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Marcos Perez–Losada

Associate Professor | Computational Biology Institute
 Department of Biostatistics and Bioinformatics
 Milken Institute School of Public Health
 The George Washington University

EDUCATION and TRAINING

- 1998** **Ph.D. Biology.** University of Vigo, Spain. *Summa Cum Laude and Thesis Award.*
- 1993** **M.S. Biology.** University of Vigo, Spain. *Summa Cum Laude.*
- 1992** **B.S. Biology.** University of Santiago de Compostela, Spain. *Summa Cum Laude.*

PROFESSIONAL EMPLOYMENT

- 2021-** **Associate Professor.** Department of Biostatistics and Bioinformatics. Milken Institute School of Public Health, George Washington University, USA
- 2019-2021** **Assistant Professor.** Department of Biostatistics and Bioinformatics. Milken Institute School of Public Health, George Washington University, USA
- 2017-2019** **Assistant Professor.** Department of Epidemiology and Biostatistics. Milken Institute School of Public Health, George Washington University, USA
- 2013-2017** **Assistant Research Professor.** Computational Biology Institute, George Washington University, USA
- 2014-2017** **K12 Scholar.** K12 Career Development Program: Omics of Pediatric Lung Diseases in DC. Children’s National Medical Center, USA
- 2008-2016** **Associate Research Professor,** Centro de Investigação em Biodiversidade e Recursos Genéticos, Portugal
- 2006-2008** **Senior Research Scientist.** GENOMA LLC, USA
- 2001-2006** **Research Associate.** Brigham Young University, USA
- 1999-2001** **Fulbright Postdoctoral Fellow.** Brigham Young University, USA
- 1998** **Post-doctoral Fellow.** University of Hull, UK
- 1992-1998** **Research Assistant.** University of Vigo, Spain

HONORS and AWARDS

- 2018** GWSPH Master Teaching Academy Fellows
- 2009** Fundação Calouste Gulbenkian, Portugal

- 1999-2001** Fulbright-MEC Postdoctoral Fellowship, USA
1999 PhD Thesis Award, University of Vigo, Spain

RESEARCH FUNDING

Current Awarded Grants

- 2024-2027** NSF, DEB - Systematics & Biodiversity Sciences, USA. "Barnacle phylogenomics and the evolution of sexual systems". DEB-2425878. \$1,022,535. Role: PI. Effort: 10%.
- 2022-2025** Fate of plastics, antibiotic resistance genes and microbial human pathogens during vermicomposting of sewage sludge (VERMEDAR). Ministerio de Ciencia e Innovación (Spain). Co-financed by the European Union. Role: Co-I.
- 2021-2025** NIH, National Institute of Allergy and Infectious Diseases. "Microbiome-host interplay in viral respiratory infections: A tracheostomy cohort". R01-AI163013-01. \$3,346,417. Role: Co-I. Effort: 15%.
- 2021-2028** NIH, National Institute of Allergy and Infectious Diseases. "District of Columbia's Childhood Asthma in Urban Settings Clinical Research Center (DC CAUSE-CRC)". U01AI160090. \$3,408,984.00. Role: Co-I. Effort: 15%.

Pending Grants

Concluded Grants

- 2020-2021** NSF Division of Environmental Biology, USA. "RAPID: A novel platform for data integration and deep learning on COVID-19". DEB-2028280. \$200,000. Role: Co-I.
- 2018-2022** NIH, National Institute of Allergy and Infectious Diseases, USA. "Airway dual-transcriptomics in bronchiolitis and risk of asthma: MARC-35 cohort". R01-AI137091. \$4,175,084. Role: Co-I. Effort: 30%.
- 2018-2022** NIH, National Institute of Allergy and Infectious Diseases, USA. "Airway metagenome and metabolome in bronchiolitis and risk of asthma: MARC-35 cohort". R01-AI134940. \$3,787,227. Role: Co-I. Effort: 22%.
- 2018-2022** Projetos de Investigação Científica e Desenvolvimento Tecnológico, Fundação para a Ciência e a Tecnologia, Portugal & EU. "Connect to conquer: integrating clinical and Omics data to characterize asthma in Portugal". T495756868-00032862. 221.238€. Role: PI. Effort: 50%.
- 2016-2021** NIH, National Institute of Allergy and Infectious Diseases, USA. "Nasal microRNA during bronchiolitis and age 6y asthma phenotypes: MARC-35 cohort". R01-AI127507-01. \$7,786,306.00. Role: Co-I. Effort: 10%.
- 2018-2020** Ministerio de Economía, Industria y Competitividad, Spain.

- “Vermicomposting as soil ecological engineering promoting microbial biodiversity to improve sustainability and productivity in agroecosystems”. AGL2017-86813-R. 96,800€. Role: Co-PI. Effort: 30%.
- 2017-2021** Margaret Q. Landenberger Research Foundation, USA. “Connect to conquer: integrating clinical and Omic data to better characterize pediatric asthma”. \$200,000.00. Role: PI. Effort: 40%.
- 2018-2020** Milken Institute School of Public Health Pilot Funds Program, USA. “Host-microbial characterization of pediatric asthma in two urban cohorts”. \$34,800. Role: PI.
- 2016-2020** NIH, National Center for Advancing Translational Sciences, USA. “Clinical and Translational Science Institute at Children’s National”. UL1TR000075. \$23,976,342. Role: Co-I. Effort: 5%.
- 2017-2019** NIH PA-13-303: R21 Exploratory/Developmental Research Grant, USA. “Exosomal miR-155 regulates airway epithelial immune responses in infants with rhinovirus infection”. 1R21AI130502-01A1. \$250,000. Role: Co-I. Effort: 10%.
- 2017** CTSI-CN Voucher Award Program, USA. “Transmission of pathogens and antimicrobial resistance genes by fecal transplant in children”. UL1TR001876 and KL2TR001877. \$10,000. Role: PI.
- 2016-2017** CTSI-CN Pilot Translational and Clinical Studies Program, USA. “Connect to conquer: integrating clinical and Omic data to better characterize pediatric asthma”. UL1TR001876 and KL2TR001877. \$37,500.00. Role: PI.
- 2016-2017** Center for AIDS Research, USA. “Real-time phylodynamic analysis of HIV in Washington DC”. 1P30AI117970. \$317,261. Role: Co-Project Director. Effort: 10%.
- 2016-2018** Fundação para a Ciência e a Tecnologia, Portugal. “To be or not to be diseased: the effects of microbiome on parasitic infections in farmed seabream and seabass”. PTDC/MARBIO/0902/2014. 164.905,00€. Role: Co-PI. Effort: 30%.
- 2016** NIH, National Institute of Allergy and Infectious Diseases, USA. “Washington Metropolitan Women's Interagency HIV Study”. U01-AI034994-22. \$852,304. Role: Co-I. Effort: 5%.
- 2014-2017** NIH, K12 Career Development Program: Omics of Pediatric Lung Diseases in DC, USA. PI: Eric P. Hoffman. K12-35797-2-CCNS21272F. \$333,031.00. Role: K12- Scholar. Effort: 75%.
- 2014-2016** NIH National Institute of Allergy and Infectious Diseases, USA. “Elimination of HIV using HERV specific T cells”. R01-AI076059-06A1. \$2,315,475. Role: Co-I. Effort: 10%.
- 2014-2015** Fundação para a Ciência e a Tecnologia, Investigador FCT programme, Projeto de investigação Exploratória, Portugal. “Systems-biology of

