Producción científica, enero 2022

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

Nº. Boletín 1/2022

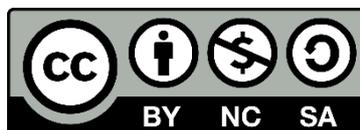## Biblioteca/CRAI

Servicio de Apoyo a la Investigación

Sevilla, febrero de 2022

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.

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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.

Web of Science

Estrategia de búsqueda avanzada:

OG = (CSIC - Andalusian Center for Developmental Biology (CABD) OR CSIC - Centro Andaluz de Biologia Molecular y Medicina Regenerativa (CABIMER) OR Universidad Pablo de Olavide) Período de tiempo=Año hasta la fecha

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 (LIMITTO (PUBYEAR , 2022))

Dialnet

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

Fecha de recolección de datos:

Dialnet: 7/02/2022

Web of Sience y Scopus: 08/02/2022

Publicaciones

BAENA-MARIN, M., ROJAS-JARAMILLO, A., GONZALEZ-SANTAMARIA, J., RODRIGUEZ-ROSELL, D., PETRO, J.L., KREIDER, R.B. y BONILLA, D.A., 2022. Velocity-Based Resistance Training on 1-RM, Jump and Sprint Performance: A Systematic Review of Clinical Trials. *Sports*, vol. 10, no. 1. DOI 10.3390/sports10010008.

Weight resistance training (RT) has been shown to positively influence physical performance. Within the last two decades, a methodology based on monitoring RT through movement velocity (also called velocity-based resistance training, VBRT) has emerged. The aim of this PRISMA-based systematic review was to evaluate the effect of VBRT programs on variables related to muscle strength (one-repetition maximum, 1-RM), and high-speed actions (vertical jump, and sprint performance) in trained subjects. The search for published articles was performed in PubMed/MEDLINE, SPORT Discus/EBSCO, OVID, Web of Science, and EMBASE databases using Boolean algorithms independently. A total of 22 studies met the inclusion criteria of this systematic review (a low-to-moderate overall risk of bias of the analyzed studies was detected). VBRT is an effective method to improve 1-RM, vertical jump and sprint. According to the results of the analyzed studies, it is not necessary to reach high muscle failure in order to achieve the best training results. These findings reinforce the fact that it is possible to optimize exercise adaptations with less fatigue. Future studies should corroborate these findings in female population.

BARZABAL, L.T., GIMENO, A.M., MARTÍNEZ, A.J. y HERMOSILLA RODRÍGUEZ, J.M., 2022. Pablo de Olavide University teaching staff's perception of their Digital Teaching Competence. *Pixel-Bit, Revista de Medios y Educacion*, no. 63, pp. 35-64. DOI 10.12795/PIXELBIT.91943.

Teaching Digital Competence is becoming a consolidated line of research, being the focus of numerous investigations. The European Commission published in 2017 the Digital Competence Framework for Teachers: DigCompEdu, in which the present study is framed, and whose main objective is to ascertain what perception the teaching staff of the Pablo de Olavide University have about their level of digital competence. With a non-experimental design, and under a descriptive approach, this study focused on the participation of 214 teachers who were administered the questionnaire (DigComEdu Check-in). We analyze the central tendency and dispersion in each dimension of the questionnaire, along with contrast statistics to assess the magnitude of the differences. The main results show a young sample, but with more than 10 years of experience, who recognise that they have been familiar with the use of information and communication technologies (ICT) as an educational tool for some time and who recognise themselves as having an «Acceptable» level of Digital Competence, standing out in «digital engagement» and assuming a low level of competence in terms of evaluation and feedback competencies, which indicates the need to carry out specific teacher training plans. © 2022 Universidad de Sevilla. All rights reserved.

BRIALES BELLÓN, I., 2022. Cómo investigar en Traducción Audiovisual: archivos, metodología y herramientas. *Tonos digital: Revista de estudios filológicos*, no. 42, pp. 8- 0. ISSN 1577-6921.

Corpas Pastor (2008: 89) notes that corpus linguistics is considered a valid methodological approach to language studies, relevant to both translation and interpreting insofar that it can be used to analyse and describe a wide range of discourse types, reflect on translation units and re-examine the concept of equivalence. Taking as its starting point the fact that it is possible to work with corpora in such varied undertakings as researching language variations, performing professional translation/interpreting tasks and developing language teaching methods, this paper describes the stages involved in comparing and contrasting the original script for the film Bienvenue chez les Ch´tis and its dubbed and subtitled renderings in Spanish. We highlight the importance of properly preparing subject material to be able to make the most of its potential. In this particular case, we used the Final Draft, AntConc and WinAlign programmes to analyse the texts in depth, easily identify segments of interest and create translation units: a systematic method which enables research into Audiovisual Translation to be carried out in a rigorous manner.

BUI, K.-T.T., TORRES, J.F., GUTIERREZ-AVILES, D., NHU, V.-H., BUI, D.T. y MARTINEZ-ALVAREZ, F., 2022. Deformation forecasting of a hydropower dam by hybridizing a long short-term memory deep learning network with the coronavirus optimization algorithm. *Computer-Aided Civil and Infrastructure Engineering*, ISSN 1093-9687. DOI 10.1111/mice.12810.

The safety operation and management of hydropower dam play a critical role in social-economic development and ensure people's safety in many countries; therefore, modeling and forecasting the hydropower dam's deformations with high accuracy is crucial. This research aims to propose and validate a new model based on deep learning long short-term memory (LSTM) and the coronavirus optimization algorithm (CVOA), named CVOA-LSTM, for forecasting the deformations of the hydropower dam. The second-largest hydropower dam of Vietnam, located in the Hoa Binh province, is focused. Herein, we used the LSTM to establish the deformation model, whereas the CVOA was utilized to optimize the three parameters of the LSTM, the number of hidden layers, the learning rate, and the dropout. The efficacy of the proposed CVOA-LSTM model is assessed by comparing its forecasting performance with state-of-the-art benchmarks, sequential minimal optimization for support vector regression, Gaussian process, M5' model tree, multilayer perceptron neural network, reduced error pruning tree, random tree, random forest, and radial basis function neural network. The result shows that the proposed CVOA-LSTM model has high forecasting capability (R-2 = 0.874, root mean square error = 0.34, mean absolute error = 0.23) and outperforms the benchmarks. We conclude that CVOA-LSTM is a new tool that can be considered to forecast the hydropower dam's deformations.

CAMARERO, J.J., SÁNCHEZ-SALGUERO, R., SANGÜESA-BARREDA, G., LECHUGA, V., VIÑEGLA, B., SECO, J.I., TAÏQUI, L., CARREIRA, J.A. y LINARES, J.C., 2022. Reply to the letter to editor regarding Camarero et al. (2021): Overgrazing and pollarding threaten Atlas cedar conservation under forecasted aridification regardless stakeholders' nature. *Forest Ecology and Management* [en línea], vol. 503. DOI 10.1016/j.foreco.2021.119779.

CAMBRA-FIERRO, J., FUENTES-BLASCO, M., GAO, L.X., MELERO-POLO, I. y TRIFU, A., 2022. The influence of communication in destination imagery during COVID-19. *Journal of Retailing and Consumer Services* [en línea], vol. 64. DOI 10.1016/j.jretconser.2021.102817.

A little over a year after the pandemic and ensuing state-of-emergency were officially declared, it seems timid signs of budding recovery are finally appearing. This paper presents empirical evidence related with a destination recovery during the COVID-19 pandemic. Data were collected during the early reopening of tourism in Spain (Easter break). This research evaluates the links between communication -both DMO (destination marketing organization) and tourist-generated communication- and destination awareness, imagery and perceived health safety. We also analyzed the impact of travel frequency on the entire construct set, as well as its role as potential moderator in the causal model. Results allow us to put forth a series of recommendations for tourist destination managers, aimed at meeting the challenges of progressively opening up tourism and mobility as the COVID-19 pandemic reality continues to evolve. © 2021 Elsevier Ltd

CAMBRA-FIERRO, J.J. y PEREZ, L., 2022. (Re)thinking smart in rural contexts: A multi-country study. *Growth and Change*, ISSN 0017-4815. DOI 10.1111/grow.12612.

Interest in the concept of smart cities and the process of smartization has increased in recent years, as reflected in the number of studies published in academic journals. Research has offered multiple perspectives to understand the risks and challenges posed by the growing population in urban areas, highlighting plans and actions that need to be undertaken. In contrast to smart cities, smartization in rural areas has received only scarce attention, despite the beneficial effect that the transformation of rural areas could have for society. Smart villages face different issues such as depopulation and the need to attract young people if they are to survive. Consequently, we need to rethink the impact of technology and the overall idea of becoming "smart" in this context. Therefore, this paper aims to define "smart" in the context of rural areas. In terms of methodology, the research takes the Smart Rural 21 project as case study. The results consider related aspects of sustainability, governance, the role of technology and the need to use a strategic approach that ensures quality of life in rural areas.

CAMPO TEJEDOR, A. del, 2022. Barberías flamencas: Medio milenio de un contexto de música andaluza. *Andalucía en la historia*, no. 74, pp. 8-13. ISSN 1695-1956.

Al menos desde el siglo XVI, los barberos fueron célebres por su afición a la guitarra. En Andalucía, las barberías se convirtieron, con los años, en improvisadas tertulias flamencas, donde los cabales amenizaban la espera con cante y guitarreo, cuando no acababan formando auténticas juergas. Frente al toque punteado de los guitarristas de concierto, los barberos tenían fama de tocaores cortos, hasta el punto de que el tosco rasgueo de la sonanta fue proverbialmente conocido como «toque a lo barbero», lo que no les privó de convertirse con el tiempo en conocidos guitarristas o ejercer de maestros de otros flamencos.

CARAVACA-SANCHEZ, F., PASTOR-SELLER, E., BARRERA-ALGARIN, E. y LUIS SARASOLA, J., 2022. Burnout, social support, anxiety and job satisfaction among social work professionals. *Interdisciplinaria*, vol. 39, no. 1, pp. 179-194. ISSN 1668-7027. DOI 10.16888/interd.2022.39.1.11.

Burnout, defined with its most agreed upon definition, given in 1982 by Christina Maslach (Maslach Burnout Inventory), is a prolonged response to chronic emotional and interpersonal stressors on the job. Individuals suffering from burnout experience emotional exhaustion, depersonalization of clients, and reduced feelings of personal accomplishment. The well-documented day-to-day and long-term experiences of job stress and burnout among social services institutions increasingly raise concerns among leaders, policy makers and scholars. In this senses, previous research conducted internationally has shown a high prevalence of burnout among Social Workers collective. The burnout in Social Work is related to three types of factors: individual (seniority, gender, training and qualification, personality attributes, etc.), organizational (role stress, uncertainty, work overload, lack of human resources, etc.), and contextual. However, it is not frequent to find studies that analyze this occupational health problem in Spain. Current research explores the prevalence of burnout (using the Maslach Burnout Inventory) and associated risk factors like the demographic, occupational, perceived social support (Duke-UNC Functional Social Support Questionnaire), anxiety (General- ized Anxiety Disorder) and job satisfaction levels (Overall Job Satisfaction) among social workers in Spain. Higher perceived social support decreases; higher anxiety is linked to higher burnout, and higher job satisfaction is linked to lower burnout incidence. Participants: the study's sample was composed of a total of 252 subjects, of which 88.5 % (n = 223) were women, and 11.5 % (n = 29) were men, all social workers from the Professional Associations of Social Work of Seville and Murcia, with an average age of 40.7 years. The information was collected online via the Google Questionnaire application at the end of 2017. The questionnaire was divided into four different blocks: demographic (including age, sex, marital status and number of children) and labor (seniority, employment sector and employment context) variables; perceived social support (Duke-UNC functional social support questionnaire); Generalized Anxiety disorder scale (GAD 7); Overall Job Satisfaction questionnaire; and burnout (Maslach Burnout Inventory), whose 22 questions measure emotional exhaustion, low depersonalization and personal fulfillment. Based on the prevalence of burnout, 46.8 % (n = 118) showed high emotional exhaustion, 56.7 % (n = 143) high depersonalization and 62.3 % (n = 157) low personal achievement. Likewise, after logistic regression analysis, it is observed how certain variables are statistically significantly associated with the different

dimensions of burnout, specifically, emotional exhaustion was associated with older age (OR = 1.028; p = .038), work seniority (OR = 1.032; p = .038) and job satisfaction (OR = .978; p = .009). High depersonalization was positively associated with working in social services (OR = 1.726; p = .018), perceived social support (OR = .969; p = .026) and anxiety (OR = 1.213; p = .037). Finally, low personal achievement was statistically associated with perceived social support (OR = .969; p = .026) and anxiety (OR = 1.213; p = .037). Current results could be effective when carrying out prevention strategies aimed at reducing the problem of burnout among Social Work professionals in Spain. The socio-economic and political context of Spain characterized by austerity in recent years has negatively affected the public sector and social services through restrictions on access to rights, precarious working conditions for social workers, reduction of templates and work teams, elimination of public services and benefits, progressive privatization and reduction of budgets for social policies, increasing the workload of social workers in Spain. Current results show the degree of dissatisfaction among social workers in Spain, calling on other researchers to analyze the protective factors that can cushion the appearance and negative effects of burnout.

CARDONA LINARES, A.J., ÁNGEL HERRADOR SÁNCHEZ, J. y CALVO LLUCH, Á., 2022. Descripción de la metodología aplicada en una investigación cualitativa en Expresión Corporal y Danza: la vida y obra de Patricia Stokoe. *Retos: nuevas tendencias en educación física, deporte y recreación*, no. 45, pp. 1-11. ISSN 1579-1726.

The beginnings of corporal expression have been and are being analyzed from different perspectives. This work has attempted to delve into the beginnings that occurred throughout the 20th century, when this emerging discipline was nourished by multiple sources: society, arts, education, psychology, etc. Patricia Stokoe (1919-1996), devoted her life to the study of body language-dance. Considered one of the initiators in this field (Kalmar, 2005; Cardona, 2009; Ruano & Sánchez, 2009), her work continues to be a reference nowadays and it is present in a large part of the scientific production generated in this discipline. It is in the research by Cardona (2009), who carried out a doctoral thesis, where the study of the life and work of the author has been deepened. We present here how this qualitative research was carried out. A cross-sectional descriptive treatment was carried out, using the analysis of documents and interviews. We conducted more than thirty interviews between Buenos Aires and Spain, establishing 4 dimensions / fields that provided structure and clarity to the study: life analysis; analysis of the influences on life and work; analysis of the work; bibliographic essay of the work. We obtained results that make the life and work of Patricia Stokoe one of the pioneers in the construction and genesis of corporal expression.

