# Joaquín Miguel Prada Jiménez de Cisneros

joaquinprada@heras.es

Mathematics Institute

347 Senate House

University of Warwick

CV4 7AL Coventry

UK

18, Melbourne Road

CV5 6JP Coventry

UK

+44 7452 903020

## CURRENT POSITION

**Research Associate at the University of Warwick**  United Kingdom

## EDUCATION

**PhD at the University of Glasgow**  United Kingdom

Department of Biodiversity, Animal Health and Comparative Medicine  2011-2014

Dissertation: Quantification of host-parasite interactions: Sheep and their nematodes

**BSc + MSc at TECNUN, Universidad de Navarra**  Spain

in Industrial Engineering (Ingeniero Industrial Superior in spanish)  2005-2010

Dissertation: Merging topology and stoichiometry: a connectivity analysis on the metabolic network of *E. Coli*

## RESEARCH EXPERIENCE

**Postdoctoral Rearch Associate at the University of Warwick**  United Kingdom

Mathematics Institute  2016-Present

Advisors: Dr. Deirdre Hollingsworth & Prof. Matt Keeling

Across-disease position within the Neglected Tropical Diseases (NTD) modelling consortium

- Leading modelling approaches to improve schistosomiasis diagnostics
- Recently started creating a novel model of lymphatic filariasis transmission

**Postdoctoral Research Associate at Princeton University**  United States

Department of Ecology and Evolutionary Biology  2014-2016

Advisors: Prof. C. Jessica E. Metcalf & Prof. Bryan Grenfell

Mathematical models of measles and rubella

- Modelled a comparison of vaccination campaigns needed to maintain measles elimination in various sub-Saharan African countries [Ref. 9]
- Led development of a model to improve disease incidence inference for measles and rubella using serological data

**PhD Student at the University of Glasgow**  United Kingdom

Intitute of Biodiversity, Animal Health and Comparative Medicine  2011-2014

Advisors: Prof. Michael J. Stear & Dr. Louise Matthews

Mathematical models of host-parasite interactions

- Independently developed an individual based immunologically explicit data-driven mathematical model of nematode infection in sheep [Ref. 5]
- Statistical analysis of parasitological and immunological data [Refs. 3,4,6,7,8]

**Student Research Assistant at the Centro Tecnológico CEIT-IK4**    Spain
Department of Biomedical Engineering    2009-2011
Advisors: Dr. Francisco J. Planes & Dr. Jon Pey
Metabolic network analysis in *E. Coli*
- Independently developed a model to improve metabolic path finding methods using carbon flux paths [Refs. 1,2]

**Student Research Assistant at the Centro Tecnológico CEIT-IK4**    Spain
Department of Electrical, Electronic and Control Engineering    2007-2009
Advisor: Dr. Emilio Sánchez
Programming and Improvement of automated robotic system
- Constructed a power and control source for haptic devices
- Structural analysis of a RFID membrane using the finite elements method

## GRANTS AND AWARDS

| | |
|---|---|
| Postdoc funded by the Bill & Melinda Gates Foundation | 2014-2016 |
| PhD funded by a Marie Curie – Innovative Training Networks grant | 2011-2014 |
| FEUN Internship; 1 year salary – competitive selection | 2010-2011 |
| Beca (Scholarship) AMIC Erasmus; competitive selection for an undegraduate international exchange – 6 months funded in Polytech Lille, France | 2009 |

## TEACHING EXPERIENCE

**Demostrating:** Teaching Assistant, Immunology and Epidemiology    2016
Teaching Assistant, Seminar on Bayesian Statistics    2011-2014
Teaching Assistant, Proteins, DNA & Basic genetics 2; positive feedback received
Teaching Assistant in practicals, Veterinary Bioinformatics 2
Teaching Assistant, Scientific Methodology and Statistics 4; wrote and marked one exam question in the finals

**Seminars led:** Seminar on Using JAGS in R, Universidad de León (2013)    Spain
Seminar on Using JAGS in R, Princeton University (2016); positive feedback received    United States

**Supervision:** Co-supervised a student senior thesis with Prof. C. Jessica E. Metcalf    United States
Co-supervised students master's thesis with Dr. Miguel Martínez-Iturralde    Spain
Head of the SEED (Sustainability through Electric Energy Developments) student research group    Spain

## PUBLICATIONS

**9. J. M. Prada**, C. J. E. Metcalf, S. Takahashi, J. Lessler, A. Tatem, M. Ferrari, "Inferring impact of measles vaccination campaigns with realistic demographic and epidemiological settings – can elimination be maintained?", Vaccine, in press    2017

**8.** M. Atlija, **J. M. Prada** (shared first authorship), B. Gutiérrez-Gil, F. A. Rojo-Vázquez, M. J. Stear, J. J. Arranz and M. Martínez-Valladares, "Implementation of an extended ZINB model in the study of low levels of natural gastrointestinal nematode infections in adult sheep", BMC Vet. Research 2016    2016

