



**MPL**

**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

- 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

- 2022-2024** NSF, DEB - Systematics & Biodiversity Sciences, USA. "Barnacle phylogenomics and the evolution of diverse sexual systems". ECR5E2LU5BL6. \$912,087. Role: PI. Effort: 10%.
- 2023** GW Cancer Center. Katzen Internal Pilot Award Program. Characterization of host-microbiome interactions and human endogenous retroviruses expression in patients with AIDS-associated Kaposi's sarcoma. Role: Co-I. \$40,000.
- 2024-2030** Predictive Intelligence for Pandemic Prevention Phase II Centers Program. Theme 1: A New Toolbox for Accurate Pandemic Prediction (TAPP). Integrating diverse data through AI modeling for accurate pandemic prediction. Role: Co-I (To be submitted Dec 2023).

### 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 Economia, 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 Aeglididae". DEB-0075600. \$180,000. Role: Post-Doct – *I planned, wrote and managed this grant*. Effort: 100%. Objective: study the diversity, conservation and systematics of the freshwater crabs Aeglididae.

## PEER REVIEWED PUBLICATIONS

Publications: 199

h-index (Google Scholar): 50

i10-index (Google Scholar): 145

### Journal Articles

- 2023 Marcos Pérez-Losada** and Keith A. Crandall. Spatial diversity of the skin bacteriome. *Frontiers in Microbiology* (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).
- 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, Katuska 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 Fujiogi, 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. Freishtat, 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. Freishtat, 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 Hernández, 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 Cenzual, 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, Dmitry 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<sup>a</sup> 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 Fujiogi, 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.
- María Gómez-Brandón, Manuel Aira, Natielo Santana, **Marcos Pérez-Losada** and Jorge Dominguez. Temporal dynamics of bacterial communities in a

- pilot-scale vermireactor fed with distilled grape marc. *Microorganisms* 8, 642.
- Hans G. Pohl, Suzanne L. Groah, **Marcos Pérez-Losada**, Inger Ljungberg, Bruce M. Sprague, Neel Chandal, Ljubica Caldovic and Michael Hsieh. The urine microbiome of healthy men and women differs by urine collection method. *International Neurourology Journal* 24(1): 41-51.
- Marcos Pérez-Losada**, Kelly M. Crandall and Keith A. Crandall. Testing the “grandma hypothesis”: a project-based learning approach to genomics by characterizing skin microbiome diversity. *Journal of Microbiology & Biology Education* 21(1): 21.1.7.
- Gisela Loretán, Rueda, Eva Carolina, Cabrera, Juan Manuel, **Pérez-Losada, Marcos**, Collins, Pablo Agustín, Giri, Federico. Geographical isolation and restricted gene flow drive *Aegla singularis* (Decapoda. Anomura. Aeglidae) speciation in southern South America. *Biological Journal of Linnean Society* 129(1): 177–189.
- 2019** Keylie M. Gibson, Margaret C. Steiner, Seble Kassaye, Frank Maldarelli, Zehava Grossman, **Marcos Pérez-Losada**, Keith A Crandall. A 28-year history of HIV-1 drug resistance and transmission in Washington, DC. *Frontiers in Microbiology* 10:369.
- Daniela Rosado, Raquel Xavier, Ricardo Severino, Fernando Tavares, Jo Cable, **Marcos Pérez-Losada**. Effects of disease, antibiotic treatment and recovery trajectory on the microbiome of farmed seabass (*Dicentrarchus labrax*). *Scientific Reports* 9: 18946.
- Suchitra Hourigan, Michelle Ahn, Keylie Gibson, **Marcos Pérez-Losada**, Grace Felix, Melissa Weidner, Ian Leibowitz, John Niederhuber, Cynthia L. Sears, Keith A. Crandall, Maria Oliva-Hemker. Fecal transplant in children with *Clostridioides difficile* gives sustained reduction in antimicrobial resistance and pathogenic burden. *Open Forum Infectious Diseases* 6(10), ofz379.
- Matthew L. Bendall, Miguel de Mulder Rougvi, Aarón Lecanda-Sánchez, **Marcos Pérez-Losada**, Mario A. Ostrowski, R. Brad Jones, Lubbertus C. Mulder, Gustavo Reyes-Terán, Keith A. Crandall, Christopher E. Ormsby and Douglas F. Nixon. Telescope: Characterization of the retrotranscriptome by accurate estimation of transposable element expression. *PLoS Computational Biology* 15(9): e1006453.
- Maria Gómez-Brandón, Manuel Aira, Allison R. Kolbe, Nariane de Andrade, **Marcos Pérez-Losada**, Jorge Domínguez. Rapid bacterial community changes during vermicomposting of grape marc derived from red winemaking. *Microorganisms* 7, 473.

