

**ROBERT DeSALLE**  
CURATOR AND PROFESSOR  
DIVISION OF INVERTEBRATE ZOOLOGY

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**HIGHEST DEGREE EARNED**

Ph. D.

**AREA OF SPECIALIZATION**

Entomology, genomics, fruit flies

**EDUCATIONAL EXPERIENCE**

Ph.D. in Biology, Washington University, St. Louis, MO, 1984

B.A. in Biological Sciences, University of Chicago, 1976

**PREVIOUS EXPERIENCE IN DOCTORAL EDUCATION**

FACULTY APPOINTMENTS

Adjunct Appointments

Yale (1986-1999)

Columbia (1997-Present)

New York University (1995-Present)

CUNY (2000-Present)

University of Connecticut (1999-2004)

Cornell (1997-2001)

COURSES TAUGHT

Evolution (co-professor), Richard Gilder Graduate School, 2009-present

Molecular and Genome Evolution, Richard Gilder Graduate School, AY: 2009-2010  
(Spring) & AY: 2011-2012 (Fall)

Phylogenomics, Columbia University E3B program (Spring 2011)

Introduction to Biology, Undergraduate level, New York University, AY: 2004-2005

Molecular Mechanisms- Animals, Graduate level, New York University, AY: 2004-2005

Bioinformatics, Graduate level, New York University, AY: 2004-2005

Introduction to Evolution, Graduate level, New York University, AY: 2004-2005

Evolution, Graduate level, Columbia University, AY: 2004-2005

Evolution and Journalism, Graduate level, Columbia University, AY: 2004-2005

GRADUATE COMMITTEES

Over 100 in 17 years and 50 the past 10, including:

Zach Baldwin, Richard Gilder Graduate School

Ed Stanley, Richard Gilder Graduate School

Sebastian Kvist, Richard Gilder Graduate School

Alejandro Grajales, Richard Gilder Graduate School

Dawn Roje, Richard Gilder Graduate School

## GRADUATE ADVISEES

Eric Stiner (CUNY)	CUNY teaching fellow
Mike Friedman (CUNY)	CUNY teaching fellow
Samuel Crane (CUNY)	CUNY/NSF teaching fellow
Anthony Deo (NYU)*	NSF funded
Chanda Bennet (Columbia University)*	Columbia University funded
Francisca Almeida (NYU)*	NYU teaching fellow
Kurt Lineau (NYU)*	NIH graduate fellow
Ryan Kelly (Columbia)*	NSF funded
Al Phillips (Columbia)	AMNH fellow
Mike Rusello (Columbia University)*	WCS DIG / CERC funded
Chelsea Specht (New York University)*	NSF funded
Evon Hekalla (Columbia University)*	EPA Fellow
Mike Yudell (City Univerity NY)*	CU School of Public Health funded
Rocco Rorandelli (NYU)*	NYU funded
Martine Zilversmit (NYU)*	NYU funded
Paul Planet(Columbia University)*	Columbia University funded
Indra Neil Sarkar (Columbia University)*	Columbia University funded
Eugenia Narro (Columbia University)*	NSF funded
Julian Stark (New York University)*	NYU funded
Celeste Durando (City Univerity NY)*	NSF funded/ AMNH Fellow
Valerie Schawaroch (City Univerity NY)*	NSF DIG / AMNH Fellow
James Bonacum (Yale University)*	AMNH Fellow
James Remsen (New York University)*	NSF DIG / NYU funded
Yael Wyner (New York University)*	NSF DIG / NYU funded
Mary Egan (Fordham University)*	Fordham University funded
Phaedra Doukakis (Yale University)*	EPA Fellow
Paul Goldstein (University of Connecticut)*	EPA Fellow
Joe Thornton (Columbia University)*	NSF DIG / CERC funded
John Gatesy (Yale University)*	NSF DIG / NSF funded
Robin Absher (Yael University)*	NSF DIG / Yale funded
Charles Wray (Yale University)*	NASA fellow
Ranhy Bang (Cornell University)*	Cornell funded / AMNH fellow
Richard Baker (Yale University)*	NSF DIG / AMNH fellow
Howard Rosenbaum (Yale University)*	WCS / CBC DIG / AMNH funding

