

Mikel Alexander

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## RESEARCH ENTOMOLOGIST

Since childhood I am passionate about nature. Over the last years I have specialized in insects and later on in dipterans of Public and Animal Health importance. I have published a total of 24 papers (17 by first author) and I have also written a book.


## PROFESSIONAL CAREER


<p><b>2019</b></p>  <p>Basque Government fellowship-program</p>	<p><b>Post-doctoral researcher (Bilbao, Spain)</b></p> <ul style="list-style-type: none"><li>• Neiker (Basque Institute for Agricultural Research)</li><li>• Biodiversity of <b>Culicidae</b> in the Basque Country (classical and molecular taxonomy)</li><li>• Biodiversity of <i>Culicoides</i> midges, sand flies and black flies</li></ul> <p>2<sup>nd</sup> Post-Doc</p>
<p><b>2017, 2018</b></p>  <p>Basque Government fellowship-program</p>	<p><b>Post-doctoral researcher (Rio de Janeiro, Brazil)</b></p> <ul style="list-style-type: none"><li>• Fiocruz-Institute Oswaldo Cruz (IOC)</li><li>• Project: <i>An integrated program for surveillance, disease prevention and control of the asian tiger mosquito Ae. albopictus in Northern Spain</i></li><li>• Vector competence studies of Spanish <b>Aedes albopictus</b> to Zika virus</li><li>• Insecticide susceptibility studies and occurrence of <i>kdr</i> mutations in <b>Ae. albopictus</b></li></ul> <p>2<sup>nd</sup> Post-Doc</p>
<p><b>2016</b></p>  <p>Project: Wellcome Trust</p>	<p><b>Post-doctoral researcher (SP/MG, Brazil)</b></p> <ul style="list-style-type: none"><li>• Sao Paulo and Minas Gerais states (supported by Lancaster University)</li><li>• Project: <i>Field trials of synthetic sex pheromone to reduce visceral leishmaniasis transmission by Lutzomyia longipalpis in Brazil</i></li><li>• Bioassays of insecticide resistance in <b>Lutzomyia longipalpis</b> sand fly</li><li>• Assessment of the impact of insecticide interventions in <b>Lu. longipalpis</b>, <b>mosquitos</b> and <b>Culicoides</b> biting midges</li><li>• Mark-release recapture experiments in <b>Lu. longipalpis</b></li></ul> <p>1<sup>st</sup> Post-Doc</p>
<p><b>2015</b></p>  <p>Project: Wellcome Trust</p>	<p><b>Post-doctoral researcher (Staffordshire, UK)</b></p> <ul style="list-style-type: none"><li>• Keele University</li><li>• Production of natural sex-pheromone in 3 chemotypes of <b>Lu. longipalpis</b></li><li>• Attraction/repellency of odour compounds in <b>Lu. longipalpis</b></li></ul> <p>1<sup>st</sup> Post-Doc</p>

## PH.D. DISSERTATION


<b>2011-2014</b>	<b>Ph.D. Candidate (Vitoria, Spain)</b>
	<ul style="list-style-type: none"><li>• Neiker (Basque Institute for Agricultural Research)</li><li>• Entitled: The genus <i>Culicoides</i> (Diptera: Ceratopogonidae) in the Basque Country, Northern Spain</li><li>• Biology (taxonomy) and ecology of <b><i>Culicoides</i></b></li><li>• Barcelona stay (CSIC) (chemical ecology of <b><i>Culicoides</i></b>)</li></ul>

## MASTERS

<b>2011</b>	<b>Forensic Analysis (Basque country, Spain)</b>
	<ul style="list-style-type: none"><li>• University of the Basque Country (UPV/EHU)</li><li>• Master in Forensic Analysis</li><li>• Project: <i>Culicoides</i> (Diptera: Ceratopogonidae) biting midges in the Basque Country region</li></ul>

<b>2014</b>	<b>Pest Control and Management (Valencia, Spain)</b>
	<ul style="list-style-type: none"><li>• University of Valencia (UV)</li><li>• Master in Pest Control and Management</li><li>• Project: New approaches and measures to monitoring and controlling of sucking insects in Public Health</li></ul>

## UNIVERSITY DEGREE

<b>2004-2009</b>	<b>Biological Sciences (Pamplona, Spain)</b>
	<ul style="list-style-type: none"><li>• University of Navarre (UNAV)</li><li>• Zoology and Botany specialization</li><li>• Internal student (2007-2009) in the Department of Zoology and Ecology</li></ul>

## LANGUAGES

Spanish	
English	
Portuguese	

## COMPUTER PROGRAMS

Microsoft office	
SPSS	
ARC-SIG	

## ACADEMIC CONFERENCES ATTENDED

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National Congress of Applied Entomology (SEEA). Jaén, Spain. 24-28 October 2011. 2 poster presentations.

