Producción científica, abril 2020

Boletín de publicaciones de producción científica de la Universidad Pablo de Olavide.

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Biblioteca/CRAI

Servicio de Apoyo a la Investigación

Sevilla, mayo de 2020

Metodología

El presente Boletín de Producción científica está destinado a la difusión mensual de la producción científica de los investigadores de la Universidad Pablo de Olavide, en Web of Science, Scopus y Dialnet.

La Biblioteca/CRAI de la UPO, como apoyo a la investigación de la comunidad universitaria del Personal Docente e Investigador, elabora este producto para la visibilidad de la Universidad con relación a su producción científica.

Los datos se obtienen de la colección de la Web of Science, de la base de datos referencial Scopus (Elsevier) y de la base de datos Dialnet.

El listado de las referencias bibliográficas junto a sus resúmenes, que suponen el resultado de la producción científica institucional mensual, ha sido elaborado a partir de la búsqueda en las diferentes bases de datos, utilizando para ello estrategias de búsqueda avanzada.

1. Web of Science

Estrategia de búsqueda avanzada:

OG=(Universidad Pablo de Olavide)

Índices=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI

Período de tiempo=Año hasta la fecha

2. Scopus

Estrategia de búsqueda avanzada:

((AF-ID (*"CSIC-JA-UPO-USE - Centro Andaluz de Biologia Molecular y Medicina Regenerativa CABIMER" 60012334*))) OR ((AF-ID (*"Universidad Pablo de Olavide" 60030114*) OR AF-ID (*"CSIC-JA-UPO - Centro Andaluz de Biología del Desarrollo CABD" 60103756*))) AND (LIMIT-TO (PUBYEAR , *2020*)

3. Dialnet

Para obtener la producción científica de se ha seguido un procedimiento para la importación de ficheros al Gestor de Referencias Bibliográficas (Zotero).

Una vez obtenidos todas las referencias de las publicaciones se ha generado la bibliografía con Zotero.

Publicaciones

ACEVEDO, J.J., MESSIAS, J., CAPITAN, J., VENTURA, R., MERINO, L. y LIMA, P.U., 2020. A Dynamic Weighted Area Assignment Based on a Particle Filter for Active Cooperative Perception. *Ieee Robotics and Automation Letters*, vol. 5, no. 2, pp. 736-743. ISSN 2377-3766. DOI 10.1109/LRA.2020.2965876.

This article addresses an Active cooperative perception problem for networked robots systems. Given a team of networked robots, the goal is finding a target using their inherent uncertain sensor data. The article proposes a particle filter to model the probability distribution of the position of the target, which is updated using detection measurements from all robots. Then, an information-theoretic approach based on the RRT* algorithm is used to determine the optimal robots trajectories that maximize the information gain while surveying the map. Finally, a dynamic area weighted allocation approach based on particle distribution and coordination variables is proposed to coordinate the networked robots in order to cooperate efficiently in this active perception problem. Simulated and real experimental results are provided to analyze, evaluate and validate the proposed approach.

AKHMETZYANOV, L., SANCHEZ-SALGUERO, R., GARCIA-GONZALEZ, I., BURAS, A., DOMINGUEZ-DELMAS, M., MOHREN, F., DEN OUDEN, J. y SASS-KLAASSEN, U., 2020. Towards a new approach for dendroprovenancing pines in the Mediterranean Iberian Peninsula. *Dendrochronologia*, vol. 60, pp. 125688. ISSN 1125-7865. DOI 10.1016/j.dendro.2020.125688.

Dendroprovenancing studies frequently use site chronologies to identify the origin of archaeological and historical timber. However, radial growth (tree-ring width, TRW) of tree species is influenced by both local and regional climate scales. Here we investigate how the use of annually-resolved Blue Intensity (BI) measurements can enhance dendroprovenancing precision of black pine (Pinus nigra Arn.) and Scots pine (P. sylvestris L.) on the Iberian Peninsula. Principal Component Gradient Analyses (PCGA) was used to assess geographical patterns of annual variation in different TRW and BI proxies of pine trees from two mountain ranges in the Central System and Andalusia in Spain. Local climate-growth relationships were quantified to identify underlying causes of identified groups with diverse growth patterns. Two distinct elevational groups were observed when performing PCGA on latewood BI time series with the response to summer drought as the main factor causing the differences. Both P. nigra and P. sylvestris BI time series were found to be more related to summer drought at low-elevation sites showing an increase in sensitivity at lower latitudes. PCGA of TRW time series allowed to discriminate between trees from Andalusia and Central System within the elevation groups. February and October temperatures were found to be the main climatic factors causing the differences in TRW time series among the high-elevation sites, whereas for low-elevation trees it was the average winter temperature influencing TRW. A subsequent leave-one-out analyses confirmed that including latewood BI time series improves the precision of dendroprovenancing of pine wood in the Iberian Peninsula.

ALONSO, D., FERNANDEZ-ESLAVA, B., EDELAAR, P. y ARIZAGA, J., [sin fecha]. Morphological divergence among Spanish Common Crossbill populations and adaptations to different pine species. *Ibis*, ISSN 0019-1019. DOI 10.1111/ibi.12835.

Crossbills (Loxia spp.) provide a classical avian model of ecological specialization on food resources. Previous studies have suggested that morphometric, genetic and vocal diversification among Common Crossbill Loxia curvirostra populations is better explained by ecological distance (use of different conifers) than by geographical distance, indicating that populations have diverged adaptatively. We tested for adaptive divergence in Iberian crossbills using bill and body size measurements of 6082 crossbills from 27 sites, each consisting of a dominant or single pine (Pinus) of four possible species. Crossbills using different pines differed significantly in body size and bill size and shape. There was no correlation between geographical and morphological distance among sampling sites, consistent with the hypothesis that the morphological divergence of Iberian crossbills is shaped by their ecological differences (foraging on alternative conifers) rather than geographical distance. However, for unknown reasons, Common Crossbills foraging on Pinus sylvestris in Iberia have on average much smaller bills than Parrot Crossbills Loxia pytyopsittacus feeding on the same pine species in northern Europe. The extent to which crossbills specialize on Iberian P. sylvestris remains to be established. Specialization on conifers with overlapping geographical distributions may be facilitated by matching habitat choice of crossbills as a function of their local intake rates.

ÁLVAREZ-HERRERA, C., MAISANABA, S. y REPETTO, G., 2020. Investigation of mechanisms of toxicity and exclusion by transporters of the preservatives triclosan and propylparaben using batteries of Schizosaccharomyces pombe strains. *Environmental Research*, vol. 183. DOI 10.1016/j.envres.2019.108983

Triclosan (TCS) and propylparaben (PPB) are antimicrobials widely used. They present many similarities in their applications and also in their human and environmental health risks. In order to investigate the mechanisms of toxic action and the efflux pumps involved in their detoxication, we used a strategy with batteries of Schizosaccharomyces pombe yeast strains, either defective in cell signalling, in detoxification pumps, or in cell surveillance mechanisms. Yeast were exposed up to 20 h in solid medium or in liquid medium in 96-well plates. The mechanisms of action investigated were spindle defects (mph1), stress (pmk1), DNA interference (rad3) or diverse effects (MDR-sup). The efflux pumps investigated were Bfr1, Pmd1, Mfs1 and Caf5 or the Pap1 transcription factor. Here we show that TCS was 75 times more toxic than PPB in the wild type fission yeast. More oxidative stress and less protection by exclusion pumps were observed for TCS than for PPB. The cytotoxicity produced by TCS decreased from bfr1> mfs1> pmd1 > pap1 and caf5A deficient strains. In contrast, cytotoxic concentrations of PPB caused only a mild stress. The protection provided for PPB by the transporters was more marked than for TCS, decreasing from Pmd1, Caf5, Mfs1 and Bfr1. Furthermore, microtubule and DNA interferences were revealed for PPB, according to the cytotoxicity of mph1 and rad3 defective cells, respectively. As both compounds present complex adverse effects at concentrations close to exposure, and their combination clearly causes a strong potentiation, more

exhaustive controls and regulations in their use should be considered. © 2019

ASCENSÃO, F., LATOMBE, G., ANADÓN, J.D., ABELLÁN, P., CARDADOR, L., CARRETE, M., TELLA, J.L. y CAPINHA, C., 2020. Drivers of compositional dissimilarity for native and alien birds: the relative roles of human activity and environmental suitability. *Biological Invasions*, vol. 22, no. 4, pp. 1447-1460. DOI 10.1007/s10530-020-02196-7

We assessed the relative importance of human activity and environmental suitability as drivers of compositional dissimilarity of alien birds for 65 of the most populous cities of the Iberian Peninsula. We examined how these drivers relate to Zeta diversity (ζ) for alien Passeriformes and Psittaciformes. We performed the analysis using multiple orders of ζ, which provides insight on the role played by rare and common species in determining levels of dissimilarity. We also ran the analyses using the community of native Passeriformes as a phylogenetically close contrasting control. Our results showed that the proportion of urban area, a variable related to colonization and propagule pressure, had a strong influence on Psittaciformes but not on alien Passeriformes. This latter group showed to be primarily influenced by environmental factors, similarly to what was found for native Passeriformes. On other hand, human connectivity, as measured by distance through roads and railways seemed to play a significant role in shaping the compositional dissimilarity of alien Passeriformes, but not Psittaciformes. Regardless of the group analysed, the relative importance of the explanatory variables was similar for both rare and common species. Our findings highlight differences between the factors driving compositional dissimilarity for distinct groups of birds. While the emerging biogeography of Psittaciformes is mainly a reflection of distinctiveness in urban areas, alien Passeriformes are more strongly affected by the natural environment and thus their biogeography may increasingly resemble the one of their native counterparts. © 2020, Springer Nature Switzerland AG.