- earthworm-microbe interactions". IF/00764/2013/CP1154/CT0010. 50,000 €. Role: PI.
- 2014-2015** District of Columbia Center for AIDS Research, USA. "Are humanized mice a viable model to study HIV-1 evolutionary dynamics?" P30AI087714. \$50,000. Role: PI.
- 2014-2015** George Washington University Facilitating Fund, USA. "Are humanized mice a viable model to study HIV-1 evolutionary dynamics at early infection?" \$15,000. Role: PI.
- 2013-2016** Fundação para a Ciência e a Tecnologia, Investigador FCT programme, Portugal. "Systems-biology of earthworm-microbe interactions". IF/00764/2013. 252,072 €. Role: PI. Effort: 40%.
- 2013-2016** Ministerio de Economía y Competitividad, Spain. "Interactions between earthworms and microorganisms during vermicomposting: structure, function and dynamics of the microbial communities". CTM2013-42540-R. 104,060 €. Role: Co-PI. Effort: 20%.
- 2013-2015** Fundação para a Ciência e a Tecnologia, Portugal. "PATHOSPILL: using an integrative approach to investigate the consequences of pathogen spill-over between wild and farmed fish species in a key estuarine habitat". EXPL/MAR-BIO/1034/2012. 66,000 €. Role: Co-PI. Effort: 20%.
- 2011-2013** Ministerio de Educación y Ciencia, Spain. "Earthworms stimulate and accelerate microbial decomposition during vermicomposting". ECTM2009-08477. 133,000 €. Role: Co-PI. Effort: 20%.
- 2010-2012** Fundação para a Ciência e a Tecnologia, Portugal. "Unraveling the evolutionary radiation of the acorn barnacles (Thoracica: Sessilia: Balanomorpha) using molecular and morphological data". PTDC/BIA-BEC/098553/2008. 53,900 €. Role: PI. Effort: 50%.
- 2010** Synthesys, EU. "Evolutionary relationships among Balanomorpha barnacles based on morphological and molecular evidence". DK-TAF-407. 5,000 €. Role: PI.
- 2006-2009** Ministerio de Educación y Ciencia, Spain. "Phylogenetic relationships of Lumbricidae (Oligochaeta) based on molecular and morphological evidence". CGL2006-11928/BOS. 63,900 €. Role: Co-PI. Effort: 40%.
- 2003-2006** NSF Division of Environmental Biology, USA. "Systematics and Evolution of Barnacles". DEB-0236135. \$300,000. Role: Post-Doct – *I planned, wrote and managed this grant*. Effort: 100%.
- 2002-2004** United States Forest Service, USA. "*Oreohelix* genetics study". \$10,000. Role: Post-Doct – *I planned, wrote and managed this grant*. Objective: study the diversity, conservation and systematics of the land snail *Oreohelix*.

2000-2003 NSF Division of Environmental Biology, USA. " Phylogenetics and Biogeography of Aeglidae ". DEB-0075600. \$180,000. Role: Post-Doct – / *planned, wrote and managed this grant*. Effort: 100%. Objective: study the diversity, conservation and systematics of the freshwater crabs Aeglidae.

PEER REVIEWED PUBLICATIONS

Publications: 203

h-index (Google Scholar): 51

i10-index (Google Scholar): 150

Journal Articles

2024 Raquel Xavier, **Marcos Pérez-Losada**, Sofia Marques Silva, Maria João Faleiro, Paula Canada. Lymphocystis viral disease impacts the diversity and functional profiles of the skin microbiome in gilthead seabream. *Frontiers in Microbiology* (accepted).

Marcos Pérez-Losada, Eduardo Castro-Nallar, Jenaro García-Huidobro, José Laerte Boechat, Luis Delgado, Tiago Azenha Rama, Manuela Oliveira. The nasal mycobiome of individuals with allergic rhinitis and asthma differs from that of healthy controls in composition, structure and function. *Frontiers in Microbiology* (accepted).

Jowers, Michael, Muñoz Pajares, Jesus, Webber, John, Arkle, Jeanette, Arenas-Castro, Salvador, Ho, Simon, Rivas, Gilson, Murphy, John, Borzée, Amaël, Pyron, Alexander, **Perez-Losada, Marcos**, De Freitas, Mayke, Downie, J. Roger, Moreno-Rueda, Gregorio, Forcina, Giovanni, Sánchez-Ramírez, Santiago. Testing molecular date estimates using an ecological and vicariant case study in treefrogs: the Geological-Ecological Molecular Calibration. *Journal of Biogeography* (in press).

Tyson Dawson, Liang Chen, Barry Kreiswirth, Michael Zody, Samantha Fennessey, **Marcos Pérez-Losada**, Keith A. Crandall, Barun Mathema, Ali Rahnavard. Integrating multi-omics and clinical data to identify associates of epidemiological health outcomes: the early COVID-19 pandemic in New Jersey. *Cell Host and Microbe* (in press).

Hideaki Miyachi, Tadao Ooka, **Marcos Pérez-Losada**, Carlos A. Camargo, Jr., Kohei Hasegawa and Zhaozhong Zhu. Nasopharyngeal airway long non-coding RNAs of bronchiolitis infants and subsequent asthma development. *The Journal of Allergy and Clinical Immunology* 153(6): 1729-1735.e7.

Michihito Kyo, Zhaozhong Zhu, Ryohei Shibata, Tadao Ooka, Jonathan Mansbach, Brennan Harmon, Andrea Hahn, **Marcos Pérez-Losada**, Carlos A. Camargo, Jr., Kohei Hasegawa. Nasal microRNA signatures for

disease severity in infants with respiratory syncytial virus bronchiolitis: A multicenter prospective study. *BMJ Open Respiratory Research* 11(1): e002288.

- Daniel Enrique Figueroa, Mauro Belleggia, Gabriela Andreoli, Silvina Izzo, Nelson Bovcon, **Marcos Pérez-Losada**, Agustin M De Wysiecki, Jorge Horacio Colonello, María Inés Trucco. A Faunistic Revision of Longnose Skates of the Genus *Dipturus* (Rajiformes: Rajidae) from the Southern Southwestern Atlantic Ocean, Based on Morphological and Molecular Evidence. *Diversity* 16(3), 146.
- Kylie I Krohmaly, **Marcos Pérez-Losada**, Zhaozhong Zhu, Kohei Hasegawa, Carlos A. Camargo, Jr., Brennan Harmon, Janice A. Espinola, Laura Reck-Cechinel, Rachael Batabyal, Robert J Freishtat, Andrea Hahn. Bacterial small RNAs may mediate immune response differences seen in respiratory syncytial virus-versus rhinovirus-bronchiolitis. *Frontiers in Immunology* 5: 1330991.
- 2023 Marcos Pérez-Losada** and Keith A. Crandall. Spatial diversity of the skin bacteriome. *Frontiers in Microbiology* 14:1257276.
- Gisela Loretan, Federico Giri, Juan Manuel Cabrera, Florencia Coronel, Pablo Agustín Collins, **Marcos Pérez-Losada**, Eva Carolina Rueda. Phylogeography reveals complex historical processes and different evolutionary significant units in *Aegla scamosa* freshwater crabs. *Hydrobiologia* 850: 3627–3644.
- Ignacio Ramos-Tapia, Katiuska Reynaldos, **Marcos Pérez-Losada**, Eduardo Castro-Nallar. Characterization of the upper respiratory tract microbiota in Chilean asthmatic children reveals compositional, functional and structural changes. *Frontiers in Allergy* 4:1223306.
- Ryohei Shibata, Zhaozhong Zhu, Michihito Kyo, Tadao Ooka, Robert J. Freishtat, Jonathan M. Mansbach, **Marcos Pérez-Losada**, Carlos A. Camargo Jr. and Kohei Hasegawa. Nasopharyngeal fungal subtypes of infant bronchiolitis and disease severity risk. *eBioMedicine* 95:104742.
- Suzanne L. Groah, Amanda K. Rounds, Bruce Sprague and **Marcos Pérez-Losada**. Intravesical *Lactobacillus rhamnosus* GG alters urobiome composition and diversity among people with neurogenic lower urinary tract dysfunction. *Topics in Spinal Cord Injury Rehabilitation* 29 (3): 44–57.
- Zhaozhong Zhu, Robert J. Freishtat, Brennan Harmon, Andrea Hahn, Stephen J. Teach, **Marcos Pérez-Losada**, Kohei Hasegawa and Carlos A. Camargo. Nasal airway microRNA profiling of infants with severe bronchiolitis and risk of childhood asthma: A multicenter prospective study. *European Respiratory Journal* 62(2): 2300502.