Annual Simposium of Avedila. Asturias, Spain. 5-6 November 2015. 1 poster presentation.

IX International Symposium on Phlebotomine sandflies (ISOPS IX). Reims, France. 28-June to 1 July, 2016. 1 poster presentation.

Arthromint XXI. Rio de Janeiro, Brazil. 19-23 July 2017. 1 poster presentation.

XXVII Brazilian Congress on Entomology & Latin American Congress on Entomology. Rio Grande do Sul, Brazil. 2-6 September 2018. 1 poster presentation.

V International Symposium of Surveillance, Monitoring and Control of vectors implicated in the transmission of Zoonotic Diseases. Trinidad, Cuba. 12-16 November 2018. 3 oral presentations.

VI International Symposium of Surveillance, Monitoring and Control of vectors implicated in the transmission of Zoonotic Diseases. Topes Collantes, Cuba. 11-14 November 2019. 1 poster presentation.

## SEMINARS/COURSES GIVEN

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Keele University (Staffordshire, United Kingdom). Ecology of *Culicoides* and their role as arbovirus vectors in Europe (in english). May 2016.

Institute Oswaldo Cruz-Fiocruz (Rio de Janeiro, Brazil). Current status of invasive mosquitoes and emerging arboviruses in Europe: the new threat of *Ae. albopictus* (in portuguese). September 2018.

University of Fernando Arturo de Meriño (UAFAM) (Jarabacoa, Dominican Republic). New tendencies for the control of agriculture and public health pests (in spanish). November 2018.

University of Basque Country (UPV/EHU) (Bilbao, Spain). Haematophagous Diptera with interest in Animal and Public Health (in spanish). May 2019.

Ibereroamerican University (UNIBE) (Santo Domingo, Dominican Republic). Techniques for Surveillance, Monitoring and Control of mosquitoes (Diptera: Culicidae) and ticks (Acari: Ixodidae y Argasidae) (in spanish). June 2019.

Institute of Investigation in Menorca (*Institut Menorqui d'Estudies*, IME) (Menorca, Spain). Vectorial capacity of mosquitoes (in spanish). September 2019.

## LONG-COURSES ATTENDED

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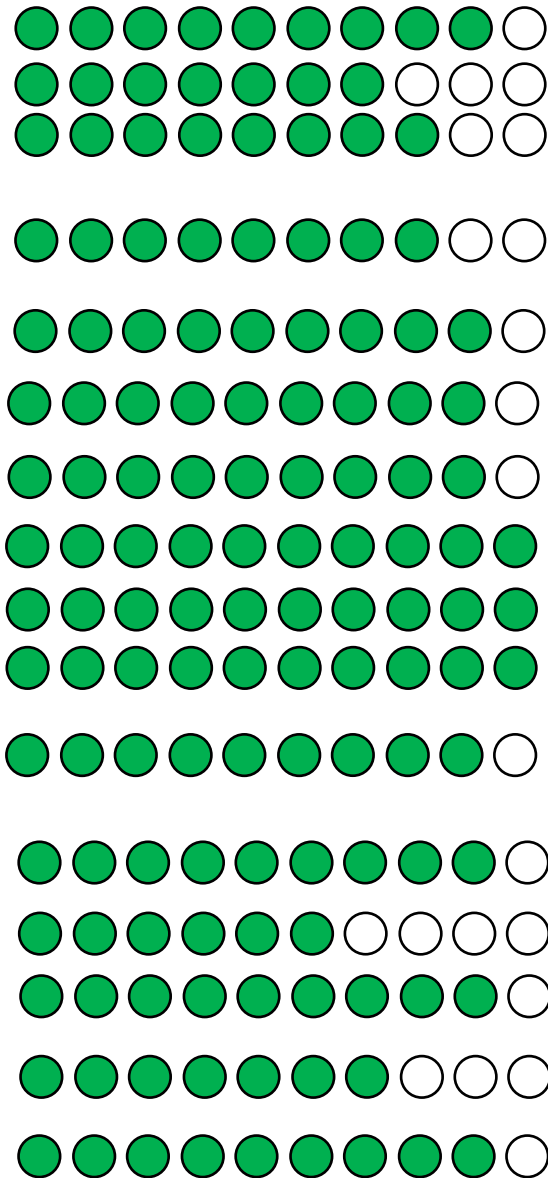
Advanced training course of medical-veterinary entomology and vector control (Organized by Zaragoza University, Huesca, Spain). 1 week duration. 2013.

Advanced training course for identification and mounting techniques of Neotropical Culicidae (Fiocruz, Institute Oswaldo Cruz, Rio de Janeiro, Brazil). 1 week duration. 2018.

