

Genivaldo Gueiros Z. Silva

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Education, Positions, And Employment Experience

Year	Position
2014 -	PhD student in Computational Science (emphasis in Computational Biology), San Diego University.
2012 - 2014	Master student in Computational Science, San Diego University. (transferred to the PhD program)
2012 –	Graduate Assistant, Department of Computer Science, San Diego State University.
2009 – 2012	Software Engineer, Universidade Federal Rural de Pernambuco.
2010 – 2012	Student Researcher, Laboratório de Bioinformática e Biologia Evolutiva (LABBE), Universidade Federal de Pernambuco.
2011 – 2011	Exchange Student Brazil-USA (FIPSE-CAPES), Edwards' Lab San Diego University.
2010 – 2011	Teaching Assistant, Introduction to Computer Programming, Universidade Federal Rural de Pernambuco.
2010 – 2010	Teaching Assistant, Database, Universidade Federal Rural de Pernambuco.
2008 – 2010	Student Researcher, Epi Schisto Risk Modeling, Universidade Federal Rural de Pernambuco.
2007 – 2011	U.S Equivalency: BS Computer Science – Universidade Federal Rural de Pernambuco – Brazil.

Publications

Journal Manuscripts:

2016

1. **Genivaldo G. Z. Silva**, John Matthew Haggerty, Daniel A. Cuevas, Michael Doane, Elizabeth A Dinsdale, Bas E. Dutilh, and Robert A. Edwards: **Ecological Implications of Metagenomics Data Analysis (under-review)**
2. **Genivaldo G. Z. Silva**, Fabyano A. C. Lopes, and Robert A. Edwards. An agile functional analysis of metagenomic data using SUPER-FOCUS. ("Protein Function Prediction" in Methods in Molecular Biology series -- Springer Book; **accepted**)

3. Steven D. Quistad, Yanwei Lim, **Genivaldo G. Z. Silva**, Craig E. Nelson, Andreas F. Haas, Linda-Wegley Kelly, Robert Edwards and Forest Rohwer: **Using viral populations to predict immune system structure in uncharacterized systems. Proc Biol Sci. 2016 Aug 31;283(1837). pii: 20161200. doi: 10.1098/rspb.2016.1200.**
4. B Knowles, CB Silveira, BA Bailey, K Barott, VA Cantu, AG Cobián-Güemes, FH Coutinho, EA Dinsdale, B Felts, KA Furby, EE George, KT Green, GB Gregoracci, AF Haas, JM Haggerty, ER Hester, N Hisakawa, LW Kelly, YW Lim, M Little, A Luque, T McDole-Somera, K McNair, LS de Oliveira, SD Quistad, NL Robinett, E Sala, P Salamon, SE Sanchez, S Sandin, **Genivaldo G. Z. Silva**, J Smith, C Sullivan, C Thompson, MJA Vermeij, M Youle, C Young, B Zgliczynski, R Brainard, RA Edwards, J Nulton, F Thompson, F Rohwer. **Lytic to temperate switching of viral communities.** Nature. 2016 Mar 24;531(7595):466-70. doi: 10.1038/nature17193. Epub 2016 Mar 16.
5. Lucas William Mendes, Lucas Peres Palma Braga, Acacio Aparecido Navarrete, Dennis Goss de Souza, **Genivaldo G. Z. Silva**, Siu Mui Tsai. **Using metagenomics to connect microbial community biodiversity and functions.** (Metagenomics: Current Advances and Emerging Concepts 2016, Caister Academic Press; **accepted**)
6. Amaro E. T. Silva, Larissa A. Guimarães, Elthon G. Ferreira, Maria da Conceição M. Torres, Alison B. da Silva, Paola C. Branco, Francisca Andréa S. Oliveira, Genivaldo G. Z. Silva, Diego V. Wilke, Edilberto R. Silveira, Otilia D. L. Pessoa, Paula C. Jimenez and Leticia V. Costa-Lotufo. **Bioprospecting Anticancer Compounds from the Marine-Derived Actinobacteria Actinomadura sp. Collected at the Saint Peter and Saint Paul Archipelago (Brazil) (J.Braz. Chem. Soc.; accepted)**
7. Adriana Sturion Lorenzi, **Genivaldo G. Z. Silva**, Fabyano Alvares Cardoso Lopes, Mathias Ahii Chia, Robert A. Edwards, and Maria do Carmo Bittencourt-Oliveira: **Draft genome sequence of the saxitoxin-producing cyanobacteria Cylandrospermopsis raciborskii ITEP A1 from a Brazilian semi-arid freshwater body revealing cylandrospermopsin synthetase Genes. Genome Announc. 2016 May 5;4(3). pii: e00228-16. doi: 10.1128/genomeA.00228-16.**
8. Cynthia B. Silveira, Felipe H. Coutinho, **Genivaldo G. Z. Silva**, Giselle Cavalcanti, Anderson Cabral, Rodolfo Paranhos, Ronaldo B. Francini-Filho, Rodrigo L. de Moura, Cristiane C. Thompson, Gustavo B. Gregoracci, Linda Wegley-Kelly, Liz Dinsdale, Robert A. Edwards, Forest Rohwer, Fabiano Thompson: **Extensive presence of bacterial virulence genes in viral communities from disturbed coral reefs (under review)**
9. Cynthia B. Silveira, Felipe H. Coutinho, Giselle Cavalcanti, Ana Carolina Soares, **Genivaldo G. Z. Silva**, Vito A. Cantu, Mike Doane, Ben Knowles, Ronaldo B. Francini-Filho, Cristiane C. Thompson, Elizabeth A. Dinsdale, Gustavo B. Gregoracci, Forest Rohwer, Fabiano Thompson. **Bacteriophage genomic signatures and transfer of bacterial virulence genes in coral reefs (under-review)**
10. Adriana Sturion Lorenzi, **Genivaldo G. Z. Silva**, Fabyano Alvares Cardoso Lopes, Mathias Ahii Chia, Robert A. Edwards, and Maria do Carmo Bittencourt-