- Marcos Pérez-Losada**, Eduardo Castro-Nallar, José Laerte Boechat, Luis Delgado, Tiago Azenha Rama, Valentín Berrios-Farías and Manuela Oliveira. Nasal bacteriomes of patients with asthma and allergic rhinitis show unique composition, structure, function and interactions. *Microorganisms* 11, 683.
- Ryohei Shibata, Zhaozhong Zhu, Tadao Ooka, Robert J. Freishtat, Jonathan M. Mansbach, **Marcos Pérez-Losada**, Ignacio Ramos-Tapia, Stephen J. Teach, Carlos A. Camargo Jr. and Kohei Hasegawa. Immunoglobulin E-virus phenotypes of infant bronchiolitis and risk of childhood asthma. *Frontiers in Immunology* 14:1187065.
- Ana Pereira, Marta C. Soares, Teresa Santos, Ana Poças, **Marcos Pérez-Losada**, Amy Apprill, Paul C. Sikkell and Raquel Xavier. Reef location and client diversity influence the skin microbiome of the Caribbean cleaner goby *Elacatinus evelynae*. *Microbial Ecology* 85: 372–382.
- Marcos Pérez-Losada**, Eduardo Castro-Nallar, José Laerte Boechat, Luis Delgado, Tiago Azenha Rama, Valentín Berrios-Farías and Manuela Oliveira. The oral bacteriomes of patients with allergic rhinitis and asthma differ from that of healthy controls. *Frontiers in Microbiology* 14:1197135.
- 2022** Sergio Guajardo-Leiva, Jaime Alarcón, Florence Gutzwiller, Jorge Gallardo-Cerda, Ian S. Acuña-Rodríguez, Marco Molina-Montenegro, Keith A. Crandall, **Marcos Pérez-Losada** and Eduardo Castro-Nallar. Source and acquisition of rhizosphere microbes in Antarctic vascular plants. *Frontiers in Microbiology* 13:916210.
- Zhaozhong Zhu, Carlos A. Camargo Jr., Yoshihiko Raita, Robert J. Freishtat, Michimasa Fujjogi, Andrea Hahn, Jonathan M. Mansbach, Jonathan M. Spergel, **Marcos Pérez-Losada** and Kohei Hasegawa. Nasopharyngeal airway dual-transcriptome of infants with severe bronchiolitis and risk of childhood asthma: A multicenter prospective study. *The Journal of Allergy and Clinical Immunology* 150(4):806-816.
- Daniela Rosado, Ignacio Ramos-Tapia, Keith A. Crandall, **Marcos Pérez-Losada** and Jorge Domínguez. Grapevine treatment with bagasse vermicompost changes the microbiome of Albariño must and wine and improves wine quality. *OENO One*, 56(3), 219–230.
- Daniela Rosado, Marta Lores, Ignacio Ramos-Tapia, Keith A. Crandall, **Marcos Pérez-Losada** and Jorge Domínguez. Integrated fertilization with bagasse vermicompost changes the microbiome of red grapevine Mencía must and improves wine quality. *Fermentation* 8(8), 357.
- Manuel Aira, **Marcos Pérez-Losada**, Keith A. Crandall and Jorge Domínguez. Host taxonomy determines the composition, structure, and diversity of the

- earthworm gut microbiome under homogenous feeding conditions. *FEMS Microbiology Ecology* 98 (9), fiac093.
- Michimasa Fujiogi, Yoshihiko Raita, **Marcos Pérez-Losada**, Robert J. Freisztat, Juan Celedón, Jonathan M. Mansbach, Pedro A. Piedra, Zhaozhong Zhu, Carlos A. Camargo Jr., and Kohei Hasegawa. Integrated relationship of nasopharyngeal airway host response and microbiome with bronchiolitis severity: dual-transcriptomic profiling. *Nature Communications* 13, 4970.
- Manuel Aira, **Marcos Pérez-Losada**, Keith A. Crandall and Jorge Domínguez. Composition, structure and diversity of soil bacterial communities before, during and after transit through the gut of the earthworm *Aporrectodea caliginosa*. *Microorganisms* 10(5), 1025.
- Gracelyn Hill, **Marcos Pérez-Losada**, Elena Delgado, Sonia Benito, Vanessa Montero, Horacio Gil, Mónica Sánchez, Javier Enrique Cañada-García, Elena Garcia Bodas, Keith A Crandall and Michael M Thomson. The origin, epidemiology and phylodynamics of HIV-1 CRF47_BF. *Frontiers in Microbiology* 13, 863123.
- Marcos Pérez-Losada**, Dhatri Badri Narayanan, Allison R. Kolbe, Ignacio Ramos-Tapia, Eduardo Castro-Nallar, Keith A. Crandall and Jorge Domínguez. Comparative analysis of metagenomics and metataxonomics for the characterization of vermicompost microbiomes. *Frontiers in Microbiology* 13, 854423.
- Daniela Rosado, **Marcos Pérez-Losada**, Ricardo Severino, Raquel Xavier. Monitoring disease and antibiotic treatment in the skin microbiota of farmed seabass fingerlings. *Microbial Ecology* 83(3):789-797.
- James P. Bernot; Pavel Avdeyev; Anton Zamyatin; Niklas Dreyer; Nikita Alexeev; **Marcos Pérez-Losada**; Keith A Crandall. Chromosome-level genome assembly, annotation and phylogenomics of the gooseneck barnacle *Pollicipes pollicipes*. *GIGA Science* 12;11.
- Yoshihiko Raita, **Marcos Pérez-Losada**, Robert J. Freisztat, Andrea Hahn, Eduardo Castro-Nallar, Ignacio Ramos-Tapia, Nathaniel Stearrett, Yury A. Bochkov, James E. Gern, Zhaozhong Zhu, Carlos A. Camargo, Jr. and Kohei Hasegawa. Nasopharyngeal metatranscriptome profiles of infants with bronchiolitis and risk of childhood asthma: a multicentre prospective study. *European Respiratory Journal* 60(1): 2102293.
- 2021** Daniela Rosado, **Marcos Pérez-Losada**, Manuel Aira, Jorge Domínguez. Bacterial succession during vermicomposting of silver wattle (*Acacia dealbata* Link). *Microorganisms* 10, 65
- Benny K. K. Chan, Andy S. Gale, Niklas Dreyer, Henrik Glenner, Christine Ewers-Saucedo, **Marcos Pérez-Losada**, Gregory A. Kolbasov, Keith A. Crandall and Jens T. Høeg. The evolutionary diversity of barnacles with

- an updated classification of fossil and living forms. *Zoological Journal of the Linnean Society* 193(3), 789-846.
- David T.J. Broderick, David W. Waite, Robyn L. Marsh, Carlos A. Camargo, Paul Cardenas, Anne B. Chang, William O.C. Cookson, Leah Cuthbertson, Wenkui Dai, Mark L. Everard, Alain Gervaix, J. Kirk Harris, Kohei Hasegawa, Lucas R. Hoffman, Soo-Jong Hong, Laurence Josset, Matthew S. Kelly, Bong-Soo Kim, Yong Kong, Shuai C Li, Jonathan M. Mansbach, Asuncion Mejias, George A. O'Toole, Laura Paalanen, **Marcos Pérez-Losada**, Melinda M. Pettigrew, Maxime Pichon, Octavio Ramilo, Lasse Ruokolainen, Olga Sakwinska, Patrick C. Seed, Christopher J. van der Gast, DPhil Brandie D. Wagner, Hana Yi, Edith T. Zemanick, Yuejie Zheng, Naveen Pillarisetti, Mike Taylor. Bacterial signatures of paediatric respiratory disease: an individual participant data meta-analysis. *Frontiers in Microbiology* 12, 4018.
- Ali Rahnavard, Tyson Dawson, Rebecca Clement, Nathaniel Stearrett, **Marcos Pérez-Losada**, Keith A. Crandall. Epidemiological associations with genomic variation in SARS-CoV-2. *Scientific Reports* 11, 23023.
- Jorge Domínguez, Manuel Aira, Keith A. Crandall, **Marcos Pérez-Losada**. Earthworms drastically change fungal and bacterial communities during vermicomposting of sewage sludge. *Scientific Reports* 11, 15556.
- Susana Seixas, Allison R. Kolbe, Silvia Gomes, Maria Sucena, Catarina Sousa, Luís Vaz Rodrigues, Gilberto Teixeira, Paula Pinto, Tiago Tavares de Abreu, Cristina Bárbara, Júlio Semedo, Leonor Mota, Ana Sofia Carvalho, Rune Matthiesen, Patrícia Isabel Marques and **Marcos Pérez-Losada**. Comparative analysis of the bronchoalveolar microbiome in Portuguese patients with different chronic lung disorders. *Scientific Reports* 11, 15042.
- Daniela Rosado, Raquel Xavier, Jo Cable, Ricardo Severino, **Marcos Pérez-Losada**. Longitudinal sampling of external mucosae in farmed European seabass reveals the impact of water temperature on bacterial dynamics. *ISME Communications* 1, 28.
- Bianca L. Zimmermann, Ivanice Buzzato, Sandro Santos, Federico Giri, Franco T. de Mello, Keith A. Crandall, **Marcos Pérez-Losada** and Marlise L. Bartholomei-Santos. Entangled Aeglidae (Decapoda, Anomura): Additional evidence for cryptic species. *Zoologica scripta* 50 (4), 473-484.
- Elena Delgado, Aurora Fernández-García, **Marcos Pérez-Losada**, María Moreno-Lorenzo, Ismael Fernández-Miranda, Sonia Benito, Vanesa Montero, Horacio Gil, Silvia Hernáez, Josefa Muñoz, Miren Z. Zubero-Sulibarria, Elena García-Bodas, Mónica Sánchez, Jorge del Romero, Carmen Rodríguez, Luis Elorduy, Elena Bereciartua, Esther Culebras, Iciar Rodríguez-Avial, María Luisa Giménez-Alarcón, Carmen Martín-