Measuring insect traits using Near-Infrared Spectroscopy (Fiocruz, Institute Oswaldo Cruz- Rio de Janeiro, Brazil). 1 week duration. 2017

GIS techniques applicated to Veterinary Epidemiology. Held in Neiker (Basque Institute for Agricultural development, Bilbao, Spain) (organised by The Hunting Resources Research Institute, IREC). 1 week duration. 2019.

## EXPERIENCE, CAPACITIES AND HABILITIES



- Conduct field trials
- Conduct laboratory trials
- Design of experiments and generating innovative ideas
- Communication with specialists and no specialists
- Teamwork (flexibility)
- Ability to work in low-income countries
- Preparation of scientific papers
- Surveillance, monitoring, trapping
- Handling and manipulation of Diptera
- Taxonomy and identification
- Behavioural bioassays (EAG, SPME, olfactometry, insecticide resistance, vectorial capacity)
- Establishment and maintenance of colonies
- Molecular biology
- GC-MS and NIRS
- Other taxa (Coleoptera, Hymenoptera)
- Desire to travel, enthusiasm to work, coordination of projects at large-scale

**González, M.**, y Goldarazena, A. 2011. El género *Culicoides* en el País Vasco: guía práctica para su identificación y control. Servicio Central de Publicaciones del Gobierno Vasco, Vitoria-Gasteiz, España. ISBN: 978-84-457-3174-1. 247 pgs.

## 2011

## (PAPERS)

López, S., **González, M.**, Iturrondobeitia, J.C., Goldarazena, A. 2011. Primer registro de *Allonyx quadrimaculatus* (Schaller, 1783) y *Clerus mutillarius* Fabricus, 1775 (Coleoptera: Cleridae) para la Comunidad Autónoma Vasca. *Boletín de la Sociedad Entomológica Aragonesa (S.E.A.)*. 49: 333-334.

López, S., **González, M.**, Goldarazena, A. 2011. *Vespa velutina* Lepeletier, 1836 (Hymenoptera: Vespidae): First records in Iberian Peninsula. *EPPO bulletin*. 41: 439-441.

## 2012

López, S., **González, M.**, Goldarazena, A. 2012. *Urocerus albicornis* (Fabricius, 1781) (Hymenoptera: Siricidae), new horntail for Iberian Peninsula. *EPPO Bulletin*. 42: 150-15.

López, S., **González, M.**, Iturrondobeitia, J.C., Goldarazena, A. 2012. Disruption of trans-pityol-mediated attraction by racemic trans-conophthorin in twig beetle *Pityophthorus pubescens*. *Journal of Applied Entomology*. 137: 257-263.

**González, M.**, López, R., Goldarazena, A. 2012. Bioecología de *Culicoides tauricus* Gutsevich, 1959 (Diptera: Ceratopogonidae) en el País Vasco (Península Ibérica): dinámicas de vuelo y zonas de cría en explotaciones ovinas. *Boletín de la Sociedad Entomológica Aragonesa (S.E.A.)*. 50: 465-469.

## 2013

**González, M.**, López, S., Romón, P., Baldet, T., Delécolle, J.C., Goldarazena, A. 2013. Monitoring of *Culicoides* Latreille (Diptera: Ceratopogonidae) after BTV outbreaks in sheep farms and in natural habitats from the Basque Country (N Spain). *Proceedings of the Entomological Society of Washington*. 11: 48-69.

**González, M.**, López, S., Mullens, B.A., Baldet, T., Goldarazena, A. 2013. A survey of *Culicoides* developmental sites on a farm in Northern Spain with a brief of immature habitats of European species. *Veterinary Parasitology*. 191: 81-93.

**González, M.**, López, S., Goldarazena, A. 2013. New record of the biting midge *Leptoconops noei* in northern Spain: notes on its seasonal abundance and flying height preference. *Journal of Insect Science*. 13: 45.

## 2014

**González, M.**, Venter, G.J., López, S., Iturrondobeitia, J.C., Goldarazena, A. 2014. Laboratory and field evaluation of chemical and plant-derived potential repellents against *Culicoides* midges (Diptera: Ceratopogonidae) in the Basque Country (Northern Spain). *Medical and Veterinary Entomology*. 28(4): 421-431.

**González, M.**, López, S., Rosell, G., Guerrero, A., Goldarazena, A. 2014. Cuticular and internal chemical composition of the biting midges *Culicoides* spp. (Diptera: Ceratopogonidae), potential vectors of viral diseases. *Natural Product Communications*, 9: 1-6.

**González, M.**, López, S., P. Romón, Iturrondobeitia, J.C., Goldarazena, A. 2014. Fenología, ecología y diversidad de la familia Ceratopogonidae (Diptera: Nematocera) excluyendo al género *Culicoides*, en el País Vasco (Península Ibérica). *Boletín de la Sociedad Entomológica Aragonesa (S.E.A.)*. 55: 205-215.

