

CURRICULUM VITAE ABREVIADO (CVA)**Part A. PERSONAL INFORMATION**

First name	Julián		
Family name	Santiago Moreno		
Gender (*)	Male	Birth date	19/07/1968
Social Security, Passport, ID number		PAL244944	30536191B
e-mail	moreno@inia.csic.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)	0000-0001-5551-8120		

(*) *Mandatory***A.1. Current position**

Position	Research Professor		
Initial date	01/10/2018		
Institution	Spanish National Research Council (CSIC)		
Department/Center	Animal Reproduction	INIA	
Country	Spain	Teleph. number	34 629335347
Key words	Comparative spermatology, Cryobiology, Reproductive endocrinology, Conservation		

A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
2016-2018	Research Scientist/INIA/Spain
2006-2016	Tenured Scientist/INIA/Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Veterinary (Licensed)	University of Cordoba (UCO, Spain)	1991
Veterinary (PhD)	Complutense University of Madrid (UCM, Spain)	1997

(Include all the necessary rows)

Part B. CV SUMMARY (*max. 5000 characters, including spaces*)

Dr. Julián Santiago Moreno is currently Research Professor at the Department of Animal Reproduction of INIA-CSIC. He got his DVM-degree at the Faculty of Veterinary of Cordoba (1991). Post-graduate fellowship at Regional Centre of Agricultural Research and Development (CIDA-Cordoba) (1991-1992). PhD fellowship at the INIA (1992-1996), receiving his doctorate from Complutense University of Madrid. Honorary Professor at the University of Cordoba (1997-1998). Researcher hired by INIA (1998-2001). Postdoctoral OCDE fellowship at INRA (France) (2002). Researcher of the Ramon y Cajal Program (2002-2005). Staff researcher at the INIA from 2006. Director (2011-2016) and deputy director (2017-2022) of the Department of Animal Reproduction of INIA. Head of the Research Group Physiology and Technologies of Reproduction in Wild Species of the CSIC. The current research interest concerns the comparative spermatology, cryobiology, reproductive endocrinology of wild and domestic ruminants, ex situ conservation of threatened breeds/species, and to establish bridges between wild animal reproduction and domestic animals reproductive technologies. His main milestones achieved include the identification of endogenous rhythms of neuroendocrine-gonadal activity in mouflon and goat, the endocrine mechanisms that regulate the horn growth in wild bovid, the effect of androgens on small ruminant's sperm cryodamage, the first Spanish National Bank of chicken sperm (including 16 threatened local breeds), and suitable assisted reproduction techniques applied to threatened wild and domestic mammal and birds. He is an advisor on the ex situ in vitro conservation procedures of the Spanish National Program for the conservation of the Iberian capercaillie. He is also advisor to different zoological gardens for assisted reproductive techniques: Zoo-Aquarium Madrid, Faunia, Zoological Garden of Cordoba, Zoo Guadalajara, Marineland (Antibes, France). Responsible



of the assisted reproduction team that has allowed the birth of 4 giant pandas at the Zoo of Madrid, using assisted reproductive techniques. Its international activities have included the creation of germplasm banks in threatened species, such as the Beira antelope and Erlanger gazelle at the Al Wabra Nature Reserve (Qatar), and advisor to the Government of China for the cryopreservation of sperm from the Black Silky hen. He has been a visiting professor at the Leibniz Institute for Zoo and Wildlife Research (Berlin, Germany), Sharjah Equine Hospital (United Arab Emirates), Camel Reproduction Centre (Dubai, United Arab Emirates), Hunan University (China), Republic University of Uruguay, National Autonomous University of Mexico, University of Cuenca (Ecuador), INRA (France), Linköping University (Sweden). Leader (PI) in 14 Spanish competitive grants financed with public funds and one European project. PI in 12 research contracts with private companies and regional governments. He has produced 200 original papers in peer-reviewed journals (JCR) and 123 chapters of books and reviews. 36 invited talks. As a result of his scientific career, he has an h-index of 30, with a total of 3,203 citations. He acts as Editor of "Animal" (Elsevier) and "Spanish Journal of Agricultural Research". He has trained and supervised 12 PhD Thesis. He serves as international reviewer for many national and international granting agencies: CDTI, ANEP and currently AEI. Member of the MINECO and AEI technical commissions for Research projects. Commission member of INIA for RTA and RZ projects. Advisor to the General Intervention for programs of the Ministry of Agriculture, Food and Environment on issues of biodiversity conservation. Expert in evaluation activities at the Andalusian Evaluation Agency; Ministry of Agriculture, Food and Environment; National Center of Science and Technology Evaluation (Republic of Kazakhstan); National Research and Innovation Agency (Uruguay); CNPq of the Brazilian government; Agencia Nacional de Argentina para la Promoción de la Investigación, el Desarrollo Tecnológico y la Innovación; European AgreenSkills program; Israel Science Foundation, National Science Center of Poland (Poland), Islamic University of Bahawalpur (Pakistan), Canadian Poultry Research Council (Canada).