- Allison R. Kolbe, Eduardo Castro-Nallar, Diego Preciado, **Marcos Pérez-Losada**. Altered middle ear microbiome in children with chronic otitis media with effusion and respiratory illnesses. *Frontiers Cellular and Infection Microbiology* 9:339.
- Jorge Domínguez, Manuel Aira, Allison R. Kolbe, María Gómez-Brandón and **Marcos Pérez-Losada**. Changes in the composition and function of bacterial communities during vermicomposting may explain beneficial properties of vermicompost. *Scientific Reports* 9(1):9657.
- Allison R. Kolbe, Manuel Aira, María Gómez-Brandón, **Marcos Pérez-Losada**, and Jorge Domínguez. Bacterial succession and functional diversity during vermicomposting of the white grape marc *Vitis vinifera* v. Albariño. *Scientific Reports* 16;9(1):7472.
- Christine Ewers-Saucedo, Christopher L. Owen, **Marcos Pérez-Losada**, Jens T. Høeg, Henrik Glenner, Benny Kwok Kan Chan & Keith A. Crandall. Towards a Barnacle Tree of life: Integrating diverse phylogenetic efforts into a comprehensive hypothesis of thecostracan evolution. *Peer J*. 7:e7387.
- Manuel Aira, **Marcos Pérez-Losada** and Jorge Domínguez. Microbiome dynamics during cast ageing in the earthworm *Aporrectodea caliginosa*. *Applied Soil Ecology* 139: 56-63.
- Kamwing Jair, Chase D. McCann, Harrison Reed, Amanda D. Castel, **Marcos Pérez-Losada**, Brittany Wilbourn, Alan E. Greenberg, Jeanne A. Jordan and the DC Cohort Executive Committee. Validation of publicly-available software used in analyzing NGS data for HIV-1 drug resistance mutations and transmission networks in a Washington, DC, Cohort. *PLoS One* 14(4): e0214820.
- Farnaz Bozorgi, Masoumeh Malek, Manuel Aira, **Marcos Pérez-Losada**, Jorge Dominguez. Multigene phylogeny reveals a new Iranian earthworm genus (Lumbricidae: *Philomontanus*) with three new species. *PLoS One* 14(1): e0208904.
- Raquel Xavier, Renata Mazzei, **Marcos Pérez-Losada**, Daniela Rosado, Joana Santos, Ana Veríssimo, Marta C Soares. A risky business? Habitat and social behaviour impact skin and gut microbiomes in Caribbean cleaning gobies. *Frontiers in Microbiology* 10:716.
- Daniela Rosado, **Marcos Pérez-Losada**, Ricardo Severino, Jo Cable, Raquel Xavier. Characterization of the skin and gill microbiomes of the farmed seabass (*Dicentrarchus labrax*) and seabream (*Sparus aurata*). *Aquaculture* 500: 57-64.
- 2018** Luis M. Mejía-Ortiz, Marilú López-Mejía, Juan Carlos Tejeda-Mazariegos, Oscar Frausto-Martínez, Keith A. Crandall, **Marcos Pérez-Losada**, Jair Gaspar