BAENA-GONZALEZ, R., LOZANO, D., GALLARDO, A.M., CHAVARRIA-ORTIZ, C. y GARCIA-TASCON, M., [sin fecha]. Influence of the handball goal anti-tip system through the game actions observation method: 2019 Four Nations International Handball Junior Tournament. *International Journal of Performance Analysis in Sport*, ISSN 2474-8668. DOI 10.1080/24748668.2020.1749967.

The anti-tip system used in the goals for the practice of handball begins to be considered a relevant factor to avoid accidents, as factors such as misuse, lack of maintenance, etc., can cause accidents with serious and even fatal damage. Therefore, the aim of this study is to analyse the influence in the handball game of an innovative anti-tip system for the goals (ATS) called Tutigool. For the analysis of game actions the free software Lince has been used, which allows data analysis of the multidimensional observation proposal called the Game Action Observation System influenced by the anti-tip system of the goals (SOATS) composed of 11 criteria and 41 categories of all the influential variables in the offensive actions of the sport. Results show that goals were moved in 25.64% of the 117 body contacts, 93.3% of those 30 movements were caused by the goalkeeper, 66.7% of the displacements occurred after the player's throw, which means 78 times and the goalkeeper's body impulse on the goal was the main reason of moving with 36.8% meaning 43 times. This innovative system should

be considered and included in the handball regulation to improve the safety and avoid accidents of the practitioners.

BECERRA, J., 2020. Evaluation of the penetration depth of nano-biocide treatments by LIBS. En: Science and digital technology for cultural heritage: Interdisciplinary approach to diagnosis, vulberability, risk assessment and graphic information models, *Science and digital technology for cultural heritage: Interdisciplinary approach to diagnosis, vulberability, risk assessment and graphic information models* [en línea]. S.l.: Taylor & Francis, pp. 368-374. ISBN 978-0-367-36368-0. Disponible en: https://dialnet.unirioja.es/servlet/articulo?codigo=7310237.

BECERRA, J., TIRADO HERNÁNDEZ, A., ORTIZ, R. y ORTIZ, P., 2020. Interlaboratory experience to evaluate the vulnerability of churches in Seville (Spain). En: Science and digital technology for cultural heritage: Interdisciplinary approach to diagnosis, vulnerability, risk assessment and graphic information models, *Science and digital technology for cultural heritage: Interdisciplinary approach to diagnosis, vulberability, risk assessment and graphic information models* [en línea]. S.l.: Taylor & Francis, pp. 409-413. ISBN 978-0-367-36368-0. Disponible en: https://dialnet.unirioja.es/servlet/articulo?codigo=7310263.

BECERRA, J., ZADERENKO PARTIDA, A.P., ORTIZ, P. y KARAPANAGIOTIS, I., 2020. Evaluation of nanoparticles effectiveness as a biocide by multi-spectral imaging. En: Science and digital technology for cultural heritage: Interdisciplinary approach to diagnosis, vulnerability, risk assessment and graphic information models, *Science and digital technology for cultural heritage: Interdisciplinary approach to diagnosis, vulberability, risk assessment and graphic information models* [en línea]. S.l.: Taylor & Francis, pp. 307-311. ISBN 9,7803673637e+12. Disponible en: https://dialnet.unirioja.es/servlet/articulo?codigo=7310249.

BENÍTEZ, J., ORTIZ, P. y ORTIZ, R., 2020. Indicators, sustainability and vulnerability in the diagnosis of historical cities. En: Science and digital technology for cultural heritage: Interdisciplinary approach to diagnosis, vulberability, risk assessment and graphic information models, *Science and digital technology for cultural heritage: Interdisciplinary approach to diagnosis, vulberability, risk assessment and graphic information models* [en línea]. S.l.: Taylor & Francis, pp. 404-408. ISBN 978-0-367-36368-0. Disponible en: https://dialnet.unirioja.es/servlet/articulo?codigo=7310264.

BERDUGO, M., SOLIVERES, S., DELGADO-BAQUERIZO, M. y MAESTRE, F.T., 2020. Ecosystem aridity and atmospheric CO2 Response. *Science*, vol. 368, no. 6488, pp. 252-252. ISSN 0036-8075. DOI 10.1126/science.abb5840.

BUONO, L. y MARTINEZ-MORALES, J.-R., 2020. Retina Development in Vertebrates: Systems Biology Approaches to Understanding Genetic Programs: On the Contribution of Next-Generation Sequencing Methods to the Characterization of the Regulatory Networks Controlling Vertebrate Eye Development. *BioEssays*, vol. 42, no. 4. DOI 10.1002/bies.201900187

The ontogeny of the vertebrate retina has been a topic of interest to developmental

biologists and human geneticists for many decades. Understanding the unfolding of the genetic program that transforms a field of progenitors cells into a functionally complex and multi-layered sensory organ is a formidable challenge. Although classical genetic studies succeeded in identifying the key regulators of retina specification, understanding the architecture of their gene network and predicting their behavior are still a distant hope. The emergence of next-generation sequencing platforms revolutionized the field unlocking the access to genome-wide datasets. Emerging techniques such as RNA-seq, ChIP-seq, ATAC-seq, or single cell RNA-seq are used to characterize eye developmental programs. These studies provide valuable information on the transcriptional and cis-regulatory profiles of precursors and differentiated cells, outlining the trajectories that connect each intermediate state. Here, recent systems biology efforts are reviewed to understand the genetic programs shaping the vertebrate retina. © 2020 WILEY Periodicals, Inc.

CALABUIG-MORENO, F., GONZÁLEZ-SERRANO, M.H., FOMBONA, J. y GARCÍA-TASCÓN, M., 2020. The emergence of technology in physical education: A general bibliometric analysis with a focus on virtual and augmented reality. *Sustainability (Switzerland)*, vol. 12, no. 7, pp. 1-23. DOI 10.3390/su12072728

Technology has been gradually introduced into our society, and the field of education is no exception due to technology's ability to improve the teaching-learning process. Furthermore, within the area of physical education (PE), its importance has been highlighted by the existence of specific apps for physical activity that can be used inside and outside the classroom to assess physical condition, as well as through the potential that virtual and augmented reality can have in such assessment. Therefore, the main objectives for this study were (1) to perform a bibliometric analysis of the articles published in the Web of Science (WoS) on technology in PE and (2) to analyze the articles published on augmented or virtual reality in PE found through this search. The results show that although studies on technology in PE (461 articles) have begun to consolidate over the last five years (there was a turning point in 2015), with the USA being the most influential country in this area, specific research on the use of augmented reality (AR) and virtual reality (VR) is still at a very early stage (22 articles with a small growth in 2017), with Spain being the most influential country; much more research is needed to achieve its consolidation. © 2020 by the authors. Licensee MDPI, Basel, Switzerland.

CAMBRA-FIERRO, J., MELERO-POLO, I., PATRÍCIO, L. y SESE, F.J., 2020. Channel Habits and the Development of Successful Customer-Firm Relationships in Services. *Journal of Service Research*, DOI 10.1177/1094670520916791

Technology advances have profoundly changed the way customers and service organizations interact, leading to a multitude of service channels. This study investigates consumer habits toward service channels in order to understand the influence of these channel habits on perceptions and intentions (perceived switching costs and attitudinal loyalty) and on consumer behavior (service usage and cross-buy). We empirically test the framework in the financial services industry, and the results reveal that physical store habit increases perceived switching costs and that acquired habits toward the physical store and self-service kiosks have a positive influence on attitudinal loyalty. Perceived switching costs

positively affect service usage, and attitudinal loyalty positively influences cross-buy. In addition, habits in each channel lead to an increase in the number of services acquired (cross-buy), but online and self-service kiosks channel habits negatively impact service usage, as the lack of physical presence may increase customer uncertainty. Because habits are built on the frequency and stability of channel usage, firms can manage habits by encouraging frequent interactions under stable contexts. In addition, firms should stimulate customer habits toward the physical store as it is central to the promotion of loyalty and for increasing service usage. © The Author(s) 2020.