\*=received degree

## RESEARCH GRANT SUPPORT

### FEDERAL SOURCES

NSF Virtual Plant Genome Program (renewal) (2010-2014); (Co-PI Gloria Corruzi)

NSF 2010 Plant Genome (2008-2010); (Co-PI Mike Peruginan; Richard Bonneau)

- National Science Foundation, Dissertation Research: The Use of Cladistic Techniques to Identify the Genetic Determinants of Phenotypes, July 1, 2005-December 31, 2006.
- National Science Foundation, VCA: Virtual Center for Plant Evolutionary Genomics, October 1, 2004-September 30, 2009.
- National Institutes of Health, Supplement: Genetic Transfer in the Evolution of Infectious Disease, September 1, 2004-January 31, 2006.
- National Science Foundation, Dissertation Research: Connectivity and Intra-Population Structure of Western South Atlantic Green Sea Turtle (*Chelonia mydas*) Foraging Populations, July 15, 2004-June 30, 2005.
- National Science Foundation, Collaborative Research: Assembling the Tree of Life: An Integrated Approach to the Origin and Diversification of Protostomes, January 1, 2004-December 31, 2005.
- National Science Foundation, Integrative Studies of Wolbachia-Eukaryotic Interactions: Genomes to Communities and Back, September 1, 2003- August 31, 2005.
- National Institutes of Health, Supplement: Genetic Transfer in the Evolution of Infectious Disease, February 1, 2003-January 31, 2006.
- National Science Foundation, UMEB: Introducing Students to Conservation Genetics and Environmental Science: A Collaboration Among St. Francis College, Medgar Evers College and American Museum of Natural History, September 1, 2002-August 31, 2006.
- National Institutes of Health, Genetic Transfer in the Evolution of Infectious Disease, co-PI, Robert DeSalle, February 1, 2002-January 31, 2006.
- National Science Foundation, High Throughput Sequencing and the Phylogeny of Family Drosophilidae, February 1, 2002- January 31, 2006.
- National Science Foundation, Megafaunal Mammal Genetics and Extinction Dynamics in the Late Pleistocene: Testing the Hyperdisease Hypothesis, September 1, 2001-August 31, 2006.

#### NON-FEDERAL SOURCES

Richard Lounsberry Foundation, Evaluating DNA Barcoding, \$325,000, 2004-2006.

#### RECENT ARTICLES IN REFEREED JOURNALS (2006-2011)

- Egan M, Lee EK, Chiu JC, Coruzzi G, DeSalle R. 2009. Gene orthology assessment with *OrthologID*. In: *Methods in Molecular Biology. Bioinformatics for DNA Sequence Analysis*. 537:23-38. (Posada D, Ed.)
- Bonaventura MD, Lee E, DeSalle R, Planet P. 2010. A whole-genome phylogeny of the family Pasteurellaceae. *Mol Phylogenet Evol* 54(3):950-956.
- Deo AJ, Costa R, DeLisi LE, DeSalle R, Haghghi F. 2010. A novel analytical framework for dissecting the genetic architecture of behavioral symptoms in neuropsychiatric disorders. *PLoS ONE* 5(3):e9714.
- Nagarajan N, Cook C, Di Bonaventura M, Ge H, Richards A, Bishop-Lilly KA, DeSalle R, Read TD, Pop M. 2010. Finishing genomes with limited resources: lessons from an ensemble of microbial genomes. *BMC Genomics* 11(1):242.
- Yassin A, Lienau EK, Narechania A, DeSalle R. 2010. Catching the phylogenetic history through the ontogenic hourglass: a phylogenomic analysis of *Drosophila* body