- Oliveira: **Draft genome assembly of filamentous heterocyst-forming Sphaerospermopsis aphanizomenoides (Cyanobacteria) from a Brazilian semi-arid water supply reservoir. (not submitted)**
11. Leticia V. Costa-Lotufo, Amaro E. Trindade Silva, Fausto Carnevale Neto, Ricardo Silva, **Genivaldo G. Z. Silva**, Diego V. Wilke, Francisco C. L. Pinto, Bianca Del B. Sahn, Arinice M. Costa, Paula C. Jimenez, Jaqueline Nakau Mendonça, Tito M.C. Lotufo, Otília D. L. Pessoa, Norberto P. Lopes: **Integrating omics fingerprinting in soft corals along Brazilian coast: adaptive and functional patterns. (under review)**
 12. Adriana Sturion Lorenzi, **Genivaldo G. Z. Silva**, Fabyano Alvares Cardoso Lopes, Mathias Ahii Chia, Robert A. Edwards, and Maria do Carmo Bittencourt-Oliveira: **Cyanobacterial microbiome from Brazilian semiarid reservoirs. (not submitted)**
 13. Yan Wei Lim, **Genivaldo G. Z. Silva**, Daniel A. Cuevas, Forest Rohwer, Robert A. Edwards: **The genetic differences of CF Prevotella and Veillonella compared to oral isolates. (not submitted)**

2015

1. **Genivaldo G. Z. Silva**, Green K., B. E. Dutilh, and R. A. Edwards: **SUPER-FOCUS: A tool for agile functional analysis of shotgun metagenomic data. (Bioinformatics).**
2. T. David Matthews, Robert Schmieder, **Genivaldo G. Z. Silva**, Julia Busch, Noriko Cassman, Matthew Doherty, Dawn Green, Brian Matlock, Brian Heffernan, Gary Olsen, Leigh Farris Hanna, Dieter Schifferli, Stanley Maloy, Elizabeth A. Dinsdale, and Robert A. Edwards: **Genomic Comparison of the Closely-related Salmonella enterica Serovars Enteritidis, Dublin and Gallinarum (Plos One)**
3. Edmundo Calva, Claudia Silva, Mussaret Zaidi, Alejandro Sánchez-Flores, Karel Estrada, **Genivaldo G. Z. Silva**, Mayela Soto-Jiménez, Magdalena Wiesner, Marcos Fernández-Mora, Rob Edwards, and Pablo Vinuesa. **Complete genome sequencing of a multidrug-resistant and human-invasive Salmonella enterica serovar Typhimurium strain of the emerging ST213 genotype (Genome Announc. 2015 Jun 18;3(3))**
4. Acacio A. Navarrete, Tatiana R. Diniz, Lucas P. P. Braga, **Genivaldo G. Z. Silva**, Julio C. Franchinic, Raffaella Rossetto, Robert A. Edwards, Siu M. Tsai. **Multi-analytical approach reveals potential microbial indicators in soil for sugarcane model systems (PLoS One. 2015 Jun 9;10(6):e0129765)**

2014

1. **Genivaldo G. Z. Silva**, Cuevas DA, Dutilh BE, Edwards RA: **FOCUS: an alignment-free model to identify organisms in metagenomes using non-negative least squares. PeerJ 2014, 2:e425.**