- Salas, Carmen Gómez-González, José J García-Irure, Gema Cenxual, Ana Martínez-Sapiña, María Maiques-Camarero, Lucía Pérez-Álvarez, and Michael M Thomson. Identification of CRF89_BF, a new member of an HIV-1 circulating BF intersubtype recombinant form family widely spread in South America. *Scientific Reports* 11(1):11442.
- Yoshihiko Raita, **Marcos Pérez-Losada**, Robert J. Freishtat, Brennan Harmon, Tina V. Hartert, Jonathan M. Mansbach, Pedro A. Piedra, Zhaozhong Zhu, Carlos A. Camargo, Jr., and Kohei Hasegawa. Integrated-omics endotyping of infants with respiratory syncytial virus bronchiolitis and risk of childhood asthma. *Nature Communications* 12: 3601.
- Nathaniel Stearrett, Tyson Dawson, Gholamali Rahnavard, Prathyusha Bachali, Matthew Lewis Bendall, Chen Zeng, Roberto Caricchio, **Marcos Pérez-Losada**, Amrie C Grammer, Peter E Lipsky and Keith A Crandall. Expression of Human Endogenous Retroviruses in Systemic Lupus Erythematosus: Multiomic Integration with Gene Expression. *Frontiers in Immunology, section Microbial Immunology* 12, Article 661437.
- Daniela Rosado; **Marcos Pérez-Losada**; Ana Pereira; Ricardo Severino; Raquel Xavier. Effects of aging on the skin and gill microbiota of farmed seabass and seabream. *Animal Microbiome* 3:10.
- Catherine Forster, Michael H. Hsieh, **Marcos Pérez-Losada**, Ljuba Caldovic, Hans Pohl, Inger Ljungberg, Bruce Sprague, Crystal Stroud and Suzanne Groah. A single intravesical instillation of *Lactobacillus rhamnosus* GG is safe in children and adults with neuropathic bladder: A phase Ia clinical trial. *The Journal of Spinal Cord Medicine* 44:62-69.
- Matthew L. Bendall, Keylie M. Gibson, Margaret C. Steiner, Uzma Rentia, **Marcos Pérez-Losada** and Keith A. Crandall. HAPHPIPE: Haplotype reconstruction and phylodynamics for deep sequencing of intra-host viral populations. *Molecular Biology and Evolution* 38:1677-1690.
- 2020** Juan Carlos Nogues, **Marcos Pérez-Losada**, Diego Preciado. A review of otitis media microbiome studies: What do they tell us? *Laryngoscope Investigative Otolaryngology* 5: 936–940.
- Kyle Salka, Maria Arroyo, Elizabeth Chorvinsky, Karima Abutaleb, Geovanny F. Perez, Seth Wolf, Xilei Xuchen, Jered Weinstock, Maria J. Gutierrez, **Marcos Pérez-Losada**, Dinesh Pillai, Gustavo Nino. Innate IFN-lambda responses in the human infant airway epithelium and clinical regulatory factors during viral respiratory infections in early life. *Clinical & Experimental Allergy* 50 (9): 1044–1054.
- Anton Eliseev, Dimitry Novik, Pavel Avdeyev, Keylie M. Gibson, Matthew L. Bendall, **Marcos Pérez-Losada**, Nikita Alexeev and Keith A. Crandall.

- Evaluation of haplotype callers for next-generation sequencing of viruses. *Infection Genetics and Evolution* 82, 104277.
- Marcos Pérez-Losada**, Miguel Arenas, Juan Carlos Galán, M^a Alma Bracho, Julia Hillung, Neris García-González and Fernando González-Candelas. High-Throughput Sequencing (HTS) for the analysis of viral populations. *Infection Genetics and Evolution* 80, 104208.
- Matthieu J. Miossec, Sandro Valenzuela, **Marcos Pérez-Losada**, W. Evan Johnson, Keith A. Crandall, Eduardo Castro-Nallar. Evaluation of computational methods for human microbiome analysis using simulated data. *PeerJ* 8:e9688.
- Allison R. Kolbe, Matthew L. Bendall, Alexander T. Pearson, Doru Paul, Douglas F. Nixon, **Marcos Pérez-Losada** and Keith A. Crandall. Human endogenous retrovirus expression is associated with head and neck cancer and differential survival. *Viruses* 12, 956.
- Keylie M Gibson, Kamwing Jair, Amanda D Castel, Matthew L Bendall, Brittany Wilbourn, Jeanne A Jordan, Keith A Crandall, **Marcos Pérez-Losada** and the DC Cohort Executive Committee. A cross-sectional study to characterize local HIV-1 dynamics in Washington, DC using next-generation sequencing. *Scientific Reports* 10, 1989.
- Raquel Xavier; Ana Pereira; Andres Pagan; Gina C. Hendrick; Matthew D. Nicholson; Daniela Rosado; Marta C. Soares; **Marcos Pérez-Losada**; Paul C. Sikkel. The effects of environment and ontogeny on the skin microbiome of two *Stegastes* damselfishes (Pomacentridae) from the eastern Caribbean Sea. *Marine Biology* 167, 102.
- Michimasa Fujjogi, Carlos A. Camargo Jr., Jimmy Bernot, Robert J Freishtat, Brennan Harmon, Jonathan Mansbach, Eduardo Castro-Nallar, **Marcos Pérez-Losada** and Kohei Hasegawa. In infants with severe bronchiolitis: dual-transcriptomic profiling of nasopharyngeal microbiome and host response. *Pediatric Research* 88: 144–146.
- Keylie M. Gibson, Margaret C. Steiner, Uzma Rentia, Matthew L. Bendall, **Marcos Pérez-Losada** and Keith A. Crandall. Validation of variant assembly using HAPHPIPE with next generation sequence data from viruses. *Viruses* 12 (7), 758.
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- Høeg, J. T., Y. Achituv, B. K.K. Chan, K. Chan, P. Gram Jensen and **M. Pérez-Losada**. Cypris Morphology in the barnacles *Ibla* and *Paralepas* (Crustacea: Cirripedia Thoracica) - Implications for Cirripede Evolution. *Journal of Morphology* 270: 241-255.
- Xu, J., **M. Pérez-Losada**, C. G. Jara and K. A. Crandall. Pleistocene glaciation leaves deep signature on the freshwater crab *Aegla alacalufi* in Chilean Patagonia. *Molecular Ecology* 18: 904-918.

- 2008** Weaver, K. F., **M. Pérez-Losada**, R. P. Guralnick, A. Nelson, S. Blatt and K. A. Crandall. Assessing the conservation status of the land snail *Oreohelix peripherica wasatchensis* (Family Oreohelicidae). *Conservation Genetics* 9: 907-916.
- Carvajal-Rodríguez, A., D. Posada, **M. Pérez-Losada**, E. Keller, E. J. Abrams, K. A. Crandall and R. P. Viscidi. Disease progression and evolution of the HIV-1 env gene in 24 infected infants. *Infection Genetics and Evolution* 8: 110-120.
- Bond-Buckup, G., C. G. Jara, **M. Pérez-Losada**, L. Buckup and K. A. Crandall. An assessment of global diversity of the freshwater 'crab' Aeglidae (Decapoda: Anomura). *Hydrobiologia* 595: 267–273.
- Pérez-Losada, M.**, M. Harp, J. T. Høeg, Y. Achituv, D. Jones, H. Watanabe and K. A. Crandall. The tempo and mode of barnacle evolution. *Molecular Phylogenetics and Evolution* 46: 328–346.
- 2007** Porter, M. L., K. Dittmar de la Cruz and **M. Pérez-Losada**. How long does evolution of the troglomorphic form take? Estimating divergence times in *Astyanax mexicanus*. *Acta Carsologica* 36: 173-182.
- Pérez-Losada, M.**, K. A. Crandall, M. C. Bash, M. Dan, J. Zenilman and R. P. Viscidi. Distinguishing importation from diversification of quinolone-resistant *Neisseria gonorrhoeae* by molecular evolutionary analysis. *BMC Evolutionary Biology* 7: 84-94.
- Pérez-Losada, M.**, K. A. Crandall, J. Zenilman and R. P. Viscidi. Temporal trends in gonococcal population genetics in a high prevalence urban community. *Infection, Genetics and Evolution* 7: 271-278.
- Pérez-Losada, M.**, M. J. Nolte, K. A. Crandall, and P. W. Shaw. Testing hypotheses of population structuring in the NE Atlantic Ocean and Mediterranean Sea using the common cuttlefish *Sepia officinalis*. *Molecular Ecology* 16: 2667-2679.
- Pérez-Losada, M.**, M. L. Porter, L. Tazi, and K. A. Crandall. New methods for inferring population dynamics from microbial sequences. *Infection, Genetics and Evolution* 7: 24-43.
- 2006** Jobes, D. V., M. Daoust, V. T. Nguyen, A. Padua, F. Sinangil, **M. Pérez-Losada**, K. A. Crandall, T. Oliphant, D. Posada, A. Rambaut, J. Fuchs, and P. W. Berman. Longitudinal population analysis of dual infection with recombination in two strains of HIV-1 subtype B in an individual from a Phase 3 HIV vaccine efficacy trial. *AIDS* 22: 968-978.
- Pérez-Losada, M.**, R. G. Christensen, D. A. McClellan, Byron Adams, R. P. Viscidi, and K. A. Crandall. Phylogenetic codivergence of polyomaviruses and their hosts. *Journal of Virology* 80: 5663-5669.