CARO-GONZALEZ, F.J., CRUZ-DIAZ, R. y ROMAN-GRAVAN, P., 2022. Historical evolution of the Comunicar Group. An analysis from the Communication area. *Revista Espanola de Documentacion Cientifica*, vol. 45, no. 1. ISSN 0210-0614. DOI 10.3989/redc.2022.1.1844.

The publication in high-impact scientific journals constitutes the axis around which scientific and academic society pivots. This study addresses a contextual approach

to the process of creation and consolidation of an academic journal, taking the Comunicar journal, which is ranked at the highest positions in the international rankings in the areas of education, communication and cultural studies, as a case of study. The process is inserted in the context of the history of communication research in Spain. A single case qualitative research strategy is carried out using in-depth interviews and documentary analysis of the Journal itself. The results show the relevance of contextual and human elements in the development of this publication.

COBOS-SANCHIZ, D., PEREA-RODRIGUEZ, M.-J., MORÓN-MARCHENA, J.-A. y MUÑOZ-DÍAZ, M.-C., 2022. Positive Adult Education, Learned Helplessness and the Pygmalion Effect. *International Journal of Environmental Research and Public Health* [en línea], vol. 19, no. 2. DOI 10.3390/ijerph19020778.

Positive education is seen as a transformative methodological approach capable of improving the act of teaching and learning and, above all, essential for the development of students' personal skills and competences. However, few studies have been carried out on this topic in the field of adult and continuing education; instead, they have been published mainly in the field of formal education and at school age. This study works with a sample of 399 people over 16 years of age and students of the Universidad Popular de Dos Hermanas in order to show the relationship between the Pygmalion effect and learned helplessness in the process of acquiring knowledge in adulthood. In this way, three tools were used: one questionnaire that showed the teachers' perceptions of the students' qualities and behaviour and two that provided information on self-concept, self-esteem, personal and social skills and other variables directly related to emotional intelligence and positive education. It shows how exposure to negative operational constraints hinders the psychosocial and socio-educational development of learners in all possible ways, while, on the other hand, it indicates the importance of positive education to compensate for this phenomenon by enhancing the development and growth of those who study and participate in non-formal education through positive reinforcement. Likewise, the factorial interrelation of both positive and negative conditioning factors and their incidence on learning is shown; the importance of neutralising the negative components and strengthening the positive reinforcement and the role played by the community and education professionals as catalysts and behavioural modulators at any stage of learning and age group for the achievement of the objectives of the student and of education itself in a broad sense. © 2022 by the authors. Licensee MDPI, Basel, Switzerland.

COLOM PIELLA, G., 2022. Una radiografia de la defensa espanyola. *Política & prosa*, no. 39, pp. 20-24. ISSN 2604-6113.

DE DIOS, R., SANTERO, E. y REYES-RAMIREZ, F., 2022.The functional differences between paralogous regulators define the control of the general stress response in Sphingopyxis granuli TFA. *Environmental Microbiology*, ISSN 1462-2912. DOI 10.1111/1462-2920.15907.

Sphingopyxis granuli TFA is a contaminant degrading alphaproteobacterium that

responds to adverse conditions by inducing the general stress response (GSR), an adaptive response that controls the transcription of a variety of genes to overcome adverse conditions. The core GSR regulators (the response regulator PhyR, the anti-sigma factor NepR and the sigma factor EcfG) are duplicated in TFA, being PhyR1 and PhyR2, NepR1 and NepR2 and EcfG1 and EcfG2. Based on multiple genetic, phenotypical and biochemical evidences including in vitro transcription assays, we have assigned distinct functional features to each paralogue and assessed their contribution to the GSR regulation, dictating its timing and the intensity. We show that different stress signals are differentially integrated into the GSR by PhyR1 and PhyR2, therefore producing different levels of GSR activation. We demonstrate in vitro that both NepR1 and NepR2 bind EcfG1 and EcfG2, although NepR1 produces a more stable interaction than NepR2. Conversely, NepR2 interacts with phosphorylated PhyR1 and PhyR2 more efficiently than NepR1. We propose an integrative model where NepR2 would play a dual negative role: it would directly inhibit the sigma factors upon activation of the GSR and it would modulate the GSR activity indirectly by titrating the PhyR regulators.

DE GRACIA, S.V., LLIBRER ESCRIG, I. y GUTIÉRREZ HIDALGO, F., 2022. Teocentrismo, antropocentrismo y contabilidad: de la Edad Media al Renacimiento. *Revista de contabilidad: Spanish accounting review [RC-SAR]*, vol. 25, no. 1, pp. 147-158. ISSN 1138-4891. 10.6018/rcsar.420341

The change in the accounting method from single entry to double entry in the 15th century has been tried to explain by the influence of some different issues such as the appearance of capitalism or by the contact of Italy with other peoples. However, none of them has been able to do so satisfactorily. That is why this work, tries to show how this accounting change could be pushed by a paradigm shift: the philosophical and religious perception of the world and its passed from the Middle Ages to the Renaissance. It will be seen using a qualitative methodology which helps to know how the methods of charge and discharge and double entry respond to the prevailing ways of thinking in which they developed. The first one, can be associated with a Theocentric thought, typical of the Middle Ages, and the second one, double entry bookkeeping, philosophical viewpoint that are the are the most important entity in the world, which is characteristic of the Renaissance.

DÍAZ-NOGUERA, M.D., HERVÁS-GÓMEZ, C., DE LA CALLE-CABRERA, A.M. y LÓPEZ-MENESES, E., 2022. Autonomy, Motivation, and Digital Pedagogy Are Key Factors in the Perceptions of Spanish Higher-Education Students toward Online Learning during the COVID-19 Pandemic. *International Journal of Environmental Research and Public Health* [en línea], vol. 19, no. 2. DOI 10.3390/ijerph19020654.

This paper proposes a development model of the adaptation capacity of students to digital transformation in university teaching through three constructs: motivations, digital pedagogy, and student autonomy. For this study, an ad hoc scale was created to record the adaptation capacity of students to digital transformation. The sample was 483 students from the University of Seville (Spain), to whom an online survey was administered during the development of online teaching in the

period of November 2020 using the Google Forms platform. The findings of this study showed that university student motivation acquired a greater threshold than autonomy, whose threshold in turn, was greater than that of digital pedagogy in the ability to adapt to online teaching and that the capacity of adaptation to the online modality is explained by the perception that university students have of the usefulness, products, and learning outcomes, among others. In conclusion, the lack of adequate and enabled study spaces is key to developing the online model. We consider all these aspects as prospective research objectives.

ECHAVES GARCÍA, A. y ECHAVES, C., 2022. Acercamiento Cualitativo a la Emancipación Residencial en Periodos de Crisis. *Anduli: revista andaluza de ciencias sociales*, no. 21, pp. 29-53. ISSN 1696-0270.

La emancipación residencial es un fenómeno que sigue despertando un gran interés académico, político y social. Más allá del claro efecto que la crisis económica tuvo en este proceso en nuestro país, retrasando la salida del hogar familiar/de origen por parte de los jóvenes, la realidad a la que se enfrenta este colectivo en la actualidad sigue siendo compleja y problemática. Siguen existiendo contextos adversos que dificultan el tránsito a la independencia residencial, y así lo han constatado numerosas investigaciones sociológicas, la mayoría de carácter cuantitativo. En el presente artículo, y desde una aproximación cualitativa, se analiza el fenómeno de la emancipación residencial en España recurriendo a grupos de discusión, para emancipados y no emancipados (realizados en 2014). Llevados a cabo en distintas ciudades, se recogen así percepciones, valoraciones e interpretaciones que hacen los jóvenes de la realidad en la que se encuentran inmersos y se constatan los factores que actúan de freno.

FERNANDEZ-ROCA, F.J. y LOPEZ-MANJON, J.D., 2022. A rhetorical history built over one hundred and eighty years on social memory and longevity. The case of Acesur. *Investigaciones De Historia Economica*, ISSN 1698-6989. DOI 10.33231/j.ihe.2021.12.001.

The article focuses on the rhetorical history that the Andalusian firm Acesur, one of Spain's leading olive-oil companies, has been constructing over the years. The text answers the questions of how and when the firm a) configured a historical narrative aimed at external agents and developed around two key elements: longevity and the link of its region of origin with olive oil; b) constructed social memory assets to identify itself and its brands with elements of regional culture and thus catalyse the country of origin effect; and c) adapted the use of its history to its own changes, to those of its environment and to its strategic decisions. The rhetorical story, in use during more than 150 years, is one of the tools that have contributed to the growth of Acesur in different markets in which it operates. (C) 2021 Asociacion Espanola de Historia Economica

FERNANDEZ-RODRIGUEZ, M.J., MANCILLA-LEYTON, J.M., DE LA LAMA-CALVENTE, D. y BORJA PADILLA, R., 2022. Evaluation of batch mesophilic anaerobic digestion of raw and trampled llama and dromedary dungs: methane potential and kinetic study. *Biomass Conversion and Biorefinery*, ISSN 2190-6815. DOI 10.1007/s13399-021-02255-6.

This research was carried out with the aim to evaluate the anaerobic digestion (AD) of llama and dromedary dungs (both untreated and trampled) in batch mode at mesophilic temperature (35 degrees C). The biochemical methane potential (BMP) tests with an inoculum to substrate ratio of 2:1 (as volatile solids (VS)) were carried out. The methane yield from trampled llama dung (333.0 mL CH4 g(-1) VSadded) was considerably higher than for raw llama, raw and trampled dromedary dungs (185.9, 228.4, 222.9 mL CH4 g(-1) VSadded, respectively). Therefore, trampled llama dung was found to be the best substrate for methane production due to its high content of volatile solids as well as its high nitrogen content (2.1%) and more appropriate C/N ratio (23.6) for AD. The experimental data was found to be in accordance with both first-order kinetic and transference function mathematical models, when evaluating the experimental methane production against time. By applying the first-order kinetic model, the hydrolysis rate constants, k(h), were found to be 19% and 11% higher for trampled dungs in comparison with the raw dung of dromedary and llama, respectively. In addition, the maximum methane production rate (R-m) derived from the transference function model for trampled llama dung (22.0 mL CH4 g(-1) VS d(-1)) was 83.3%, 24.4% and 22.9% higher than those obtained for raw llama manure and for raw and trampled dromedary dungs, respectively.

FILTER, A., OLIVARES, J., MOLINA, A., MORENTE-SANCHEZ, J., ROBLES, J., NAKAMURA, F.Y., SANTALLA, A., LOTURCO, I. y REQUENA, B., 2022. Reliability and usefulness of maximum soccer-specific jump test: a valid and cost-effective system to measure on soccer field. *Sports Biomechanics*, ISSN 1476-3141. DOI 10.1080/14763141.2021.2024244.

The aims of this study were (a) to assess intra-session reliability and usefulness of the soccer-specific maximum vertical jump (heading test, HT) and (b) to analyse the validity of the easy-to-use and cost-effective instrument (smartphone camera, MOB) compared with gold-standard instrument (3D motion capture system, MOCAP) to obtain the vertical jump performance during HT. Twelve semi-professional high-level and fifteen amateur soccer male players (23.9 +/- 3.6 years) performed three HT attempts, and kinematic data were recorded with MOB and MOCAP. Intra-class correlation coefficient (ICC) and coefficient of variation (CV) were used as measures of intra-session reliability. T-test with Cohen's effect size (ES), Pearson's product moment and Bland-Altman analysis were used to obtain MOB validity. Regarding intra-session reliability, the CV was 1.13%, and ICC was 0.98, considered acceptable. Respecting validity criteria did not reveal significant differences ($p < 0.05$; effect size = 0.06, considered trivial), `almost perfect' correlation (Pearson) ($r = 0.98$; $p < 0.05$), and strong agreement were obtained between MOB and MOCAP. This finding showed a test (HT) with a specific character, using cost-effective instrument and applicable to all soccer fields (adjusted to the standardised lines in the soccer field), all of them backed-up by reliability, usefulness and validity criteria.

FILTER-RUGER, A., GANTOIS, P., HENRIQUE, R.S., OLIVARES-JABALERA, J., ROBLES-RODRIGUEZ, J., SANTALLA, A., REQUENA, B. y NAKAMURA, F.Y., 2022. How does curve sprint evolve across different age categories in soccer players? *Biology of Sport*, vol. 39, no. 1, pp. 53-58. ISSN 0860-021X. DOI 10.5114/biolsport.2022.102867.

Research has shown that soccer players regularly execute curved sprints during matches. The purpose of this study was to determine the age-related effects on curve sprint (CS) performance to both sides, asymmetry, and association with linear sprint (LS). Eighty-four soccer players (aged 16.1 +/- 1.6 categorized in U15, U17, and U20) were recruited, who performed CS and LS tests. One-way analysis of variance (ANOVA) and effect size (ES) were used to compare CS performance between age categories, and relationships between physical performance measures were calculated using Pearson's correlation coefficient. The main findings of this study were that: 1) there were significant differences in the "good" side CS among age groups ($p < 0.001$; ES from moderate to large), but not in the "weak" side CS, 2) curve asymmetry was significantly higher in U20 than U15 ($p < 0.05$; ES large) and U17 players ($p < 0.05$; ES moderate), and 3) relationships between CS and LS times decreased with age (from significant and very large [p 0.001] to non-significant and small moderate [p 0.05]). This study highlights the importance of assessing and training CS in different age categories, an action that becomes less correlated with LS as age increases, with the aim of mitigating the increase in asymmetries as a result of the specialization process, focusing interventions mainly on improving the CS "weak" side.

FLOR-PARRA, I., SABIDO-BOZO, S., IKEDA, A., HANAOKA, K., AGUILERA-ROMERO, A., FUNATO, K., MUÑIZ, M. y LUCENA, R., 2022. The ceramide synthase subunit lac1 regulates cell growth and size in fission yeast. *International Journal of Molecular Sciences* [en línea], vol. 23, no. 1. DOI 10.3390/ijms23010303.

