UNIVERSIDAD COMPLUTENSE
MADRID

FACULTAD DE MEDICINA

<table>
<tr><td rowspan="6">FOTO
(OPCIONAL)</td><td colspan="3">Pilar Martín Escudero</td></tr>
<tr><td colspan="3">PDI: profesor Contratado Doctor</td></tr>
<tr><td colspan="3">Departamento Radiología, Rehabilitación y Fisioterapia.</td></tr>
<tr><td colspan="3">Escuela de Medicina del Deporte; despacho 15</td></tr>
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<tr><td>Formación académica</td><td colspan="3">
<table>
<tr><td>Licenciatura/Grado/Doctorado</td><td>Universidad</td><td>Año</td></tr>
<tr><td>Magíster Universitario en Administración y Dirección de Empresas Deportivas</td><td>UCM</td><td>2001</td></tr>
<tr><td>Doctor en Medicina y Cirugía</td><td>UCM</td><td>1997</td></tr>
<tr><td>Médico Especialista en Medicina de la Educación Física y el Deporte</td><td>UCM</td><td>1991</td></tr>
<tr><td>Grado y Tesina en Medicina y Cirugía</td><td>UCM</td><td>1985</td></tr>
<tr><td>Licenciada en Medicina y Cirugía</td><td>UCM</td><td>1985</td></tr>
<tr><td colspan="3">Registro ORCID: 0000-0003-1431-8493; Researcher ID: V-2078-2017; Author ID: 6506812909</td></tr>
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<tr><td>Experiencia laboral</td><td colspan="3">
<u>Positions and employment</u>
Year Position
2007- Contract Doctor Professor, Professional Medical School of physical education and sport (University Complutense of Madrid)
2004-2007 Assistant Doctor Professor (6+6), Professional Medical School of physical education and sport (University Complutense of Madrid)
1993-2004 Associate Professor (4+4), Professional Medical School of physical education and sport (University Complutense of Madrid)
1991-2004 Sport Medicine; National Center of Sports medicine in C.A.R (Center of high performance and sports science) Superior Council of Sports. Ministry of culture and Sport.

Courses I teach to Physicians who study sports medicine specialty and study in nutrtion:
1.- Training systems where learning training for athletes, exercise prescription in children, the elderly and women and exercise prescription in chronic diseases. Exercise for health.
2.- Human physiology applied to exercise
3.- Biochemistry modifications in sport. In blood, biochemistry adaptation in sport.
4.- Sports Pharmacology: The anti-doping code, Prohibited List in sport, nutritional Supplements, ergogenic aids.
5.- Technology and Innovation applied to health, nutrition and sport.
<u>Other experience and professional memberships</u>
Year Position
2021 Spanish Olympic team doctor. Tokyo 2020
2017 Spanish Deaflympics team Doctor. Samsun Turkey
2013 Spanish Deaflympics team Doctor. Bulgaria 2013
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	2012 Spanish Olympic team doctor. London 2012 1990-2019 Medical doping control in Football, UCI, Basketball, Kickboxing, Fishing & Casting; Athletics, Shooting, Almeria 2005 Mediterranean Games • Team Doctor Olympic Shooting • Team Doctor canoeing junior team. • Team Doctor XII Gymnasiada CAEN 2002 • Team Doctor World School Cross Country ChampionShip Marrakech Maroc 2000. • Referee Physiological Measurement. Sport Medicine, Annals of Sports Medicine and Research; Journal of Sport Sciences. • Referee "REVISTA INTERNACIONAL DE MEDICINA Y CIENCIAS DE LA ACTIVIDAD FíSICA Y DEL DEPORTE <u>Honors</u> **Year** **Honor or Award** 2023 Six-year period of research in Biomedicine; Court 4; years 2017-2022. Grant date: June 28, 2023. National Agency for the Evaluation of Research Activity (ANECA), Spain. 2019 Certificate I3.- identifier number I3 / 2019/377. Ministry of Science, Innovation and Universities of the Incentive Program for the Incorporation and Intensification of Research Activity. 10/01/2019. 2019 Diploma of Teaching Excellence awarded by the Complutense University of Madrid, according to the results of the Docentia Program of the Vice-rectorship of Quality for the teaching work developed during the academic year 2017-2018. 2017 "UCM-Santander: Research and Business" Award Award, first Prize for Technology-Based Projects. OXIFING HEALTH SPORT. July 2017 2014-2015 UNESCO expert appointed ASSIGNMENT / ANTI-DOPING POLICY ASSESSMENT in coordination with the AEPSAD for the evaluation of policies to combat doping and legislation in Spain. 2011-2019 Member of the Committee of inquiry from Hospital Clínico San Carlos Madrid; Research Institute. 2012 Second Prize. National Award for research in sports medicine in Spain. 2009- Doctor of the Medical Commission of the Spanish Olympic Committee 2008-2017 Expert for the evaluation of projects of the call of the National Plan of Research of Spain; Ministry of Research. 2005-2015 Doctor of the Medical Commission of Therapeutic Authorizations. Superior council of Sports. Ministry of education and science. 2000- Medical doping control.
Docencia	- **Quinquenios docentes**: 3. **Docentia en asignatura Ergogenia y Dopaje:** 1. Diploma de Excelencia Docente otorgado por la Universidad Complutense de Madrid, según los resultados del Programa