- Valladarez. Los camarones de agua dulce de la subfamilia Palaemoninae en la Península de Yucatán (México, Guatemala y Belice). *Teoría y Praxis* 25: 115-130.
- Carlos G. Jara, **Marcos Pérez-Losada**, and Keith A. Crandall. *Aegla chilota*, new species of anomuran freshwater crab from Chiloé Island, western Patagonia. *Nauplius* 26: e2018029.
- Val Stéphanie, Marian Poley, Anna, Krueger, Gustavo Nino, Kristy Brown, **Marcos Pérez-Losada**, Heather Gordish-Dressman, Diego Preciado. Characterization of mucoid and serous middle ear effusions from patients with chronic otitis media: implication of different biological mechanisms? *Pediatric Research* 84(2):296-305.
- Pérez-Losada Marcos**, Robert J. Graham, Madeline Coquillette, Amenah Jafarey, Eduardo Castro-Nallar, Manuel Aira, Claire Hoptay, Robert J. Freishtat, Jonathan M. Mansbach. Tracheal microbiota in patients with a tracheostomy before, during and after an acute respiratory infection. *Pediatric Infectious Disease Journal* 37(11): e269–e271.
- Pérez-Losada, Marcos**, Kayla J Authelet, Claire E. Hoptay, Christine Kwak, Keith A. Crandall; Robert J. Freishtat. Pediatric asthma comprises different phenotypic clusters with unique nasal microbiotas. *Microbiome* 6:179.
- \*Emma Nally, Suzanne L. Groah, **Marcos Pérez-Losada**, Ljubica Caldovic, Inger Ljungberg, Neel J. Chandel, Bruce Sprague, Michael H. Hsieh, Hans G. Pohl. Identification of *Burkholderia fungorum* in the urine of an individual with spinal cord injury and augmentation cystoplasty using 16S sequencing: copathogen or innocent bystander? *Spinal Cord Series and Cases* 4: 85.
- Bianca Zimmermann, Marcelo Crivellaro, Marlise Bartholomei-Santos, Keith A. Crandall, **Marcos Pérez-Losada**, Federico Giri, Pablo Collins, Sandro Santos, Caroline Hauschild. Phylogeography reveals an unexpectedly low genetic diversity in a widely distributed species: the case of the freshwater crab *Aegla platensis* (Decapoda: Anomura). *Biological Journal of the Linnean Society* 123 (3): 578–592.
- Hahn, Andrea, Stephanie Warnken, **Marcos Pérez-Losada**, Robert J Freishtat, Keith A Crandall. Microbial diversity within the airway microbiome in chronic pediatric lung diseases. *Infection, Genetics and Evolution* 63: 316-325.
- Houzet L., **M. Pérez-Losada**, G. Matusali, C. Deleage, N. Dereuddre-Bosquet, A. P. Satie, F. Aubry, E. Becker, B. Jégou, R. Le Grand, B. F. Keele, K. A. Crandall and N. Dejucq-Rainsford. Seminal SIV in chronically-infected

- cynomolgus macaques is dominated by virus originating from multiple genital organs. *Journal of Virology* 92 (14) e00133-18.
- Pérez-Losada, Marcos**, Miguel Arenas and Eduardo Castro-Nallar. Microbial sequence typing in the genomic era. *Infection, Genetics and Evolution* 63: 346-359.
- Kohei Hasegawa, **Marcos Pérez-Losada**, Claire E. Hoptay, Samuel Epstein, Jonathan M. Mansbach, Stephen J. Teach, Pedro A. Piedra, Carlos A. Camargo, Jr., and Robert J. Freishtat. RSV bronchiolitis versus rhinovirus: Difference in nasal airway microRNA profiles and NFκB signaling. *Pediatric Research* 83(3): 606-614.
- Arenas, Miguel, Natalia M. Araujo, Catarina Branco, Nadine Castelhana, Eduardo Castro-Nallar and **Marcos Pérez-Losada**. Mutation and recombination in pathogen evolution: Relevance, methods and controversies. *Infection, Genetics and Evolution* 63: 295-306.
- Regina Wetzer, Niel L. Bruce and **Marcos Pérez-Losada**. Relationships of the Sphaeromatidae genera (Peracarida: Isopoda) inferred from 18S rDNA and 16S rDNA genes. *Arthropod Phylogeny and Systematics* 76(1): 1-30.
- Aira, Manuel, **Marcos Pérez-Losada**, Jorge Domínguez. Diversity, structure and sources of bacterial communities of earthworm cocoons. *Scientific Reports* 8: 6632.
- Noguera, José C., Manuel Aira, **Marcos Pérez-Losada**, Jorge Domínguez, Alberto Velando. Glucocorticoids modulate gastrointestinal microbiome in a wild young bird. *Royal Society open science* 5: 171743.
- Raquel Xavier, Joanne Cable, Camino Gestal, **Marcos Pérez-Losada**, David James Harris, Rita Freitas, Daniela Rosado, Ana Verissimo, Ricardo Severino. Phylogenetic analysis of Apicomplexan parasites infecting commercially valuable species from the Northeast Atlantic reveals new and high levels of species diversity. *Parasites & Vectors* 11: 63.
- Jorge Domínguez, Manuel Aira, Pablo G. Porto, Darío J. Díaz Cosín, **Marcos Pérez-Losada**. Multigene phylogeny reveals two new isolated and relic earthworm genera (Oligochaeta: Lumbricidae). *Zoological Journal of the Linnean Society* 18: 258–274.
- Crivellaro, M. S., Bianca L. Zimmermann, Marlise L. Bartholomei-Santos, Keith A. Crandall, **Marcos Pérez-Losada**, Georgina Bond-Buckup and Sandro Santos. Looks can be deceiving: species delimitation reveals hidden diversity in the freshwater crab *Aegla longirostri* (Decapoda: Anomura). *Zoological Journal of the Linnean Society* 182: 24-37.
- 2017 Pérez-Losada, M.**, Amanda D. Castel, Brittany Lewis, M. Kharfen, C. P. Cartwright, B. Huang, T. Maxwell, A. Greenberg and Keith A. Crandall, on behalf of the DC Cohort Executive Committee. Characterization of HIV

