Departament of Biology
University of Rochester
Rochester, NY 14627
USA
+34 675424585
+1 515 441 5419
bnavarr2@ur.rochester.edu

Beatriz M. Navarro Domínguez

Education

University

2012-2016 **Ph.D. in Fundamentals and Systems Biology** Thesis title: *Gene expression changes associated to the presence of B chromosomes in the grasshopper Eyprepocnemis plorans* (t.t). Distinctions: *Cum Laude*, International Recognition. Supervisors: Dr. María Dolores López-León, Dr. Juan Pedro M. Camacho and Dr. Josefa Cabrero Hurtado. Department of Genetics, Universidad de Granada, 18010 Granada, Spain.

2010-2011 **M.Sc. in Genetics and Evolution** Thesis title: *Preliminary research on the relationship of Hsp70 and B chromosomes in Eyprepocnemis plorans (t.t).* Advisor: María Dolores López-León. Department of Genetics, Universidad de Granada, 18010 Granada, Spain.

2003-2009 **B. Sc. in Biology** University of Granada, 18010 Granada, (Spain).

Specialization courses

2012 **Perl programming. XII Edition.** Universidad de Granada, Granada, Spain.

2013-2014 **V Beginner Teaching Training and Improvement of Teaching Program** Universidad de Granada, Granada, Spain.

Professional career

Current Position

2018-present **Postdoctoral Research Associate** *Evolutionary genomics of the Segregation Distorter complex of Drosophila melanogaster.* PIs: Dr. Daven Presgraves and Dr. Amanda Larracuente. Department of Biology, University of Rochester. Rochester, New York 14627 (USA).

Previous Positions

2017-2018 **Postdoctoral Research Associate** *Evolution of Dosage Compensation - An empirical test using turtles with independently evolved XX/XY and ZZ/ZW chromosomes.* PI: Dr. Nicole Valenzuela. Department of Ecology, Evolution, and Organismal Biology. Iowa State University. Ames, Iowa 50011 (USA).

2015 **Research Assistant** *Genetic control of alternation of generations in ferns* (t.t.). PI: Dr. Manuel A. Garrido Ramos. Departamento de Genética Universidad de Granada. Departamento de Genética, Universidad de Granada. 18010 Granada (Spain)..

Fellowship, grants and awards

2012 **International FPI mobility grant, Government of Spain** *High throughput analysis of gene expression: Microarray hybridization and data analysis*. PI: Dr. Timothy F. Sharbel. Dept. of Cytogenetics and Genome Analysis Leibniz Institute of Plant Genetics and Crop Plant Research, Gaterseleben, Germany.

2010-2014 **Predoctoral Fellowship FPI, Government of Spain** *Unveiling the cross-talk between A and B chromosomes in the grasshopper Eyprepocnemis plorans.* PI: Dr. Josefa Cabrero Hurtado. Departamento de Genética, Universidad de Granada. 18010 Granada (Spain)..

Collaborations

2016-2017 **Collaborator** *Genetic engineering as a tool for the study of the evolution of the color vision* (translated title, t.t.). PI: Dr. Miguel A. Rodríguez-Gironés. Department of Functional and Evolutionary Ecology. Estación Experimental de Zonas Áridas, CSIC. Almería (Spain).

Publications

Peer-reviewed articles

2020 Lee LS*, **Navarro-Domínguez B***, Wu Z , Montiel EE, Badenhorst D, Gessler TB, Bista B & Valenzuela N. *Karyotypic evolution of Sauropsid vertebrates illuminated by optical and physical mapping of the painted turtle and slider turtle genomes. Genes*, 11(8), 928 (2020). *Contributed equally as first authors. *(view at publisher)*.

2019 Lee LS, Montiel EE, **Navarro-Domínguez B**, Valenzuela N. *Chromosomal rearrangements during turtle evolution altered the synteny of genes involved in vertebrate sex determination. Cytogenetic and genome research, 157(1-2), 77-88* (2019) *(view at publisher)*.