CANTERO, J.L., ATIENZA, M., LAGE, C., ZABORSZKY, L., VILAPLANA, E., LOPEZ-GARCIA, S., POZUETA, A., RODRIGUEZ-RODRIGUEZ, E., BLESA, R., ALCOLEA, D., LLEO, A., SANCHEZ-JUAN, P., FORTEA, J. y ALZHEIMER'S, D.N.I., 2020. Atrophy of Basal Forebrain Initiates with Tau Pathology in Individuals at Risk for Alzheimer's Disease. *Cerebral cortex (New York, N.Y. : 1991)*, vol. 30, no. 4, pp. 2083-2098. DOI 10.1093/cercor/bhz224

Evidence suggests that the basal forebrain (BF) cholinergic system degenerates early in the course of Alzheimer's disease (AD), likely due to the vulnerability of BF cholinergic neurons to tau pathology. However, it remains unclear whether the presence of tauopathy is the only requirement for initiating the BF degeneration in asymptomatic subjects at risk for AD (AR-AD), and how BF structural deficits evolve from normal aging to preclinical and prodromal AD. Here, we provide human in vivo magnetic resonance imaging evidence supporting that abnormal cerebrospinal fluid levels of phosphorylated tau (T+) are selectively associated with bilateral volume loss of the nucleus basalis of Meynert (nbM, Ch4) in AR-AD individuals. Spreading of atrophy to medial septum and vertical limb of diagonal band Broca (Ch1-Ch2) occurred in both preclinical and prodromal AD. With the exception of A+, all groups revealed significant correlations between volume reduction of BF cholinergic compartments and atrophy of their innervated regions. Overall, these results support the central role played by tauopathy in instigating the nbM degeneration in AR-AD individuals and the necessary coexistence of both AD proteinopathies for spreading damage to larger BF territories, thus affecting the core of the BF cholinergic projection system. © The Author(s) 2019. Published by Oxford University Press. All rights reserved. For permissions, please e-mail: journals.permission@oup.com.

CARAVACA SÁNCHEZ, F. y WOLFF, N., 2020. The association between substance use and mental health symptoms among incarcerated male in Spain. *Journal of Offender Rehabilitation*, vol. 59, no. 3, pp. 138-155. DOI 10.1080/10509674.2019.1706689

This paper explores the association between substance use prior to and during incarceration and between psychiatric distress and substance use during incarceration. A sample of 943 male residents from three prisons located in Spain completed a self-report questionnaire probing psychiatric distress and substance use behaviors. Rates of community- and prison-based substance use were high among respondents and prison-based substance use was positively associated with depression, anxiety, and stress symptoms during incarceration. These findings

suggest a need to redouble the effort to provide dual diagnosis treatment to residents during incarceration and carefully monitor the prescribing and distribution of sedatives during incarceration. © 2020, © 2020 Taylor & Francis Group, LLC.

CARDOZO, M.J., ALMUEDO-CASTILLO, M. y BOVOLENTA, P., 2020. Patterning the Vertebrate Retina with Morphogenetic Signaling Pathways. *Neuroscientist*, vol. 26, no. 2, pp. 185-196. DOI 10.1177/1073858419874016

The primordium of the vertebrate eye is composed of a pseudostratified and apparently homogeneous neuroepithelium, which folds inward to generate a bilayered optic cup. During these early morphogenetic events, the optic vesicle is patterned along three different axes—proximo-distal, dorso-ventral, and naso-temporal—and three major domains: the neural retina, the retinal pigment epithelium (RPE), and the optic stalk. These fundamental steps that enable the subsequent development of a functional eye, entail the precise coordination among genetic programs. These programs are driven by the interplay of signaling pathways and transcription factors, which progressively dictate how each tissue should evolve. Here, we discuss the contribution of the Hh, Wnt, FGF, and BMP signaling pathways to the early patterning of the retina. Comparative studies in different vertebrate species have shown that their morphogenetic activity is repetitively used to orchestrate the progressive specification of the eye with evolutionary conserved mechanisms that have been adapted to match the specific need of a given species. © The Author(s) 2019.

CARMONA, R., BARRENA, S., LÓPEZ GAMBERO, A.J., ROJAS, A. y MUÑOZ-CHÁPULI, R., 2020. Epicardial cell lineages and the origin of the coronary endothelium. *FASEB Journal*, vol. 34, no. 4, pp. 5223-5239. DOI 10.1096/fj.201902249RR

The embryonic epicardium generates a population of epicardial-derived mesenchymal cells (EPDC) whose contribution to the coronary endothelium is minor or, according to some reports, negligible. We have compared four murine cell-tracing models related to the EPDC in order to elucidate this contribution. Cre recombinase was expressed under control of the promoters of the Wilms' tumor suppressor (Wt1), the cardiac troponin (cTnT), and the GATA5 genes, activating expression of the R26REYFP reporter. We have also used the G2 enhancer of the GATA4 gene as a driver due to its activation in the proepicardium. Recombination was found in most of the epicardium/EPDC in all cases. The contribution of these lineages to the cardiac endothelium was analyzed using confocal microscopy and flow cytometry. G2-GATA4 lineage cells are the most frequent in the endothelium, probably due to the recruitment of circulating endothelial progenitors. The contribution of the WT1 cell lineage increases along gestation due to further endothelial expression of WT1. GATA5 and cTnT lineages represent 4% of the cardiac endothelial cells throughout the gestation, probably standing for the actual EPDC contribution to the coronary endothelium. These results suggest caution when using a sole cell-tracing model to study the fate of the EPDC. © 2020 Federation of American Societies for Experimental Biology

CARVAJAL MUÑOZ, M.R., 2020. Contractualismo, neoliberalismo y libertad en

Amartya Sen y Michel Foucault. *Oxímora: revista internacional de ética y política*, no. 16, pp. 137-157. ISSN 2014-7708. 10.1344/oxi.2020.i16.30269

Este texto se detiene en los elementos comunes encontrados en los planteamientos teóricos de Sen y Foucault. Principalmente se destacan las siguientes coincidencias: a) Crítica de un consenso ajustado a unos principios normativos trascendentales; b) Sus análisis sobre el neoliberalismo, en concreto sobre la teoría de capital humano de Becker, y, por último, c) El énfasis que ponen en la libertad individual. Se subraya la concepción que ambos tienen sobre la libertad vinculada a la acción, que lleva a la responsabilidad individual y el compromiso social, y que es de vital importancia en la actualidad.

CHÁVEZ DE DIEGO, M.J., MACÍAS BERNAL, J.M., PRIETO, A.J., ORTIZ, R. y ORTIZ, P., 2020. Artificial intelligence applied to the preventive conservation of heritage buildings. En: Science and digital technology for cultural heritage: Interdisciplinary approach to diagnosis, vulberability, risk assessment and graphic information models, *Science and digital technology for cultural heritage: Interdisciplinary approach to diagnosis, vulberability, risk assessment and graphic information models* [en línea]. S.l.: Taylor & Francis, pp. 245-249. ISBN 978-0-367-36368-0. Disponible en: https://dialnet.unirioja.es/servlet/articulo?codigo=7310262.

CHU, H., GAO, G.-F., MA, Y., FAN, K. y DELGADO-BAQUERIZO, M., 2020. Soil microbial biogeography in a changing world: Recent advances and future perspectives. *mSystems*, vol. 5, no. 2. DOI 10.1128/mSystems.00803-19

Soil microbial communities are fundamental to maintaining key soil processes associated with litter decomposition, nutrient cycling, and plant productivity and are thus integral to human well-being. Recent technological advances have exponentially increased our knowledge concerning the global ecological distributions of microbial communities across space and time and have provided evidence for their contribution to ecosystem functions. However, major knowledge gaps in soil biogeography remain to be addressed over the coming years as technology and research questions continue to evolve. In this minireview, we state recent advances and future directions in the study of soil microbial biogeography and discuss the need for a clearer concept of microbial species, projections of soil microbial distributions toward future global change scenarios, and the importance of embracing culture and isolation approaches to determine microbial functional profiles. This knowledge will be critical to better predict ecosystem functions in a changing world. © 2020 Chu et al. This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International license.

COBO-SIMON, I., MENDEZ-CEA, B., JUMP, A.S., SECO, J., JAVIER GALLEGO, F. y CARLOS LINARES, J., 2020. Understanding genetic diversity of relict forests. Linking long-term isolation legacies and current habitat fragmentation in Abies pinsapo Boiss. *Forest Ecology and Management*, vol. 461, pp. 117947. ISSN 0378-1127. DOI 10.1016/j.foreco.2020.117947.

Increasing variability and uncertainty regarding future climate provide new challenges for the conservation of endangered tree species. For example, threat status can be

impacted by genetic diversity, where forest trees show reduced geographic range size, isolated populations and fragmented distribution. We place the conservation insights of population genetic structure in a climate change context, using as experimental system a relict drought-sensitive fir (Abies pinsapo Boiss.). Nuclear (nSSR, ISSR) and chloroplast (cpSSR) markers were analysed to investigate the extent to that A. pinsapo evidences ongoing genetic erosion, isolation and divergent genetic diversity, among populations, elevations and cohorts (young, adult and old trees). We obtained contrasting patterns among chloroplast and nuclear markers. Based on cpSSRs, the highest genetic distances were found in the western portion of the distribution, while based on both nSSRs and ISSRs, differentiation appeared in the eastern portion of the distribution. Evidence for bottlenecks and genetic drift were found in all the studied populations, as well as low among-population genetic differentiation. Land use legacies e.g. impacting current forest structural diversity might be related to observed genetic diversity. No evidence of demographic genetic erosion among cohorts were found. Conservation efforts should focus on reducing the probability of occurrence of stochastic events such as fires and habitat loss due to human impacts or climate change to maximise A. pinsapo population sizes. Further research on adaptive potential should focus on identifying active genetic management strategies that might improve adaptation to future climates in such endangered relict species.

