M. (1999) Green fluorescent protein (GFP) in the instructional biochemistry laboratory. *American Society for Biochemistry and Molecular Biology, San Francisco, CA*, 105.
- Guardiola-Diaz, H. M., Foster, L.-A. & Vaz, A. (1999) Anti-mycobacterial activity of azole-antifungals: Implications for potential new therapeutic targets in *M. tuberculosis*. *11<sup>th</sup> International Conference on Cytochrome P450. Sendai Japan*, 170.

Henderson, D. E. & Guardiola-Diaz, H.M. (2000) The neighborhood as a laboratory – teaching analytical and environmental chemistry. *Paper presented at the regional meeting of the American Chemical Society.*

**Magge, S., Kurien, M.** & Guardiola-Diaz, H. M. (2001, April) Novel mRNA transcripts involved in oligodendrocyte differentiation identified by differential display. *Poster session presented at NEURON Meeting, Wellesley College.*

#### ***Conference Presentations & (cont.)***

Guardiola-Diaz, H. M. & **Magge, S.** (2001) PPAR $\delta$ -regulated genes in oligodendrocytes. *Society for Neuroscience Abstracts, Vol. 27, 462.*

**Zanno, A., Kwiatkowski, N.** & Guardiola-Diaz, H. M. (2002, April) Expression and biochemical characterization of a putative ferridoxin reductase from *M. tuberculosis*. *American Society for Biochemistry and Molecular Biology.*

Guardiola-Diaz, H. M. (2004, October) PPAR $\delta$  enhances expression of myelin proteins in oligodendrocytes and C6 cells. *Society for Neuroscience Abstracts, p.69.*

**Zanno, A. Kwiatkowaski, N., Vaz, A.** & Guardiola-Diaz, H. M. (2004, November) Identification and characterization of the reductase component of the *M. tuberculosis* CYP51 system. *21<sup>st</sup> Annual New England Membrane Enzyme Group Meeting.*

**Prendaj E., Ahmed S., DiBenedictis B,** Guardiola-Diaz, H. & R. Bansal (2010) FGF-2 is not a prototypic member of the FGF family that regulates oligodendrocyte lineage cells. *Presented at the Gordon Research Conference on Myelin.*

Guardiola-Diaz, H., Ishi,A. & Bansal, R. (2010) MAP Kinase and mTOR signaling differentially regulates oligodendrocyte differentiation. *Presented at the American Society for Neurochemistry Conference 2010.*

**McInnis, J., Reiss, C., Colantonio, A.** & Guardiola-Diaz, H (2012) “The cell signaling response to ER stress in oligodendrocytes.” *Presented at FUN symposium Society For Neuroscience, Washington DC*

#### ***Lectures to College Community***

Guardiola-Diaz, H. M. (1999) From the uncommon cold to athlete’s foot: Declaring war on the deadly *M. tuberculosis*. Brown Bag Lunch Series.

Henderson, D. & Guardiola-Diaz, H. M. (2001) Getting the lead out: Using plants to clean contaminated soil. Interdisciplinary Science Center Summer Lecture Series.

Guardiola-Diaz, H. M. (2001) Ownership of genetic information. Panel Discussion for Scientific Freedom and Responsibility Co-curricular Initiative.

Guardiola-Diaz, H. M. (March 2011) Myelin Matters

### ***Invited Lectures***

Guardiola-Diaz, H. M. (2001) Azole compound inhibition of MT CYP51. St. John's University, New York.

Guardiola-Diaz, H. M. (2001) Tuberculosis: could mycobacterial cytochrome P450s become novel therapeutic targets? *Invited lecture at the 21<sup>st</sup> Annual New England Membrane Enzyme Group Meeting*

Guardiola-Diaz, H. M. (2005, August) Estrategias nuevas para combatir *M. tuberculosis*. *Presented at Congreso Latinoamericano de Estudiantes de Microbiología y Parasitología (Latinamerican Congress for Microbiology and Parasitology Students) in Lima, Peru.*

Guardiola-Diaz, H. M. (2013, October) Cross-talk between mTOR and the endoplasmic reticulum in oligodendrocytes. *Presented at the UCHC department of Neuroscience.*

### ***Service at Trinity College***

1998-present Neuroscience Coordinating Committee  
 1999 Institutional Animal Care and Use Committee (IACUC)  
 1999-2003 Watson Selection Committee  
 1999-2008 Institutional Animal Care and Use Committee (Chair in 2001)  
 2000-2002 Faculty Advisor to the Biology Club  
 2000-2003 Committee on Committees (Chair in AY 02-03)  
 2000-2007 Faculty Conference  
 2000-2006 Community Learning Initiative Advisory Group (CLIAG)  
 2001-2004 Health Studies Advisory Committee  
 2001-2007 Institutional Animal Care and Use Committee (IACUC)  
 2001 Chair, Institutional Animal Care and Use Committee (IACUC)  
 2003 40% Rule Committee  
 2003 Contributed to HHMI grant application  
 2004 Faculty Advisor to Medical Ethics Student Reading Group  
 2005 Portal Committee  
 2006-2009 Curriculum Committee (Chair 2008-2009)  
 2006 Urban and Global Re-accreditation Working Group  
 2009 Educational Policy Committee (replacement)  
 2010 Informal Advisory Group to Presidential Scholars  
 2010-2013 Admissions and Financial Aid  
 2011-present Trinity College Institutional Biosafety Committee  
 2011 HMTCA Curricular Committee  
 2012-2015 Director, Neuroscience Program  
 2012-2016 Academic Freedom Committee  
 2013-2016 Institutional Animal Care and Use Committee (IACUC)  
 2014-2016 Chair, Institutional Animal Care and Use Committee (IACUC)  
 2015-2016 Curriculum Committee (replacement)

Educational Policy Committee (replacement)  
 Dean of Faculty Search Committee  
 2018 Health Professions Advising Committee (HPAC)  
 2018-2020 Admissions and Financial Aid Committee  
 2018-2020 POSSE Mentor  
 2019-2020 Dean of Faculty Search Committee  
 2020-2023 Educational Policy Committee  
 2022-2023 Beckman Selection Committee  
 2023-present Academic Freedom Committee

***Service to the Scientific Community***

1999 National Science Foundation review panel  
 1999 Judge- American Society for Biochemistry and Molecular Biology  
 Undergraduate Poster Competition  
 2000 Reviewed Stryer's Biochemistry 5<sup>th</sup> ed.  
 2002 Panelist for American Physiological Society Career Information Session at  
 FASEB  
 2004 Judge- American Society for Biochemistry and Molecular Biology  
 Undergraduate Poster Competition  
 2004 Participant NIH Roadmap Implications Juniata College

***Service to the Greater Hartford Community***

1999-2000 Urban Environment Fellowship  
 1999 Judge: State of Connecticut Department of Environmental Protection's  
 Elementary School Poster Competition  
 2000 Connecticut Children's Medical Center Auxiliary Board Fellowship  
 Committee  
 2000-2004 St. Joseph's Cathedral Sandwich Ministry  
 2005 Hartford Middle School (Learning Corridor) -- College for a Day participant  
 2008-2009 Charter Oak Elementary School Career Day  
 2009 West End Community Association Education Committee  
 2011 HMTCA Governance Team