- Daniels, S. R., N. Cumberlidge, **M. Pérez-Losada** and K. A. Crandall. Evolution of Afrotropical freshwater crab lineages obscured by morphological convergence. *Molecular Phylogenetics and Evolution* 40: 227-235.
- Crandall, K. A., **M. Pérez-Losada**, R. G. Christensen, D. A. McClellan and R. P. Viscidi. Phylogenomics and molecular evolution of Polyomaviruses. *Advances in Experimental Medicine and Biology* 577: 46-59. Review.
- Pérez-Losada, M.**, E. B. Browne, A. Madsen, T. Wirth, R. P. Viscidi and K. A. Crandall. Population genetics of microbial pathogens estimated from Multilocus Sequence Typing (MLST) data. *Infection, Genetics and Evolution* 6: 97-112.
- 2005** Martínez, P., **M. Pérez-Losada**, A. Guerra and A. Sanjuan. First genetic validation and diagnosis of the short-finned squid species of the genus *Illex* (Cephalopoda: Ommastrephidae). *Marine Biology* 148: 97-108.
- Porter, M. L., **M. Pérez-Losada** and K.A. Crandall. Model based multi-locus estimation of Decapod phylogeny and divergence times. *Molecular Phylogenetics and Evolution* 37: 355-369.
- Pérez-Losada, M.**, Raphael P. Viscidi, and Keith A. Crandall. Population Genetics of *Neisseria gonorrhoeae* in a High Prevalence Community Using a Hyper-Variable Outer Membrane porB and Thirteen Slow-Evolving Housekeeping Genes. *Molecular Biology and Evolution* 22: 1887-1902.
- Shull, H. C., **M. Pérez-Losada**, D. Blair, K. Sewell, E. A. Sinclair, S. Lawler, M. Ponniah and K. A. Crandall. Phylogeny and biogeography of the freshwater crayfish *Euastacus* (Decapoda: Parastacidae) based on nuclear and mitochondrial DNA. *Molecular Phylogenetics and Evolution* 37: 249-263.
- Pérez-Losada, M.**, J. Eiroa, S. Mato and J. Domínguez. Phylogenetic species delimitation of the earthworms *Eisenia fetida* (Savigny, 1826) and *Eisenia andrei* Bouché, 1972 (Oligochaeta, Lumbricidae) based on mitochondrial and nuclear DNA sequences. *Pedobiologia* 49: 317-324.
- 2004** **Pérez-Losada M.**, G. Bond-Buckup, C. Jara and K. A. Crandall. Molecular systematics and biogeography of the southern South American freshwater “crabs” *Aegla* (Decapoda: Anomura: Aeglididae) using multiple heuristic tree search approaches. *Systematic Biology* 53: 767-780.
- Pérez-Losada M.**, J. T. Høeg and K. A. Crandall. Unraveling the evolutionary radiation of the thoracican barnacles using molecular and morphological evidence: a comparison of several divergence time estimation approaches. *Systematic Biology* 53: 244-264.

- Pérez-Losada M.** and K. A. Crandall. Can taxonomic richness be used as a surrogate for phylogenetic distinctness indices for ranking areas for conservation? *Animal Biodiversity and Conservation* 26.1: 77-84.
- 2003** Jara C. G., **M. Pérez-Losada** and K. A. Crandall. *Aegla occidentalis* (Crustacea: Decapoda: Aeglidae), a new species of freshwater anomuran crab from the Nahuelbuta Coastal Range, Chile. *Proceeding of the Biological Society of Washington* 116: 954-963.
- Pérez-Losada M.**, A. Guerra and A. Sanjuan. Allozyme divergence supporting the taxonomic separation of *Octopus mimus* and *O. maya* from *Octopus vulgaris* (Cephalopoda: Octopoda). *Bulletin of Marine Science* 71: 653-664.
- Pérez-Losada M.**, A. Guerra, G. R. Carvalho, A. Sanjuan and P. W. Shaw. Extensive population subdivision of the cuttlefish *Sepia officinalis* (Mollusca: Cephalopoda) around the Iberian Peninsula indicated by microsatellite DNA variation. *Heredity* 89: 417-424.
- Pérez-Losada M.**, C. Jara, G. Bond-Buckup and K. A. Crandall. Phylogenetic relationships among the species of *Aegla* (ANOMURA: AEGLIDAE) freshwater crabs from Chile. *Journal of Crustacean Biology* 22: 304-313.
- Pérez-Losada M.**, J. T. Høeg, G. A. Kolbasov and K. A. Crandall. Reanalysis of the relationships among the Cirripedia and the Ascothoracida and the phylogenetic position of the Facetotecta (Maxillopoda: Thecostraca) using 18S rDNA sequences. *Journal of Crustacean Biology* 22: 661-669.
- Pérez-Losada M.**, C. Jara, G. Bond-Buckup, M. Porter and K. A. Crandall. Phylogenetic position of the freshwater anomuran Aeglidae. *Journal of Crustacean Biology* 22: 670-676.
- 2002** **Pérez-Losada M.**, C. Jara, G. Bond-Buckup and K. A. Crandall. Conservation phylogenetics of Chilean freshwater crabs *Aegla* (ANOMURA, AEGLIDAE): assigning priorities for aquatic habitat protection. *Biological Conservation* 105: 345-353.
- 2001** Guerra A., **M. Pérez-Losada**, F. Rocha and A. Sanjuan. Species differentiation of *Sepia officinalis* and *Sepia hierredda* (Cephalopoda: Sepiidae) based on morphological and allozyme analyses. *Journal Marine Biology Association U.K.* 81: 271-281.
- 2000** Shaw P. W. and **M. Pérez-Losada**. Polymorphic microsatellites in the common cuttlefish *Sepia officinalis*. *Molecular Ecology* 9: 237-238.
- 1999** **Pérez-Losada M.**, A. Guerra and A. Sanjuan. Allozyme differentiation in the cuttlefish *Sepia officinalis* (Mollusca: Cephalopoda) from the NE Atlantic and Mediterranean. *Heredity* 83: 280-289.
- 1997** Sanjuan A., **M. Pérez-Losada** and E. Rolán. Allozyme evidence for cryptic speciation in sympatric populations of the marine pollution indicator

Nassarius spp. (MOLLUSCA: GASTROPODA). *Journal Marine Biology Association U. K.* 77: 773-784.

Sanjuan A., **M. Pérez-Losada** and A. Guerra. Genetic differentiation in three *Sepia* species (Mollusca: Cephalopoda) from Galician waters (north-west Iberian Peninsula). *Marine Biology* 126: 253-259.

1996 Pérez-Losada M., A. Guerra and A. Sanjuan. Allozyme electrophoretic technique and phylogenetic relationships in three species of *Sepia* (Cephalopoda: Sepiidae). *Comparative Biochemical Physiology* 114B: 11-18.

* *Awarded Editors' Choice*

Book Chapters

2024 Pérez-Losada Marcos, Eduardo Castro-Nallar and Miguel Arenas. Microbial sequence typing strategies for genetic and genomic data. *In: Genetics and evolution of infectious diseases* (M. Tibayrenc, Ed). Elsevier Inc.

2019 Luis M. Mejía-Ortíz, Jesús E. Cupul-Pool, Marilú López-Mejía, Alfredo G. Baez-Meléndres, Juan C. Tejada Mazariegos, Jair G. Valladarez, Keith A. Crandall, **Marcos Pérez-Losada** and Oscar Frausto-Martínez. The Habitat Types of Freshwater Prawns (Palaemonidae: Macrobrachium) with Abbreviated Larval Development in Mesoamerica (Mexico, Guatemala and Belize), pp. 1-11. *In: Crustacea*. IntechOpen (www.intechopen.com).

2018 Juan Carlos Tejada-Mazariegos, Luis M. Mejía-Ortíz, Marilú López-Mejía, Keith A. Crandall, **Marcos Pérez-Losada** and Oscar Frausto-Martínez. Freshwater Crustaceans Decapods: An Important Resource of Guatemala, pp. 169-179. *In: Biological Resources of Water*.