2019 Ruiz-Ruano FJ, **Navarro-Domínguez B**, Camacho JPM, Garrido-Ramos MA. *Characterization of the satellitome in lower vascular plants: the case of the endangered fern Vandenboschia speciosa. Annals of Botany 123(4), 587–599* (2019) *(view at publisher)*.

2019 Ruiz-Ruano FJ, **Navarro-Domínguez B**, Camacho JPM, Garrido-Ramos MA. *Full plastome sequence in the fern Vandenboschia speciosa (Hymenophyllales): structural singularities and evolutionary insights. Journal of Plant Research 132, 3–17* (2019) *(view at publisher)*.

2019 **Navarro-Domínguez B**, Martín-Peciña M, Ruíz-Ruano FJ, Cabrero J, Corral JM, López-León MD, Sharbel TF & Camacho JPM. *Gene expression changes elicited by a parasitic B chromosome in the grasshopper Eyprepocnemis plorans are consistent with its phenotypic effects. Chromosoma 128, 53–67* (2019). *(view at publisher)*.

2017 **Navarro-Domínguez B**, Ruíz-Ruano FJ, Camacho JPM, Cabrero J & López-León MD. *Transcription of a B chromosome* CAP-G *pseudogene does not influence normal Condensin Complex genes in a grasshopper. Scientific Reports 7, 17650* (2017) *(view at publisher)*.

2017 **Navarro-Domínguez B,** Ruíz-Ruano FJ, Cabrero J, Corral JM, López-León MD, Sharbel TF & Camacho JPM. *Protein-coding genes in B chromosomes of the grasshopper Eyprepocnemis plorans. Scientific Reports 7, 45200* (2017) *(view at publisher)*.

2016 **Navarro-Domínguez B**, Cabrero J, Camacho JPM & López-León MD. *B-chromosome effects on Hsp70 gene expression does not occur at transcriptional level in the grasshopper Eyprepocnemis plorans. Molecular Genetics and Genomics, 291(5), 1909-1917* (2016) *(view at publisher)*.

2013 Cabrero J, Bakkali M, **Navarro-Domínguez B**, Ruíz-Ruano FJ, Martín-Blázquez R, López-León MD & Camacho JPM. *2013. The Ku70 DNA-repair protein is involved in centromere function in a grasshopper species. Chromosome Research 21(4), 393-406* (2013) *(view at publisher)*.

Preprints and articles in preparation

- Ruiz-Ruano FJ, **Navarro-Dominguez B**, López-León MD, Cabrero J & Camacho JPM. *Evolutionary success of a parasitic B chromosome rests on gene content.* BioRxiv, 683417 *(view at bioRxiv)*.
- Ruiz-Ruano FJ, **Navarro-Domínguez B**, Camacho JPM & Garrido-Ramos MA. *Most DNA sequences in the genome of the fern Vandenboschia speciosa are transposable elements. Under Review in Genes.*
- **Navarro-Domínguez B**, Brand CL, Chang CH, Muirhead CA, Presgraves DC & Larracuente A. *Evolutionary genomics of the Segregation Distorter supergene: drive, recombination and genetic load. In preparation.*

Publishing

2020 Preprint editorial team of *Proceedings of the Royal Society of London B.*

2020 Reviewer for *Molecular Ecology*.

Conferences and seminars

Talks

2019 *Evolutionary genomics of the Segregation Distorter gene complex*, Evolution, Ecology, Genetics and Genomics Seminar (E2G2). Rochester, NY (USA).

2019 *Population genomics of the selfish Segregation Distorter gene complex reveals the interaction of drive, recombination, and genetic load*, GLAM-Evogen. Buffalo, NY (USA).

2016 *B chromosomes contain protein-coding genes, and they are expressed! (t.t.)* , IX Seminario de Citogenética de la Sociedad Española de Genética, Toledo (Spain).

2014 *Gene expression changes associated to the presence of B chromosomes in Eyprepocnemis plorans* (t.t.), VIII Seminario de Citogénetica de la Sociedad Española de Genética, Alcalá de Henares (Spain).