- diversity, phylodynamics and drug resistance in Washington, DC. *PLoS One* 12(9): e0185644.
- Pérez-Losada, M.**, Robert J Graham, Madeline Coquillet, Amenah Jafarey, Eduardo Castro-Nallar, Manuel Aira, Robert J Freishtat, Jonathan M Mansbach. The temporal dynamics of the tracheal microbiome in tracheostomised patients with and without lower respiratory infections. *PLoS One* 12(8): e0182520.
- Pérez, Geovanny F., **Marcos Pérez-Losada**, Natalia Isaza, Mary C. Rose, Anamaris M. Colberg-Poley, Gustavo Nino. Nasopharyngeal Microbiome in Premature Infants and Stability during Rhinovirus Infection. *Journal of Investigative Medicine* 65: 984-990.
- Krueger A., Val S., **Pérez-Losada M.**, Panchapakesan K., Devaney J., Duah V., DeMasson C., Poley M., Rose M., Preciado D. The Relationship of the Middle Ear Effusion Microbiome to Secretory Mucin Production in Pediatric Patients with Chronic Otitis Media. *The Pediatric Infectious Disease Journal* 36: 635-640.
- Pérez-Losada Marcos**, Lamia Alamri, Keith A. Crandall and Robert J. Freishtat. Nasopharyngeal microbiome diversity changes over time in children with asthma. *PLoS One* 12(1): e0170543.
- 2016** Jörg, Römbke; Manuel Aira; Thierry Backeljau; Karin Breugelmans; Jorge Dominguez; Elisabeth Funke; Nadin Graf; Mehrdad Hajibabaei; **Marcos Pérez-Losada**; Pablo G Porto; Rüdiger Schmelz; Joaquin Vierna; Anton Vizcaino; Markus Pfenninger. DNA barcoding of earthworms (*Eisenia fetida/andrei*) from 28 ecotoxicological test laboratories. *Applied Soil Ecology* 104: 3–11.
- Groah Suzanne, **Marcos Pérez-Losada**, Ljuba Caldovic, Inger Ljungberg, Bruce Sprague, Eduardo Castro-Nallar, Neel Shah, Michael Hsieh, Hans Pohl. Redefining healthy urine: a cross-sectional exploratory metagenomic study of people at low- and high-risk for urinary tract infection. *The Journal of Urology* 196: 579-587.
- Hahn A., Sanyal A, Pérez G, Colberg-Poley AM, Campos J, Rose M, **Pérez-Losada M.** Different Next Generation Sequencing platforms produce different microbial profiles and diversity in cystic fibrosis sputum. *Journal of Microbiological Methods* 130: 95–99.
- Val Stephanie, Marian Poley, Kristy Brown, Rachel Choi, Stephanie Jeong, AnaMaris Colberg-Poley, Mary C. Rose, Karuna C. Panchapakesan, Joe C. Devaney, **Marcos Pérez-Losada**, Diego Preciado. Proteomic characterization of middle ear fluid reveals neutrophil extracellular traps as a predominant innate immune response in chronic otitis media. *PLoS One* 11(4): e0152865.