FRANCO-LEAL, N., CAMELO-ORDAZ, C., FERNANDEZ-ALLES, M. y SOUSA-GINEL, E., 2020. The Entrepreneurial Ecosystem: Actors and Performance in Different Stages of Evolution of Academic Spinoffs. *Entrepreneurship Research Journal*, vol. 10, no. 2. DOI 10.1515/erj-2018-0228

The importance of entrepreneurial ecosystems is accentuated in the academic entrepreneurship context since academic spinoffs (ASOs) must rely on actors from the ecosystem to access resources they lack in order to improve their performance. This study analyzes the impact that actors from social and institutional (university and nonuniversity) contexts in the entrepreneurial ecosystem have on ASO performance in the stage of creation and initial development and in the stage of consolidation. From a sample of 118 ASOs in the initial stage and 47 ASOs in the consolidation stage, the results indicate that social and institutional contexts improve the performance of ASOs in both phases of development, although the relevance of each context varies with the stage. In the creation and initial development stage, the institutional context affects the ASOs' performance to a greater extent, while the influence of the social context is less strong. Science parks from the institutional context are the most relevant actors in this phase. In the consolidation phase, social context is the most relevant for improving the performance of ASOs, with the venture capitalist being the actor that exerts more influence. With respect to the institutional context, performance is only affected by the nonuniversity context in this stage. © 2020 Walter de Gruyter GmbH, Berlin/Boston.

GALLARDO, A., FERNÁNDEZ-PALACIOS, J.M., BERMÚDEZ, A., DE NASCIMENTO, L., DURÁN, J., GARCÍA-VELÁZQUEZ, L., MÉNDEZ, J. y RODRÍGUEZ, A., 2020. The pedogenic Walker and Syers model under high atmospheric P deposition rates. *Biogeochemistry*, vol. 148, no. 3, pp. 237-253. DOI 10.1007/s10533-020-00657-8

The Walker and Syers model predict that phosphorus (P) availability decreases with time leading to a final stage known as retrogression. We tested the validity of the Walker and Syers model in the Canary Islands, a soil chronosequence ranging from 300 years to 11 million years under recurrent episodes of atmospheric dust-containing P inputs. In particular, we compared our results with those from the volcanic soil chronosequences described in the Hawaii Islands and in Arizona, as they share key biological and/or geological characteristics. In three islands of the Canarian Archipelago, we selected 18 independent sites dominated by mature Pinus canariensis forests and grouped them into six age classes. For each site, soil samples were analyzed for known proxies of soil nitrogen (N), P and cations availability. We also analyzed the P. canariensis needles for N, P and cation contents. We found tendencies similar to those observed in other soil chronosequences: maximum N and P concentrations at intermediate ages and lower P concentrations in the older soils. The nutrient dynamics suggested that the older sites may indeed be approaching the retrogression stage but at lower rates than in other similar chronosequences. Differences from other chronosequences are likely due to the drier Canarian climate, the higher P deposition rates originating from the nearby Sahara Desert and the top soil horizon studied. Our results confirm the validity of the Walker and Syers model for the Canary Islands despite the influence that the high P deposition rates and the seasonally dry climate may have on soil development and P pools in P. canariensis ecosystems. © 2020, The Author(s).

GARCÍA PÉREZ, J.I., LÓPEZ BARNEO, J., BUENO CAVANILLAS, A., CASADESÚS PURSALS, J., GÓMEZ SKARMETA, J.L. y DIEGO RODRÍGUEZ PUYOL, 2020. *Fifteen Years of Baeza's Workshops: Current Trends in Biomedicine (2004-2019)* [en línea]. S.l.: Universidad Internacional de Andalucía. ISBN 978-84-7993-353-1. Disponible en: https://dialnet.unirioja.es/servlet/libro?codigo=758745.

En 2004 se ponen en marcha los workshops "Current Trends in Biomedicine". Un espacio destinado al diálogo y la reflexión en torno a los últimos avances sobre el sistema nervioso, la transcripción genética o la implicación de las bacterias en la salud humana, entre otras materias. Cerca de 1.000 personas han participado en esta cita, donde la UNIA ha puesto toda su capacidad logística y una inversión que, hasta la fecha, suma el millón de euros.

Esta publicación conmemora el 15 aniversario de este proyecto. Pero no es el tiempo, sino la calidad de las propuestas recibidas, el mejor indicador de que se ha alcanzado una fase de consolidación. Conscientes de su juventud, el objetivo ahora es incidir en mejorar la notoriedad y la intensidad de los debates. Haciendo de estos seminarios una visita cada vez más imprescindible en el calendario científico internacional.

GARCIA-GONZALEZ, J.M., GOMEZ-CALCERRADA, S.G., HERNANDEZ, E.S. y RIOS-AGUILAR, S., [sin fecha]. Barriers in higher education: perceptions and discourse analysis of students with disabilities in Spain. *Disability & Society*, ISSN 0968-7599. DOI 10.1080/09687599.2020.1749565.

Spanish universities must guarantee optimum accessibility to facilitate the teaching-

learning process of students with disabilities. The objective of this study was to investigate how Spanish students with disabilities perceive access to Higher Education and the day-to-day of their academic life. A qualitative design was performed, using sequential discourse analysis adapted to the area of studies with people with disabilities. Two focus groups and sixteen interviews with university students with disabilities were analyzed. The discursive strategies of the students presented an asymmetry between the normative and the factual, although within a framework of inclusion and integration into university life. Six types of barriers were identified: computer, bureaucratic, and architectural -more intense in the traditional universities-, and learning, personal, and social barriers -stronger in online universities. To ensure the inclusion of students with disabilities, there is a need to increase information and training and to establish common procedures across Higher Education institutions. Points of interest Despite the legislative measures regarding inclusion in Higher Education, the representativeness of students with disabilities in Spain is low. Students with disabilities found six different types of barriers in accessing university studies in Spain. Research shows that Spanish university students with disabilities consider dropping out of Higher Education due to the difficulties they encounter on a day-to-day basis. Spanish university students with disabilities detect barriers that are specific to society, in general, and to the university system, in particular, that prevent a real equality beyond the deficits of their disabilities. Improvements should be oriented towards the training and awareness of the entire university community and its standards of practice.

GÓMEZ MORÓN, M.A., 2020a. Characterization of glass tesserae from the Mosque of Cordoba. En: Science and digital technology for cultural heritage: Interdisciplinary approach to diagnosis, vulberability, risk assessment and graphic information models, *Science and digital technology for cultural heritage: Interdisciplinary approach to diagnosis, vulberability, risk assessment and graphic information models* [en línea]. S.l.: Taylor & Francis, pp. 258-262. ISBN 978-0-367-36368-0. Disponible en: https://dialnet.unirioja.es/servlet/articulo?codigo=7310259.

GÓMEZ MORÓN, M.A., 2020b. Non-destructive techniques applied to in situ study of Maqsura at Cordoba cathedral (Spain). En: Science and digital technology for cultural heritage: Interdisciplinary approach to diagnosis, vulberability, risk assessment and graphic information models, *Science and digital technology for cultural heritage: Interdisciplinary approach to diagnosis, vulberability, risk assessment and graphic information models* [en línea]. S.l.: Taylor & Francis, pp. 338-342. ISBN 978-0-367-36368-0. Disponible en: https://dialnet.unirioja.es/servlet/articulo?codigo=7310243.

GÓMEZ-BUENO, C. y MARTÍN-CRIADO, E., 2020. Response disagreements between parents and children in surveys on family and education. *Revista de Educacion*, vol. 2020, no. 388, pp. 11-38. DOI 10.4438/1988-592X-RE-2020-388-445

Surveys on family and education usually ask parents. Would results change if we ask children? To answer this question, we analyze the disagreements between parents' and children's answers to 16 questions asked in the 2010 Social Survey in Andalusia. This survey asks parents and children from two cohorts of 12 and 16 years old. To measure disagreement we calculate the simple agreement

coefficient, the Kappa coefficient and the Intraclass Correlation Coefficient. Afterwards we compare, with crosstabs, parents' and children's responses to similar questions, controlling by parents' studies. The main result is that disagreements are not large, but they have big consequences: when we control by parents' studies we obtain very different results depending on whom we ask- parents or children-. When we ask parents, higher social strata's practices appear more in compliance with the legitimate discourse on children's education and the differences in these practices between social strata are more often statistically significant. We hypothesize that this is due to two facts: social desirability bias is bigger in parents than in children and this bias acts in different directions in the different social strata. © 2020, Ministry Education and Science. All rights reserved.