	Docentia del Vicerrectorado de Calidad por la labor docente desarrollada durante el curso 2017-2018, otorgado el 21 de Febrero de 2019, Madrid. 2. Otros resultados de Docentia: 2018-2019 (muy positiva); 2017-2018 (excelente); 2016-2017 (no valida); 2015-2016 (muy positiva). - **Asignaturas impartidas en las diferentes titulaciones**: 1.- Ergogenia y Dopaje: asignatura optativa 4 curso Nutrición. 2.- Master en Nutrición Avanzada: Master oficial de la UCM. 3.- Título propio: Enfermería del Deporte. 4.- Formación en higiene, farmacología y sistemas de entrenamiento en la formación de Médicos especialistas en Medicina del Deporte. - **Tutorización en actividades docentes:** TFM 10; TFG: 15; 6 Tesis. - **Otros méritos relacionados con la actividad docente:** 1. Proyectos de innovación docente 2, 2. Participación en actividades de divulgación 8 ediciones semana de la ciencia. - **Cursos de formación docente:** 10 cursos de formación docente.
Gestión	- Secretaria Docente de la Escuela de Especialización Profesional de Medicina de la Educación Física y el Deporte desde el 20 de Febrero de 2018 hasta la actualidad. - **Otros puestos de gestión relacionados:** Evaluador externo proyectos del MINECO, ANEP. Y EVALUA. Evaluadora de Grado y Master de diferentes titulaciones por Madrid I+D.
Investigación (solo en el caso de que se tenga)	1. **Líneas de investigación:** Dopaje y oximetría 2. **Equipos de investigación:** Directora Grupo de Investigación consolidado de la UCM: 950056 - APLICACIÓN DE LA OXIMETRÍA DE PULSO EN EL DEPORTE Y EN LA AYUDA DIAGNÓSTICA. **3. Publicaciones destacadas:** **1.- Martín-Escudero P.** "Prescribing exercise in Hepatitis" (in spanish). Revista Española de Enfermedades Digestivas.2002; 94 (3): 149-158. 2.-Giannetti R, Silveira Martín JP, Dotor ML, Golmayo D, **Martín Escudero P**, Miguel-Tobal F, Bilbao A."An Innovate signal processing algorithm for near infrared laser-based pulse oximeter". Proceedings of 10th Internacional Symposium on Development in Digital Measuring Instrumentation, Naples, Italy, September 17-18,1998. Pascale Daponte, Máximo D'Apuzzo, and Antonio Langella, Eds IMEKO TC-4, Sept 1998, pp 153-156. 3.- S.M. López Silva, M.L. Dotor, J.P. Silveira, R. Giannetti, D. Golmayo, **P. Martín- Escudero**, F. Miguel, J.L. Álvarez-Sala, L. Herrera."Transmittance photoplethysmography and pulse oximetry with near infrared laser diodes." Proceedings of 10th Internacional Symposium on Development in Digital Measuring Instrumentation,

Naples, Italy, September 17-18,1998. Pascale Daponte, Máximo D'Apuzzo, and Antonio Langella, Eds IMEKO TC-4, Sept 1998, pp 320-324.