- Pérez-Losada Marcos**, Keith A. Crandall and Robert J. Freishtat. Two sampling methods yield distinct microbial signatures in the nasopharynges of asthmatic children. *Microbiome* 4:25.
- Pérez-Losada Marcos**, Keith A. Crandall, Robert J. Freishtat. Comparison of two commercial DNA extraction kits for the analysis of nasopharyngeal bacterial communities. *AIMS Microbiology* 2(2): 108-119.
- Hilton Sarah K., Eduardo Castro-Nallar, **Marcos Pérez-Losada**, Ian Toma, Timothy A. McCaffrey, Eric P. Hoffman, Marc O. Siegel, Gary L. Simon, W. Evan Johnson and Keith A. Crandall. Metataxonomic and metagenomic approaches versus culture-based techniques for clinical pathology. *Frontiers Microbiology* 7: 484.
- Aira Manuel, Jessica Olcina, **Marcos Pérez-Losada**, Jorge Domínguez. Characterization of the bacterial communities of casts from *Eisenia andrei* fed with different substrates. *Applied Soil Ecology* 98: 103-111.
- 2015** Sandro Santos, Georgina Bond-Buckup, Ludwig Buckup, Marlise Ladvocat Bartholomei-Santos, **Marcos Pérez-Losada**, Carlos G. Jara, and Keith A. Crandall. Three new species of Aeglidae (*Aegla* leach, 1820) from the Paraná state, Brazil. *Journal of Crustacean Biology* 35(6): 839–849.
- Delgado, E., María Teresa Cuevas, Francisco Domínguez, Yolanda Vega, Marina Cabello, Aurora Fernández-García, **Marcos Pérez-Losada**, María Ángeles Castro, Vanessa Montero, Mónica Sánchez, Ana Mariño, Hortensia Álvarez, Patricia Ordóñez, Antonio Ocampo, Celia Miralles, Sonia Pérez-Castro, María José López-Álvarez, Raúl Rodríguez, Matilde Trigo, Julio Diz-Arén, Carmen Hinojosa, Pablo Bachiller, Silvia Hernáez Crespo, Ramón Cisterna, Eugenio Garduño, Lucía Pérez-Álvarez, Michael M Thomson. Phylogeny and Phylogeography of a Recent HIV-1 Subtype F Outbreak among Men Who Have Sex with Men in Spain Deriving from a Cluster with a Wide Geographic Circulation in Western Europe. *PLoS One* 10(11): e0143325.
- Aira Manuel, Seth Bybee, **Marcos Pérez-Losada**, Jorge Dominguez. Feeding on microbiomes: effects of detritivory on the taxonomic and phylogenetic bacterial composition of animal manures. *FEMS Microbiology Ecology* 91: 2015, fiv117.
- Castro-Nallar, E., Matthew L. Bendall, **Marcos Pérez-Losada**, Sarven Sabuncyan, Emily G. Severance, Faith B. Dickerson, Jennifer R. Schroeder, Robert H. Yolken, Keith A. Crandall. Composition, taxonomy and functional diversity of the oropharynx microbiome in individuals with schizophrenia and controls. *Peer J* 3: e1140.
- Castro-Nallar, E., Ying Shen, Robert J. Freishtat, **Marcos Pérez-Losada**, Solaiappan Manimaran, Gang Liu, Avrum Spira, W. Evan Johnson, and