- segmentation genes. Evol Dev 12(3):288-295.
- Cibrián-Jaramillo A, De la Torre-Bárcena E, Lee EK, Katari MS, Little DP, Stevenson DW, Martienssen R, Coruzzi GM, DeSalle R. 2010. Using 271 phylogenomic patterns and gene ontology to identify proteins of importance in plant evolution. Genome Biol Evol 2:225.
- Cibrián-Jaramillo A, Daly AC, Brenner E, DeSalle R, Marler TE. 2010. When North and South don't mix: genetic connectivity of a recently endangered oceanic cycad, *Cycas micronesica*, in Guam using EST-microsatellites. Mol Ecol 19(12):2364-2379.
- Hekkala ER, Amato G, DeSalle R, Blum MJ. 2010. Molecular assessment of population differentiation and individual assignment potential of Nile crocodile (*Crocodylus niloticus*) populations. Conserv Genet 11(4):1435-1443.
- Dias IMG, Almeida FC, Amato G, DeSalle R, Fonseca CG. 2010. Delineating geographic boundaries of the woolly mouse opossums, *Micoureus demerarae* and *Micoureus paraguayanus* (Didelphimorphia: Didelphidae). Conserv Genet 11(4):1579-1585.
- Gruber DF, DeSalle R, Lienau EK, Tchernov D, Pieribone VA, Kao HT. 2010. Novel internal regions of fluorescent proteins undergo divergent evolutionary patterns. Mol Biol Evol 26(12):2841-2848.
- DeSalle R, Mares R, Garcia-España A. 2010. Evolution of cysteine patterns in the large extracellular loop of tetraspanins from animals, fungi, plants and single-celled eukaryotes. Mol Phylogenet Evol 56(1):486-491.
- Wyner Y, DeSalle R. 2010. Taking the conservation biology perspective to secondary school classrooms. Conserv Biol 24(3):649-654.
- Schiffman M, Rodriguez AC, Chen Z, Wacholder S, Herrero R, Hildesheim A, DeSalle R, Befano B, Yu K, Safaeian M, Sherman ME, Morales J, Guillen D, Alfaro M, Hutchinson M, Solomon D, Castle PE, Burk RD. 2010. A population-based prospective study of carcinogenic human papillomavirus variant lineages, viral persistence, and cervical neoplasia. Cancer Res 70(8):3159-3169.
- Perez-Sweeney B, DeSalle R, Ho JL. 2010. An introduction of a novel population genetic approach for HIV characterization. Infect Genet Evol 10(8):1155-1164.
- Yassin A, Markow TA, Narechania A, O'Grady PM, DeSalle R. 2010. The genus *Drosophila* as a model for testing tree- and character-based methods of species identification using DNA barcoding. Mol Phylogenet Evol 57(2):509-517.
- Escalante P, Desalle R, Kolokotronis SO. 2010. The MexBOL initiative. [edited issue] Mitochondrial DNA 21(Suppl 1): 1-2.
- Ameida FC, DeSalle R. 2009. Orthology, function, and evolution of accessory gland proteins in the *Drosophila repleta* group. Genetics 181(1):235-245.
- Chen Z, DeSalle R, Schiffman M, Herrero R, Burk RD. 2009. Evolutionary dynamics of variant genomes of human papillomavirus types 18, 45, and 97. J Virol 83(3):1443-1455.
- Lemke MJ, Lienau EK, Rothe J, Pagioro TA, Rosenfeld J, DeSalle R. 2009. Description of freshwater bacterial assemblages from the Upper Paraná river floodpulse system, Brazil. Microb Ecol 57(1):94-103.
- Schierwater B, de Jong D, DeSalle R. 2009. Placozoa and the evolution of Metazoa and intrasomatic cell differentiation. Int J Biochem Cell Biol 41(2):370-379.
- Schierwater B, Eitel M, Jakob W, Osigus HJ, Hadrys H, Dellaporta SL, Kolokotronis SO,