GONZALEZ ENRIQUEZ, C., RUIZ JIMENEZ, A.M. y ROMERO PORTILLO, D., 2020. The Decline of the Spanish National Identity during the Economic Crisis. *Revista Espanola De Investigaciones Sociologicas*, no. 170, pp. 95-114. ISSN 0210-5233. DOI 10.5477/cis/reis.170.95.

This article examines the evolution of the strength and nature of the Spanish national identity, considering the years 2002 and 2015, before and after the economic crisis starting in 2008. A correlation between economic factors and Spanish national identity, has been found with this identity having weakened during the analyzed period and with certain civic elements losing weight. To test the specific significance of the economic crisis on this change, an analysis of fictitious cohorts is carried out, relating change in purchasing power of wages for different age groups to changes in the feeling of national identity. The article also relates the evolution of the feeling of Spanish pride with other individual sociodemographic and political factors. Finally, the change in the nature of national identity is analyzed.

GONZALEZ-MORO, I., OLAZAGOITIA-GARMENDIA, A., COLLI, M.L., COBO-VUILLEUMIER, N., POSTLER, T.S., MARSELLI, L., MARCHETTI, P., GHOSH, S., GAUTHIER, B.R., EIZIRIK, D.L., CASTELLANOS-RUBIO, A. y SANTIN, I., 2020. The T1D-associated lncRNA Lnc13 modulates human pancreatic beta cell inflammation by allele-specific stabilization of STAT1 mRNA. *Proceedings of the National Academy of Sciences of the United States of America*, vol. 117, no. 16, pp. 9022-9031. ISSN 0027-8424. DOI 10.1073/pnas.1914353117.

The vast majority of type 1 diabetes (T1D) genetic association signals lie in noncoding regions of the human genome. Many have been predicted to affect the expression and secondary structure of long noncoding RNAs (lncRNAs), but the contribution of these lncRNAs to the pathogenesis of T1D remains to be clarified. Here, we performed a complete functional characterization of a lncRNA that harbors a single nucleotide polymorphism (SNP) associated with T1D, namely, Lnc13. Human pancreatic islets harboring the T1D-associated SNP risk genotype in Lnc13 (rs917997*CC) showed higher STAT1 expression than islets harboring the heterozygous genotype (rs917997*CT). Up-regulation of Lnc13 in pancreatic beta-cells increased activation of the proinflammatory STAT1 pathway, which correlated with increased production of chemokines in an allele-specific manner.

In a mirror image, Lnc13 gene disruption in beta-cells partially counteracts polyinosinic-polycytidylic acid (PIC)-induced STAT1 and proinflammatory chemokine expression. Furthermore, we observed that PIC, a viral mimetic, induces Lnc13 translocation from the nucleus to the cytoplasm promoting the interaction of STAT1 mRNA with (poly[rC] binding protein 2) (PCBP2). Interestingly, Lnc13-PCBP2 interaction regulates the stability of the STAT1 mRNA, sustaining inflammation in beta-cells in an allele-specific manner. Our results show that the T1D-associated Lnc13 may contribute to the pathogenesis of T1D by increasing pancreatic beta-cell inflammation. These findings provide information on the molecular mechanisms by which disease-associated SNP5 in lncRNAs influence disease pathogenesis and open the door to the development of diagnostic and therapeutic approaches based on lncRNA targeting.

HARR, J.C., SCHMID, C.D., MUNOZ-JIMENEZ, C., ROMERO-BUENO, R., KALCK, V., GONZALEZ-SANDOVAL, A., HAUER, M.H., PADEKEN, J., ASKJAER, P., MATTOUT, A. y GASSER, S.M., 2020. Loss of an H3K9me anchor rescues laminopathy-linked changes in nuclear organization and muscle function in an Emery-Dreifuss muscular dystrophy model. *Genes & Development*, vol. 34, no. 7-8, pp. 560-579. ISSN 0890-9369. DOI 10.1101/gad.332213.119.

Mutations in the nuclear structural protein lamin A produce rare, tissue-specific diseases called laminopathies. The introduction of a human Emery-Dreifuss muscular dystrophy (EDMD)-inducing mutation into the C. elegans lamin (LMN-Y59C), recapitulates many muscular dystrophy phenotypes, and correlates with hyper-sequestration of a heterochromatic array at the nuclear periphery in muscle cells. Using muscle-specific emerin Dam-ID in worms, we monitored the effects of the mutation on endogenous chromatin. An increased contact with the nuclear periphery along chromosome arms, and an enhanced release of chromosomal centers, coincided with the disease phenotypes of reduced locomotion and compromised sarcomere integrity. The coupling of the LMN-Y59C mutation with the ablation of CEC-4, a chromodomain protein that anchors H3K9-methylated chromatin at the nuclear envelope (NE), suppressed the muscle-associated disease phenotypes. Deletion of cec-4 also rescued LMN-Y59C-linked alterations in chromatin organization and some changes in transcription. Sequences that changed position in the LMN-Y59C mutant, are enriched for E2F (EFL-2)-binding sites, consistent with previous studies suggesting that altered Rb-E2F interaction with lamin A may contribute to muscle dysfunction. In summary, we were able to counteract the dominant muscle-specific defects provoked by LMNA mutation by the ablation of a lamin-associated H3K9me anchor, suggesting a novel therapeutic pathway for EDMD.

HERCOG, K., ŠTERN, A., MAISANABA, S., FILIPIČ, M. y ŽEGURA, B., 2020. Plastics in cyanobacterial blooms—genotoxic effects of binary mixtures of cylindrospermopsin and bisphenols in HepG2 cells. *Toxins*, vol. 12, no. 4. DOI 10.3390/toxins12040219

Ever-expanding environmental pollution is causing a rise in cyanobacterial blooms and the accumulation of plastics in water bodies. Consequently, exposure to mixtures of cyanotoxins and plastic-related contaminants such as bisphenols (BPs) is of

increasing concern. The present study describes genotoxic effects induced by co-exposure to one of the emerging cyanotoxins—cylindrospermopsin (CYN)—(0.5 µg/mL) and BPs (bisphenol A (BPA), S (BPS), and F (BPF); (10 µg/mL)) in HepG2 cells after 24 and 72 h of exposure. The cytotoxicity was evaluated with an MTS assay and genotoxicity was assessed through the measurement of the induction of DNA double strand breaks (DSB) with the γH2AX assay. The deregulation of selected genes (xenobiotic metabolic enzyme genes, DNA damage, and oxidative response genes) was assessed using qPCR. The results showed a moderate reduction of cell viability and induction of DSBs after 72 h of exposure to the CYN/BPs mixtures and CYN alone. None of the BPs alone reduced cell viability or induced DSBs. No significant difference was observed between CYN and CYN/BPs exposed cells, except with CYN/BPA, where the antagonistic activity of BPA against CYN was indicated. The deregulation of some of the tested genes (CYP1A1, CDKN1A, GADD45A, and GCLC) was more pronounced after exposure to the CYN/BPs mixtures compared to single compounds, suggesting additive or synergistic action. The present study confirms the importance of co-exposure studies, as our results show pollutant mixtures to induce effects different from those confirmed for single compounds. © 2020 by the authors.

JARAIZ-ARROYO, I., MARTIN-CALVO, A., JOSE GUTIERREZ-SEVILLANO, J., BARRANCO, C., DIAZ-DIAZ, N. y CALERO, S., 2020. OCEAN: An Algorithm to Predict the Separation of Biogas Using Zeolites. *Industrial & Engineering Chemistry Research*, vol. 59, no. 15, pp. 7212-7223. ISSN 0888-5885. DOI 10.1021/acs.iecr.9b06451.

In this work, we propose the OCEAN algorithm, a method for the analysis and selection of the best performing material and working conditions for an efficient separation of carbon dioxide and methane from biogas. Molecular simulation and intelligent computational techniques joined forces to generate a reliable database of adsorption values with an optimized number of parameters, allowing an accurate prediction of the adsorption behavior of the materials at any working condition (pressure and temperature). The screening over a large number of possibilities leads to the selection of the optimal combination of material and operational conditions for an enhanced biogas purification process.

LEÓN-MORENO, C., CALLEJAS-JERÓNIMO, J.E., SUAREZ-RELINQUE, C., MUSITU-FERRER, D. y MUSITU-OCHOA, G., 2020. Parental socialization, social anxiety, and school victimization: A mediation model. *Sustainability (Switzerland)*, vol. 12, no. 7. DOI 10.3390/su12072681

The aim of this study was to examine the relationship between parenting dimensions (involvement/acceptance vs. strictness/imposition) and school victimization, considering the possible mediating role of social anxiety. The sample comprised 887 adolescents (52.3% girls) aged between 12 and 16 (M = 13.84 and SD = 1.22) enrolled at three compulsory secondary education («ESO» or «Educacion Secundaria Obligatoria» in Spanish) schools located in the provinces of Valencia,

Teruel and Seville (Spain). A structural equations model was developed using the Mplus 7.4 program. The results obtained indicate that social anxiety mediates the relationship between parenting dimensions (involvement/acceptance vs. strictness/imposition) and school victimization. Finally, the results and their potential theoretical and practical implications are discussed. © 2020 by the authors.