4.-S. M. López Silva, R. Giannetti, M. L. Dotor, D. Golmayo, **P. Martín-Escudero**, F. Miguel-Tobal, A. Bilbao, J. P. Silveira. Fotopletismografía por transmisión con diodos láser en el infrarrojo cercano durante el ejercicio. Óptica pura y aplicada (revista de la Sociedad Española de Óptica); 2005;38 (1) : 31-39

5.-Martín-Escudero P, Miguel-Tobal F, Bilbao Monasterio A, Galindo Canales M, Silveira Martín JP, Dotor Castilla ML, Golmayo Fernández D, Gianetti R, López-Silva S. "Aportaciones Fisiológicas de la medida continua de la saturación de oxígeno en atletas de ambos sexos que realizan pruebas de esfuerzo máximas". Selección. 2006; 15 (3): 132-143.

6.- Martín-Escudero P. Physical exercise in epilepsy (in spanish).Semergen. 2007; 32: 127-139

7.-S.M. López Silva, M.L. Dotor, J.P. Silveira, R. Giannetti, **P. Martín-Escudero**, F. Miguel-Tobal, A, Bilbao, M. Galindo Canales."Pulse rate measurement from transmittance photoplethysmography in cycle ergometer test". Proceedings IMTC2 Internacional Instrimentation and Measurement Tecnology Conference, USA Austin Texas. Mayo3-6 2010.

8. Marca Fuertes C; Galindo Canales M; Miguel-Tobal F; **Martín-Escudero P**. La pulsioximetría y su aplicación en pruebas de esfuerzo máximo". Apunts Medicina del Esport. 2011;46 (169):23-27.

9.- S. M. López Silva, R. Giannetti, M. L. Dotor, D. Golmayo, JP. Silveira, F. Miguel-Tobal, A. Bilbao, M Galindo Canales, **P. Martín Escudero**. Heuristic Algorithm for Photoplethysmography Heart Rate Tracking during Athetes Maximal Exercise Test". Journal of Medical and Biological Engineering (JMBE).2012; 32(3): 181-188.

10. **Martín-Escudero P**, Muñoz-Guerra J, Del Prado N, Galindo Canales M, Fuentes Ferrer M, Vargas S, Soldevilla AB, Serrano-Garde E, Miguel-Tobal F, Maestro de Las Casas M, Fernandez-Pérez C. Impact of UGT2B17 gene deletion on the steroid profile of an athlete. Physiol Rep,2015; 3 (12), e12645.

11. Chauvet M, **Martín-Escudero P**, Martinez-de-Haro V, J, Cid-Yagüe L. "Physical Activity and smoking habit in Adolescent Students". Revista Internacional de Medicina y Ciencias de la Actividad Física y el Deporte.2018, 18 (69); pag 151-164.

12. **Martín-Escudero Pilar**, Muñoz-Guerra J, Vargas S, Serrano-Garde E, Soldevilla AB, Galindo-Canales M, Del Prado N, Fuentes-Ferrer M, Fernández-Pérez C. Impact of the UGT2B17 polymorphism on the steroid profile. Results of a crossover clinical trial in athletes submitted to testosterone. Steroids; 2019; 141: 104-113. DOI: 10.1016/j.steroids.2018.11.009.

13. Herrero-González, Helena, Martín-Acero R, Lalín-Novoa C, Pol R, **Martín-Escudero P**, De la Torre AI, Hughes C, Magni M, Biosca F, Ramos R. "Position statement of the Royal Spanish Football Federation for the resumption of football activities after the COVID-19 pandemic (June 2020)." British Journal of Sports Medicine; ISNN: 2044-6055; 2020 16 june; DOI: 10.1136/bjsports-2020-102640.

14. Garcia-Isidoro, S., Miguel-Tobal, F., **Martin-Escudero, P.**, Gutierrez-Ortega, C., & Castellanos-Sanchez, V. O. "Martial arts injuries: a longitudinal study about judo, karate and wushu carried out in Community of Madrid, Spain." The Journal of Sports Medicine and Physical Fitness. 2020, 23 july. DOI: 10.23736/S0022-4707.20.11216-7

15. **Martín-Escudero, P**.; Cabanas, A.M.; Fuentes-Ferrer, M.; Galindo-Canales, M. "Oxygen Saturation Behavior by Pulse Oximetry in Female Athletes. Breaking Myths." Biosensors ISNN: 2079-6374; 2021, 11,391. https://doi.org/10.3390/bios11100391

16. Cabanas, AM, Fuentes -Guajardo, M., LaTorre, K, León D, **Martín-Escudero, P**. "Skin Pigmentation Influence on Pulse Oximetry Accuracy: A Systematic Review and Bibliometric Analysis". Sensors; ISNN: 1424-8220; 2022, 22 (9),3402. https://doi.org/10.3390/s22093402.