Cell division produces two viable cells of a defined size. Thus, all cells require mechanisms to measure growth and trigger cell division when sufficient growth has occurred. Previous data suggest a model in which growth rate and cell size are mechanistically linked by ceramide-dependent signals in budding yeast. However, the conservation of mechanisms that govern growth control is poorly understood. In fission yeast, ceramide synthase is encoded by two genes, Lac1 and Lag1. Here, we characterize them by using a combination of genetics, microscopy, and lipid analysis. We showed that Lac1 and Lag1 co-immunoprecipitate and co-localize at the endoplasmic reticulum. However, each protein generates different species of ceramides and complex sphingolipids. We further discovered that Lac1, but not Lag1, is specifically required for proper control of cell growth and size in Schizosaccharomyces pombe. We propose that specific ceramide and sphingolipid species produced by Lac1 are required for normal control of cell growth and size in fission yeast. © 2021 by the authors. Licensee MDPI, Basel, Switzerland.

GALLARDO, J.A., GARCIA-TORRES, M., GOMEZ-VELA, F., MORALES, F., DIVINA, F., BECERRA-ALONSO, D., VELAZQUEZ, G., DAUMAS-LADOUCE, F., VAZQUEZ NOGUERA, J.L., SAUER AYALA, C., PINTO-ROA, D.P., GARDEL-SOTOMAYOR, P.E. y MELLO ROMAN, J.C., 2022. Forecasting Electricity Consumption Data from Paraguay Using a Machine Learning Approach. En: GONZALEZ, HS AND LOPEZ, IP AND BRINGAS, PG AND QUINTIAN, H AND CORCHADO, E (ed.), *16th International Conference on Soft Computing Models in Industrial and Environmental Applications (SOCO 2021)*. S.l.: Startup Ole; Basque Govt, Dept Educ & Univ; Logistar Project DeustoTech; Univ Deusto, pp. 685-694. ISBN 978-3-030-87869-6. DOI 10.1007/978-3-030-87869-6_65.

Global energy consumption is growing due to multiple reasons, such as the COVID-19 pandemic. In order to improve the efficiency of energy consumption and thus contribute to the protection of the environment, governments are implementing new energy efficiency policies. Prediction of energy consumption is one of the most important objectives in this regard. Forecasting algorithms based on machine learning approaches have proven to be a robust solution to provide predictions based on energy consumption data. In this paper, we present a comparative study of different forecasting approaches on an energy consumption dataset collected from a Paraguayan electricity distribution provider. In the analysis, historical windows, W, of {7, 14, 28, 84} days and a prediction horizon, h of one day were used. Models were evaluated using the coefficient of determination (R-2), the mean absolute error(MAE), the root mean squared error (RMSE), and the mean absolute percentage error (MAPE). The results achieved show that, among the techniques studied, Artificial Neural Networks are the best strategy to capture the complexity of the data. Furthermore, the performance of linear regression is outstanding, taking into account its simplicity.

GARCÍA ÁLVAREZ, P., 2022. El efecto perverso de la recepción del fenómeno de los «delitos de odio» en el sistema penal español. *El odio como motivación criminal*. S.l.: Wolters Kluwer, pp. 51-68. ISBN 978-84-19032-10-2.

En esta obra colectiva se analiza el fenómeno de los delitos de odio desde diferentes ciencias penales. El libro se estructura en tres partes. En la primera se realiza una revisión dogmática y jurisprudencial de los distintos tipos penales. Se afrontan los difíciles problemas de definición y sus consecuencias para la interpretación de esta forma de criminalidad, poniendo especial atención en ciertos casos especialmente relevantes. En la segunda parte se examinan las actuales tendencias en política criminal, así como las últimas propuestas de reforma legislativa con las que se pretenden castigar nuevas manifestaciones del odio. Finalmente, el último bloque aborda los delitos de odio desde una perspectiva criminológica, para lo que se adopta una orientación más empírica, recurriendo así a metodologías de investigación cualitativas y cuantitativas.En esta monografía participan 12 profesores universitarios de nueve universidades, todos ellos acreditados expertos en sus respectivas áreas de especialidad; todos ellos son voces autorizadas en la materia que acumulan una dilatada experiencia en el estudio de esta forma de criminalidad. El Director de la obra es Marco Teijón Alcalá, profesor de Derecho penal y Criminología de la UNED y forma parte de

los Equipos Docentes de Derecho penal (Parte especial) y Criminología.

GARCÍA BENAU, M.A., SIERRA GARCÍA, L. y GAMBETTA LOPASSIO, N., 2022. Análisis del valor comunicativo de los informes de auditoría españoles tras la inclusión de las cuestiones clave de auditoría. *Estudios financieros. Revista de contabilidad y tributación: Comentarios, casos prácticos*, no. 466, pp. 167-196. ISSN 1138-9540.

In recent years the content of the audit report has evolved significantly. Spain, through the NIAES, has established the standards that regulate its content, contemplating the incorporation of a section that reports on the most significant risks that have attracted the auditor's attention. In this research we study whether the inclusion of the key audit matters (KAM) has had a real impact on the quality of the audit, proxied by the communicative value of the audit report. Specifically,we analyze the readability of the risks linked to the KAM and whether the client and audit firm's characteristics determine this readability.The results of our empirical study, based on the Ibex 35 companies for the period 2017-2019(the period in which these new regulations came into force in Spain), show that the readability islow in both, the description of the risks and the description of the audit procedures performed by the auditor to address them. The most relevant readability determinant of the KAM is the audit firm. The incumbent audit firm, the change of auditor and the industry specialization also affect the KAM readability.This research shows that work must be done to improve the clarity of the auditor's report, which will have an impact on the user's understanding of the content of the audit report. Therefore, the conclusions of this research are of great relevance for regulators, the practice and the academia.

GARCÍA DAZA, F.A., PUERTAS, A.M., CUETOS, A. y PATTI, A., 2022. Microrheology of colloidal suspensions via dynamic Monte Carlo simulations. *Journal of Colloid and Interface Science*, vol. 605, pp. 182-192. DOI 10.1016/j.jcis.2021.07.088.

Understanding the rheology of colloidal suspensions is crucial in the formulation of a wide selection of industry-relevant products, such as paints, foods and inks. To characterise the viscoelastic behaviour of these soft materials, one can analyse the microscopic dynamics of colloidal tracers diffusing through the host fluid and generating local deformations and stresses. This technique, referred to as microrheology, links the bulk rheology of fluids to the microscopic dynamics at the particle scale. If tracers are subjected to external forces, rather than freely diffusing, it is called active microrheology. Motivated by the impact of microrheology in providing information on local structure in complex systems such as colloidal glasses, active matter or biological systems, we have extended the dynamic Monte Carlo (DMC) technique to investigate active microrheology in colloidal suspensions. The original DMC theoretical framework, able to accurately describe the Brownian dynamics of colloids at equilibrium, is here reconsidered and expanded to describe the effects of an external force pulling a tracer embedded in isotropic colloidal suspensions at different densities. To this

end, we studied the dynamics of a spherical tracer dragged by a constant external force through a bath of spherical and rod-like particles of comparable size. We could extract valuable details on its effective friction coefficient, being constant at small and large values of the external force, but otherwise displaying a nonlinear behaviour that indicates the occurrence of a force-thinning regime. Our DMC simulation results are in excellent quantitative agreement with past Langevin dynamics simulations and theoretical works for the bath of spherical colloids. The bath of rod-like particles is studied in the isotropic phase, and displays an example where DMC is more convenient than Brownian or Langevin dynamics, in this case, in dealing with particle rotation. © 2021 Elsevier Inc.

GARCÍA-BENAU, M.-A., BOLLAS-ARAYA, H.-M. y SIERRA-GARCÍA, L., 2022. Non-financial reporting in Spain. The effects of the adoption of the 2014 EU Directive. *Revista de Contabilidad-Spanish Accounting Review*, vol. 25, no. 1, pp. 3-15. DOI 10.6018/RCSAR.392631.

The Directive 2014/95/EU imposes new requirements regarding the disclosure of non-financial information (NFI). The aim of this paper is to analyse the NFI disclosed by Spanish listed companies. This is a pioneering study in Spain, since it was conducted during the first year in which NFI disclosure was mandatory, according to the requirements of the Spanish adaptation of Directive. We determine whether decisions on NFI reporting adopted in this respect (i.e. to do so within the management report or as a separate sustainability report) depend on the company's characteristics. In addition, we consider whether the content of such reports differs significantly. Findings show that some Spanish companies do not disclose mandatory NFI. Larger and more profitable companies, which belong to specific sectors and have a sustainability committee, are more likely to disclose this information in a sustainability report. The contents of management and sustainability reports present significant differences. ©2022 ASEPUC. Published by EDITUM - Universidad de Murcia. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

GARCIA-GARCIA, I., MENDEZ-CEA, B., MARTIN-GALVEZ, D., SECO, J.I., GALLEGO, F.J. y LINARES, J.C., 2022. Challenges and Perspectives in the Epigenetics of Climate Change-Induced Forests Decline. *Frontiers in Plant Science*, vol. 12. ISSN 1664-462X. DOI 10.3389/fpls.2021.797958.

Forest tree species are highly vulnerable to the effects of climate change. As sessile organisms with long generation times, their adaptation to a local changing environment may rely on epigenetic modifications when allele frequencies are not able to shift fast enough. However, the current lack of knowledge on this field is remarkable, due to many challenges that researchers face when studying this issue. Huge genome sizes, absence of reference genomes and annotation, and having to analyze huge amounts of data are among these difficulties, which limit the current ability to understand how climate change drives tree species epigenetic modifications. In spite of this challenging framework, some insights on the relationships among climate change-induced stress and epigenomics are coming. Advances in DNA sequencing technologies and an increasing number of studies dealing with this topic must boost our knowledge on tree adaptive capacity to

changing environmental conditions. Here, we discuss challenges and perspectives in the epigenetics of climate change-induced forests decline, aiming to provide a general overview of the state of the art.

GAUTHIER, B.R., LORENZO, P.I. y COMAILLS, V., 2022. Physical forces and transient nuclear envelope rupture during metastasis: The key for success? *Cancers* [en línea], vol. 14, no. 1. DOI 10.3390/cancers14010083.

During metastasis, invading tumor cells and circulating tumor cells (CTC) face multiple mechanical challenges during migration through narrow pores and cell squeezing. However, little is known on the importance and consequences of mechanical stress for tumor progression and success in invading a new organ. Recently, several studies have shown that cell constriction can lead to nuclear envelope rupture (NER) during interphase. This loss of proper nuclear compartmentalization has a profound effect on the genome, being a key driver for the genome evolution needed for tumor progression. More than just being a source of genomic alterations, the transient nuclear envelope collapse can also support metastatic growth by several mechanisms involving the innate immune response cGAS/STING pathway. In this review we will describe the importance of the underestimated role of cellular squeezing in the progression of tumorigenesis. We will describe the complexity and difficulty for tumor cells to reach the metastatic site, detail the genomic aberration diversity due to NER, and highlight the importance of the activation of the innate immune pathway on cell survival. Cellular adaptation and nuclear deformation can be the key to the metastasis success in many unsuspected aspects. © 2021 by the authors. Licensee MDPI, Basel, Switzerland.

GINSBURGH, V. y MORENO-TERNERO, J.D., 2022. Brexit and multilingualism in the European Union. *Metroeconomica*, ISSN 0026-1386. DOI 10.1111/meca.12379.

The European Union (EU) spends more than one billion euros per year ensuring translation and interpretation of 24 languages to preserve multilingualism. We examine how this budget should be fairly allocated, taking into account linguistic and economic realities of each member country. Our analysis tries to estimate the value of keeping English as a procedural language (in fact, almost a lingua franca) in the post-Brexit EU, where, today, just about one percent of the population speaks it as native language.

GLAVE, L.M., 2022. The one who doesn't have inga, has mandinga. Honor and miscegenation in the American worlds. Anuario Colombiano de Historia Social y de la Cultura, vol. 49, no. 1, pp. 433-438. ISSN 0120-2456. DOI 10.15446/achsc.v49n1.98773.

Es una buena noticia editorial el libro editado por Sarah Albiez-Wieck, Lina Mercedes Cruz Lira y Antonio Fuentes Barragán. Como bien señala Jean-Paul Zúñiga en el prefacio, se trata de una contribución colectiva —polifónica, la llama la

editorial—, donde la conjunción de autores nóveles y expertos, de distinta procedencia y formación, lejos de resultar un obstáculo, ha sido tal vez uno de los valores a resaltar de la publicación. El libro trata de las relaciones entre honor y mestizaje en una perspectiva dinámica que resalta lo cambiante en la historia. Todos los autores hacen gala del valor de la comparación en el análisis, mostrando evidencias y situaciones de diversos lugares de la América colonial hispana, combinando además estudios del mundo rural y del urbano.

GÓMEZ-GUERRERO, S., ORTIZ, I., SOSA-CABRERA, G., GARCÍA-TORRES, M. y SCHAERER, C.E., 2022. Measuring Interactions in Categorical Datasets Using Multivariate Symmetrical Uncertainty. *Entropy* [en línea], vol. 24, no. 1. DOI 10.3390/e24010064.

Interaction between variables is often found in statistical models, and it is usually expressed in the model as an additional term when the variables are numeric. However, when the variables are categorical (also known as nominal or qualitative) or mixed numerical-categorical, defining, detecting, and measuring interactions is not a simple task. In this work, based on an entropy-based correlation measure for n nominal variables (named as Multivariate Symmetrical Uncertainty (MSU)), we propose a formal and broader definition for the interaction of the variables. Two series of experiments are presented. In the first series, we observe that datasets where some record types or combinations of categories are absent, forming patterns of records, which often display interactions among their attributes. In the second series, the interaction/non-interaction behavior of a regression model (entirely built on continuous variables) gets successfully replicated under a discretized version of the dataset. It is shown that there is an interaction-wise correspondence between the continuous and the discretized versions of the dataset. Hence, we demonstrate that the proposed definition of interaction enabled by the MSU is a valuable tool for detecting and measuring interactions within linear and non-linear models. © 2021 by the authors. Licensee MDPI, Basel, Switzerland.