Part C. RELEVANT MERITS

C.1. Publications

Pequeño B, Castaño C, Alvarez-Rodriguez M, Bóveda P, Millán de la Blanca MG, Toledano-Díaz A, Galarza D, Rodriguez-Martinez H, Martínez-Madrid B, Santiago-Moreno J. 2023. Variation of existence and location of Aquaporin3 in relation to cryoresistance of ram spermatozoa. *Frontiers in Veterinary Science* 10:1167832

Bóveda P, Estes MC, Velázquez R, Castaño C, Toledano-Díaz A, López-Sebastián A, Mejía O, Millán de la Blanca MG, Ungerfeld R, Santiago-Moreno J. 2021. Influence of circulating testosterone concentration on sperm cryoresistance: the ibex as an experimental model. *Andrology* 9:1242–1253

Bóveda P, Toledano-Díaz A, Castaño C, Santiago-Moreno J. 2020. Ultra-rapid cooling of ibex sperm by spheres method does not induce a vitreous extracellular state and increases the membrane damages. *PLoS One* 15(1):e0227946.

O'Brien E, Estes MC, Castaño C, Santiago-Moreno J. 2019. Effectiveness of ultra-rapid cryopreservation of sperm from endangered species, examined by morphometric means. *Theriogenology* 129: 160-167.

Martínez-Fresneda L, O'Brien E, Velázquez R, Santiago-Moreno J. 2019. Seasonal variations of sperm freezability associated with testicular germinal epithelium changes in domestic (*Ovis aries*) and wild (*Ovis musimon*) rams. *Reproduction Fertility and Development* 31: 1545-1557.

Martínez-Fresneda L, Castaño C, Bóveda P, Tesfaye D, Schellander K, Santiago-Moreno J, García-Vázquez FA. 2019. Epididymal and ejaculated sperm differ on their response to the cryopreservation and capacitation processes in mouflon (*Ovis musimon*). *Scientific Reports* 9(1):15659.



Pradiee J, Estes MC, Lopez-Sebastián A, Toledano-Díaz A, Castaño C, Carrizosa JA, Urrutia B, Santiago-Moreno J. 2015. Successful ultrarapid cryopreservation of wild Iberian ibex (*Capra pyrenaica*) spermatozoa. *Theriogenology* 84:1513-22

Santiago-Moreno J, Castaño C, Toledano-Díaz A, Hildebrandt TB. 2013. Cryopreservation of aoudad (*Ammotragus lervia sahariensis*) sperm obtained by transrectal ultrasound-guided massage of the accessory sex glands and electroejaculation. *Theriogenology* 79: 383-391.

Santiago-Moreno J, A Gómez-Brunet, A Toledano-Díaz, R Salas-Vega, F Gómez-Guillamón, A López-Sebastián. 2012. Role of testosterone and photoperiod on seasonal changes in horn growth and sperm variables in the Iberian ibex, a model for polygynous wild bovids. *Journal of Endocrinology* 214:155-63.

Gómez-Brunet A, Santiago-Moreno J, del Campo A, Malpoux B, Chemineau P, Tortonese D, González-Bulnes A, López-Sebastián A. 2008. Endogenous circannual cycles of ovarian activity and changes in prolactin and melatonin secretion in wild and domestic female sheep maintained under a long day photoperiod. *Biology of Reproduction* 78:552-562.

C.2. Congress (most representative invited conferences)

Santiago-Moreno J. Sperm cryopreservation in wild small ruminants: new approaches for improving the sperm cell cryoresistance. The 11th International Ruminant Reproduction Symposium. Galway (Ireland). 28 May - 1 June 2023 (invited conference).

Santiago-Moreno J. Strategy for biobanking avian resources: Advantages and limits in the implementation of a sperm cryobank, IMAGE (Innovative Management of Animal Genetic Resources) Scientific Conference. Madrid (Spain). 5 February 2020 (invited conference).

Santiago-Moreno J. Sperm cryopreservation in domestic and wild species: a review of recent advances. 3th International Congress on Animal Production Specialized in Cattle. Cuenca (Ecuador). 19-21 June 2019 (invited conference).

Santiago-Moreno J. Assisted reproductive techniques applied to bird's conservation. X Congress of MSc and PhD in Animal Science and Health. FES Cuautitlán-México (México). 25-26 June 2018 (invited conference).

Santiago-Moreno J. Assisted reproduction in Mediterranean wild ruminants: lessons from the Spanish ibex (*Capra pyrenaica*). 8th International Ruminant Reproduction Symposium. Anchorage, Alaska (USA). 3-7 September 2010 (invited conference).