LEZCANO, C., VÁZQUEZ NOGUERA, J.L., PINTO-ROA, D.P., GARCÍA-TORRES, M., GAONA, C. y GARDEL-SOTOMAYOR, P.E., 2020. A multi-objective approach for designing optimized operation sequence on binary image processing. *Heliyon*, vol. 6, no. 4. DOI 10.1016/j.heliyon.2020.e03670

In binary image segmentation, the choice of the order of the operation sequence may yield to suboptimal results. In this work, we propose to tackle the associated optimization problem via multi-objective approach. Given the original image, in combination with a list of morphological, logical and stacking operations, the goal is to obtain the ideal output at the lowest computational cost. We compared the performance of two Multi-objective Evolutionary Algorithms (MOEAs): the Non-dominated Sorting Genetic Algorithm (NSGA-II) and the Strength Pareto Evolutionary Algorithm 2 (SPEA2). NSGA-II has better results in most cases, but the difference does not reach statistical significance. The results show that the similarity measure and the computational cost are objective functions in conflict, while the number of operations available and type of input images impact on the quality of Pareto set. © 2020 The Authors

MANZANO-LÓPEZ, J. y MONJE-CASAS, F., 2020. Asymmetric cell division and replicative aging: a new perspective from the spindle poles. *Current Genetics*, DOI 10.1007/s00294-020-01074-y

Although cell division is usually portrayed as an equitable process by which a progenitor cell originates two identical daughter cells, there are multiple examples of asymmetric divisions that generate two cells that differ in their content, morphology and/or proliferative potential. The capacity of the cells to generate asymmetry during their division is of paramount biological relevance, playing essential roles during embryonic development, cellular regeneration and tissue morphogenesis. Problems with the proper establishment of asymmetry and polarity during cell division can give rise to cancer and neurodevelopmental disorders, as well as to also accelerate cellular aging. Interestingly, the microtubule organizing centers that orchestrate the formation of the mitotic spindle have been described among the cellular structures that can be differentially allocated during asymmetric cell divisions. This mini-review focuses on recent research from our group and others uncovering a role for the non-random distribution of the spindle-associated microtubule organizing centers in the differential distribution of aging factors during asymmetric mitoses and therefore in the maintenance of the replicative lifespan of the cells. © 2020, Springer-Verlag GmbH Germany, part of Springer Nature.

MARTÍNEZ-SÁNCHEZ, S.M., MARTÍNEZ-GARCÍA, T.E. y MUNGUÍA-IZQUIERDO, D., 2020. Clinical, psychopathological, physical, and sleep evolution in adolescents with restrictive anorexia nervosa participating in a day hospital program. *Psychiatry Investigation*, vol. 17, no. 4, pp. 366-374. DOI 10.30773/pi.2020.0016

Objective To analyze the clinical, psychopathological, physical, and sleep-related evolution of adolescents with restricting-type of anorexia nervosa (AN-R) after 10 weeks of a daytime hospital program. Methods Body composition, physical activity and sleep were measured objectively before and after 10 weeks of treatment. In addition, psychopathology and body image disturbances were measured with a self-report questionnaire. Results Fourteen female adolescents with AN-R (14.3±1.6 years old) participated in the study. A significant increase was found in eight of the ten variables for body composition (p<0.05). There were no significant changes in psychopathology, body image disturbances or physical activity. Concerning sleep, a significant, moderately standardized and substantial increase in night latency was found (p=0.002), and there was a significant, small standardized and substantial decrease in night efficiency (p=0.035). Conclusion After 10 weeks of follow-up with adolescent patients with AN-R who attended a day hospital program, there was a positive evolution of body composition. However, with regard to sleep patterns, there was a worsening of latency and night efficiency. Therefore, sleep care should be addressed in acute treatment programs for adolescents with AN-R. © 2020 Korean Neuropsychiatric Association.

MATTERA, M.G., HORNERO-MENDEZ, D. y ATIENZA, S.G., 2020. Carotenoid content in tritordeum is not primarily associated with esterification during grain development. *Food Chemistry*, vol. 310, pp. 125847. ISSN 0308-8146. DOI 10.1016/j.foodchem.2019.125847.

Tritordeums show a significant proportion of lutein esters which increases carotenoid stability and retention throughout the food chain. Esterification is a common means of carotenoid sequestration. A putative association between lutein esters formation acting as a metabolic sink during early stages of grain development and the high carotenoid content of tritordeums is analyzed in this work. Compared to wheat, tritordeums accumulated significantly higher lutein contents from 20 days post anthesis (dpa) but lutein esters were not detected until 36 dpa. Thus esterification is not acting as a metabolific sink before 36 dpa. The presence of lutein esters at late stages of grain development may have a complementary role in carotenoid accumulation by reducing and/or counteracting their catabolism. The differences for lutein esterification among tritordeums suggest the existence of diversity for xanthophyll acyl transferases that could be exploited to increase lutein retention in this cereal and through the food chain.

MOLINA PARÍS, J., MASCARÓS, E., OCAÑA, D., SIMONET AINETO, P. y CAMPO SIEN, C., 2020. Recursos asistenciales en atención primaria para manejo del asma: proyecto Asmabarómetro. *Atención primaria: Publicación oficial de la Sociedad Española de Familia y Comunitaria*, vol. 52, no. 4, pp. 258-266. ISSN

0212-6567. 10.1016/j.aprim.2018.09.009

Objective The objective of this study was to describe the current provision of basic resources for asthma management in Primary Health Care (PHC).DesignCross-sectional study, with an ad hoc quantitative survey.Location and participantsA total

MORENO LAMA, L. y YÉLAMOS LÓPEZ, J., 2020. *Understanding the immunomodulatory role of parp proteins in the response against tumors* [en línea]. S.l.: s.n. Disponible en: https://dialnet.unirioja.es/servlet/tesis?codigo=266522.

Introduction and theoretical context: Poly(ADP-ribose)-polymerases (PARP)-1 and PARP-2 play an essential role in the DNA damage response. Based on this effect of PARPs in the malignant cell itself, PARP inhibitors have emerged as new therapeutic approache.

MUNIZ-GONZALEZ, J., GIRALDEZ-COSTAS, V., GONZALEZ-GARCIA, J., ROMERO-MORALEDA, B. y ANGEL CAMPOS-VAZQUEZ, M., 2020. Positional differences in the most demanding conditional phases in female football competition. *Ricyde-Revista Internacional De Ciencias Del Deporte*, vol. 16, no. 60, pp. 199-213. ISSN 1885-3137. DOI 10.5232/ricyde2020.06006.

The purpose of this study was to analyze the demands of maximum conditional requirements periods (PMI) in official women's competition football matches.18 professional players (1(a)Spanish Division, Liga Iberdrola) participated in this study. Players were analyzed depending on their specific position: central defender (DC), lateral defender (DL), midfield player (MC), midband (MB) and forward (DE). PMI were registered in 3 time windows (1, 5 and 10 minutes), in 15 official competition matches by GPS devices (10 Hz) and based on four study variables: total distance covered (DR), sprint-distance (D-SP>21km.h-1), high metabolic load distance (D-APM>20w.kg-1) and acceleration density (AD). In addition, the number of sub-maximal occurrences (intensity >85% PMI) in each time window was assessed. DC and DE reached values significantly lower than MC in all analyzed time windows. While the MC reflected D-SP values significantly lower than DL, MB and DE in all time windows. Moreover, the DC reached D-APM values significantly lower than DL, MC, MB and DE (time windows 5' and 10'). Regarding AD, the DC, MC and DE reached values significantly lower than DL and MB (time window 1'). The number of sub-maximal occurrences in competition was significantly lower in the D-SP and D-APM variables, compared to DR and AD in all time windows. These results could serve as a reference in the design of training tasks, aimed at simulating of PMI conditional requirements.

NUNEZ, F.J., GALIANO, C., MUNOZ-LOPEZ, A. y FLORIA, P., [sin fecha]. Is possible an eccentric overload in a rotary inertia device? Comparison of force profile in a cylinder-shaped and a cone-shaped axis devices. *Journal of Sports Sciences*, ISSN 0264-0414. DOI 10.1080/02640414.2020.1754111.

The aims of this study were to compare the force profile of using a horizontal cylinder-shaped axis or a vertical cone-shaped axis to provide resistance in rotary inertia devices, and to report the evolution of kinetic and kinematic variables in experienced athletes during a half-squat exercise. Twenty-two healthy active men participated in the assessment of time, peak velocity, peak force, time to reach the peak force, average force, impulse, and range of movement, during a half-squat incremental test performed on conical inertial device (CP) and on cylinder inertial device (YY). The analysis showed that YY during CON-ECC phased generates substantial higher peak_force, mean_force, impulse, time, and a lower peak_velocity, than CP. We never obtained eccentric overload for peak_force or mean_force. CP offers less resistance to accelerate-decelerate the movement with respect to YY, we need checking whether eccentric overload it is being produced, and the impulse was the only kinetic variable that was able to discriminate between the inertias and devices.