- Keith A. Crandall. Integrating Metagenomics and Host Gene Expression to Characterize Asthma-Associated Microbial Communities. *BMC Medical Genomics* 8: 50.
- Pérez-Losada, M.**, Eduardo Castro-Nallar, Matthew Bendall, Robert J. Freishtat, Keith A. Crandall. Dual transcriptomic profiling of host and microbiota during health and disease in pediatric asthma. *PLoS One* 10(6): e0131819.
- Pérez-Losada, M.**, M. Arenas, J. C. Galán, F. Palero; F. Gonzalez-Candelas. Recombination in viruses: Mechanisms, methods of study, and evolutionary consequence. *Infection, Genetics and Evolution* 30: 296-307.
- Pérez-Losada, M.**, J. W. Breinholt, M. Aira, J. Domínguez. An updated multilocus phylogeny of the Lumbricidae (Annelida: Clitellata: Oligochaeta) earthworms. *Journal of Phylogenetics and Evolutionary Biology* 3: 1.
- Dominguez J., M. Aira, J. W. Breinholt, M. Stojanovic, S. W. James, **M. Pérez-Losada**. Underground evolution: new roots for the old tree of lumbricid earthworms. *Molecular Phylogenetics and Evolution* 83: 7-19.
- 2014 Pérez-Losada M.**, Jens T. Høeg, Noa Simon-Blecher, Yair Achituv, Diana Jones, Keith A. Crandall. Molecular phylogeny, systematics and morphological evolution of the acorn barnacles (Thoracica: Sessilia: Balanomorpha). *Molecular Phylogenetics and Evolution* 81: 147-158.
- Toma I., Marc O. Siegel, John Keiser, Anna Yakovleva, Alvin Kim, Lionel Davenport, Joseph Devaney, Eric P. Hoffman, Rami Alsubai, Keith A. Crandall, Eduardo Castro-Nallar, **Marcos Pérez-Losada**, Sarah Hilton, Lakhmir S. Chawla, Timothy A. McCaffrey, and Gary L. Simon. Single-Molecule Long Read 16S Sequencing to Characterize the Lung Microbiome from Mechanically Ventilated Patients with Suspected Pneumonia. *Journal of Clinical Microbiology* 52: 3913-3921.
- 2013 Santos S., C. G. Jara, M. Ladvocat Bartholomei-Santos, M. Pérez-Losada and K. A. Crandall.** New species and records of the genus *Aegla* Leach, 1820 (Crustacea, Anomura, Aeglididae) from the West-Central region of Rio Grande do Sul, Brazil. *Nauplius* 21(2): 211-223.
- Faria J, **Pérez-Losada M.**, Cabezas P., Alexandrino P., Froufe E. Multiplexing of novel microsatellite loci for the vulnerable slipper lobster *Scyllarus arctus* (Linnaeus, 1758). *Journal of Experimental Zoology* 9999A: 1–5.
- Faria J., E. Froufe, F. Tuya, P. Alexandrino and **M. Pérez-Losada**. Panmixia in the endangered slipper lobster *Scyllarides latus* from the Northeastern Atlantic and Western Mediterranean. *Journal of Crustacean Biology* 33: 557-566.
- Castellanos-Martínez, S., **M. Pérez-Losada** and C. Gestal. Molecular phylogenetic analysis of the coccidian cephalopod parasites *Aggregata*

- octopiana and *Aggregata eberthi* from the NE Atlantic coast using 18S rRNA sequences. *European Journal of Parasitology* 49: 373-380.
- Wetzer, R., **M. Pérez-Losada** and N. L. Bruce. Phylogenetic relationships of the family Sphaeromatidae Latreille, 1825 (Crustacea: Peracarida: Isopoda) within Sphaeromatidea based on 18S-rDNA molecular data. *Zootaxa* 3599: 161–177.
- Xavier R., Severino R., **Pérez-Losada M.**, Cable J., Harris D.J. First record of *Sphaerospora dicentrarchi* (Myxosporaea, Sphaerosporidae) in *Dicentrarchus punctatus*. *Bulletin of the European Association of Fish Pathologists* 33: 21-24.
- Pérez-Losada, M.**, P. Cabezas, E. Castro-Nallar, K. A. Crandall. Pathogen typing in the genomics era: MLST and the future of molecular epidemiology. *Infection, Genetics and Evolution* 16: 38-53.
- 2012** Andonov, A., M. B. Coulthart, **M. Pérez-Losada**, K. A. Crandall, D. Posada, R. Padmore, A. Giulivi, J. J. Oger, A. A. Peters, G. A. Dekaban. Insights into origins of Human T-cell Lymphotropic Virus Type 1 based on new strains from aboriginal people of Canada. *Infection, Genetics and Evolution* 12: 1822-1830.
- Pérez-Losada, M.**, J. T. Høeg and K. A. Crandall. Deep phylogeny and character evolution in Thecostraca (Crustacea: Maxillopoda). *Integrative and Comparative Biology* 52: 430-442.
- Pérez-Losada, M.**, J. T. Høeg, K. A. Crandall and Y. Achituv. Molecular phylogeny and character evolution of the chthamaloid barnacles (Cirripedia: Thoracica). *Molecular Phylogenetics and Evolution* 65: 329-334.
- Santos, S., G. Bond-Buckup, L. Buckup, **M. Pérez-Losada**, M. Finley, K. A. Crandall. Three new species of *Aegla* (ANOMURA) freshwater crabs from the upper Uruguay River hydrographic basin in Brazil. *Journal of Crustacean Biology* 32: 529-540.
- Castro-Nallar, E., K. A. Crandall and **M. Pérez-Losada**. Genetic diversity and molecular epidemiology of HIV transmission. *Future Virology* 7: 1-14.
- Castro-Nallar, E., M. Pérez-Losada, G. F. Burton and K. A. Crandall. The evolution of HIV: Inferences using phylogenetics. *Molecular Phylogenetics and Evolution* 62: 777-792.
- Barber, B., J. Xu, **M. Pérez-Losada**, C. G. Jara and K. A. Crandall. Conflicting evolutionary patterns due to mitochondrial introgression and multilocus phylogeography of the Patagonian freshwater crab *Aegla neuquensis*. *PLoS One* 7: e37105.