GONZÁLEZ-MARISCAL, I., POZO MORALES, M., ROMERO-ZERBO, S.Y., ESPINOSA-JIMENEZ, V., ESCAMILLA-SÁNCHEZ, A., SÁNCHEZ-SALIDO, L., COBO-VUILLEUMIER, N., GAUTHIER, B.R. y BERMÚDEZ-SILVA, F.J., 2022. Abnormal cannabidiol ameliorates inflammation preserving pancreatic beta cells in mouse models of experimental type 1 diabetes and beta cell damage. *Biomedicine and Pharmacotherapy* [en línea], vol. 145. DOI 10.1016/j.biopha.2021.112361.

The atypical cannabinoid Abn-CBD improves the inflammatory status in preclinical models of several pathologies, including autoimmune diseases. However, its potential for modulating inflammation in autoimmune type 1 diabetes (T1D) is unknown. Herein we investigate whether Abn-CBD can modulate the inflammatory response during T1D onset using a mouse model of T1D (non-obese diabetic- (NOD)-mice) and of beta cell damage (streptozotocin (STZ)-injected mice). Six-week-old female NOD mice were treated with Abn-CBD (0.1–1 mg/kg) or vehicle during 12 weeks and then euthanized. Eight-to-ten-week-old

male C57Bl6/J mice were pre-treated with Abn-CBD (1 mg/kg of body weight) or vehicle for 1 week, following STZ challenge, and euthanized 1 week later. Blood, pancreas, pancreatic lymph nodes (PLNs) and T cells were collected and processed for analysis. Glycemia was also monitored. In NOD mice, treatment with Abn-CBD significantly reduced the severity of insulitis and reduced the pro-inflammatory profile of CD4+ T cells compared to vehicle. Concomitantly, Abn-CBD significantly reduced islet cell apoptosis and improved glucose tolerance. In STZ-injected mice, Abn-CBD decreased circulating proinflammatory cytokines and ameliorated islet inflammation reducing intra-islet phospho-NF-κB and TXNIP. Abn-CBD significantly reduced 2 folds intra-islet CD8+ T cells and reduced Th1/non-Th1 ratio in PLNs of STZ-injected mice. Islet cell apoptosis and intra-islet fibrosis were also significantly reduced in Abn-CBD pre-treated mice compared to vehicle. Altogether, Abn-CBD reduces circulating and intra-islet inflammation, preserving islets, thus delaying the progression of insulitis. Hence, Abn-CBD and related compounds emerge as new candidates to develop pharmacological strategies to treat the early stages of T1D. © 2021 The Authors

GUIJO PÉREZ, S., 2022. El último grabado de la Virgen de la Salud de San Isidoro: Un modelo contemporáneo de Adolfo López Rodriguez. *Boletín de las cofradías de Sevilla*, no. 756, pp. 39-40. ISSN 1137-2893.

HADJOUT, D., TORRES, J.F., SEBAA, A. y MARTINEZ-ALVAREZ, F., 2022. Medium-Term Electricity Consumption Forecasting in Algeria Based on Clustering, Deep Learning and Bayesian Optimization Methods. En: GONZALEZ, HS AND LOPEZ, IP AND BRINGAS, PG AND QUINTIAN, H AND CORCHADO, E (ed.), *16th International Conference on Soft Computing Models in Industrial and EnvironmentalAapplications (SOCO 2021)*. S.l.: Startup Ole; Basque Govt, Dept Educ & Univ; Logistar Project DeustoTech; Univ Deusto, pp. 739-748. ISBN 978-3-030-87869-6. DOI 10.1007/978-3-030-87869-6_70.

Forecasting electricity consumption of aggregate or individual consumers is a challenge of production and distribution electricity enterprise to manage their electricity demand and reducing electricity loss. In this context, we investigate the problem of improving the accuracy of forecasting electricity consumption of the economic sector in Algeria. This paper presents a medium-term electricity consumption forecasting method based on a combination of deep learning and clustering techniques. The proposed approach aims to effectively extract the similarity of consumers' consumption; and performing forecasting accurately at the reduced level. In the first step, two clustering methods, namely K-means and K-Shape, are used to extract similarities among consumers. Then, a deep learning model, based on Gated Recurrent Units, for each cluster with a Bayesian optimizer is employed to extract patterns of the consumers' electricity consumption. To validate the proposed method, we compared our results to two enterprise classifications: Activity Sector and Maximum Power Demand. Several experiments have been conducted with almost 2000 clients and 14 years of monthly electricity consumption from Bejaia, Algeria. The results show that K-Shape reaches much higher prediction accuracy. The best results in global prediction obtained a MAPE equals to 6.57% and the grouping customer on Activity Sector a MAPE equals to 15.52% in individual.

HERNANDEZ-HERNANDEZ, C., FERNANDEZ-CABANAS, V.M., RODRIGUEZ-GUTIERREZ, G., FERNANDEZ-PRIOR, A. y MORALES-SILLERO, A., 2022. Rapid screening of unground cocoa beans based on their content of bioactive compounds by NIR spectroscopy. *Food Control*, vol. 131. ISSN 0956-7135. DOI 10.1016/j.foodcont.2021.108347.

Near Infrared (NIR) spectroscopy was evaluated as a fast and easy method for identifying the most interesting cocoa genotypes according to chemical composition, including bioactive compound contents, in more than 80 samples of cocoa beans from the Mexican Germplasm Bank, which were harvested over three years. Clear differences in chemical composition were detected in fermented and dried samples among genotypes. The contents in fat, protein, total sugars, total phenols, phenolic compounds and theobromine were determined for both whole cocoa beans and ground cotyledon samples; and calibration models were developed from the spectra of intact beans, nibs and ground cotyledons. In general, the calibration models obtained for cotyledon composition from the spectra of cocoa nibs and ground beans were better than those obtained from the spectra of intact beans. Fat content showed better calibration statistic values from the spectra of nibs and ground cotyledon ($r2 = 0.70$). Bioactive compounds, such as theobromine ($r2 = 0.77$), total sugars ($r2 = 0.74$), total phenols ($r2 = 0.66$) and derivatives of epicatechin ($r2 = 0.88$), together with fat ($r2 = 0.70$), protein ($r2 = 0.64$) and husk content ($r2 = 0.82$), were well-predicted using NIR spectroscopy in intact beans, cocoa nibs and/or ground cotyledon. The potential of NIRS technology was confirmed to support germplasm banks and breeding programs for the rapid identification of interesting genotypes based on their contents in bioactive compounds.

HERNANDEZ-RAMIREZ, M., CACERES-FERIA, R. y RUIZ-BALLESTEROS, E., 2022. Housing tactics: Searching for community resilience in depopulated rural contexts (Huertas, South West Spain). *Sociologia Ruralis*, vol. 62, no. 1, pp. 24-43. ISSN 0038-0199. DOI 10.1111/soru.12367.

Depopulation of the rural world jeopardises the continuity of many communities and the socioecosystems they support. In response to this situation, diverse strategies are activated to ensure the continuity of these socioecosystems. All these initiatives seek, directly or indirectly, to strengthen community resilience, with a view to making the changes required to reverse the population trend. One of the most obvious, but least studied, effects of depopulation is the abandonment of housing, which initially implies urban deterioration and collapse but which can also become an opportunity if these abandoned houses are turned into a resource at different levels and in different arenas. An ethnographic case study conducted in the Sierra de Aracena Mountains (South West Spain) allows us to explore the link between housing and community resilience, helping us understand how the use and management of redundant housing can be a fundamental component of resilience in rural settings marked by depopulation.

JAJKO, G., GUTIÉRREZ-SEVILLANO, J.J., SŁAWEK, A., SZUFLA, M., KOZYRA, P., MATOGA, D., MAKOWSKI, W. y CALERO, S., 2022. Water adsorption in ideal and defective UiO-66 structures. *Microporous and Mesoporous Materials*

[en línea],vol. 330. DOI 10.1016/j.micromeso.2021.111555.

We combine experiments and simulations to study the adsorption of water in several UiO-66 frameworks (ideal and defect-containing structures). We propose a new set of charges for the frameworks that accurately provides the water-structure interaction at the molecular level. The new set is suitable for predicting water adsorption in the ideal UiO-66 structure, providing for the first time, good agreement between experimental and calculated isotherms. The proposed procedure for tuning the point charges of the framework to achieve agreement with experiments is universal and can easily be extended to other MOFs. We explore the structural characteristics in terms of adsorption of water and the potential application of these materials to water harvesting from air. Our results show that the number of introduced defects significantly affect water sorption properties, which results in shifting steep water uptake and increasing saturation loading. Additional performed experiments, such as Ar sorption and the use of the QE-TPDA method allow for a broad characterization of structure-containing defects and the impact that these defects exert on the properties of the materials. © 2021

JIMÉNEZ GUTIÉRREZ, I., 2022. Necesidades formativas en traducción inversa especializada. Análisis de caso (español-francés). Tonos digital: Revista de estudios filológicos, *Tonos digital: Revista de estudios filológicos*, no. 42, pp. 24-0. ISSN 1577-69

La importancia que está cobrando la traducción inversa —o traducción hacia la lengua no nativa del traductor— en el mercado profesional de la traducción es ya una realidad y ha supuesto la introducción de modificaciones tanto en los planes de estudio de los diferentes grados en Traducción e Interpretación como en la forma en la que se aborda la formación en esta modalidad de traducción en las universidades españolas. La labor del docente en este nuevo contexto no está exenta de dificultades. En esta contribución proponemos aproximarnos a la formación en traducción inversa desde la perspectiva del docente para identificar las necesidades formativas de los estudiantes. Revisaremos el papel que se le ha concedido a la traducción inversa en los planes de estudio actuales, enumeraremos los ámbitos en los que se desarrollan las investigaciones en traducción inversa en la actualidad y analizaremos cómo ha evolucionado la valoración de la traducción inversa desde los inicios de la Traductología hasta a actualidad. Por último, describiremos una propuesta didáctica desarrollada recientemente en la Universidad Pablo de Olavide de Sevilla en asignaturas de traducción inversa especializada en la combinación lingüística español (A)-francés (B/C) y cómo ha contribuido dicha propuesta a mejorar la formación de los estudiantes.

JIMENEZ-NAVARRO, M.J., MARTINEZ-ALVAREZ, F., TRONCOSO, A. y ASENCIO-CORTES, G., 2022. HLNet: A Novel Hierarchical Deep Neural Network for Time Series Forecasting. En: GONZALEZ, HS AND LOPEZ, IP AND BRINGAS, PG AND QUINTIAN, H AND CORCHADO, E (ed.), *16th International Conference on Soft Computing Models in Industrial and*

EnvironmentalAapplications (SOCO 2021). S.l.: Startup Ole; Basque Govt, Dept Educ & Univ; Logistar Project DeustoTech; Univ Deusto, pp. 717-727. ISBN 978-3-030-87869-6. DOI 10.1007/978-3-030-87869-6_68.

Time series forecasting is a well-known application area for deep learning, in which the historical data are used to predict the future behavior of the series. Several deep learning methods have been proposed in this context, but they usually try to generate the output from the input, with no data transformation. In this paper, we introduce a novel method to improve the performance of deep learning models in time series forecasting. This method divides the model into hierarchies or levels, from more simple ones to more complex. Simpler levels handle smoothed versions of the input, while the most complex level processes the original time series. This method follows the human learning process, that is, general tasks are firstly performed and, afterwards, more precise ones are accomplished. Our proposed method has been applied with LSTM architectures, showing remarkable performance in a variety of time series. Moreover, comparisons to standard LSTM are reported.

LAZARO PAULINA, C.B., GALLARDO GUERRERO, A.M. y GARCIA TASCON, M., 2022. Case study of the implementation of a competence evaluation of soccer players in the "cadete" category of Sevilla F.C. *Retos-Nuevas Tendencias en Educacion Fisica Deporte y Recreacion*, no. 43, pp. 893-903. ISSN 1579-1726.

Soccer is one of the most practiced sports in the world, requiring coaches, club technicians and specialized sports associations to have the tools to identify potential players who demonstrate a high professional level.That is why the objective was to implement an evaluation methodology for the analysis of a soccer player competency model (MCJF) in two teams in the Sevilla FC "cadete" (U15-16) category.The competence perception of 4 dimensions (psychological, tactical, technical and physical) was analyzed, on a scale of six levels.A bidirectional analysis was carried out, where the player's perception of himself and the coach's perception of the player are compared, and if this depends on the position held on the field. The results suggested that the assessment of the perception of skills to highlight the talent of coaches and players are similar in all areas, highlighting the tactical, technical and psychosocial dimensions. The perception that a player has about the assessment of his skills depends on the position he occupies on the field of play (ANOVA $p < 0.05$). Regarding the perception of the coach, the tactical and technical dimensions showed dependence on the variables studied (ANOVA $p < 0.05$).This study shows the need for tools not only for coaches to detect talent, but also for the players themselves to know what's expected of them to develop at a professional level.

LÓPEZ BARONI, M.J., 2022. Las moratorias científicas en el contexto de la Declaración Universal sobre Bioética y Derechos Humanos. *Derechos y libertades: Revista de Filosofía del Derecho y derechos humanos*, no. 46, pp. 297-325. ISSN 1133-0937. 10.20318/dyl.2022.6522

In 1975, the Asilomar Conference inaugurated a form of regulation that has been generally underestimated by jurists: the declaration of a voluntary, temporary and universal scientific moratorium. Since then, these types of statements have occurred, although with uneven results. The main characteristic of thesestatements is that scientists make a techno-scientific discovery or innovation whose immediate scope they cannot calibrate, in a context of legal anomie and total and absolute ignorance on the part of society and public powers. Well, we wonder to what extent the law could or should accept this type of statementin order to make it binding, in accordance with the content of the Universal Declaration on Bioethics and Human Rights Of UNESCO.