17. **Martín-Escudero, P**, Cabanas, AM, Dotor-Castilla ML, Galindo-Canales, M, Miguel-Tobal, F, Fernández-Perez, C, Fuentes-Ferrer, M, Gianetti, R. "Are Activity Wrist-Worn Devices Accurate for Determining Heart Rate during Intense Exercise?": Bioengineering. ISNN: 2306-5354; 2023, 10 (2),254; DOI: https://doi.org/10.3390/bioengineering10020254

18. Cabanas, AM, **Martín-Escudero, P**, & Shelley, K. H. "Improving pulse oximetry accuracy in dark-skinned patients: technical aspects and current regulations.": British Journal of Anaesthesia. (Br J Anaesth). ISNN: 1471-6771; 2023, Aug 4: S0007-0912(23)00378-1.; DOI: https://doi.org/10.1016/j.bja.2023.07.005 . PMID: 37544838

19. Cabanas, A. M., Fuentes-Guajardo, M.; Sáez, N.;Catalán, D.D.; Collao-Caiconte, P.O.; **Martín-Escudero, P**; "Exploring the Hidden Complexity: Entropy Analysis in Pulse Oximetry of Female Athletes.":

	Biosensors. ISNN: 2079-6374 2024, January 19: 14(1), 52-66. DOI: https://doi.org/10.3390/bios14010052 **4. Participación en proyectos de I+D+I:** 1.- "Oxygen saturation monitoring during maximal stress test performance". CSD (06/EPU10/00). From october 2000 to September 2001.This study was performed between the Instituto de Microelectrónica de Madrid (IMM) attached to the Centro Nacional de Microelectrónica under the CSIC, the Medical Professional School of Physical Education and Sport of the UCM and Medicine Center Sports Council. The objective is to develop oximeters for athletes. 2.-:"Analysis of continuous monitoring of oxygen saturation by pulsoximetry during maximal stress tests on professional athletes".CSD (04/EPB10/02). 2003. This study was performed between the Instituto de Microelectrónica de Madrid (IMM) attached to the Centro Nacional de Microelectrónica under the CSIC, the Medical Professional School of Physical Education and Sport of the UCM and Medicine Center Sports Council. The objective is to develop oximeters for athletes. 3.- "Multiple wavelength pulse oximetry in high performance female athletes who practice aerobic sports. CSD (02/EPB10/03) 2003-2004. This study was performed between the Instituto de Microelectrónica de Madrid (IMM) attached to the Centro Nacional de Microelectrónica under the CSIC, the Medical Professional School of Physical Education and Sport of the UCM and Medicine Center Sports Council. The objective is to develop oximeters for female athletes. 4.- "Application and improvements in oxygen saturation continuous measurement by pulse oximetry in young athletes during treadmill stress tests. Their usefulness as a training parameter. CSD (02/EPB10/04) 2005. This study was performed between the Instituto de Microelectrónica de Madrid (IMM) attached to the Centro Nacional de Microelectrónica under the CSIC, the Medical Professional School of Physical Education and Sport of the UCM and Medicine Center Sports Council. The objective is to improve pulsoximeters for athletesin order to improve physical performance. 5.- "Continuous determination of oxygen saturation by pulsoximetry and its relationship with lactic acid metabolism. CSD (02/EPB10/05)2005-2006. This study was performed between the Instituto de Microelectrónica de Madrid (IMM) attached to the Centro Nacional de Microelectrónica under the CSIC, the Medical Professional School of Physical Education and Sport of the UCM and Medicine Center Sports Council. The objective is to improve pulsoximeters for athletes in order to improve physical performance.