- Pérez-Losada, M.**, R. Bloch, J. W. Breinholt, M. Pfenninger and J. Domínguez. Taxonomic assessment of Lumbricidae (Oligochaeta) earthworm genera using DNA barcodes. *European Journal of Soil Biology* 48: 41-47.
- 2011 Pérez-Losada, M.**, J. W. Breinholt, P. G. Porto, M. Aira and J. Domínguez. An earthworm riddle: systematics and phylogeography of the Spanish lumbricid *Postandrilus*. *PLoS One* 6 e28153.
- Tazi L, Imamichi H, Hirschfeld S, Metcalf JA, Orsega S, **Pérez-Losada M**, Posada D, Clifford Lane H and Crandall KA. HIV-1 infected monozygotic twins: a tale of two outcomes. *BMC Evolutionary Biology* 11: 62.
- Pérez-Losada, M.**, D. V. Jobes, F. Sinangil, K. A. Crandall, M. Arenas, D. Posada, and P. W. Berman. Phylodynamics of HIV-1 from a Phase III AIDS Vaccine Trial in Bangkok, Thailand. *PLoS One* 6: e16902.
- Barber, B. R., P. J. Unmack, **M. Pérez-Losada**, J. B. Johnson and K.A. Crandall. Different processes lead to identical patterns: a test of codivergence and the role of sea-level and climate changes in shaping a southern temperate species assemblage. *BMC Evolutionary Biology* 11: 343.
- 2010** Nuñez, J. J., M. T. González and **M. Pérez-Losada**. Testing species boundaries between *Sebastes capensis* and *S. oculatus* (Teleostei: Scorpaenidae) through mitochondrial DNA sequences. *Revista de Biología Marina y Oceanografía* 45: S1 565-573.
- Toon, A., **M. Pérez-Losada**, C. E. Schweitzer, R. M. Feldman, M. Carlson and K. A. Crandall. Gondwanan radiation of the southern hemisphere crayfish (Decapoda: Parastacidae): Evidence from fossils and molecules. *Journal of Biogeography* 37: 2275-2290.
- Santos S, Bond-Buckup G, **Pérez-Losada M.**, Jara CG, Crandall KA and Buckup L. New records and description of a new species of Aeglidae (Crustacea: Anomura) from river basins in Southern Brazil. *Nauplius* 18: 79-86.
- Guerra, A., A. Roura, A. F. González, S. Pascual, Y. Cherel and **M. Pérez-Losada**. Morphological and genetic evidence that *Octopus vulgaris* Cuvier, 1797 inhabits Amsterdam and Saint Paul Islands (Southern Indian Ocean). *ICES Journal of Marine Science* 67: 1401-1407.
- Bond-Buckup, G., C. G. Jara, L. Buckup, **M. Pérez-Losada**, A. A. P. Bueno, K. A. Crandall and S. Santos. New species and new records of endemic freshwater crabs from the Atlantic forest in southern Brazil (Anomura, Aeglidae). *Journal of Crustacean Biology* 30: 495-502.
- Bond-Buckup, G, C. G. Jara, L. Buckup, A. A. P. Bueno, **M. Pérez-Losada** and K. A. Crandall. Description of a new species of Aeglidae, and new records of related species from river basins in Argentina (Crustacea, Anomura). *Zootaxa* 2343: 18-30.