2017 Pérez-Losada Marcos, Miguel Arenas and Eduardo Castro-Nallar. Multilocus sequence typing of pathogens: methods, analyses and applications, pp. 383-404. *In: Genetics and evolution of infectious diseases* (M. Tibayrenc, Ed). Elsevier Inc.

2014 Pérez-Losada, M. Mandibulata. Chapter 28. *In: Tree of Life*. (Rafael Zardoya and P. Vargas-Gómez, Eds.). Sinauer Associates.

2012 Pérez-Losada, M. Mandibulados. *In: El árbol de la vida: sistemática y evolución de los seres vivos*, chapter 27 (Rafael Zardoya and P. Vargas-Gómez, Eds.). Museo de Ciencias Naturales, CSIC, Madrid, Spain.

2011 Pérez-Losada, M., M. L. Porter, R. P. Viscidi, and K. A. Crandall. Multilocus sequence typing of pathogens. *In: Genetics and evolution of infectious diseases*, pp. 503-521 (M. Tibayrenc, Ed). Elsevier Inc.

Pérez-Losada, M., J. Xu, C. Jara and K. Crandall. Comparing phylogeographic patterns across the Patagonian Andes in two freshwater crabs of the

- genus *Aegla* (Decapoda: Aeglididae). Phylogeography and Population Genetics in Crustacea. *Crustacean Issues* 19: 291-303.
- Froufe, E., P. Cabezas, P. Alexandrino, and **M. Pérez-Losada**. Comparative phylogeography of three achelate lobster species from Macaronesia (North East Atlantic). Phylogeography and Population Genetics in Crustacea. *Crustacean Issues* 19: 157-173.
- 2009** Crandall, K. A., M. L. Porter, **M. Pérez-Losada**. Crabs, shrimps and lobsters (Decapoda). *In: The Timetree of Life*, pp. 293-297 (S. Blair Hedges and Sudhir Kumar, Eds.). Oxford University Press, Oxford.
- Pérez-Losada, M.**, J. T. Høeg and K. A. Crandall. Stalked and acorn barnacles (Thoracica). *In: The Timetree of Life*, pp. 298-301 (S. Blair Hedges and Sudhir Kumar, Eds.). Oxford University Press, Oxford.
- Breinholt, J., **M. Pérez-Losada** and K. A. Crandall. The timing of the diversification of the freshwater crayfishes. *In: Decapoda crustacean phylogenetics*, pp. 335-347 (J. W. Martin, K. A. Crandall and D. L. Felder, Eds.). CRC Press, Taylor and Francis Group.
- 2008** Crandall, K. A. and **M. Pérez-Losada**. Epidemiological and evolutionary dynamics of pathogens. *In: Evolutionary biology of bacterial and fungal pathogens*, pp. 21-30 (Baquero et al., Eds.). American Society of Microbiology Press, Washington, D. C.
- Pérez-Losada, M.**, M. L. Porter and K. A. Crandall. Methods for analyzing viral evolution. *In: Plant Virus Evolution*, pp. 165-204 (M. J. Roossinck, Ed.). Springer-Verlag Berlin Heidelberg.
- 2005** Sinclair E. A., M. Pérez-Losada and K. A. Crandall. Molecular phylogenetics for conservation biology. *In Phylogeny and conservation*, pp. 19-56 (Purvis, A., T. Brooks, and J. Gittleman, Eds.). Cambridge University Press, Cambridge, UK.

Conference Proceedings

- 2016** **Pérez-Losada, M.**, Goldstein, A., Alamri, L., Crandall, K.A., Freishtat, R.J. Nasopharynx microbiome composition varies over time in pediatric asthma. *Journal of Investigative Medicine*. 64: 815.
- 2015** Groah, S., **Pérez-Losada, M.**, Caldovic, L., Ljungberg, I., Sprague, B., Castro-Nallar, E., Shah, N., Hsieh, M., Pohl, H. All asymptomatic bacteriuria, all the time. *Journal of Urology*. 193: E225.
- Pérez, G.F., **Pérez-Losada, M.**, Pancham, K., Huseni, S., Colberg-Poley, A., Nino, G. Characterization of nasal airway microbiota during rhinovirus infection in full term and in premature infants. *Journal of Investigative Medicine*. 63: 574.
- Pérez-Losada, M.**, Mansell, D., Nallar, E.C., Johnson, W.E., Crandall, K.A.,

Freishtat, R.J. PathoScope: integrating microbiome characterization and host gene expression in pediatric asthma. *Journal of Investigative Medicine*. 63: 575.

Groah, S., **Pérez-Losada, M.**, Caldovic, L., Ljungberg, I., Sprague, B., Castro-Nallar, E., Shah, N., Hsieh, M., Pohl, H. Pyuria and asymptomatic bacteriuria is associated with novel and specific urine microbiomes. *Journal of Urology*. 193: E226.

2008 Høeg, J., H. Glenner, M.J. Grygier, Y. Fujita, **M. Pérez-Losada** and K.A. Crandall. Metamorphosis in crustacean Y-larvae. A parasitic solution to an old zoological riddle. *Journal of Morphology* 269: 1471.

Submitted Publications

Aira, Manuel; **Pérez-Losada, Marcos**; Crandall, Keith A.; Domínguez, Jorge. Faster turnover of taxonomic over functional bacterial composition during vermicomposting indicates increasing functional redundancy. *Environmental Microbiology*.

Marcos Pérez-Losada, Eduardo Castro-Nallar, Jenaro García-Huidobro, José Laerte Boechat, Luis Delgado, Tiago Azenha Rama, Manuela Oliveira. Characterization of the oral mycobioneme of Portuguese with allergic rhinitis and asthma. *Current Research in Microbial Sciences*.

SCHOLARLY PRESENTATIONS

Invited Congress and Symposium Communications

- 2017** **Pérez-Losada, M.** Characterization of HIV diversity, phylodynamics and drug resistance in USA. Sociedad Chilena de Evolución, Puerto Varas, Chile.
Pérez-Losada, M. The short-term dynamics of the tracheal microbiome in tracheostomized patients with lower respiratory infections. ATS, Washington, DC.
- 2016** **Pérez-Losada, M.**, Keith A. Crandal, Robert J. Freishtat. Integrating NGS data to assess host-microbe interactions in asthma. 17th Portugaliae Genetica. Porto, Portugal.
- 2015** **Pérez-Losada, M.** Intra-host evolutionary dynamics of SIV in cynomolgus macaques. 2015 National Center for AIDS Research Meeting, Seattle, WA.
- 2013** **Pérez-Losada, M.**, J. T. Høeg, Y. Achituv and K. A. Crandall. The evolution of acorn barnacles: Darwin's window to evolutionary theory. The Crustacean Society, Summer Meeting. San Jose, Costa Rica.
- 2012** **Pérez-Losada, M.**, J. T. Høeg, Y. Achituv and K. A. Crandall. Deep phylogeny and character evolution in the Thecostraca barnacles. SICB, Charleston, South Carolina, USA.
- 2010** **Pérez-Losada, M.** and K. A. Crandall. Phylogeny, conservation and speciation of *Aegla* (Decapoda: Aegliidae) freshwater crabs from Patagonia.

VII Reunión Alejandro Villalobos, University of Quintana Roo, Cozumel, Mexico.

- 2009** **Pérez-Losada, M.**, J. T. Høeg and K. A. Crandall. Barnacle phylogenetics: last insights on the evolution of the first model organism. The Crustacean Society, Summer Meeting. Tokyo, Japan.

Congress and Symposium Communications (last 5 years)

- 2024** Kylie I Krohmaly, **Marcos Perez-Losada**, Ignacio Ramos-Tapia, Zhaozhong Zhu, Kohei Hasegawa, Carlos A. Camargo, Jr., Brennan Harmon, Janice A. Espinola, Laura Reck Cechinel, Rachael Batabyal, Robert J Freishtat, Andrea Hahn. Bacterial small RNAs (sRNAs) may mediate immune response differences seen in respiratory syncytial virus (RSV) versus rhinovirus (RV) bronchiolitis. American Federation for Medical Research Conference Southeastern Regional Meeting. Birmingham, Alabama.

- 2023** Krohmaly K.I., **Perez-Losada M.**, Zhu Z., Hasegawa K., Hahn A.L., Camargo C.A. Jr, Freishtat R.J. Differential expression of bacterial small RNAs in severe bronchiolitis. International Society for Extracellular Vesicles (ISEV) Annual Meeting. Seattle WA, USA.