2014 *Transcriptome and microarray analysis of B chromosome effects on gene expression in two populations of* Eyprepocnemis plorans *(t.t.)*, 3rd B-Chromosome Conference. Gatersleben (Germany).

Posters

2016 *Gene expression changes associated to an intragenome parasitism (t.t.)*, V Congreso de la Sociedad Española de Biología Evolutiva. Murcia (Spain), 18-21th January.

2014 *Analysis of B chromosome effects on gene expression by means of Illumina transcriptome sequencing*, 3rd B-Chromosome Conference. Gatersleben (Germany).

Others

2014 Organizer (student) *XX Seminar of Population Genetics and Evolution (t.t.)*, Sociedad Española de Genética.

2014 Chair at the 3rd B-Chromosome Conference. 5th session*: Novel analysis methods and applications of B chromosomes*, Gatersleben, Germany.

Teaching and outreach

Lecturing

2013-2014 Practicum in Genetics II. Departament of Genetics, Biology, Universidad de Granada.

2013-2014 Practicum in Evolutionary Biology. Departament of Genetics, Biology, Universidad de Granada.

2012-2013 Practicum in Genetics II. Departament of Genetics, Biology, Universidad de Granada.

2012-2013 Practicum in Evolutionary Biology. Departament of Genetics, Biology, Universidad de Granada.

Mentoring

2018 PhD Rotation Student, IGG program. Zainab Riaz. *Immunodetection of DNA methylation in turtle chromosomes*, *Department of Ecology, Evolution, and Organismal Biology. Iowa State University*, Ames, Iowa.

2016-2017 Masters student supervision (Master in Genetics and Evolution Program, University of Granada). Juan Muñoz Checa. *Determination of the spatial expression pattern of the opsins in the visual system of* Bombus terrestris *(t.t)*, Department of Functional and Evolutionary Ecology. Estacion Experimental de Zonas Áridas, CSIC., Almería, Spain.

Outreach

2015 Workshop on XVIII Science Fair: Genetics: a thousand faces of inheritance *(t.t.)*. Parque de las Ciencias (Science Museum), Granada, Spain.

2015 XV Week of Science (t.t.). Departamento de Genética, Universidad de Granada. Guidance of highschool students interested in scientific careers, Granada, Spain.

2014 XIV Week of Science (t.t.). Departamento de Genética. Guidance of highschool students interested in scientific careers, Granada, Spain.

2013 Workshop on XVI Science Fair: Genetics: a thousand faces of inheritance *(t.t.)*. Parque de las Ciencias (Science Museum), Granada, Spain.

2013 XIII Week of the Science (t.t.). Departamento de Genética. Guidance of highschool students interested in scientific careers, Granada, Spain.

2012 Workshop on XV Science Fair: *Genetics: two faces of inheritance (t. t.)*, Parque de las Ciencias (Science Museum).

2012 XII Week of Science (t.t.). Departamento de Genética. Guidance of highschool students interested in scientific careers, Granada.

Contact information for references

Dr. Juan Pedro M. Camacho. PhD Supervisor. Departamento de Genética, Facultad de Ciencias. Avda. Fuentenueva s/n. Universidad de Granada. C.P.: 18071, Granada (Spain) jpmcamac@ugr.es

Dr. Manuel A. Garrido Ramos. Departamento de Genética, Facultad de Ciencias. Avda. Fuentenueva s/n. Universidad de Granada. C.P.: 18071, Granada (Spain) mgarrido@ugr.es.

Dr. Daven C. Presgraves. Department of Biology, University of Rochester, 402 Hutchison Hall, University of Rochester, Rochester, NY 14627 (USA) daven.presgraves@rochester.edu

Dr. Amanda Larracuente. Department of Biology, University of Rochester, 402 Hutchison Hall, University of Rochester, Rochester, NY 14627 (USA) alarracu@ur.rochester.edu

Dr. Nicole Valenzuela. Department of Ecology, Evolution, and Organismal Biology. Iowa State University. 251 Bessey Hall. Ames, IA 50011 (USA) nvalenzu@iastate.edu