- Tazi, T., **M. Pérez-Losada**, W. Gu, L. Xue, K. A. Crandall and R. P. Viscidi. Population Dynamics of *Neisseria gonorrhoeae* in Shanghai, China: A Comparative Study. *BMC Infectious Diseases* 10: 13.
- Domínguez, J. and **M. Pérez-Losada**. *Eisenia fetida* (Savigny, 1826) y *Eisenia andrei* Bouché, 1972 son dos especies diferentes de lombrices de tierra. *Acta Zoologica Mexicana* (n. s.) 2: 321-331.
- Pérez-Losada, M.**, David V. Jobes, Faruk Sinangil, Keith A. Crandall, David Posada, and Phillip W. Berman. Phylodynamics of HIV-1 from a Phase 3 HIV-1 vaccine trial in North America. *Molecular Biology and Evolution* 27: 417-425.
- 2009** Høeg, J. T., **M. Pérez-Losada**, Henrik Glenner, Gregory A Kolbasov and Keith A. Crandall. Evolution of morphology, ontogeny and life cycles within the Crustacea Thecostraca. *Arthropod Systematics and Phylogeny* 67: 199-217.
- Santos, S., G. Bond-Buckup, **M. Pérez-Losada**, M. Ladvocat Bartholomei-Santos and L. Buckup. *Aegla manuinflata*, a new species of freshwater anomuran (Decapoda: Anomura: Aeglidae) from the Ibicuí River basin, Rio Grande do Sul, Brazil, determined by morphological and molecular characters. *Zootaxa* 2088: 31-40.
- Pérez-Losada, M.**, D. Posada, D. V. Jobes, F. Sinangil, P. W. Berman and K. A. Crandall. Ethnic differences in the adaptation rate of HIV gp120 from a vaccine trail. *Retrovirology* 6: 67.
- Pérez-Losada, M.**, M. Ricoy, J. Marshall and J. Domínguez. Phylogenetic assessment of the earthworm *Aporrectodea caliginosa* species complex (Oligochaeta, Lumbricidae) based on mitochondrial and nuclear DNA sequences. *Molecular Phylogenetics and Evolution* 52: 293-302.
- Pérez-Losada, M.**, G. Bond-Buckup, C. G. Jara and K. A. Crandall. Conservation assessment of southern South American freshwater ecoregions on the basis of the distribution and genetic diversity of crabs from the genus *Aegla*. *Conservation Biology* 23: 692-702.
- Pérez-Losada, M.**, Jens T. Høeg and Keith A. Crandall. Remarkable convergent evolution in specialized parasitic Thecostraca (Crustacea). *BMC Biology* 7: 15.
- 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

**2023 Pérez-Losada Marcos**, Miguel Arenas and Eduardo Castro-Nallar. Microbial sequence typing strategies for genetic and genomic data. *In: Genetics and evolution of infectious diseases* (M. Tibayrenc, Ed). Elsevier Inc. (in press).

**2019** Luis M. Mejía-Ortíz, Jesús E. Cupul-Pool, Marilú López-Mejía, Alfredo G. Baez-Meléndres, Juan C. Tejeda 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 Tejeda-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

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 are differentially expressed in rhinovirus- versus respiratory syncytial virus-bronchiolitis. *Frontiers in Cellular Infection and Microbiology*.

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*.

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 signature for disease severity in infants with respiratory syncytial virus bronchiolitis: A multicenter prospective study. *Critical Care*.

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. *Scientific Reports*.

## 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)

- 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 Fujiogi, 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.
- 2019** Keylie M Gibson, Pavel Avdeyev, Anton Eliseev, Dmitry Novik, Nikita Alexeev, Matthew L Bendall, **Marcos Pérez-Losada**, Keith A Crandall. Simulation of intra-patient HIV populations reveals variability of HIV haplotype reconstruction using next-generation sequencing data. 26<sup>th</sup> International HIV Dynamics & Evolution. Cascais, Portugal.

Keylie M Gibson, Margaret C Steiner, Seble Kassaye, Frank Maldarelli, Zehava Grossman, **Marcos Pérez-Losada**, Keith A Crandall. A 28-Year History of HIV-1 Drug Resistance and Transmission in Washington, DC. 26<sup>th</sup> International HIV Dynamics & Evolution. Cascais, Portugal.

## 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: Fundaments 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** Fundaments 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: fundaments and applications (15 h). Museo Nacional de Ciencias Naturales, Madrid, Spain. Role: course developer
- Population genetics of infectious diseases: fundaments 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

- 2020-** **Kylie Krohmaly.** Children's National Medical Center, USA.
- 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