LÓPEZ-NOGUERO, F., GALLARDO-LÓPEZ, J.A. y MUÑOZ VILLARAVIZ, D., 2022. Videojuegos y preadolescencia: Uso, hábitos e implicaciones socioeducativas en función del género. *Revista colombiana de educación*, no. 84, pp. 15- 0. ISSN 0120-3916. 10.17227/rce.num84-12

Video games are now a widespread form of entertainment among pre-adolescent youth, but they can also become powerful tools for game-playing in the classroom and for improving the teaching-learning process. Video games facilitate learning in various fields of knowledge and benefit the development of multiple skills from the recreational and creative, but can also cause negative effects such as addiction, sedentarism, decreased academic performance or sociability problems. The aim of the research is to know the habits of consumption of video games in pre-adolescence and its socio-educational implications, depending on the gender of the participants. The sample is composed of 825 students from various public educational centers in Andalusia (Spain), aged between 9 and 14 years. The research is developed from a quantitative, descriptive, ex post facto, transversal and correlational methodological approach, using the instrument «Questionnaire on video game consumption habits» (López, 2012) for the collection of information. The results indicate a clear differentiation in the responses issued according to gender, indicating that boys are more interested in video games, know more about them and use them more frequently than girls. In addition, it is boys who demonstrate a more competitive attitude when playing video games.

LÓPEZ-RIVERA, E., GONZÁLEZ-BADILLO, J.J. y ESPAÑA-ROMERO, V., 2022. Which is the most reliable edge depth to measure maximum hanging time in sport climbers? *Gait and Posture*, vol. 91, pp. 59-65. DOI 10.1016/j.gaitpost.2021.09.200.

Background: The ability to generate high levels of force with the finger flexor muscles and sustain it for the maximum time was reported as a climbing performance factor. This study aimed to answer the question of which is the most reliable edge depth to measure maximum hanging time in non-elite and elite rock climbers: 6, 8, 10, 12 or 14 mm. Methods: Thirty-six climbers (10 female, 26 male; 6b-8c redpoint level) were assessed twice, one week apart. Results: Systematic bias (95 % limits of agreements) was -1.84 (6.31) for HT6, -0.26 (8.83) for HT8, -1.30 (8.72) for HT10, -4.37 (9.57) for HT12, and -2.94 (9.53) for HT14 at non-elite group (all P values > 0.05 but HT12 and HT14). Among elite group, -1.38 (7.58),

0.68 (12.09), -2.20 (13.35), -0.49 (9.80) and 0.73 (10.44) was found (all P > 0.05) for HT6, HT8, HT10, HT12 and HT14, respectively. No patterns of heteroscedasticity were observed for any of the trials for non-elite and elite climbers. Significance: Among all edge depths analysed, 8 mm seemed to be the most accurate edge to evaluate hanging time. Alternatively, a 10 mm hold depth could be recommended for climbers from 6b to 7c, and 12 mm for climbers from 7c+ to 8c. © 2021 Elsevier B.V.

LÓPEZ-SEGOVIA, M., FERNÁNDEZ, I.V., CARRASCO, R.H. y BLANCO, F.P., 2022. Preseason Injury Characteristics in Spanish Professional Futsal Players: The LNFS Project. *Journal of Strength and Conditioning Research*, vol. 36, no. 1, pp. 232-237. DOI 10.1519/JSC.0000000000003419.

This study aimed to examine the incidence of injuries and their characteristics among professional Spanish futsal players during the preseason period and to compare injury-related variables in the context of both competition and training. Eleven futsal teams belonging to the First and Second Spanish Division and 161 players participated in the study. Characteristics of injuries, including type, location, cause and time of injury, injury recurrence, and duration of absence, were recorded. A total of 62 injuries were reported; injury rates of 9.9 (95% confidence interval [CI]: 7.0–12.5) injuries/1,000 training hours and 61.1 (95% CI: 25.7–96.5) injuries/1,000 match hours were collected. These data indicate a mean of 5.64 6 2.66 injuries per team during the preseason period. Of these injuries, 92.1% involved the lower limbs. When data from training and competition were analyzed together, the highest incidence of injuries affected the ankle (21%), followed by the hip/groin and knee (19.4% each). The most common type of injury was muscle rupture/tear/strain (29.0%). During training, the highest percentage of injuries were located in the knee (23.9%), followed by the ankle and hip/groin (21.7% in each case), while during matches, the thigh (35.7%) followed by the ankle (21.4%) was the regions most affected. A significant relationship (p 5 0.008) was observed between injury cause (without contact, with other player, with the ball, and others) and injury context (training, match). To conclude, the results of this study suggest the need for injury prevention protocols focuses on the ankle and the knee joints and muscle strain prevention. © 2019 National Strength and Conditioning Association

LÓPEZ-VISO, C., HODAIFA, G. y MUÑOZ, M.J., 2022. Nematode biomass production from sewage sludge as a novel method for circular economy. *Journal of Cleaner Production* [en línea], vol. 330. DOI 10.1016/j.jclepro.2021.129706.

Sludge generated in urban wastewater treatment plants is a huge environmental and economic challenge of sustainability. Sludge recovery is an environmental necessity and is a requirement for wastewater treatment plants. Predators have been proposed as a biological solution and simultaneously obtaining by-product of interest. Nematodes are predators that are found naturally in sludge but have never been proposed for sludge reduction. In this work, Caenorhabditis elegans, a nematode broadly used for biomedical studies, was used to grow on urban sludge, reaching a remarkable average population up to 92,668 nematodes/mL, 50.6% of sludge was converted into nematode biomass and up to 21.0% of organic matter

removed. To demonstrate the viability of this nematode to grow and reduce urban sludges, different experiments in solid and liquid culture media were performed. The physio-chemical composition of the different types of sludges generated in the urban wastewater treatment plants was determined. The total lipids (4.52%, w/w) and fatty acid profiles obtained in the nematode biomass were determined. This work presents a new method to valorise urban sludge and opens the possibility to obtain by-products with high added value. © 2021 Elsevier Ltd

LUCILA OSORIO, M., CENTENO, E., CAMBRA-FIERRO, J. y DEL CASTILLO, E., 2022.In search of fit or authenticity? A product-type consumer decision in celebrity brand extensions. *Journal of Product and Brand Management*, ISSN 1061-0421. DOI 10.1108/JPBM-04-2021-3437.

Purpose Celebrity-branded products constitute a brand extension growing phenomenon. Authenticity may explain why some of these offerings are successful despite low perceived fit, a traditional measure for brand extension acceptance. The purpose of this paper is to propose and test a framework based on the meaning transfer model that depicts the effects of brand extension authenticity, brand extension fit and idol attachment on the valuation of such offerings. An exploration of both functional and hedonic extensions is provided to control for product-type variables. Design/methodology/approach Scenario-based survey data from a general population (n = 646) was collected and analyzed with ordinary least squares regressions. Findings Brand extension authenticity is a significant antecedent of brand extension success in both product types, and brand extension fit is the most relevant antecedent only in functional extensions. Idol attachment exerts less influence than fit and authenticity in the functional extension. However, its relevance considerably improves in the hedonic extension. Originality/value A better understanding of consumers' responses to celebrity brand extensions is essential to the branding literature. To the best of the authors' knowledge, this study is the first to consider brand extension authenticity as a predictor of celebrity brand extension success and advances our knowledge of consumer behavior in relation to celebrities as brands and their products as brand extensions. The conceptual and empirical relevance of brand extension authenticity is demonstrated, highlighting its predictive power when compared with brand extension fit and idol attachment in a celebrity brand extension model, and a boundary condition related to product typology is uncovered.

LUENGO LÓPEZ, J., 2022. Morfología y significado de la cama en Marcel Prévost. Del lecho conyugal al camastro del adulterio. *Signa: Revista de la Asociación Española de Semiótica*, no. 31, pp. 515-536. ISSN 1133-3634. 10.5944/signa.vol31.2022.29411

El erotismo ha sido siempre una constante en la producción literaria de Marcel Prévost. Una sutil exaltación física del deseo que el escritor parisino proyectaba en la narrativa de aquellas escenas y situaciones que recreaba en sus textos. En muchas de ellas, la cama será el centro neurálgico de esa amatoria, generada o contenida, alrededor de la cual las mujeres burguesas tamizaban su existencia en el círculo social al que pertenecían. A lo largo del presente estudio profundizaremos en los

significados de la cama, yendo desde la sacralidad del lecho conyugal a los camastros improvisados en lugares ocultos para consumar la infidelidad, concibiéndose este mueble de sueño y ensueño como dual representación física de libertad y sujeción entre los individuos.

MARTÍNEZ ÁLVAREZ, F., TRONCOSO LORA, A., QUINTIÁN, H. y CORCHADO, E., 2022. Special issue SOCO 2019: New trends in soft computing and its application in industrial and environmental problems. *Neurocomputing*, vol. 470, pp. 278-279. DOI 10.1016/j.neucom.2021.01.071.

MARTÍNEZ-CAVA, A., HERNÁNDEZ-BELMONTE, A., COUREL-IBÁÑEZ, J., MORÁN-NAVARRO, R., GONZÁLEZ-BADILLO, J.J. y PALLARÉS, J.G., 2022. Bench Press at Full Range of Motion Produces Greater Neuromuscular Adaptations Than Partial Executions after Prolonged Resistance Training. *Journal of Strength and Conditioning Research*, vol. 36, no. 1, pp. 10-15. DOI 10.1519/JSC.0000000000003391.

Training at a particular range of motion (ROM) produces specific neuromuscular adaptations. However, the effects of full and partial ROM in one of the most common upper-limb exercises such as the bench press (BP) remain controversial. In this study, 50 recreationally to highly resistance trained men were randomly assigned to 1 of 4 training groups: full bench press (BPFULL), two-thirds bench press (BP2/3), and one-third bench press (BP1/3) and control (training cessation). Experimental groups completed a 10-week velocity-based resistance training program using the same relative load (linear periodization, 60–80% 1 repetition maximum [1RM]), only differing in the ROM trained. Individual ROM for each BP variation was determined in the familiarization and subsequently replicated in every lift during training and testing sessions. Neuromuscular adaptations were evaluated by 1RM strength and mean propulsive velocity (MPV). The BPFULL group obtained the best results for the 3 BP variations (effect size [ES] 5 0.52–1.96); in turn, partial BP produced smaller improvements as the ROM decreased (BP2/3: ES 5 0.29–0.78; BP1/3: ES 5 20.01 to 0.66). After 10-week of training cessation, the control group declined in all neuromuscular parameters (ES 5 0.86–0.92) except in MPV against low loads. Based on these findings, the BPFULL stands as the most effective exercise to maximize neuromuscular improvements in recreational and well-trained athletes compared with partial ROM variations. © 2019 National Strength and Conditioning Association

MARTINEZ-FERRAN, M., RAFEI, E., ROMERO-MORALES, C., PÉREZ-RUIZ, M., LAM-MELÉNDEZ, A., MUNGUIA-IZQUIERDO, D. y PAREJA-GALEANO, H., 2022. Optimizing Field Body Fat Percentage Assessment in Professional Soccer Players. *Applied Sciences (Switzerland)* [en línea], vol. 12, no. 2. DOI 10.3390/app12020727.

Body composition is a determinant of performance in soccer. To estimate the body fat percentage (%BF), dual energy X-ray absorptiometry (DXA) is effective though this method is expensive and not readily accessible. This study examines the validity of widely used field methods based on anthropometric data and bioelectrical impedance analysis (BIA). Participants were 21 male Spanish First

Division soccer players aged between 22 and 35 years. In each participant, body fat mass was determined by BIA and using 18 anthropometric equations including skinfold (SKF) measurements. DXA was used as reference. Correlation with DXA measurements was excellent for all equations and separate SKF measurements yet only moderate for BIA. However, only the equation recently developed for use in soccer players based on iliac crest and triceps SKFs showed no significant or standardized differences with DXA-derived %BF and these measurements also had the lowest bias. Our findings suggest that when DXA is not available, the best field method for %BF assessment in footballers is the equation based on iliac crest and triceps SKF. As another good option, we propose the sum of triceps, subscapular, supraspinal, and abdominal SKFs, as this combination also showed good correlation with DXA. © 2022 by the authors. Licensee MDPI, Basel, Switzerland.

MARTÍNEZ-JIMÉNEZ, L., 2022. Epistemología feminista de la conciliación: una propuesta práctica para miradas y mujeres en transición. *Feminismo/s*, no. 39, pp. 181-210. ISSN 1696-8166. 10.14198/fem.2022.39.07

This essay claims the relevance of a feminist epistemological practice of conciliation, capable of bringing together modern and postmodern sensibilities and works. This conciliatory gaze makes it possible to address the relationships between the macro-structural, meso-institutional and micro-incarnate dimensions of women's lives in their broad complexity, as well as to go through the current debates on the (in)validity of the categories of gender and woman. To this end, Sandra Harding's Standpoint Theory, a paradigm of the new feminist epistemology and the focus of scientific and political discrepancies between feminisms themselves, is taken as a starting point. Based on Harding's proposal, a critical analysis is made of the feminist tensions that this theory raises. These tensions point to certain essentialist and universalist risks and, at the same time, to possible individualist or relativist drifts. It is then suggested that this Standpoint Theory should meet with a postmodern approach that would make it more complex and update it in the eyes of current feminist discussions. From this postmodern standpoint, a series of amendments are proposed to refine the feminist epistemological gaze: to confront the single narrative about women from their diverse experiences; to explore the different embodied experiences to connect and analyse them in context, that is, subjected to structural power relations; to replace automatic epistemic privilege with a critical and argued preference for women's experiences and narratives; and, finally, to value the experiences and stories of the researcher to guide the study and, also, to expose the privileges and limitations of their own point of view.

MARTINEZ-PITA, I. y MORENO, O., 2022. A method to predict the reproductive cycle of the striped venus clam Chamelea gallina based on the influence of environmental factors: Application in its fishery management. *Fisheries Research*, vol. 245. ISSN 0165-7836. DOI 10.1016/j.fishres.2021.106133.

The main objective of this study was to design a method able to forecast gonadal stages in Chamelea gallina based on the influence of environmental conditions. This tool could be used to improve its fishery management since natural beds have been

extremely overexploited during the last few decades on the European coasts and populations have severely decreased. The natural population's reproductive cycle was studied from November 2013 to June 2016 (32 months). Gonadal and condition indexes (GI and CI) values were statistically related to environmental conditions: surface seawater temperature (SST) and chlorophyll-a (Chlo-a). Among all the correlations made, the highest R2 value (p < 0.001) was found between GI and the SST registered 60 days before bivalve sampling (SST-60). The regression equation derived from this correlation allows estimate the GI value if the SST-60 values are available. Each GI value is related with one gonadal stage (resting, maturation, ripe) and this allows for forecasting of the reproductive cycle. Therefore, the closed season can be established when most of the population is in the ripe stage and can be adjusted taking into account the possible temperature variations across the years. For ease of use, GI values estimated with this tool have also been converted using different colors onto a map of striped venus acute accent reproductive stages in its natural beds.