C.3. Research projects

PID2020-113288RB-100. Mechanisms of sperm cryoresistance and new procedures for sperm and testicular tissue cryopreservation in domestic and wild ruminants. AEI. Programa Estatal I+D+I. 2021-2024. 169.400 €. PI: Julián Santiago Moreno.

TED2021-130581B-I00. Gamete characterization as marker of environmental influences and its role on sperm cryoresistance in capercaillie. AEI, UE. Proyectos de Transición Ecológica y Digital 202- 2022-2024. 161.000 €. PI: Julián Santiago Moreno.

AGL2017-85753-R. Variability in the efficacy of sperm cryopreservation from small ruminants related with seasonal changes in thyroid hormones and aquaporins expression. MCINN. Programa Estatal I+D+I. 2018-2020. 178.112 €. PI: Julián Santiago Moreno

DOC2017458. Implementation of reproductive biotechnologies for the conservation of biodiversity. Application in two critically endangered species: Cantabrian capercaillie and European mink. Fundación Biodiversidad. MAPAMA. 2018-2019. 21.295 €. PI: Milagros C. Estes, Julián Santiago Moreno



677353 IMAGE. Innovative Management of Genetic Resources. European Union. H2020, Program3 H2020-SFS-2015-2. 2016-2019. 7.000.000€/ proyecto INIA-Spain 230.000 €. PI: Michèle Tixier-Boichard/ Julián Santiago Moreno (WP3.1).

AGL2014-52081-R. Influence of endocrine status on small ruminant sperm freezing and vitrification response: Use of wild and domestic ruminants as an experimental model. MCINN. Programa Estatal I+D+I. 2015-2018. 155.000 €. PI: Julián Santiago Moreno.

AGL2011-25495. Ultra-rapid freezing and vitrification of spermatozoa from Mediterranean wild bovids as an alternative to conventional freezing. MCINN. Programa Nacional, Investigación Fundamental. 2012-2015. 121.000€. PI: Julián Santiago Moreno.

RZ2012-00013-C02. Reproductive technologies and behavioral patterns for conservation and management of the red-legged partridge (*Alectoris rufa*) as a renewable hunting resource. INIA. Genetic Resources Programme. 2012-2014.191.554€. PI: Julián Santiago Moreno

RZ2009-00001-C02-02 Creation of a semen cryobank to complement the program of conservation and genetic study of Spanish chicken breeds. INIA. Genetic Resources Programme. 2009-2012. 147.423€. PI: Julián Santiago Moreno.

AGL2008-01747/GAN. Variability on cryopreservation of Spanish ibex spermatozoa for development of germplasm banks: influence of photoperiod and social interactions. Programa Nacional. MCINN. 2008-2011. 75.000€. PI: Julián Santiago Moreno

C.4. Contracts, technological or transfer merits

CON23-174. Effects of diet supplementation with omega-3 from microalgae on sperm quality. Sociedad Cooperativa De Santo Domingo - CSIC contract. 2023-2024. 30.000,00 €. PI: Julián Santiago Moreno

CON22-225. Development of a new extender for cryopreserving rooster semen. Arquimea Group S.A. – CSIC contract. 50.000 €- 2022-2024. PI: Julián Santiago Moreno.

CON22-093. In vitro and in vivo evaluation of rooster semen diluted with different extenders. Bianor-Biotech SL – CSIC contract. 10.080 €. 2022-2023. PI: Julián Santiago Moreno.

CC19-096. Reproductive technologies applied to the study and conservation of threatened species. Fundación Parques Reunidos – INIA agreement. 42540 €. 2020-2024. PI: Julián Santiago Moreno

CON18-141. Development of new sperm evaluation procedures based on the use of fluorescent probes and design of new semen extenders in different animal species. Zoitechlab S.L.-INIA contract. 153156 €. 2018-2021. PI: Julián Santiago Moreno.

CC16-001. Sperm collection, study and conservation of marine fauna. Fundación Parques Reunidos – INIA agreement. 24000 €. 2016-2018. PI: J. Santiago Moreno.

Patents and Trademarks:

López Sebastián A., Carrizosa J., Urrutia B., Gomez Brunet A., Toledano A., Coloma M.A., Santiago-Moreno. J. Method of induction and synchronization of ovulation for goat artificial insemination. ES2235654.(P201131349). OEPM 2/08/2011. Spain. INIA.

Santiago-Moreno J, López Sebastián A, Esteso MC, Toledano Díaz A, Castaño García C, Coloma MA. Device for thawing sperm pellets-DDP-70. ES1078200 (U201231215; ref. MU3588/2012). OEPM 20/03/2013. Spain. INIA.

Community Trademark Flock-Reprod. N° 010-972-751. New methods for reproduction of dairy goats. June 2012. Trademark for food products of goats produced without hormones using protocols of the European Project Flock-Reprod.