	6.- Continuous monitoring of oxygen saturation during maximal stress tests on black athletes. CSD (03/UPB10/06).2006-2007. Postgraduate fellowship. This study was performed by Instituto de Microelectrónica (IMM) attached to the Centro Nacional de Microelectrónica under the CSIC, the Professional Medical School of Physical Education and Sport of the UCM and the Pontifical University of Comillas (ICAI). The purpose of this study is the development of an improved pulse oximeter for sports use, including black athletes, aimed at improving physical performance. 7.- Study of correlation between peripheral and lactic ventilatory thresholds between male athletes versus healthy male smokers (PR1/07-14910).2006-2007. This study was performed by the Pneumology Service of San Carlos Clinical Hospital, Medical Professional School of Physical Education and Sport of the UCM and (Centro de Medicina del Consejo Superior de Deportes) Medicine Center Sports Council, in order to study the correlation between ventilatory thresholds, peripheral and lactic acid ones, between non-smoker male athletes and smoker male athletes. 8.- Devolopment of athlets health card Advisory collaboration. Advisors to the development of athlete's health card within the Comisión de Salud y Control de Dopaje del CSD. 9.- Oxygen saturation study in female black athletes during maximal stress tests. 01/UPB10/07. 2007-2008.This study was performed by the Instituto de Microelectrónica (IMM) attached to the Centro Nacional de Microelectrónica under the CSIC, the Medical Professional School of Physical Education and Sport of the UCM and Centro de Medicina del Consejo Superior de Deportes. The objective was the development of improved pulse oximeters for sports use, including black female athletes, focused on physical performance improvement. 10.- Analysis and modeling of the relationship between the ECG, laser photoplethysmography and ventilatory parameters during maximal exercise testing in female and male athletes. 01/UPB10/08.2008. This study was performed by the Instituto de Microelectrónica (IMM) attached to the Centro Nacional de Microelectrónica under the CSIC, the Medical Professional School of Physical Education and Sport of the UCM and Centro de Medicina del Consejo Superior de Deportes. The objective was the development of improved pulse oximeters for sports use, including male and female, black and Caucasian athletes, focused on physical performance improvement. 11.- Non-invasive Estimation of Blood Lactate Levels in Athletes after Maximal Effort Tests by Pulsioximetry. This study was carried out jointly with the CNM-CSIC , ICAI Biomedical engineering and the Professional

	School of Medicine Physical Education and Sport of the UCM. This investigation supports the idea estimation of Lactate Levels / Respiratory Zone is possible by the oxygen saturation measurements by pulsioximetry and application in wearebles. 12.- Steroid profile in athletes and their relation to physiological and genetic parameters. Development of mathematical models for the determination of steroid levels thresholds doping control Financing Agency: project funded by National R + D + I (DEP2009-14788-C03-03). January 2010 TO: December 2013.This study was carried out jointly with the Unit for Research Support of the Hospital San Carlos de Madrid, Anti-Doping Agency and the Professional School of Medicine Physical Education and Sport of the UCM, for the development of mathematical models to determine threshold levels of steroids in doping control. 13. Sports crossover clinical trial in UGT2B17 population by polymorphism. Impact on the steroid profile. Financing Agency: project funded by National R + D + I (DEP2012-40156). January 2013 TO: December 2015. This study was carried out jointly with the Unit for Research Support of the Hospital San Carlos de Madrid, Anti-Doping Agency and the Professional School of Medicine Physical Education and Sport of the UCM, for validation of mathematical models to determine threshold levels of steroids in doping control. 14.- Methodological development for screening steroid consumption in the field of sport practice based in AR (androgen receptor) (DEP2016-78559-R) ;This study was carried out jointly with the Unit for Research Support of the Hospital San Carlos de Madrid, Anti-Doping Agency and the Professional School of Medicine Physical Education and Sport of the UCM, Previous studies by other research groups have shown that performing studies on androgen receptors obtained from yeast with bioluminescence assays, that androgen activity in urine increased 4.5 times and was closely associated with the unconjugated or free testosterone independent of the UGT2B17 genotype. This data supports the idea that trials with androgen receptors (AR) can serve as a complement to the urine values of testosterone/epitestosterone (T/E) as evidence of doping, because the ranges of determination significantly influenced by the UGT2B17 gene deletion polymorphism. 15.- PROJECT TITLE: “Development of a portable pulse oximeter with bluetooth, for integration in the medical follow-up of post-covid 19 patients, in respiratory rehabilitation inside and outside the Hospital. Healthstart Plus funded project (HSP-2; 2022) CAM-UE. This study will be performed by the Pneumologie Service from Hospital Clinico San Carlos Madrid Spain and the Medical Professional School of Physical Education and Sport of the UCM.

16.- PROJECT TITLE: Evaluation of the accuracy of pulse oximetry as a function of the concentration of melanin in the skin. XIX Fonis Health Research and Development Contest 2022; Government of Chile. (SA22I0178).2023-2025. This study is carried out jointly with the University of Tarapacá (UTA) Chile, University College of London (United Kingdom) and the Professional School of Physical Education and Sports Medicine of the UCM, to analyze the precision of the pulse oximetry based on the concentration of melanin in the skin to determine the threshold value of melanin concentration from which overestimations occur in the Aymara race.