MATAMOROS-ANGLES, A., HERVERA, A., SORIANO, J., MARTI, E., CARULLA, P., LLORENS, F., NUVOLONE, M., AGUZZI, A., FERRER, I., GRUART, A., DELGADO-GARCIA, J.M. y DEL RIO, J.A., 2022. Analysis of co-isogenic prion protein deficient mice reveals behavioral deficits, learning impairment, and enhanced hippocampal excitability. *Bmc Biology*, vol. 20, no. 1. DOI 10.1186/s12915-021-01203-0.

Background Cellular prion protein (PrP(C)) is a cell surface GPI-anchored protein, usually known for its role in the pathogenesis of human and animal prionopathies. However, increasing knowledge about the participation of PrP(C) in prion pathogenesis contrasts with puzzling data regarding its natural physiological role. PrP(C) is expressed in a number of tissues, including at high levels in the nervous system, especially in neurons and glial cells, and while previous studies have established a neuroprotective role, conflicting evidence for a synaptic function has revealed both reduced and enhanced long-term potentiation, and variable observations on memory, learning, and behavior. Such evidence has been confounded by the absence of an appropriate knock-out mouse model to dissect the biological relevance of PrP(C), with some functions recently shown to be misattributed to PrP(C) due to the presence of genetic artifacts in mouse models. Here we elucidate the role of PrP(C) in the hippocampal circuitry and its related functions, such as learning and memory, using a recently available strictly co-isogenic Prnp(0/0) mouse model (Prnp(ZH3/ZH3)). Results We performed behavioral and operant conditioning tests to evaluate memory and learning capabilities, with results showing decreased motility, impaired operant conditioning learning, and anxiety-related behavior in Prnp(ZH3/ZH3) animals. We also carried in vivo electrophysiological recordings on CA3-CA1 synapses in living behaving mice and monitored spontaneous neuronal firing and network formation in primary neuronal cultures of Prnp(ZH3/ZH3) vs wildtype mice. PrP(C) absence enhanced susceptibility to high-intensity stimulations and kainate-induced seizures. However, long-term potentiation (LTP) was not enhanced in the Prnp(ZH3/ZH3) hippocampus. In addition, we observed a delay in neuronal maturation and network formation in Prnp(ZH3/ZH3) cultures.

Conclusion Our results demonstrate that PrP(C) promotes neuronal network formation and connectivity. PrP(C) mediates synaptic function and protects the synapse from excitotoxic insults. Its deletion may underlie an epileptogenic-susceptible brain that fails to perform highly cognitive-demanding tasks such as associative learning and anxiety-like behaviors.

MELARA, A., TORRES, J.F., TRONCOSO, A. y MARTINEZ-ALVAREZ, F., 2022. Electricity Generation Forecasting in Concentrating Solar-Thermal Power Plants with Ensemble Learning. En: GONZALEZ, HS AND LOPEZ, IP AND BRINGAS, PG AND QUINTIAN, H AND CORCHADO, E (ed.), *16th International Conference on Soft Computing Models in Industrial and Environmental Applications (SOCO 2021)*. S.l.: Startup Ole; Basque Govt, Dept Educ & Univ; Logistar Project DeustoTech; Univ Deusto, pp. 665-674. ISBN 978-3-030-87869-6. DOI 10.1007/978-3-030-87869-6_63.

Electric power generation forecast systems in concentrating solar-thermal power plants are a key tool for their operation and maintenance optimization. The purpose of this work is to approach the problem of electric power prediction in Arenales concentrating solar-thermal plant (Sevilla, Spain). Throughout this work, the standard phases in the knowledge discovery in databases are followed, resulting in three different models for the hourly electric power forecasting, with a 24-h prediction horizon. Each model is based on a different algorithm: Extra Gradient Boosting, K-Nearest Neighbors, and a Multi-Layer Perceptron neural network. The fitness of the models is assessed by some of the most common error metrics in regression problems with a satisfactory result. Additionally, it is shown how the results obtained in the prediction of hourly energy give rise to also evaluate the daily and the aggregate energy prediction in a wide time interval. After an individual analysis of each model, a comparative study is included with the aim of determining the best performance model.

MENDEZ-VILLANUEVA, A., NUÑEZ, F.J., LAZARO-RAMIREZ, J.L., RODRIGUEZ-SANCHEZ, P., GUITART, M., RODAS, G., MARTIN-GARETXANA, I., LEKUE, J., DI SALVO, V. y SUAREZ-ARRONES, L., 2022. Knee Flexor Eccentric Strength, Hamstring Muscle Volume and Sprinting in Elite Professional Soccer Players with a Prior Strained Hamstring. *Biology* [en línea], vol. 11, no. 1. DOI 10.3390/biology11010069.

The aim was to determine if players with a prior hamstring strain injury (HSI) exhibit bilateral deficits in knee flexor eccentric strength and hamstring muscle volume and differences in sprinting performance compared with players without a history of HSIs. Forty-six male professional soccer players participated in this study. Eccentric knee flexor strength, hamstring muscle volume (MRI), and a 20-m running sprint test (5-and 10-m split time) were assessed at the start of the preseason. Eccentric knee strength of the previously injured limbs of injured players was greater (ES: 1.18–1.36) than the uninjured limbs in uninjured players. Previously injured limbs showed possibly larger biceps femoris short heads (BFSh) and likely semitendinosus (ST) muscle volumes than the contralateral uninjured limbs among the injured players (ES: 0.36) and the limbs of the

uninjured players (ES: 0.56), respectively. Players who had experienced a previous HSI were possibly slower in the 5-m (small ES: 0.46), while unclear differences were found in both the 10-m and 20-m times. Players with a prior HSI displayed greater eccentric knee flexor strength, possibly relatively hypertrophied ST and BFSh muscles, and possibly reduced 5-m sprinting performances than previously uninjured players. This can have implication for the design of secondary hamstring muscle injury prevention strategies. © 2022 by the authors. Licensee MDPI, Basel, Switzerland.

MIRALLES MAYOL, M., RAYA GONZÁLEZ, J., RODRÍGUEZ FERNÁNDEZ, A. y CASTILLO ALVIRA, D., 2022. Efecto de la suplementación con zumo de remolacha sobre el resultado obtenido en un test máximo incremental y en dos test de valoración de potencia del tren inferior en triatletas amateurs. [Effect of beetroot juice supplementation on the result obtained. *RICYDE. Revista Internacional de Ciencias del Deporte*, vol. 18, no. 67, pp. 1-14. ISSN 1885-3137.

El objetivo fue analizar los efectos de la suplementación con zumo de remolacha (ZR) sobre el rendimiento deportivo en triatletas amateur, medido mediante un protocolo de media sentadilla bilateral y unilateral, y con una prueba de salto con contramovimiento (CMJ), en situación de fatiga. Doce triatletas amateurs participaron en este estudio aleatorizado, a doble ciego y con un diseño cruzado compuesto por dos sesiones de evaluación que consistían en un test incremental hasta la extenuación ejecutado entre dos CMJ y dos pruebas de media sentadilla con 30 y 40 kg de manera bilateral y unilateral. La intervención nutricional consistía en ingerir 140 mL de ZR o placebo 2,5 h antes de la prueba. La suplementación con ZR mejoró el consumo máximo de oxígeno (VO2max) absoluto ($p = 0,033$) y relativo ($p = 0,011$) obtenido en la prueba incremental en comparación con placebo ($4,12 \pm 0,70$ vs. $3,72 \pm 0,90$ ml·kg·min-1 y $54,82 \pm 7,72$ vs. $44,48 \pm 15,84$ ml·kg·min-1). Por otro lado, no se encontró una interacción significativa ($p > 0,05$, n2p = 0,03-0,30) para ninguna de las variables estudiadas en relación con el rendimiento bilateral y unilateral en media sentadilla ni CMJ entre la condición (placebo y ZR) y el tiempo (antes, PRE y después, POST). Estos resultados ponen de manifiesto que la suplementación con ZR ayuda a exhibir un mayor VO2max en triatletas amateurs pero no reduce la fatiga en comparación con la condición de placebo.AbstractThe aim was to analyze the effects of beetroot juice supplementation (BJ) on sports performance in amateur triathletes, measured using a bilateral and unilateral half squat protocol, and a contramovement jump (CMJ), fatigue situation. Twelve amateur triathletes participated in this randomized, double-blind, crossover design consisting of two evaluation sessions consisting of an incremental test until exhaustion performed between two CMJs and two half-squat tests with 30 and 40 kg. bilateral and unilateral loading. The nutritional intervention consisted of taking 140 mL of BJ or placebo 2.5 h before the test. BJ supplementation improved absolute ($p = 0,033$) and relative ($p = 0,011$) oxygen uptake (VO2max) in incremental test in comparison to placebo. ($4,12 \pm 0,70$ vs. $3,72 \pm 0,90$ ml·kg·min-1 y $54,82 \pm 7,72$ vs. $44,48 \pm 15,84$ ml·kg·min-1). On the other side, no significant interaction ($p > 0,05$, n2p = 0,03-0,30) was found for any of the variables studied in relation to bilateral and unilateral performance in half squat or CMJ between the condition (placebo and BJ) and time (before, PRE and after, POST). These results show that supplementation with BJ helps to exhibit greater VO2max in amateur triathletes

but does not reduce fatigue compared to the placebo condition.https://doi.org/10.5232/ricyde2022.06701

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MIRATVILLES, M., CALLE RUBIO, M., MOLINA PARÍS, J., ALMAGRO MENA, P., GÓMEZ SÁENZ, J.-T. y TRIGUEROS CARRERO, J.A., 2022. Actualización 2021 de la Guía Española de la EPOC (GesEPOC). Tratamiento farmacológico de la EPOC estable. *Archivos de bronconeumología: Organo oficial de la Sociedad Española de Neumología y Cirugía Torácica SEPAR y la Asociación Latinoamericana de Tórax (ALAT)*, vol. 58, no. 1, pp. 69-81. ISSN 0300-2896.

The Spanish COPD Guidelines (GesEPOC) were first published in 2012, and since then have undergone a series of updates incorporating new evidence on the diagnosis and treatment of COPD. GesEPOC was drawn up in partnership with scientific societies involved in the treatment of COPD and the Spanish Patients' Forum. Their recommendations are based on an evaluation of the evidence using GRADE methodology, and a narrative description of the evidence in areas in which GRADE cannot be applied. In this article, we summarize the recommendations on the pharmacological treatment of stable COPD based on 9 PICO questions. COPD treatment is a 4-step process: 1) diagnosis, 2) determination of the risk level, 3) initial and subsequent inhaled therapy, and 4) identification and management of treatable traits. For the selection of inhaled therapy, high-risk patients are divided into 3 phenotypes: non-exacerbator, eosinophilic exacerbator, and non-eosinophilic exacerbator. Some treatable traits are general and should be investigated in all patients, such as smoking or inhalation technique, while others affect severe patients in particular, such as chronic hypoxemia and chronic bronchial infection. COPD treatment is based on long-acting bronchodilators with single agents or in combination, depending on the patient's risk level. Eosinophilic exacerbators must receive inhaled corticosteroids, while non-eosinophilic exacerbators require a more detailed evaluation to choose the best therapeutic option. The new GesEPOC also includes recommendations on the withdrawal of inhaled corticosteroids and on indications for alpha-1 antitrypsin treatment. GesEPOC offers a more individualized approach to COPD treatment tailored according to the clinical characteristics of patients and their level of complexity.

MOLINA LOPEZ, A., LARA PADILLA, E., MOYA AMAYA, H., ROJANO ORTEGA, D., BERRAL AGUILAR, A.J., ESTEVAN NAVARRO, P. y BERRAL DE LA ROSA, F.J., 2022. Effect of post-training and post-match antioxidants on oxidative stress and inflammation in professional soccer players. *Retos-Nuevas Tendencias en Educacion Fisica Deporte y Recreacion*, no. 43. ISSN 1579-1726.

The objective of this study was to determine if the addition of post-activity antioxidants is a useful strategy for improving the specific analytical parameters related to oxidative stress and inflammation. The study was carried out in an Italian Serie A soccer team, between October, 2019 and January, 2020. In October, the measurements were carried out on the players without having taken post-activity antioxidant supplementation.The intervention period corresponded from the end of October to the beginning of January, a period in which post- activity

antioxidants were supplemented.The results obtained confirmed that the players who took antioxidants during the intervention period in the form of a mixture of a natural pineapple smoothie with a concentrate of tart cherry, pomegranate, black currant and beet in stick form, significantly improved the parameters associated with oxidative stress, although a significant improvement in the parameters related to inflammation was not observed. The use of antioxidants for a period of seventy days is a post-activity intervention strategy that can be considered effective for improving the reduction of parameters related to the oxidative effect derived from the practice of physical exercise at a professional level in soccer, although more studies are needed to determine the anti-inflammatory effect.

MONTORO SÁNCHEZ, J.A., 2022. Posibilidades de uso de los datos de tráfico y localización para la represión de la delincuencia organizada. *Lucha contra la criminalidad organizada y cooperación judicial en la UE: Instrumentos, límites y perspectivas en la era digital*. S.l.: Aranzadi Thomson Reuters, pp. 339-366. ISBN 978-84-13-91870-9.

MORALES, F., GARCÍA-TORRES, M., VELÁZQUEZ, G., DAUMAS-LADOUCE, F., GARDEL-SOTOMAYOR, P.E., GÓMEZ-VELA, F., DIVINA, F., VÁZQUEZ NOGUERA, J.L., SAUER AYALA, C., PINTO-ROA, D.P., MELLO-ROMÁN, J.C. y BECERRA-ALONSO, D., 2022. Analysis of Electric Energy Consumption Profiles Using a Machine Learning Approach: A Paraguayan Case Study. *Electronics (Switzerland)* [en línea], vol. 11, no. 2. DOI 10.3390/electronics11020267.