- DeSalle R. 2009. Concatenated analysis sheds light on early metazoan evolution and fuels a modern "urmetazoon" hypothesis. PLoS Biol 7(1):e1000020.
- Garcia-España A, Mares R, Sun TT, DeSalle R. 2009. Intron evolution: testing hypotheses of intron evolution using the phylogenomics of tetraspanins. PLoS ONE 4(3):e4680.
- Rosenfeld JA, Wang Z, Schones DE, Zhao K, DeSalle R, Zhang MQ. 2009. Determination of enriched histone modifications in non-genic portions of the human genome. BMC Genomics 10(1):143.
- Lienau EK, DeSalle R. 2009. Evidence, content and corroboration and the Tree of Life. Acta Biotheor 57(1-2):187-199.
- de Jong D, Eitel M, Jakob W, Osigus HJ, Hadrys H, DeSalle R, Schierwater B. 2009. Multiple *Dicer* genes in the early diverging Metazoa. Mol Biol Evol 26(6):1333-1340.
- de la Torre-Bárcena JE, Kolokotronis SO, Lee EK, Stevenson DW, Brenner ED, Katari MS, Coruzzi GM, DeSalle R. 2009. The impact of outgroup choice and missing data on major seed plant phylogenetics using genome-wide EST data. PLoS ONE 4(6):e5764.
- Di Bonaventura MP, DeSalle R, Pop M, Nagarajan N, Figurski DH, Fine DH, Kaplan JB, Planet PJ. 2009. Complete genome sequence of *Aggregatibacter (Haemophilus) aphrophilus* NJ8700. J Bacteriol 191(14):4693-4694.
- Schierwater B, Kolokotronis SO, Eitel M, DeSalle R. 2009. The Diploblast-Bilateria Sister hypothesis: parallel evolution of a nervous system may have been a simple step. Commun Integr Biol 2(5):1-3.
- Barral PM, Sarkar D, Su ZZ, Barber GN, DeSalle R, Racaniello VR, Fisher PB. 2009. Functions of the cytoplasmic RNA sensors RIG-I and MDA-5: key regulators of innate immunity. Pharmacol Ther 124(2):219-234.
- Rosenfeld JA, Xuan Z, DeSalle R. 2009. Investigating repetitively matching short sequencing reads: the enigmatic nature of H3K9me3. Epigenetics 4(7):476-486.
- Garcia-España A, DeSalle R. 2009. Intron sliding in tetraspanins. Commun Integr Biol 2(5):1-3.
- DeSalle R. 2009. Molecular tooth decay. PLoS Genet 5(9):e1000655.
- Cibrián-Jaramillo A, Bacon CD, Garwood NC, Bateman RM, Thomas MM, Russell S, Bailey DC, Hahn WJ, Bridgewater SGM, DeSalle R. 2009. Population genetics of the understory fishtail palm *Chamaedorea ernesti-augusti* in Belize: high genetic connectivity with local differentiation. BMC Genetics 10:65.
- Birstein VJ, DeSalle R, Doukakis P, Hanner R, Ruban GI, Wong E. 2009. Testing taxonomic boundaries and the limit of DNA barcoding in the Siberian sturgeon, *Acipenser baerii*. Mitochondrial DNA 5(9):e1000655.
- Chen Z, van Doorslaer K, DeSalle R, Wood CE, Kaplan JR, Wagner JD, Burk RD. 2009. Genomic diversity and interspecies host infection of  $\alpha 12$  *Macaca fascicularis* papillomaviruses (MfPVs). Virology 393(2):304-310.
- Almeida FC, Giannini NP, DeSalle R, Simmons NB. 2009. The phylogenetic relationships of cynopterine fruit bats (Chiroptera: Pteropodidae: Cynopterinae). Mol Phylogenet Evol 53(3):772-783.
- Naro-Maciel E, Reid B, FitzSimmons NN, Le M, DeSalle R, Amato G. 2009. DNA barcodes for globally threatened marine turtles: a registry approach to