Manuela Oliveira, Tiago Rama, Jose Laerte Boechat, Luis Delgado, Valentín Berrios-Farías, Eduardo Castro-Nallar, **Marcos Pérez-Losada**. Composition, structure, function, and interactions of the nasal bacteriomes in allergic rhinitis patients with or without comorbid asthma. European Academy of Allergy and Clinical Immunology, Hamburg, Germany.

Elaise Hill, **Marcos Perez-Losada**, Briony Varda, Michael Hsieh. Dual-transcriptomics for characterization of UTI in children with neurogenic bladder who perform clean intermittent catheterization. Pediatric Academic Society Meeting, Washington DC, USA.

Zhaozhong Zhu, Robert J. Freishtat, Brennan Harmon, Andrea Hahn, Stephen J. Teach, **Marcos Pérez-Losada**, Kohei Hasegawa, Carlos A. Camargo, Jr. Nasal airway microRNA profiling of infants with severe bronchiolitis and risk of childhood asthma: A multicenter prospective study. 2023 AAAAI Annual Meeting, San Antonio, TX, USA.

Manuela Oliveira, Jose Laerte Boechat, Tiago Rama, Luis Delgado, Valentín Berrios-Farías, Eduardo Castro-Nallar and **Marcos Pérez-Losada**. Composition, structure, function, and interactions of the nasal bacteriomes of Portuguese patients with asthma and allergic rhinitis. The European Academy of Allergy and Clinical Immunology (EAACI) Hybrid Congress.

- 2022** Matthieu J. Miossec, Sandro L. Valenzuela, Marcos Pérez-Losada, W. Evan Johnson, Keith A. Crandall and Eduardo Castro-Nallar. Evaluation of

- computational methods for human microbiome analysis using simulated data. Applied Hologenomics Conference. Bilbao, Spain.
- Zhaozhong Zhu, Carlos A. Camargo, Jr., Yoshihiko Raita, Robert J. Freishtat, Michimasa Fujjogi, Andrea Hahn, Jonathan M. Mansbach, **Marcos Pérez-Losada** and Kohei Hasegawa. Nasopharyngeal airway dual-transcriptome of infants with severe bronchiolitis and risk of childhood asthma. AAAAI Annual Meeting. Virtual Meeting.
- Kylie I. Krohmaly, **Marcos Pérez-Losada**, Andrea L. Hahn and Robert Freishtat. Comparison of bacterial cell- and extracellular vesicle-associated small RNAs and their potential to interact with human transcripts. ISEV Annual Meeting. Virtual Meeting.
- Kylie I. Krohmaly, **Marcos Pérez-Losada**, Andrea L. Hahn and Robert Freishtat. Comparison of bacterial cell- and extracellular vesicle-associated small RNAs and their potential to interact with human transcripts. 12th Annual Research, Education and Innovation Week. Children's National Hospital, Washington DC.
- 2021** Yoshihiko Raita, **Marcos Pérez-Losada**, Robert J. Freishtat, Brennan Harmon, Jonathan M. Mansbach, Pedro A. Piedra, Zhaozhong Zhu, Carlos A. Camargo, Jr., and Kohei Hasegawa. Integrated omics endotyping of infants with respiratory syncytial virus bronchiolitis: Associations with acute severity and asthma development. Society for Academic Emergency Medicine. Virtual Meeting.
- 2020** Amanda K Rounds, Suzanne L Groah, **Marcos Pérez-Losada**, Inger H Ljungberg, Bruce Sprague, Elizabeth Davis, Rochelle E. Tractenberg. Intravesical Probiotic Use Decreases Urinary Symptoms, Changes Urine Microbiome and Microbial Communities of those with Neurogenic Lower Urinary Tract Dysfunction- First In-Human Trial. Multidisciplinary Benign Urology Research Day 2020. Duke University, USA.

TEACHING PORTFOLIO

Courses Taught

- 2023** PUBH 6277 – Public Health Genomics (3 credits). Milken Institute School of Public Health. George Washington University, USA. Role: course developer
 PUBH 3202 – Introduction to Genomics (3 credits). Milken Institute School of Public Health. George Washington University, USA. Role: course developer
 BIOC6240: Next Generation Sequencing – Principles and Applications.
- 2022** PUBH 6277 – Public Health Genomics (3 credits). Milken Institute School of Public Health. George Washington University, USA. Role: course developer
 PUBH 3202 – Introduction to Genomics (3 credits). Milken Institute School of Public Health. George Washington University, USA. Role: course developer

- BIOC6240: Next Generation Sequencing – Principles and Applications. Workshop on microbiome diversity and analyses (1 credit). Universidad de Puerto Rico en Ponce, Puerto Rico.
- 2021** PUBH 6277 – Public Health Genomics (3 credits). Milken Institute School of Public Health. George Washington University, USA. Role: course developer
 PUBH 3202 – Introduction to Genomics (3 credits). Milken Institute School of Public Health. George Washington University, USA. Role: course developer
 BIOC6240: Next Generation Sequencing – Principles and Applications.
- 2020** PUBH 6277 – Public Health Genomics (3 credits). Milken Institute School of Public Health. George Washington University, USA. Role: course developer
 PUBH 3202 – Introduction to Genomics (3 credits). Milken Institute School of Public Health. George Washington University, USA. Role: course developer
 BIOC6240: Next Generation Sequencing – Principles and Applications. IBS Program and M.Sc Program in Bioinformatics, School of Medicine and Health Sciences, George Washington University, USA. Role: guest lecturer
- 2019** PUBH 6277 – Public Health Genomics (3 credits). Milken Institute School of Public Health. George Washington University, USA. Role: course developer
 BIOC6240: Next Generation Sequencing – Principles and Applications. IBS Program and M.Sc Program in Bioinformatics, School of Medicine and Health Sciences, George Washington University, USA. Role: guest lecturer
 Youth Bioinformatics Symposium (6 h). Exploring Computational Biology. George Mason University, USA. Role: course instructor
- 2018** PUBH 6277 – Public Health Genomics (2 credits). Milken Institute School of Public Health. George Washington University, USA. Role: course developer
 BIOC6240: Next Generation Sequencing – Principles and Applications. IBS Program and M.Sc Program in Bioinformatics, School of Medicine and Health Sciences, George Washington University, USA. Role: guest lecturer
- 2014** Integrative Bioinformatics: Fundamentals and applications of molecular phylogenetics. George Washington University, USA. Role: guest lecturer
- 2013** Phylodynamics of infectious diseases (15 h). Instituto de Salud Carlos III, Madrid, Spain. Role: course developer
- 2012** Phylodynamics of infectious diseases (15 h). Instituto de Salud Carlos III, Madrid, Spain. Role: course developer
 Masters in Genetics of Aquatic Organisms (1 credit). Centro de Investigação em Biodiversidade e Recursos Genéticos, Portugal. Role: course instructor
- 2011** Masters in Genetics of Aquatic Organisms (1 credit). Centro de Investigação em Biodiversidade e Recursos Genéticos, Portugal. Role: course instructor
- 2010** Fundamentals and applications of molecular phylogenetics (10 h). University of Quintana Roo, Cozumel, Mexico. Role: course developer

- 2009** Molecular Systematics (30 h). University Austral of Chile, Chile. Role: course developer
Coalescent theory: fundamentals and applications (15 h). Museo Nacional de Ciencias Naturales, Madrid, Spain. Role: course developer
Population genetics of infectious diseases: fundamentals and applications (10 h). Master: Biodiversity, Conservation and Evolution. Instituto Cavanilles, Valencia, Spain. Role: course instructor
- 2008** Molecular Evolution (4 credits). Brigham Young University, USA. Role: course instructor
Phylogenetic analysis of DNA sequences (30 h). Bar Ilan University, Israel. Role: course developer
- 2004** Bayesian Phylogenetic Analysis (40 h). University Autónoma of Morelos, Mexico. Role: course developer
- 2003** Molecular Systematics (30 h). University Austral of Chile, Chile. Role: course developer
- 1999** Molecular Techniques in Genetics (2.5 credits). University of Vigo, Spain. Role: course developer
- 1998** Human Genetics (2.5 credits). University of Vigo, Spain. Role: course developer
- 1997** Genetics of Marine Organisms (1 credit). University of Vigo, Spain. Role: course instructor
Techniques in Genetics (3 credits). University of Vigo, Spain. Role: course instructor
- 1996** Genetics (1.5 credits). University of Vigo, Spain. Role: course instructor
Techniques in Genetics (2.5 credits). University of Vigo, Spain. Role: course instructor
- 1995** Genetics (2 credits). University of Vigo, Spain. Role: course instructor
Genetics of Marine Organisms (2 credits). University of Vigo, Spain. Role: course instructor

Workshops attended

- 2008** Statistical and computational challenges in molecular phylogenetics and evolution. Royal Society of London, UK
- 2007** Estimating demographic parameters from genetic data. La Fouly, Switzerland.
- 2000** Molecular evolution. Marine Biological Laboratory, Woods Hole, USA.
- 1994** Analysis of the evolutionary process. Universidad Complutense, Spain.