Correctly defining and grouping electrical feeders is of great importance for electrical system operators. In this paper, we compare two different clustering techniques, K-means and hierarchical agglomerative clustering, applied to real data from the east region of Paraguay. The raw data were pre-processed, resulting in four data sets, namely, (i) a weekly feeder demand, (ii) a monthly feeder demand, (iii) a statistical feature set extracted from the original data and (iv) a seasonal and daily consumption feature set obtained considering the characteristics of the Paraguayan load curve. Considering the four data sets, two clustering algorithms, two distance metrics and five linkage criteria a total of 36 models with the Silhouette, Davies–Bouldin and Calinski–Harabasz index scores was assessed. The K-means algorithms with the seasonal feature data sets showed the best performance considering the Silhouette, Calinski–Harabasz and Davies–Bouldin validation index scores with a configuration of six clusters. © 2022 by the authors. Licensee MDPI, Basel, Switzerland.

MORENO GÓMEZ, E. y JÁUREGUI-LOBERA, I., 2022. Variables emocionales y food craving: Influencia del ciclo menstrual.: *Journal of Negative and No Positive Results: Jonnpr*, vol. 7, no. 1, pp. 28-63. ISSN 2529-850X.

Antecedentes. El ciclo reproductor femenino - que implica interacciones entre el cerebro, el útero y los ovarios - está constituido por la fase folicular o proliferativa (también denominada pre-ovulatoria), posteriormente, tiene lugar la ovulación, tras ella

comienza la fase lútea o secretora y, por último, tiene lugar la fase menstrual. Durante el ciclo menstrual la mujer experimenta cambios hormonales que pueden provocarle síntomas físicos, psicológicos y comportamentales como cambios en el apetito, pudiendo afectarle así a su ingesta alimentaria. Un fenómeno observado durante la menstruación es el food craving, definido como una necesidad irresistible de consumir comida ("ansia"), siendo predominante desear consumir alimentos procesados durante la fase premenstrual, conducta que, también se asocia a un estado de ánimo negativo. No obstante, numerosos y diversos patrones alimentarios, así como también fluctuaciones en el estado emocional, se han observado en la mujer durante las diversas fases del ciclo menstrual. Por ello, es necesario una mayor investigación en esta área. Objetivos y método. El presente trabajo, tiene como objetivos observar la variación del food craving en función de las diferentes fases del ciclo menstrual y observar la influencia de variables emocionales (ansiedad-estado de ánimo negativo) en el "ansia por comer" (food craving). Para ello, se ha realizado una búsqueda bibliográfica en las bases de datos PubMed, y otras fuentes como Wiley Online Library y ResearchGate, para obtener y contrastar las ideas de los autores de estudios previos con respecto al tema.Discusión. Se ha observado que existe una tendencia a un patrón energético-alimentario mayor durante la fase lútea junto con una experiencia "food craving" también incrementada durante esta etapa, en comparación con otras fases del ciclo menstrual. A nivel emocional, se ha observado que durante la fase premenstrual la mujer consume alimentos ultraprocesados como el chocolate con la creencia de que disminuyen los síntomas asociados a este periodo. Sin embargo, hay que mencionar que, en los estudios analizados, existe una elevada variabilidad con relación a los niveles hormonales, ingesta alimentaria y estado emocional de la mujer durante las diversas etapas del ciclo menstrual que ha dificultado la interpretación de los resultados.Conclusión. Los resultados analizados son poco concluyentes. Es evidente que el ciclo menstrual afecta tanto a la ingesta alimentaria como al estado emocional de la mujer pero se necesitan más estudios que permitan analizar la relación existente entre alimentación, food craving, ciclo menstrual y emociones de forma más precisa y concreta.

MUÑOZ-LLERENA, A., PEDRERO, M.N., FLORES-AGUILAR, G. y LÓPEZ-MENESES, E., 2022. Design of a Methodological Intervention for Developing Respect, Inclusion and Equality in Physical Education. *Sustainability (Switzerland)* [en línea], vol. 14, no. 1. DOI 10.3390/su14010390.

The following educational intervention proposal arises from the importance of implementing an education based on fostering values through physical education (PE) lessons. PE has certain characteristics that contribute to enhancing learning at a social, affective and psychological level, in addition to promoting adequate physical development. The proposed design is based on Donald Hellison's personal and social responsibility model (TPSR), whose main objective is to achieve a teaching methodology that can convey values and skills in the lives of youth at risk of exclusion. Different sports modalities are used in the initiation phase, which make up a ten-week teaching unit and in which the game takes the leading role. The application of this program focuses specifically on students in compulsory secondary education, a stage in which significant changes are experienced in many aspects and levels. However, it is completely adaptable to other develop-mental stages. In this way, the main objective of this work is to

create an intervention proposal that aims to promote, following a set of intervention units of sessions, the development of the three main values in which this work is based: respect, equality and inclusion. © 2021 by the authors. Licensee MDPI, Basel, Switzerland.

NISA CACERES, D. y MORENO SOLDEVILA, R., 2022.Hopes Woven in Smoke: Reimagining Virgil's Aeneid in Irene Vallejo's El silbido del arquero. *Neophilologus*, ISSN 0028-2677. DOI 10.1007/s11061-021-09721-6.

This article investigates Irene Vallejo's 2015 novel El silbido del arquero, a narrative in the Virgilian tradition mostly inspired by Book IV of the Aeneid. We show how Vallejo reinterprets Dido and Aeneas's tragic love story by foregrounding minor characters, developing the setting, integrating popular subgenres and exploring communicative anxieties and gender issues. It is argued that patterns of dissatisfaction, self-delusion and disillusionment with human affairs ultimately collide with a message of hope voiced by the fictionalised Virgil.

NUNEZ, F., ARCOS-VARGAS, A., USABIAGA, C. y ALVAREZ-DE-TOLEDO, P., 2022.On directors' compensation: a multilevel analysis of Spanish listed companies. *Empirical Economics*, ISSN 0377-7332. DOI 10.1007/s00181-021-02183-4.

This study analyzes the determinants of the annual compensation of directors belonging to the boards of the Spanish companies that constitute the IBEX 35 stock index. We investigate the importance of observed and unobserved heterogeneity in explaining director compensation. Based on a three-level mixed effect model, our analysis includes time-invariant random effects at company and manager level as determinants of director pay. We find that company effects explain 30% of the variation in director pay, while company and director effects taken together explain 77% of that variation. Our findings suggest that the characteristics of the company, in terms of activity sector, size and financial performance, and the professional attributes of the director (especially the role within the board), influence the compensation received. In addition, some directors and companies show random effects (either positive or negative) that significantly separate them from the expected compensation estimated from the fixed part of the model.

NUVIALA NUVIALA, R., MORÁN GÁMEZ, G., MORENO AZZE, A. y FALCÓN MIGUEL, D., 2022. Relación entre motivos de práctica de actividad física y nivel de formación de usuarios de centros deportivos. *Trances: Transmisión del conocimiento educativo y de la salud*, vol. 14, no. 1, pp. 37-49. ISSN 1989-6247.

Los centros deportivos necesitan adaptar sus servicios a los intereses de los usuarios. Para ello es imprescindible segmentar el mercado atendiendo a las tradicionales variables sociodemográficas y otras como las motivaciones y las actitudes. El objetivo de la investigación fue conocer los motivos de los usuarios para acudir a los centros deportivos estableciendo perfiles diferenciadores en función de sus diferentes niveles de formación académica. Los usuarios señalaron el Disfrute

(3.93 ± .60) y el Fitness/Salud (3.84 ± .71) como los motivos más relevantes. Los usuarios sin formación se sentían motivados por el Fitness y Disfrute, mientras que los usuarios con formación profesional por Fitness y Apariencia. La vinculación de los motivos de práctica de actividad física del usuario con su nivel de formación mostró diferencias significativas en todos los factores. Estos resultados posibilitan ofertar servicios más eficientemente ya que permite un mejor ajuste a las demandas de los usuarios aumentando su fidelidad.

ORANTES-GONZALEZ, E. y HEREDIA-JIMENEZ, J., 2022. Are Men and Women Equally Affected by Load Carriage While Landing? Analysis of Balance in Spanish Infantry Soldiers. *Motor Control*, vol. 26, no. 1, pp. 48-57. ISSN 1087-1640. DOI 10.1123/mc.2021-0016.

In this study, the effect of carrying combat equipment and a backpack on balance between men and women was analyzed by simulating a jump out of an armored fighting vehicle, together with the influence of body composition variables. Thirty-seven men and eight women participated in this study. Three landings were performed by simulating a jump from a wheeled armored vehicle carrying no load, carrying the combat equipment and backpack condition. A force plate was used to measure the amplitude and velocity displacement of the center of pressure and the stabilization time. A significant load effect was found on the total velocity and medial-lateral velocity. The weight of the combat equipment and the body composition variables did not correlate with the balance variables. Male and female soldiers showed similar body balance while carrying military combat equipment.

ORTIZ SANCHEZ, J.A., RAMIREZ-HURTADO, J.M. y CONTRERAS, I., 2022. A structural equation model about the effect of health on behaviour intention to practise active commuting: study of the factorial invariance by sex and age. *Retos-Nuevas Tendencias en Educacion Fisica Deporte y Recreacion*, no. 44, pp. 386-394. ISSN 1579-1726.

A growing of health problems in people have been in recent years, as obesity, overweight, diabetes, etc. Active commuting is a way to combat these problems. The objective of this work is to assess the effect of health, comfort and environmental awareness on behaviour intention to practice active commuting, as well as to study the factorial invariance by sex and age. For this purpose, a questionnaire was designed and distributed by means of a convenience sample with snowball effect. 448 responses were obtained from this sample. The specification and estimation of structural equation model with AMOS was designed for the analysis of the data. The results show that the reliability and validity of measurement model and structural model is verified. The results also show that factorial invariance by sex is verified but strict factorial invariance for age is not verified.

OVIEDO-CARO, M.Á., BUENO-ANTEQUERA, J. y MUNGUIA-IZQUIERDO, D., 2022.Meeting physical activity guidelines and its association with health-related

quality of life throughout pregnancy: the PregnActive project. *Psychology Health & Medicine*, ISSN 1354-8506. DOI 10.1080/13548506.2022.2029502.

Pregnancy is a unique period in women life, characterized by anatomical and metabolic variation that may affect health-related quality of life (HRQoL). Physical activity has the potential to positively influence HRQoL. The aim of this study is to analyze the association between the fulfillment of physical activity guidelines and HRQoL throughout pregnancy. Seventy-eight pregnant women were assessed at two time point through their pregnancy: at mid- and at later-pregnancy. Physical activity was objectively assessed by a multi-sensor monitor and pregnant women were categorized by the fulfillment of the minimum physical activity recommendations: at least 30 minutes/day on at least 5 days/week. Perceived mental health was evaluated by health-related quality of life and by psychological pregnancy symptoms, using the SF-36 and the Pregnancy Symptoms Inventory, respectively. T-Student Test and hierarchical multiple linear regressions analysis was developed. Pregnant women who fulfilled physical activity recommendations reported better mental HRQoL both at mid-pregnancy ($p = 0.148$) and later-pregnancy ($p = 0.007$). The number of days meeting minimum physical activity recommendations contributes to better mental HRQoL and together with depression and anxiety symptoms the model explain the 65% of the mental HRQoL at later pregnancy. Meeting the minimum physical activity recommendations is associated with better perceived health at both midpregnancy and later pregnancy. While mental HRQoL is explained by physical activity, physical HRQoL is explained by others factors such as age or pregnancy-related symptoms, but not by meeting the minimum physical activity recommendations.

OTERO SABORIDO, F.M., POZUELO-ESTRADA, F.J. y PALOMINO-DEVIA, C., 2022. Perception of university students of Physical Education on the dialogue mark. *Retos-Nuevas Tendencias en Educacion Fisica Deporte y Recreacion*, no. 43, pp. 300-308. ISSN 1579-1726.

The dialogue score (DM) is a formative and shared assessment strategy for which there is little scientific evidence. Therefore, the main objective of this study was to analyze the perception of university students on the use of the DM within the flipped learning model. To do this, 144 students from the Degree in Physical Activity and Sports Sciences carried out a work project on sports initiation models. After a process of feeback and continuous evaluation of the task over three weeks, the students shared a DS session with their teacher to grade the work. The analysis of the interviews with the Atlas.ti software reflected the positive perception of the students towards DM. Students consider that it benefits learning and improves interaction with the teacher. Likewise, they believe that DM would have worsened if instead of using qualitative traits it had been negotiated on numerical ratings

PALAREA-ALBALADEJO, J., CAYUELA-SÁNCHEZ, J.A. y MORIANA-CORRERO, E., 2022. Estimating Fat Components of Potato Chips Using Visible

and Near-Infrared Spectroscopy and a Compositional Calibration Model. *Food Analytical Methods*, vol. 15, no. 1, pp. 133-143. DOI 10.1007/s12161-021-02106-0.

When aiming to assess the fat composition of commercial potato chip products, their diversity and the difficulties to verify the nutritional label of batches of chips by official methods are main challenges. Thus, the possibility of using alternative technologies is of great interest for both the industry and the public administration. Near-infrared spectroscopy (NIRS) is a rapid and non-destructive technique that has been proven useful in different applications in the food industry. However, suitable specific treatments of compositional references with NIRS methods have been until now very scarce in the literature. The nutritional label information is commonly given as percentage content values across several nutritional categories. This formally corresponds with the class of so-called compositional data, for which there are specific statistical methods. This study contributes to ongoing research on the feasibility of Vis/NIR spectroscopy for food nutritional labelling. In particular, a calibration model is formulated to estimate the relative content of fat in potato chips products based on NIR spectral signal that integrates a consistent statistical treatment of the nutritional reference data. The method provides accurate estimates of the fat composition, with this including saturated, monounsaturated, and polyunsaturated types of fat, as well as their total fat percentage (cross-validated overall $R2 = 0.88$ and $R2 = 0.82$ from ground and fragmented samples respectively) and shows its potential for both nutritional labelling and verification in a rapid and inexpensive manner. © 2021, The Author(s).