2. **Genivaldo G. Z. Silva**, Dutilh BE, Edwards RA: **FORMAL: A model to identify organisms present in metagenomes using Monte Carlo Simulation.** bioRxiv 2014:010801.
3. Lim YW, Cuevas DA, **Genivaldo G. Z. Silva**, Aguinaldo K, Dinsdale EA, Haas AF, Hatay M, Sanchez SE, Wegley-Kelly L, Dutilh BE, Harkins TT, Lee CC, Tom W, Sandin SA, Smith JE, Zgliczynski B, Vermeij MJA, Rohwer F, Edwards RA: **Sequencing at sea: challenges and experiences in Ion Torrent PGM sequencing during the 2013 Southern Line Islands Research Expedition.** PeerJ 2014, 2:e520.
4. Dutilh BE, Thompson CC, Vicente AC, Marin MA, Lee C, **Genivaldo G. Z. Silva**, Schmieder R, Andrade BG, Chimetto L, Cuevas D, Garza DR, Okeke IN, Aboderin AO, Spangler J, Ross T, Dinsdale EA, Thompson FL, Harkins TT, Edwards RA: **Comparative genomics of 274 *Vibrio cholerae* genomes reveals mobile functions structuring three niche dimensions.** BMC Genomics 2014, 15:654.
5. Dutilh BE, Cassman N, McNair K, Sanchez SE, **Genivaldo G. Z. Silva**, Boling L, Barr JJ, Speth DR, Seguritan V, Aziz RK, Felts B, Dinsdale EA, Mokili JL, Edwards RA: **A highly abundant bacteriophage discovered in the unknown sequences of human faecal metagenomes.** Nat Commun 2014, 5.
6. Junior NA, Meirelles PM, Santos E de O, Dutilh B, **Genivaldo G. Z. Silva**, Paranhos R, Cabral AS, Rezende C, Iida T, Moura RL de, Kruger RH, Pereira RC, Valle R, Sawabe T, Thompson C, Thompson F: **Microbial community diversity and physical–chemical features of the Southwestern Atlantic Ocean.** Arch Microbiol 2014:1–15.

2013

1. **Genivaldo G. Z. Silva**, Bas E Dutilh, T David Matthews, Keri Elkins, Robert Schmieder, Elizabeth A Dinsdale, and Robert A Edwards **Combining de novo and reference-guided assembly with scaffold_builder.** *Source Code Biol. Med.* 2013, 8:23
2. Gizele D. Garcia, Gustavo B. Gregoracci, Eidy de O. Santos, Pedro M. Meirelles, **Genivaldo G. Z. Silva**, Rob Edwards, Tomoo Sawabe, Kazuyoshi Gotoh, Shota Nakamura, Tetsuya Iida, Rodrigo L. de Moura, and Fabiano L. Thompson. **Metagenomic analysis of healthy and White-plague affected *Mussismilia braziliensis* corals.** *Microb Ecol.* 2013 Jan 15.
3. Thompson CC, **Genivaldo G. Z. Silva**, Vieira NM, Edwards R, Vicente AC, Thompson FL. **Genomic Taxonomy of the Genus *Prochlorococcus*.** *Microb Ecol.* 2013 Aug 21. [PMID: 23963220](#)

2012

1. Luckwu de Lucena BT, **Genivaldo G. Z. Silva**, Manoel Dos Santos B, Dias GM, Amaral GR, Moreira AP, de Moraes Júnior MA, Dutilh BE, Edwards RA, Balbino V, Thompson CC, Thompson FL. **Genome sequence of the ethanol tolerant**

- Lactobacillus vini strains LMG23202T and JP7.8.9.** J Bacteriol. 2012 Jun;194(11):3018. doi: 10.1128/JB.00446-12.
2. Trindade-Silva AE, Rua C, **Genivaldo G. Z. Silva**, Dutilh BE, Moreira AP, Edwards RA, Hajdu E, Lobo-Hajdu G, Vasconcelos AT, Berlinck RG, Thompson FL. **Taxonomic and Functional Microbial Signatures of the Endemic Marine Sponge Arenosclera brasiliensis.** PLoS One. 2012;7(7):e39905. doi: 10.1371/journal.pone.0039905. Epub 2012 Jul 2.
 3. Noriko Cassman, Alejandra Prieto-Davó, Kevin Walsh, **Genivaldo G. Z. Silva**, Florent Angly, Sajia Akhter, Katie Barott, Julia Busch, Tracey McDole, J. Matthew Haggerty, Dana Willner, Gadiel Alarcón, Osvaldo Ulloa, Edward F. DeLong, Bas Dulith, Forest Rohwer, Elizabeth A. Dinsdale. **Oxygen minimum zones harbor novel viral communities with low diversity.** Environ Microbiol. 2012 Nov;14(11):3043-65. doi: 10.1111/j.1462-2920.2012.02891.x. Epub 2012 Oct 5.
 4. Louisi S de Oliveira, Gustavo B Gregoracci, **Genivaldo G. Z. Silva**, Leonardo T Salgado, Gilberto A Filho, Marcio A Alves-Ferreira, Renato C Pereira and Fabiano L Thompson. **Transcriptomic analysis of the red seaweed Laurencia dendroidea (Florideophyceae, Rhodophyta) and its microbiome.** BMC Genomics. 2012 Sep 17;13(1):487.
 5. Amaro Trindade-Silva, Cintia Rua, Bruno Andrade, Ana Carolina Vicente, **Genivaldo G. Z. Silva**, Roberto Berlinck, and Fabiano Thompson. **Polyketide synthase gene diversity and plasticity within the endemic sponge Arenosclera brasiliensis microbiome.** Applied and Environmental Microbiology 2012 [Appl Environ Microbiol.](#) 2012 Dec 28.