UNIVERSITY SERVICE

Committee service

- 2017-2021** **HPC Advisory Committee.** Role: representative. George Washington University

- 2019-** **DBB Curriculum Committee.** Role: participant. Department of Biostatistics and Bioinformatics, School of Public Health, George Washington University
- 2019-2020** **DBB PhD Working Group.** Role: participant. Department of Biostatistics and Bioinformatics, School of Public Health, George Washington University
- 2019-2020** **DBB MS Working Group.** Role: participant. Department of Biostatistics and Bioinformatics, School of Public Health, George Washington University

Administrative service

- 2022-** **DBB MS Health and Biomedical Data Sci – Bioinformatics.** Role: Director
- 2019-** **DBB Faculty Searches.** Role: reviewer and participant. Department of Biostatistics and Bioinformatics, School of Public Health, George Washington University
- 2021** **Promotion and Tenure Committee.** Role: reviewer. Department of Computer Science and Department of Biology, Memorial University of Newfoundland
- 2019-2020** **DBB Administrative Search.** Role: reviewer. Department of Biostatistics and Bioinformatics, School of Public Health, George Washington University
- 2017-2019** **DEB Faculty Searches.** Role: reviewer and participant. Department of Epidemiology and Biostatistics, School of Public Health, George Washington University
- 2017-2018** **DBS Faculty Search.** Role: external reviewer. Department of Biological Sciences, Columbian College of Arts and Sciences, George Washington University

Student Committees

PhD

- 2023 Nathaniel Stearrett. George Washington University
- 2020 Keylie Gibson. George Washington University
- 2019 Matthew Bendall. George Washington University
- 2018- Andrew Wilson. George Washington University
- 2018 Victoria Rodriguez. George Washington University
- 2018- Guillermo Ruiz Cancino. Universidad de Quintana Roo Campus Cozumel
- 2018- Nureen Ghuznavi. George Washington University
- 2018 Merly Escalona, Univesidad de Vigo, Spain
- 2017- James P. Bernot. George Washington University

2017 David Stern. George Washington University
2016- Konstantinos Karagiannis. George Washington University

MS

2019 Michelle Ahn. George Washington University

Culminating Experience

2019 Six students. George Washington University
2018 Twelve students. George Washington University
2017 Two students. George Washington University

Admission services

2021- **SPH Admissions Committee.** PhD-Health and Biomedical Data Sci-Bioinformatics. Role: reviewer
2019- **SPH Admissions Committee.** Role: representative. Department of Biostatistics and Bioinformatics, School of Public Health, George Washington University

MENTORING and ADVISING

Undergraduate Students (included in peer-review publication)

2017 **Christine Kwak**, UC Washington Center Internship Program. Children's National Medical Center, USA. Project: Characterization of the nasal microbiome in patients with different asthma phenotypes.
2016 **Amenah Jafarey**, UC Washington Center Internship Program. Children's National Medical Center, USA. Project: The temporal dynamics of the tracheal microbiome in tracheostomised patients with and without lower respiratory infections.
2015 **Lamia Alamri**, B.S., Gill Summer Fellowship. Children's National Medical Center, USA. Project: Microbial characterization of phenotypic clusters in asthmatic African American children.
2014 **Jessica Olcina**, Departamento de Ecoloxía e Bioloxía Animal, Universidade de Vigo, Spain. Project: biodiversity of microbial communities during vermicomposting.
2009 **Alvaro Roura**, ECOBIOMAR, Instituto de Investigaciones Marinas, IIM (CSIC), Vigo, Spain. Project: systematics of cephalopods.
2004 **Emily B. Browne**, B.S. Office of Research & Creative Activities Fellow. Brigham Young University, USA. Project: Population genetics of microbial pathogens based on MLST loci.
Mark Nolte, B.S. Office of Research & Creative Activities Fellow. Brigham Young University, USA. Project: Population structure of the cuttlefish *S. officinalis*.

Margaret Harp, B.S. Office of Research & Creative Activities Fellow. Brigham Young University, USA. Project: The tempo and mode of barnacle evolution.

2003

Ash Nelson, B.S. Office of Research & Creative Activities Fellow. Brigham Young University, USA. Project: Molecular systematics of the land snail *Oreohelix*.

Aaron Madsen, B.S. Office of Research & Creative Activities Fellow. Brigham Young University, USA. Project: Population genetics of microbial pathogens based on MLST loci.

Graduate Students

2022- **Clark Gaylord, PhD.** George Washington University. SPH HDS Program.

2021- **Caitlin Loeffler, PhD.** George Washington University. CCAS Biology.

2019-2023 **Nathaniel Stearrett, PhD.** George Washington University. Project: Transcriptomics of autoimmune and inflammatory diseases. Supervisors: Keith A. Crandall and Marcos Pérez-Losada

2019-2023 **Ignacio Ramos-Tapia, PhD.** Centro de Bioinformática y Biología Integrativa, Facultad de Ciencias de la Vida, Universidad Andrés Bello, Santiago, Chile.

2016-2021 **Daniela Rosado, PhD.** CIBIO-InBIO, Portugal. Project: microbiome of farmed fishes. Supervisors: Raquel Susana Xavier and Marcos Pérez-Losada.

2016-2020 **Keylie Gibson, PhD.** George Washington University. Project: Retroviral phylodynamics. Supervisors: Keith A. Crandall and Marcos Pérez-Losada.

2016-2020 **Gisela Loretan, PhD.** Instituto Nacional de Limnología, Universidad Nacional del Litoral, Santa Fe, Argentina.

2018 **Nikki Kupferman, MS.** MS Public Health Epidemiology and Emerging Infectious Diseases. The George Washington University School of Public Health and Field/Laboratory Experience Proposal, USA. Project: Analysis of ear microbiome

2016-2018 **Xin Huang, PhD.** George Washington University, Department of Biology. Project: Evolutionary dynamics of infectious diseases. Supervisors: Keith A. Crandall and Marcos Pérez Losada

2010-2012 **João Faria de Oliveira Santos, MS.** Centro de Investigação em Biodiversidade e Recursos Genéticos, Portugal. Project: Phylogeography and conservation of four marine lobsters from the Macaronesian (NE Atlantic).

2006 **Maigualida Ricoy Martínez,** Diploma de Estudios Avanzados. Universidad de Vigo, Spain. Project: Phylogenetic assessment of the

earthworm *Aporrectodea caliginosa* species complex (Oligochaeta, Lumbricidae).

Post-doctoral Students

2018-2019 Allison Kolbe. The George Washington University School of Public Health, USA.

2011-2013 Raquel Susana Xavier. Centro de Investigação em Biodiversidade e Recursos Genéticos, Portugal.

Faculty

2021- Ali Rahnavard. Assistant Professor, The George Washington University of School of Public Health. Tenure candidate at the Department of Biostatistics and Bioinformatics.

2021-2022 Diane Uschner. Assistant Professor, The George Washington University of School of Public Health. Tenure candidate at the Department of Biostatistics and Bioinformatics.

2017-2019 Catherine Forster. Children's National Medical Center, USA.

2014-2016 Raquel Susana Xavier. Centro de Investigação em Biodiversidade e Recursos Genéticos, Portugal.

EDITORIAL PEER REVIEW ACTIVITIES

Journal Editor

2012- Molecular, Phylogenetics and Evolution. Role: Associate Editor

2009-2020 Infection, Genetics and Evolution. Role: Associate Editor Associate Editor

Journal Referee

Bioinformatics; BMC Biology; BMC Evolutionary Biology; Cell Biology International; Evolutionary Applications; Evolution, Infection Genetics and Evolution; Frontiers Genetics; International Journal of Molecular Sciences; Invertebrate Systematics; Journal of the American Medical Association; Journal of Crustacean Biology; Journal of Evolutionary Biology; Journal of Natural History; Journal of Biogeography; Journal of Molecular Evolution; Journal of Zhejiang University-Science B; Marine Biology; Molecular Biology and Evolution; Molecular Ecology; Molecular Phylogenetics and Evolution; Pedobiologia; PLOSone; Proceedings of the Biological Society of Washington; and Systematic Biology.

Grant Referee

National Institute of Health, USA

National Science Foundation, USA

Clinical and Translation Science Institute, USA

DC Center for AIDS Research, USA

Ministerio de Educación y Ciencia, Spain

Fundação para a Ciência e a Tecnologia, Portugal

Agencia Nacional de Evaluación de la Calidad y Acreditación, Spain

National Science Centre, Poland