5. Participación en contratos de I+D+I:

1 "Desarrollo de la tarjeta de salud del deportista." Convenio de colaboración de asesoría. Abril 2007- Septiembre 2007. Asesores del desarrollo de la tarjeta de salud del deportista dentro de la Comisión de Salud y Control de Dopaje del CSD. Este estudio se realiza entre el la Escuela profesional de Medicina de la Educación Física y el Deporte de la UCM, Facultad de Medicina y en la persona de estos dos profesores y el Consejo Superior de Deportes, el fin es el desarrollo de una tarjeta de salud del deportista, para su aplicación a deportistas DAN y ADO.

2 "Desarrollar las bases de una formulación de la bebida isotónica ideal para deportistas amateurs." Convenio de colaboración de asesoría para Solan de Cabras; Nov 2010- Feb 2011. Este estudio se realiza entre el la Escuela profesional de Medicina de la Educación Física y el Deporte de la UCM, Facultad de Medicina y en la persona de estos tres profesores y Solán de Cabras, para ayudar al desarrollo de una bebida ideal para deportistas.

3.-"MONITORIZACIÓN INALÁMBRICA MULTIPARAMÉTRICA DEL EJERCICIO FÍSICO (MIMEF)"Fase de Viabilidad. Convenio de colaboración de asesoría e investigación Articulo 83 para ZURELITE SPORTS SYSTEMS, S.L Marzo 2012 a Julio 2012. Este estudio se realiza entre el la Escuela profesional de Medicina de la Educación Física y el Deporte de la UCM, Facultad de Medicina y ITT-Comillas y IMM-CSIC para el desarrollo de un aparato de monitorización de saturación de oxígeno (umbral láctico) y GPS localizador.

6. Patentes:

1.- PATENT.- Authors: Giannetti R, Silveira Martín JP, Dotor ML, Golmayo D, **Martín Escudero P**, Miguel Tobal F, Bilbao A, López S; Method of processing photopletismographic signals obtained from a person or animal and oximeter using said method. Nº: ES200501425, date of priority: 13 jun 2005. Spain.

2.- PATENT.- Authors: Giannetti R, Silveira Martín JP, Dotor ML, Golmayo D, **Martín Escudero P**, Miguel Tobal F, Bilbao A, López S Nº:

	PCT/ES06/070080, date of priority: 12 jun 2006. (WO/2006/134197) Method of processing photopletismographic signals obtained from a person or animal and oximeter using said method. **3:- PATENT:** National P201630398 Date of reception: 01 abril 2016, 14:28 (CEST). Authors: Giannetti R, Sanchez Miralles A, Dotor ML, **Martín Escudero P**, Miguel Tobal F, Galindo Canales M, López S. Sensor device, system and method for determining intervals non-invasive training for conducting an exercise. 4.- **PATENT**: (internacional) PCT/ES2017/070195 fecha de recepción: 31 March 2017. Authors: Giannetti R, Sanchez Miralles A, Dotor ML**, Martín Escudero P**, Miguel Tobal F, Galindo Canales M, López S; Sensor device, system and method for determining intervals non-invasive training for conducting an exercise.
Otros	**Year Position** 2023 Six-year period of research in Biomedicine; Court 4; years 2017-2022. Grant date: June 28, 2023. National Agency for the Evaluation of Research Activity (ANECA), Spain. 2019 Certificate I3.- identifier number I3 / 2019/377. Ministry of Science, Innovation and Universities of the Incentive Program for the Incorporation and Intensification of Research Activity. 10/01/2019. 2018 Diploma of Teaching Excellence awarded by the UCM according to the results of the Docentia Program of the Vice-rectorship of Quality for the teaching work developed during the academic year 2017-2018. 2017 "UCM-Santander: Research and Business" Award Award, first Prize for Technology-Based Projects. OXIFING HEALTH SPORT. 2014-15 UNESCO expert appointed Assignment/ Anti-Doping Policy Assessment in coordination with the AEPSAD for the evaluation of policies to combat doping and legislation in Spain. 2011-19 Member of the Committee of inquiry from Hospital Clínico San Carlos Madrid; Research Institute. 2012 Second Prize. National Award for research in sports medicine in Spain. 2009- Doctor of the Medical Commission of the Spanish Olympic Committee 2005-15 Doctor of the Medical Commission of Therapeutic Authorizations. Superior council of Sports. Ministry of education and science.

Indicar: Más información

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