Awards

Provost's Award - Student Research Symposium (SRS) 2016

Award for poster presentation at 13th annual ACSESS meeting, 2016

Award for poster presentation at 12th annual ACSESS meeting, 2015

Presentations in conferences

Oral:

1. Student Research Symposium (SRS), San Diego, CA, 2013.
2. Student Research Symposium (SRS), San Diego, CA, 2014.
3. Student Research Symposium (SRS), San Diego, CA, 2015
4. 10th Rocky Mountain Bioinformatics Conference, Aspen/Snowmass, CO, 2012.
5. IX Encontro Regional de Matemática Aplicada e Computacional (ERMAC), Paraíba, Brazil, 2009

Poster:

1. San Diego Microbiology Group (SDMG) All-day meeting, San Diego, CA, 2013
2. Applied Computational Science and Engineering Student Support (ACSESS), San Diego, CA, 2013
3. 10th Rocky Mountain Bioinformatics Conference, Aspen/Snowmass, CO, 2012.
4. 11th Rocky Mountain Bioinformatics Conference, Aspen/Snowmass, CO, 2013.
5. 4th Southern California Systems Biology Conference, Irvine, CA, 2014
6. ASM General Meeting - American Society for Microbiology, Boston, MA, 2014
7. Applied Computational Science and Engineering Student Support (ACSESS), San Diego, CA, 2015
8. ASM General Meeting - American Society for Microbiology, New Orleans, LA, 2015

Published Meeting:

1. Albuquerque, J. O., **Silva, G. G. Z.**, Ramos, R., Bocanegra, S., Ferreira, T. A. E., Ferrer, S., Codina, D. L., Souza, M. A. A., Santos, R. S., Barbosa, C. C. G. S. **Modeling a Real Data Cellular Automaton to Analyze the Schistosomiasis Expansion Process along the coastline of Brasil.** European Meetings on Cybernetics and Systems Research, 2012, Vienna. EMCSR Fourth International Symposium on Agent-Based Modeling and Simulation, 2012.
2. Lins M., L.A., **Silva, G. G. Z.**, Santos, M.A.O., Balbino, V.Q., Kido, E.A., Pimentel C., A.P., Andrade, P.P., Medeiros, P.L., Silva, E.C. **In silico analysis of the most expressed 14 contigs in a Leishmania chagasi cDNA library from the Northeast Genome Program.** I Luso-Brazilian Congress of the Experimental Pathology (XI International Symposium on Experimental Techniques), 2011, Recife. XI International Symposium on Experimental Techniques, 2011.
3. **Silva, G. G. Z.**, Medeiros, S.M.O., Gomes, R.C.A., Santos, M.A.O., M.V.A. Batista, Cunha, W., Lima, T.L.D., Ferreira, T. A. E., Balbino, V.Q. **SandFly Database: Development of an integrated platform of biological and molecular data of SandFlies (Diptera: Psychodidae) of medical and veterinary importance.** Entomol 4, 2010, Recife. Anais do IV Workshop de Genética e Biologia Molecular de Insetos Vetores de Doenças Tropicais, 2010. p. 120-121., 2010.
4. **Silva, G. G. Z.**, Medeiros, S.M.O., Gomes, R.C.A., Santos, M.A.O., Batista, M.V.A., Gomes, L., Lima, T.L.D., Ferreira, T. A. E., Balbino, V.Q. **Sandfly database: In silico exploitation of est data to Explore expression patterns in sandfly species.** In: x-meeting - 6th international conference of the Brazilian association for bioinformatics and computational biology, 2010, Ouro Preto. x-meeting - Abstracts book, 2010.
5. **Silva, G. G. Z.**, Silva, C. V. X. S., Ramos, R., Albuquerque, J. O., Bocanegra S., Amarista, M., Barbosa, C. S. **Simulação computacional do processo de expansão da Esquistossomose na área litorânea de Pernambuco usando**

Autômatos celulares com base de dados reais. In: IX Encontro Regional de Matemática Aplicada e Computacional, 2009, João Pessoa. IX Encontro Regional de Matemática Aplicada e Computacional, 2009.