## 2015

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**González, M.**, Alarcón-Elbal, P.M., López, S. Blood-feeding Diptera (Culicidae and Ceratopogonidae) in an urban park of the city of Vitoria-Gasteiz (Basque Country, Spain). 2015. *Journal of the European Mosquito Control Association*. 33:10-14.

Goldarazena, A., Perez de Heredia, I., Romón, P., Iturrondobeitia, J.C., **González, M.**, Lopez, S. 2015. Spread of the yellow-legged hornet *Vespa velutina nigrithorax* du Buysson (Hymenoptera: Vespidae) across Northern Spain. *EPPO Bulletin*. 45: 1-6.

Sánchez Murillo, J. M., **González, M.**, Martínez Díaz, M., Sanz Jiménez, C., Reyes Galá, A. & P. M. Alarcón-Elbal. 2015. First record of *Culicoides paradoxalis* Ramilo & Delécolle, 2013 (Diptera, Ceratopogonidae) in Spain. *Graellsia*, 71 (2) e033.

## 2016

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**González, M.**, Alarcón-Elbal, P.M., Valle-Mora, J., Goldarazena, A. 2016. Comparison of different light sources for trapping *Culicoides* biting midges, mosquitoes and other dipterans. *Veterinary Parasitology*, 226: 44-49.

## 2017

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**González, M.**, Alarcón-Elbal, P.M., Venter, G.J., López, S. 2017. Flight and swarming behaviour of *Culicoides* species (Diptera: Ceratopogonidae) on a livestock farm in Northern Spain. *Veterinaria Italiana*, 53 (2): 157-166.

Alarcón-Elbal, P.M., Paulino-Ramírez, R., Diéguez-Fernández, L., Fimia-Duarte, R., Guerrero, K.A., **González, M.** 2017. Arboviral diseases spread by mosquitoes (Diptera: Culicidae) in the Dominican Republic: a review (in Spanish). *The Biologist (Lima)*, 15(1): 193-219.

**González, M.**, Bandi, K.K., Bell, M., Brazil, R.P., Dilger, E., Guerrero, A., Courtenay, O., & Hamilton, J.G.C. 2017. Temporal comparison of sex-aggregation pheromone gland content and dynamics of release in three members of the *Lutzomyia longipalpis* (Diptera: Psychodidae) species Complex. *PLOS Neglected Tropical Diseases*. 11(12): e0006071.

## 2018

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Bell, M.J., Sedda, L., **González M.A.**, de Souza, C.F., Dilger, E, Brazil, R.P., et al. 2018. Attraction of *Lutzomyia longipalpis* to synthetic sex-aggregation pheromone: Effect of release rate and proximity of adjacent pheromone sources. *PLOS Neglected Tropical Diseases*, 12(12): e0007007.

## 2019

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**González, M. A.**, Rodríguez Sosa, M. A., Vásquez Bautista, Y. E., Diéguez Fernández, L., Borge de Prada, M., Guerrero, K. A., & Alarcón-Elbal, P.M. 2019. Micro-environmental features associated to container-dwelling mosquitoes (Diptera: Culicidae) in an urban cemetery of the Dominican Republic. *Revista de Biología Tropical*, 67(1), 132-145.



**González, M.A.**, Pavan, M.G., Fernandes, R.S., Busquets, N., David, M.R., Lourenço-Oliveira, R., García-Pérez, A.L., Maciel-de-Freitas, R. 2019. Limited risk of Zika virus transmission by five *Aedes albopictus* populations from Spain. *Parasites and Vectors*.12: 150.

**González, M.A.**, Bell, M.J., Bernhardt, S.A., Brazil, R.P., Dilger, E., Courtenay, O., Hamilton, J.G.C. 2019. Susceptibility of wild-caught *Lutzomyia longipalpis* (Diptera: Psychodidae) sand flies to insecticide after an extended period of exposure in western São Paulo, Brazil. *Parasites and Vectors*, 12: 110.

Courtenay, O., Dilger, E., Calvo-Bado, L.A., Kravar-Garde, L., Carter, V., Bell, M.J., Borges-Alves, G., Goncalves, R., Makhdoomi, M.M., **González M.A.**, Nunes, C.M., Bray, D.P., Brazil, R., Hamilton, J.G.C. 2019. A synthetic sand fly aggregation pheromone co-located with insecticide, and insecticide-impregnated dog collars, reduce canine *Leishmania infantum* infection incidence and vector densities: a stratified cluster randomised trial. *PLOS Neglected Tropical Diseases*. 13(10): e0007767.

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