- documenting biodiversity. [Mol Ecol Resources](#) 10(2):252-263.
- Calcagnotto D, DeSalle R. 2009. Population genetic structuring in pacu (*Piaractus mesopotamicus*) across the Parana-Paraguay basin: evidence from microsatellites. [Neotrop Ichthyol](#) 7(4):607-616.
- Lienau EK, DeSalle. 2009. Is the microbial tree of life verificationist? [Cladistics](#) 26(2):195-201.
- Camp EM, Sánchez-Sánchez AV, Garcia-España A, DeSalle R, Odqvist L, O'Connor JE, Mullor JL. 2009. Nanog regulates proliferation during early fish development. [Stem Cells](#) 27(9):2081-2091.
- O'Grady PM, Lapoint RT, Bonacum J, Lasola J, Owen E, Wu Y, DeSalle R. 2011. Phylogenetic and ecological relationships of the Hawaiian *Drosophila* inferred by mitochondrial DNA analysis. [Mol Phylogenet Evol](#) 58(2):244-256.
- Goldstein PZ, DeSalle R. 2011. Integrating DNA barcode data and taxonomic practice: determination, discovery, and description. [BioEssays](#) 33(2):135-147.
- Sarkar, N, Planet, P. and R. DeSalle. CAOS an automated program for determining diagnostics for DNA barcoding. *Molecular Ecology Notes*. 2008
- Almeida, F, Leszczyniecka M, Fisher PB and DeSalle R., 2008. Examining ancient Inter-domain horizontal gene transfer. *Evolutionary Bioinformatics* (in press).
- Sarkar IN, Egan MG, Coruzzi G, Lee EK, DeSalle R. 2008. Automated simultaneous analysis phylogenetics (ASAP): an enabling tool for phylogenomics. [BMC Bioinf](#) 9:103.
- O'Grady P, Desalle R. 2008. Out of Hawaii: the origin and biogeography of the genus *Scaptomyza* (Diptera: Drosophilidae). [Biol Lett](#) 4(2):195-199.
- Garcia-España A, Chung PJ, Sarkar IN, Stiner E, Sun TT, Desalle R. 2008. Appearance of new tetraspanin genes during vertebrate evolution. [Genomics](#) 91: 326-334.
- DeSalle R. 2007. Phenetic and DNA taxonomy; a comment on Waugh. [Bioessays](#) 29(12):1289-1290.
- Rach J, Desalle R, Sarkar IN, Schierwater B, Hadrys H. 2008. Character-based DNA barcoding allows discrimination of genera, species and populations in Odonata. [Proc Biol Sci](#) 275(1632):237-247.
- Cibrián-Jaramillo A, Hahn WJ, DeSalle R. 2008. Development of microsatellite markers of the Mexican understory palm *Chamaedorea elegans*, cross-species genotyping, and amplification in congeners. [Mol Ecol Notes](#) [in press]
- Kao HT, Sturgis S, Desalle R, Tsai J, Davis D, Gruber DF, Pieribone VA. 2007. Dynamic regulation of fluorescent proteins from a single species of coral. [Mar Biotechnol](#) 9(6):733-746.
- DeSalle R. 2007. Phenetic and DNA taxonomy; a comment on Waugh. [Bioessays](#) 29(12):1289-1290.
- DeSalle R, Schierwater B. 2007. Key transitions in animal evolution. [Integr Comp Biol](#) 47(5):667-669.
- Schierwater B, DeSalle R. 2007. Can we ever identify the Urmetazoan? [Integr Comp Biol](#) 47(5):670-676.
- Gatesy J, DeSalle R, Wahlberg N. 2007. How many genes should a systematist sample? Conflicting insights from a phylogenomic matrix characterized by replicated incongruence. [Syst Biol](#) 56(2):355-363.

- Naro-Maciel E, Becker JH, Lima EH, Marcovaldi MA, DeSalle R. 2007. Testing dispersal hypotheses in foraging green sea turtles (*Chelonia mydas*) of Brazil. J Hered 98(1):29-39
- Chen Z, Schiffman M, Herrero R, DeSalle R, Burk RD. 2007. Human papillomavirus (HPV) types 101 and 103 isolated from cervicovaginal cells lack an E6 open reading frame (ORF) and are related to gamma-papillomaviruses. Virology 360(2):447-453.
- Chiu, J.C., E.K. Lee, M.G. Egan, I.N. Sarkar, G.M. Coruzzi, and R. DeSalle. 2006. OrthologID: automation of genome-scale ortholog identification within a parsimony framework. Bioinformatics 22(6):699-707.
- DeSalle R. 2006. Species discovery versus species identification in DNA barcoding efforts: response to Rubinoff. Conserv Biol 20(5):1545-1547.
- DeSalle R. 2006. What's in a character? Journal of Biomedical Informatics 39(1): 6-17.