ORTIZ, Pilar, PINTO PUERTO, F., VERHAGEN, P. y PRIETO, A.J., 2020. *Science and digital technology for cultural heritage: Interdisciplinary approach to diagnosis, vulberability, risk assessment and graphic information models* [en línea]. S.l.: Taylor & Francis. ISBN 978-0-367-36368-0. Disponible en: https://dialnet.unirioja.es/servlet/libro?codigo=754940.

ORTIZ, Rocío, ORTIZ, P., GÓMEZ MORÓN, M.A., TIRADO HERNÁNDEZ, A. y BECERRA, J., 2020. Non-destructive techniques applied to the study and diagnosis of ceramic and glazed terracotta tombs in Omnium Sanctorum church (Seville, Spain). En: Science and digital technology for cultural heritage: Interdisciplinary approach to diagnosis, vulberability, risk assessment and graphic information models, *Science and digital technology for cultural heritage: Interdisciplinary approach to diagnosis, vulberability, risk assessment and graphic information models* [en línea]. S.l.: Taylor & Francis, pp. 348-352. ISBN 978-0-367-36368-0. Disponible en: https://dialnet.unirioja.es/servlet/articulo?codigo=7310241.

PEÑATE, X., PRAENA-FERNÁNDEZ, J.M., PAREJA, P.R., ENGUIX-RIEGO, M.V., PAYÁN-BRAVO, L., VIEITES, B., GOMEZ-IZQUIERDO, L., OLASOLO, J.J., CAMPO, E.R., REYES, J.C., CHÁVEZ, S. y GUERRA, J.L.L., 2020. Overexpression of canonical prefoldin associates with the risk of mortality and metastasis in non-small cell lung cancer. *Cancers*, vol. 12, no. 4. DOI 10.3390/cancers12041052

Canonical prefoldin is a protein cochaperone composed of six different subunits (PFDN1 to 6). PFDN1 overexpression promotes epithelial–mesenchymal transition (EMT) and increases the growth of xenograft lung cancer (LC) cell lines. We investigated whether this putative involvement of canonical PFDN in LC translates into the clinic. First, the mRNA expression of 518 non-small cell LC (NSCLC) cases from The Cancer Genome Atlas (TCGA) database was evaluated. Patients with PFDN1 overexpression had lower overall survival (OS; 45 vs. 86 months; $p = 0.034$). We

then assessed the impact of PFDN expression on outcome in 58 NSCLC patients with available tumor tissue samples. PFDN1, 3, and 5 overexpression were found in 38% (n = 22), 53% (n = 31), and 41% (n = 24) of tumor samples. PFDN1, 3, and 5 overexpression were significantly associated with lower OS, lower disease-free survival (DFS), and lower distant metastasis-free survival (DMFS) for PFDN1 and 3 with a trend for PFDN5. In multivariate analysis, PFDN5 retained significance for OS (hazard ratio (HR) 2.56; p = 0.007) and PFDN1 for DFS (HR 2.53; p = 0.010) and marginally for DMFS (HR 2.32; p = 0.053). Our results indicate that protein response markers, such as PFDN1, 3, and 5, may complement mRNA signatures and be useful for determining the most appropriate therapy for NSCLC patients. © 2020 by the authors. Licensee MDPI, Basel, Switzerland.

RODRIGUEZ-IZQUIERDO, R.M., GONZALEZ FALCON, I. y GOENECHEA PERMISAN, C., 2020. Teacher beliefs and approaches to linguistic diversity. Spanish as a second language in the inclusion of immigrant students. *Teaching and Teacher Education*, vol. 90, pp. 103035. ISSN 0742-051X. DOI 10.1016/j.tate.2020.103035.

This study examines teachers' beliefs regarding linguistic diversity and their approaches to teaching Spanish as a second language (SSL) in the inclusion of immigrant students whose first language is not Spanish. Grounded in a qualitative study in multicultural schools in Andalusia (Spain), we compared the voices of two groups of teachers: regular teachers and specialist language teachers. Teachers reflected monolingual beliefs -from assimilationist to deficit approaches- and attached great importance to the role that SSL has for immigrant students. Results indicated the need for professional development for teachers to promote multilingualism based on beliefs of language-as-resource or language-as-right. (c) 2020 Elsevier Ltd. All rights reserved.

RODRÍGUEZ-SEGUEL, E., VILLAMAYOR, L., ARROYO, N., DE ANDRÉS, M.P., REAL, F.X., MARTÍN, F., CANO, D.A. y ROJAS, A., 2020. Loss of GATA4 causes ectopic pancreas in the stomach. *Journal of Pathology*, vol. 250, no. 4, pp. 362-373. DOI 10.1002/path.5378

Pancreatic heterotopia is defined as pancreatic tissue outside its normal location in the body and anatomically separated from the pancreas. In this work we have analyzed the stomach glandular epithelium of Gata4flox/flox; Pdx1-Cre mice (Gata4KO mice). We found that Gata4KO glandular epithelium displays an atypical morphology similar to the cornified squamous epithelium and exhibits upregulation of forestomach markers. The developing gastric units fail to form properly, and the glandular epithelial cells do not express markers of gastric gland in the absence of GATA4. Of interest, the developing glands of the Gata4KO stomach express pancreatic cell markers. Furthermore, a mass of pancreatic tissue located in the subserosa of the Gata4KO stomach is observed at adult stages. Heterotopic pancreas found in Gata4-deficient mice contains all three pancreatic cell lineages: ductal, acinar, and endocrine. Moreover, Gata4 expression is downregulated in ectopic pancreatic tissue of some human biopsy samples. © 2019 Pathological Society of Great Britain and Ireland. Published by John Wiley & Sons, Ltd. © 2019 Pathological Society of Great Britain and Ireland.

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ROMERO-MUNIZ, C., POU, P. y PEREZ, R., 2020. Induced magnetism in oxygen-decorated N-doped graphene. *Carbon*, vol. 159, pp. 102-109. ISSN 0008-6223. DOI 10.1016/j.carbon.2019.12.007.

Covalent functionalization of two-dimensional materials is a versatile tool to induce deep changes in their initial properties leading to new functionalities. Unfortunately, in the case of graphene its poor chemical reactivity turns this task rather difficult from the practical point of view. In this work, we show how the adsorption of external species can be controlled by substitutional nitrogen atoms properly distributed through the graphene layer. Nitrogen atoms can be experimentally incorporated in the graphene lattice with high precision and tunable concentration and they can be used as active sites to trigger an ordered functionalization. By means of first-principles calculations we study the adsorption of single and multiple oxygen atoms in the vicinity of substitutional N defects, revealing a rich scenario regarding adsorption configurations and electronic properties. In particular, we find a stable structure involving three oxygen atoms that induces a robust magnetic behavior in the graphene layer. The great chemical variability found in the oxygen-decorated N-doped structures presented in this study constitutes a valuable platform for the future development of graphene-based electronic and sensing devices. (C) 2019 Elsevier Ltd. All rights reserved.

RUIZ JIMENEZ, A.M., ROMERO PORTILLO, D. y NAVARRO ARDOY, L., [sin fecha]. Social patriotism: populist glue for a multinational democracy. *National Identities*, ISSN 1460-8944. DOI 10.1080/14608944.2020.1735326.

This article defines contemporary social patriotism as a type of welfare nationalism, with characteristics of an achievable civic form of maintenance nationalism. It investigates the presence of this type of nationalism in contemporary Spain, pointing out the novelty of the explicit linkage of patriotism and a reformist agenda by leftist parties. It also argues that social patriotism has the leverage for creating transversal identities within a multinational democracy such as Spain. After testing our hypotheses using qualitative and quantitative data, we discuss the implications of these findings within a wider European context.

RUIZ-BALLESTEROS, E. y RÍO, J.M.V.D., 2020. Bodies in the environment: Reflections for an ethnography of environmental perceptions. *AIBR Revista de Antropologia Iberoamericana*, vol. 15, no. 1, pp. 105-128. DOI 10.11156/aibr.150106

Perceptions are a central analytical tool to environmental anthropology. Studying perceptions implies, from a phenomenological perspective, a redefinition of ethnography and the role of the ethnographer. Using the analysis of unplanned experiences of ethnographic fieldwork, our aim is to unravel some of the

potentialities and limits of non-discursive approaches to environmental perception. Experiences wherein the corporality of the researcher — as an ethnographic tool — and her/his estrangement play a central role. © 2020, Asociacion de Antropologos Iberoamericanos en Red. All rights reserved.