**7.** C. Mair, L. Matthews, **J. Prada J. de Cisneros**, T. Stefan, and M. J. Stear, "Multitrait indices to predict worm length and number in sheep with natural, mixed predominantly *Teladorsagia circumcincta* infection", Parasitology 2015

2015

**6.** C. Mair, M. Stear, P. Johnson, M. Denwood, **J. Prada Jiménez de Cisneros**, T. Stefan and L. Matthews, "A Bayesian generalized random regression model for estimating heritability using overdispersed count data", Genetics Selection Evolution 2015

**5. J. Prada Jiménez de Cisneros**, M. J. Stear, C. Mair, T. Stefan, G. Marion and Louise Matthews, "An explicit immunogenetic model of gastrointestinal nematode infection in sheep", J. R. Soc. Interface 2014

2014

**4. J. Prada Jiménez de Cisneros**, L. Matthews, C. Mair, T. Stefan and M. J. Stear, "The transfer of IgA from mucus to plasma and the implications for diagnosis and control of nematode infections", Parasitology 2014

**3.** N. N. Jonsson; M. R Fortes; E. K. Piper; D. M. Vankan; **J. Prada J. de Cisneros**; T. Wittek, "Comparison of metabolic, hematological, and peripheral blood leukocyte cytokine profiles of dairy cows and heifers during the periparturient period", Journal of Dairy Science 2013

2013

**2.** J. Pey**,** L. Tobalina**, J. Prada J. de Cisneros** and F. J. Planes, "A network-based approach for predicting key enzymes explaining metabolite abundance alterations in a disease phenotype", BMC Systems Biology 2013

**1.** J. Pey**, J. Prada,** J. E. Beasley and F. J. Planes**,** "Path finding methods accounting for stoichiometry in metabolic networks", Genome Biology 2011

2011

## WORKING PAPERS

**4. J. M. Prada**, M. Ferrari, C. J. E. Metcalf, "Improving measles incidence inference using age-specific serological data", in prep

**3.** E. Schrom, **J. M. Prada**, A. Graham "Underlying Network Architectures Constrain the Evolution of Immune Timing Strategies under Coevolution with a Signal-Disrupting Parasite", in prep

**2. J. M. Prada**, P. H. L. Lamberton, M. Adriko, M. Arinatwe, D. Ogutu, P. Touloupou, D. Hollingsworth "Understanding the relationship between egg and antigen based diagnostics of Schistosoma mansoni infection post treatment", in prep

**1.** Q. Caudron, **J. M. Prada**, M. Gottfredsson, B. T. Grenfell, C. J. E. Metcalf, "The influence of seasonal drivers on the predictability of measles dynamics", in prep

## PRESENTATIONS

*Oral presentations competitively selected by abstract*

Can measles elimination be maintained? Inferring impact of measles vaccination campaigns with realistic demographic and epidemiological settings
Epidemics5 – Fifth International Conference of Infections Disease Dynamics

United States
2015

An explicit immunogenetic model of gastrointestinal nematode infection in sheep
British Society of Parasitology Spring meeting

United Kingdom
2014

Immuno-epidemiological models predict novel markers for parasite resistance
Epidemics4 – Fourth International Conference on Infectious Disease Dynamics

Holland
2013

| | |
|---|---|
| Modelling resistance against gastrointestinal nematodes in sheep: Theoretical considerations and practical solutions <br> XXIIIth Congress of the Polish Parasitological Society | Poland <br> 2013 |
| Modelling resistance against gastrointestinal nematodes in sheep: Theoretical considerations and practical solutions <br> Population Genetics Conference | United Kingdom <br> 2012 |
| IgA better than FEC to indicate resistance in naturally infected lambs <br> British Society of Parasitology Spring meeting | United Kingdom <br> 2011 |

## SERVICE IN THE SCIENTIFIC COMUNITY

**Reviewer:** BMC Infectious Diseases, International Health, International Journal for Parasitology, PLOS One and Journal of Veterinary Science & Medical Diagnosis

**STEM Ambassador:** Outreach activities (such as Glasgow's Science Fair)

| | |
|---|---|
| **Orientation:** Promotion and Orientation for prospective Engineering Students across Spain | 2011 |
| Invited seminar on pursuing a scientific career at IES José Marhuenda Prats, Alicante (Spain) | 2016 |

## PROFESSIONAL AFFILIATIONS

| | |
|---|---|
| Member of the American Association for the Advancement of Science (AAAS) | Since 2015 |
| Member of the Boyd Orr Centre for Population and Ecosystem Health <br> *awarded the Queen's Anniversary Prize 2014* | 2011-2014 |
| Member of the British Society for Parasitology | Since 2011 |

## LANGUAGES

| | |
|---|---|
| Spanish | Native Speaker |
| English | Bilingual |
| French | Bilingual |
| German: Zertifikat Deutch | Conversational |
| Japanese: Nôken level 4 Degree | Conversational |
| Russian | Basic |

**Computer Languages:**

| | |
|---|---|
| C, C++, Java, R | Expert |
| Python, Matlab, SQL | Proficient |