SÁNCHEZ-MORENO, M., CORNEJO-DAZA, P.J., GONZÁLEZ-BADILLO, J.J. y PAREJA-BLANCO, F., 2020. Effects of Velocity Loss During Body Mass Prone-Grip Pull-up Training on Strength and Endurance Performance. *Journal of strength and conditioning research*, vol. 34, no. 4, pp. 911-917. DOI 10.1519/JSC.0000000000003500

Effects of velocity loss during body mass prone-grip pull-up training on strength and endurance performance. J Strength Cond Res 34(4): 911-917, 2020-This study aimed to analyze the effects of 2 pull-up (PU) training programs that differed in the magnitude of repetition velocity loss allowed in each set (25% velocity loss «VL25» vs. 50% velocity loss «VL50») on PU performance. Twenty-nine strength-trained men (age = 26.1 ± 6.3 years, body mass [BM] = 74.2 ± 6.4 kg, and 15.9 ± 4.9 PU repetitions to failure) were randomly assigned to 2 groups: VL25 (n = 15) or VL50 (n = 14) and followed an 8-week (16 sessions) velocity-based BM prone-grip PU training program. Mean propulsive velocity (MPV) was monitored in all repetitions. Assessments performed at pre-training and post-training included estimated 1 repetition maximum; average MPV attained with all common external loads used during pre-training and post-training testing (AVinc); peak MPV lifting one's own BM (MPVbest); maximum number of repetitions to failure lifting one's own BM (MNR); and average MPV corresponding to the same number of repetitions lifting one's own BM performed during pre-training testing (AVMNR). VL25 attained significantly greater gains than VL50 in all analyzed variables except in MNR ($P < 0.05$). In addition, VL25 improved significantly ($P < 0.001$) in all the evaluated variables while VL50 remained unchanged. In conclusion, our results suggest that once a 25% velocity loss is achieved during PU training, further repetitions did not elicit additional gains and can even blunt the improvement in strength and endurance performance.

SANTERO, E. y DÍAZ, E., 2020. Special issue: Genetics of biodegradation and bioremediation. *Genes*, vol. 11, no. 4. DOI 10.3390/genes11040441

Many different biodegradation pathways, both aerobic and anaerobic, have already been characterised, and the phylogenetic relationships among catabolic genes within the different types of pathways have been studied. However, new biodegradation activities and their coding genes are continuously being reported, including those involved in the catabolism of emerging contaminants or those generally regarded as non-biodegradable. Gene regulation is also an important issue for the efficient biodegradation of contaminants. Specific induction by the substrate and over-imposed global regulatory networks adjust the expression of the biodegradation genes to the bacterial physiological needs. New biodegradation pathways can be assembled in a particular strain or in a bacterial consortium by recruiting biodegradation genes from different origins through horizontal gene transfer. The abundance and diversity of biodegradation genes, analysed by either genomic or

metagenomic approaches, constitute valuable indicators of the biodegradation potential of a particular environmental niche. This knowledge paves the way to systems metabolic engineering approaches to valorise biowaste for the production of value-added products. © 2020 by the authors. Licensee MDPI, Basel, Switzerland.

SANTOS-ROLDAN, L., PALACIOS-FLORENCIO, B. y BERBEL-PINEDA, J.M., 2020. The textile products labelling analysis and requirements. *Fashion and Textiles*, vol. 7, no. 1, pp. 11. ISSN 2198-0802. DOI 10.1186/s40691-019-0202-4.

The textile sector is one of the most representative of Spanish industry, contributing to the wealth of the country with close to 10% of the business fabric in Spain. However, in spite of this daily consumption little is known about the guarantees of traceability clothes labelling must inform about. The purpose of this study is to present a work of analysis of the compliance with the content of the labelling in this sector. For his objective, a research was developed through the consideration of 32 businesses of the textile sector in the city of Cordoba (Spain) where were photographed each label for its later analysis and a confirmation of the regulation. The results show that the majority of labels are incomplete and insufficient. Therefore, it's necessary the existence of an European public organism with a competence to accredit the manufacturing, distribution and commercialization of textile garments, protecting the rights of workers and the consumers' access to information.

TIRADO HERNÁNDEZ, A., ORTIZ, R., ORTIZ, P., GÓMEZ MORÓN, M.A. y BECERRA, J., 2020. In situ study by XRF and LDV of mural paintings in Magdalena church (Seville, Spain). En: Science and digital technology for cultural heritage: Interdisciplinary approach to diagnosis, vulberability, risk assessment and graphic information models, *Science and digital technology for cultural heritage: Interdisciplinary approach to diagnosis, vulberability, risk assessment and graphic information models* [en línea]. S.l.: Taylor & Francis, pp. 343-347. ISBN 978-0-367-36368-0. Disponible en: https://dialnet.unirioja.es/servlet/articulo?codigo=7310242.

TISSIERES, V., GEIER, F., KESSLER, B., WOLF, E., ZELLER, R. y LOPEZ-RIOS, J., 2020. Gene Regulatory and Expression Differences between Mouse and Pig Limb Buds Provide Insights into the Evolutionary Emergence of Artiodactyl Traits. *Cell Reports*, vol. 31, no. 1, pp. UNSP 107490. ISSN 2211-1247. DOI 10.1016/j.celrep.2020.03.054.

Digit loss/reductions are evolutionary adaptations in cursorial mammals such as pigs. To gain mechanistic insight into these processes, we performed a comparative molecular analysis of limb development in mouse and pig embryos, which revealed a loss of anterior-posterior polarity during distal progression of pig limb bud development. These alterations in pig limb buds are paralleled by changes in the mesenchymal response to Sonic hedgehog (SHH) signaling, which is altered

upstream of the reduction and loss of Fgf8 expression in the ectoderm that overlaps the reduced and vestigial digit rudiments of the pig handplate, respectively. Furthermore, genome-wide open chromatin profiling using equivalent developmental stages of mouse and pig limb buds reveals the functional divergence of about one-third of the regulatory genome. This study uncovers widespread alterations in the regulatory landscapes of genes essential for limb development that likely contributed to the morphological diversion of artiodactyl limbs from the pentadactyl archetype of tetrapods.

TRULL, O., GARCÍA-DÍAZ, J.C. y TRONCOSO, A., 2020. Stability of multiple seasonal holt-winters models applied to hourly electricity demand in Spain. *Applied Sciences (Switzerland)*, vol. 10, no. 7. DOI 10.3390/app10072630

Electricity management and production depend heavily on demand forecasts made. Anymismatch between the energy demanded with respect to that produced supposes enormous losses for the consumer. Transmission System Operators use time series-based tools to forecast accurately the future demand and set the production program. One of themost effective and highly usedmethods are Holt-Winters. Recently, the incorporation of themultiple seasonal Holt-Wintersmethods has improved the accuracy of the predictions. These forecasts, depend greatly on the parameters with which the model is constructed. The forecasters need to deal with these parameters values when operating the model. In this article, the parameters space of the multiple seasonal Holt-Winters models applied to electricity demand in Spain is analysed and discussed. The parameters stability analysis leads to forecasters better understanding the behaviour of the predictions and managing their exploitation efficiently. The analysis addresses different time windows, depending on the period of the year as well as different training set sizes. The results show the influence of the calendar effect on these parameters and if it is necessary or not to update them in order to obtain a good accuracy over time. © 2020 by the authors.

YANG, G., PING, J. y SEGOVIA, J., 2020. Doubly charmed pentaquarks. *Physical Review D*, vol. 101, no. 7, pp. 074030. ISSN 2470-0010. DOI 10.1103/PhysRevD.101.074030.

The LHCb collaboration, using its full data set from runs 1 and 2, announced in 2019 a surprising update of the hidden-charm pentaquark states P-c(4380)(+) and P-c(4450)(+), observed in 2015. A new state, P-c(4312)(+), was clearly seen at lower energies; furthermore, the original P-c(4450) resonance was resolved into two individual states, named the P-c(4440)(+) and the P-c(4457)(+). Motivated by the fact that these new hidden-charm pentaquark states were successfully predicted by our chiral quark model, we extend herein such study to the doubly charmed sector. The analyzed total spin and parity quantum numbers are J(P) = 1/2-, 3/2- and in 5/2- the I = 1/2 and 3/2 isospin channels. We find several possible narrow baryon-meson resonances (theoretical masses in parenthesis): IJ(P) = 1/21/2- Sigma D-c(4356), 1/23/2- Sigma D-c(4449), 3/21/2- Sigma D-c(4431), Sigma D-c(4446), Sigma D-c*(4514) and Xi(ccc rho)*(4461) whose widths are

4.8, 8.0, 2.6, 2.2, 4.0 and 3.0 MeV, respectively. Moreover, one shallow bound state is found, too, with quantum numbers IJ(P) = 1/23/2- Xi(cc)*pi(3757). These doubly charmed pentaquark states are expected to be identified in future experiments.

ZADERENKO PARTIDA, A.P., ORTIZ, P., NÚÑEZ, T. y BECERRA, J., 2020. Study of solvents and their implication in the in-depth penetration of nanolimes in different limestones. En: Science and digital technology for cultural heritage: Interdisciplinary approach to diagnosis, vulberability, risk assessment and graphic information models, *Science and digital technology for cultural heritage: Interdisciplinary approach to diagnosis, vulberability, risk assessment and graphic information models* [en línea]. S.l.: Taylor & Francis, pp. 312-316. ISBN 978-0-367-36368-0. Disponible en: https://dialnet.unirioja.es/se