PEÑA-GÓMEZ, M.J., SUÁREZ-PIZARRO, M. y ROSADO, I.V., 2022. XRCC1 Prevents Replication Fork Instability during Misincorporation of the DNA Demethylation Bases 5-Hydroxymethyl-2′-Deoxycytidine and 5-Hydroxymethyl-2′-Deoxyuridine. *International Journal of Molecular Sciences* [en línea], vol. 23, no. 2. DOI 10.3390/ijms23020893.

Whilst avoidance of chemical modifications of DNA bases is essential to maintain genome stability, during evolution eukaryotic cells have evolved a chemically reversible modification of the cytosine base. These dynamic methylation and demethylation reactions on carbon-5 of cytosine regulate several cellular and developmental processes such as embryonic stem cell pluripotency, cell identity, differentiation or tumourgenesis. Whereas these physiological processes are well charac-terized, very little is known about the toxicity of these cytosine analogues when they incorporate during replication. Here, we report a role of the base excision repair factor XRCC1 in protecting replication fork upon incorporation of 5-hydroxymethyl-2′-deoxycytosine (5hmC) and its deamination product 5-hydroxymethyl-2′-deoxyuridine (5hmU) during DNA synthesis. In the absence of XRCC1, 5hmC exposure leads to increased genomic instability, replication fork impairment and cell lethality. Moreover, the 5hmC deamination product 5hmU recapitulated the genomic instability phenotypes observed by 5hmC exposure, suggesting that 5hmU accounts for the observed by 5hmC exposure. Remarkably, 5hmC-dependent genomic instability and replication fork impairment seen in Xrcc1−/− cells were exacerbated by the trapping of Parp1 on chromatin, indicating that XRCC1 maintains replication fork stability during processing of

5hmC and 5hmU by the base excision repair pathway. Our findings uncover natural epigenetic DNA bases 5hmC and 5hmU as genotoxic nucleosides that threaten replication dynamics and genome integrity in the absence of XRCC1. © 2022 by the authors. Licensee MDPI, Basel, Switzerland.

PÉREZ-LUÑO, A., PIÑOL, M.D. y DOLAN, S.L., 2022. Exploring High vs. Low Burnout amongst Public Sector Educators: COVID-19 Antecedents and Profiles. *International Journal of Environmental Research and Public Health* [en línea], vol. 19, no. 2. DOI 10.3390/ijerph19020780.

The COVID-19 pandemic has had a prolonged impact on many people working in different sectors. This paper focuses on the psychological stress consequences of professionals working in the educational sector in Andalucía (Spain). Using a sample of 340 educators, this empirical paper identifies the antecedents and profiles of those that ended up with burnout vs. those that were able to develop resilience. Results from OLS regressions show that regardless of the origins of stress, the principal determinant of burnout is clearly a lack of support and a perception of an inability to control a situation. Furthermore, results also show that working sources have a higher impact on the configuration of high burnout, while family sources harm those who are more resilient (low burnout). © 2022 by the authors. Licensee MDPI, Basel, Switzerland.

PEREZ-MORENO, J.J., SANTA-CRUZ MATEOS, C., MARTIN-BERMUDO, M.D. y ESTRADA, B., 2022. LanB1 Cooperates With Kon-Tiki During Embryonic Muscle Migration in Drosophila. *Frontiers in Cell and Developmental Biology*, vol. 9. ISSN 2296-634X. DOI 10.3389/fcell.2021.749723.

Muscle development is a multistep process that involves cell specification, myoblast fusion, myotube migration, and attachment to the tendons. In spite of great efforts trying to understand the basis of these events, little is known about the molecular mechanisms underlying myotube migration. Knowledge of the few molecular cues that guide this migration comes mainly from studies in Drosophila. The migratory process of Drosophila embryonic muscles involves a first phase of migration, where muscle progenitors migrate relative to each other, and a second phase, where myotubes migrate searching for their future attachment sites. During this phase, myotubes form extensive filopodia at their ends oriented preferentially toward their attachment sites. This myotube migration and the subsequent muscle attachment establishment are regulated by cell adhesion receptors, such as the conserved proteoglycan Kon-tiki/Perdido. Laminins have been shown to regulate the migratory behavior of many cell populations, but their role in myotube migration remains largely unexplored. Here, we show that laminins, previously implicated in muscle attachment, are indeed required for muscle migration to tendon cells. Furthermore, we find that laminins genetically interact with kon-tiki/perdido to control both myotube migration and attachment. All together, our results uncover a new role for the interaction between laminins and Kon-tiki/Perdido during Drosophila myogenesis. The identification of new players and molecular interactions underlying myotube migration broadens our understanding of muscle development and disease.

PINZÓN-PARRA, C.A., COATL-CUAYA, H., DÍAZ, A., GUEVARA, J., RODRÍGUEZ-MORENO, A. y FLORES, G., 2022. Long-term effect of neonatal antagonism of ionotropic glutamate receptors on dendritic spines and cognitive function in rats. *Journal of Chemical Neuroanatomy* [en línea], vol. 119. DOI 10.1016/j.jchemneu.2021.102054.

Glutamate is the most abundant excitatory neurotransmitter in the hippocampus where mediates its actions by activating glutamate receptors. The activation of these receptors is essential for the maintenance and dynamics of dendritic spines and plasticity that correlate with learning and memory processes during neurodevelopment and adulthood. We studied in adults the effect of blocking ionotropic glutamate receptors (NMDAR, AMPAR, and KAR) functions at neonatal age (PD1-PD15) with their respective antagonists D-AP5, GYKI-53655 and UBP-302. We first evaluated memory using a new object recognition test in adults. Second, we evaluated the levels of glial fibrillary acidic protein, synaptophysin and actin with immunohistochemistry in the CA1, CA3, and dentate gyrus regions of the hippocampus and, finally, the number of dendritic spines and their dynamics using Golgi-Cox staining. We found that ionotropic glutamate receptor function blockade at neonatal age causes a reduction in short and long-term memory in adulthood and a reduction in the expression of synaptophysin and actin protein levels in the hippocampus regions studied. This blockade also reduced the number of dendritic spines and modified dendritic dynamics in the CA1 region. The antagonism of the three types of ionotropic glutamate receptors reduced the mushrooms and bifurcated types of spines and increased the thin spines. The number of stubby spines was reduced by D-AP5, increased by UPB-302, and not affected by GYKI-53655. Our results indicate that the blockade of neonatal ionotropic glutamate receptors produces alterations that persist until adulthood. © 2021 Elsevier B.V.

POZO CUEVAS, F., 2022. Researching prostitution: complexity of the subject, analytical frameworks, and controversies. *Revista Espanola De Sociologia*, vol. 31, no. 1. ISSN 1578-2824. DOI 10.22325/fes/res.2022.93.

This article sets out the key factors that impede sociological inquiry into prostitution, the approaches and frameworks adopted for this purpose, the frictions affecting the main approaches taken, and the challenges facing the scientific-social study of the phenomenon. Investigating prostitution poses difficulties because of the complex and controversial nature of this subject, the different perspectives from which it is studied, and the challenge of trying to avoid the moral and ideological disputes associated with this social practice from its origins. By adopting an objective and sufficiently detached position, this paper seeks to overcome the permanent controversy that dominates academic debate on this subject.

QUILES GARCÍA, F., 2022. El hijo pródigo, Murillo y el Barroco andaluz. *Descubrir el arte*, no. 275, pp. 60-64. ISSN 1578-9047.

Tras una reciente restauración, la Galería Nacional de Dublín ha prestado al Museo del

Prado la serie de seis cuadros del pintor sevillano que narra esta parábola y que se exhibe junto a la historia de José, de Antonio del Castillo, y la mayor parte de los cuadros que describen la vida de San Ambrosio, de Valdés Leal

RAMÓN DÍAZ, A., 2022. La inadmisión a trámite de las reclamaciones presentadas ante la agencia española de protección de datos. *Diario La Ley*, no. 9985, pp. 2- 0. ISSN 1989-6913.

Desarrollamos en el presente estudio jurídico el concepto de reclamación y su trascendencia para la autoridad de control (como deber) y para el interesado (como derecho), la inadmisión a trámite de la reclamación y sus causas, la obligación de notificación y formas de reacción ante la resolución de inadmisión de la reclamación planteada, para finalizar con unas breves conclusiones.

RÍO RUIZ, M.Á., MARTÍN GIMENO, R. y ORTEGA, M., 2022. Luces y sombras de la educación infantil 0-3 en Andalucía: condiciones de acceso y escolarización. *Revista de Sociología de la Educación-RASE*, vol. 15, no. 1, pp. 127-151. ISSN 2605-1923. 10.7203/RASE.15.1.22990

El artículo examina diferentes facetas de la Educación Infantil 0-3 en Andalucía. Se analizan las características e historia reciente del modelo implantado aquí en el contexto de la Educación 0-3 estatal. El análisis revela una gran expansión reciente de la escolaridad en todos los años de este ciclo, pero basada en la multiplicación de una oferta de centros infantiles privados concertados infra financiados, en dificultades económicas, muy condicionados por ello a cumplir mínimos de proyectos asistenciales. Todo ello limita muchas veces la calidad y eficacia pedagógica que se viene crecientemente demandando a este ciclo. El análisis también identifica exclusiones por motivos económicos, pero que afectan menos a las familias más vulnerables de menos recursos por debajo del umbral de la pobreza que a las familias de clases populares que se autoexcluyen o retrasan al máximo la matriculación al carecer de bonificaciones, incentivos económicos y derechos a plazas gratuitas.

RODRÍGUEZ IZQUIERDO, R.M., 2022. International experiences and the development of intercultural sensitivity among university students. *Educación XX1: Revista de la Facultad de Educación*, vol. 25, no. 1, pp. 93-117. ISSN 1139-613X. 10.5944/eduxx1.30143

International cultural immersion experiences are deemed one of the most effective ways to prepare multicultural and global citizens. The purpose of the study was to determine: (1) first-year and final-year university students' levels of Intercultural Sensitivity (henceforth IS); (2) if there was a relationship between IS and experiences of intercultural contact; and (3) the variables that might predict the development of IS. A longitudinal method and a correlational-predictive design was used. The sample comprised 1645 (52.5% women and 47.5% men) undergraduate students from 8 public universities and one private university in Andalusia (Spain) with a mean age of 23.29 (SD = 4.99). The Intercultural

Development Inventory (IDI) was usedto measure IS, and the Intercultural Experiences Inventory (IEI) was administered to explore students' intercultural experiences. Findings highlighted that there is little change in the IDI scores among first-year and final-year students, and most students were found to be in the intermediate stages of intercultural development (the minimization stage according to Bennett's model, characterized by the widespread belief that everyone is quite similar). The lack of development found in the students' IS could have something to do with the lack of opportunity to reflect and think about cultural differences. Positive correlations were found between IS and mobility experiences and intercultural friendships, and negative correlations were found with the number of intercultural interactions and language knowledge. Having mobility experiences, being female, and having friends from other cultures were predictive variables of IS. Finally, the educational implications are discussed.

ROIZ-PAGADOR, J., CHACON-MALDONADO, A., RUIZ, R. y ASENCIO-CORTES, G., 2022. Earthquake Prediction in California Using Feature Selection Techniques. En: GONZALEZ, HS AND LOPEZ, IP AND BRINGAS, PG AND QUINTIAN, H AND CORCHADO, E (ed.), *16th International Conference on Soft Computing Models in Industrial and Environmental Applications (SOCO 2021)*. S.l.: Startup Ole; Basque Govt, Dept Educ & Univ; Logistar Project DeustoTech; Univ Deusto, pp. 728-738. ISBN 978-3-030-87869-6. DOI 10.1007/978-3-030-87869-6_69.

Predicting the magnitude of earthquakes is of vital importance and, at the same time, of extreme complexity, where each attribute contributes differently in the process, even introducing noise. Preprocessing using attribute selection techniques helps to alleviate this drawback. In this work, this is demonstrated through an extensive comparison of 47 years of data from the Northern California Earthquake Data Center, where a wide range of feature selection algorithms are applied composed by different search, like population, local and ranking search based; and evaluators, like Correlations, consistency and distance metrics. After that, prediction algorithms will allow to compare the result with and without the application of feature selection, showing that the number of existing attributes can be reduced by 80%, improving metrics of the original, ensuring that the use of attribute selection in this type of problem is quite promising.

ROMERO-BARRAGÁN, M.T., GRUART, A. y DELGADO-GARCÍA, J.M., 2022. Transsynaptic Long-Term Potentiation in the Hippocampus of Behaving Mice. *Frontiers in Synaptic Neuroscience* [en línea], vol. 13. DOI 10.3389/fnsyn.2021.811806.

Long-term potentiation (LTP) is an experimental procedure that shares certain mechanisms with neuronal learning and memory processes and represents a well-known example of synaptic plasticity. LTP consists of an increase of the synaptic response to a control stimulus following the presentation of a high-frequency stimulation (HFS) train to an afferent pathway. This technique is studied mostly in the hippocampus due to the latter's high susceptibility and its laminar nature

which facilitates the location of defined synapses. Although most preceding studies have been performed in vitro, we have developed an experimental approach to carry out these experiments in alert behaving animals. The main goal of this study was to confirm the existence of synaptic changes in strength in synapses that are post-synaptic to the one presented with the HFS. We recorded field excitatory post-synaptic potentials (fEPSPs) evoked in five hippocampal synapses, from both hemispheres, of adult male mice. HFS was presented to the perforant pathway (PP). We characterized input/output curves, paired-pulse stimulation, and LTP of these synapses. We also performed depth-profile recordings to determine differences in fEPSP latencies. Collected data indicate that the five selected synapses have similar basic electrophysiological properties, a fact that enables an easier comparison of LTP characteristics. Importantly, we observed the presence of significant LTP in the contralateral CA1 (cCA1) area following the control stimulation of non-HFS-activated pathways. These results indicate that LTP appears as a physiological process present in synapses located far away from the HFS-stimulated afferent pathway. Copyright © 2022 Romero-Barragán, Gruart and Delgado-García.

SÁNCHEZ-HIDALGO, A.C., ARIAS-ARAGÓN, F., ROMERO-BARRAGÁN, M.T., MARTÍN-CUEVAS, C., DELGADO-GARCÍA, J.M., MARTINEZ-MIR, A. y SCHOLL, F.G., 2022. Selective expression of the neurexin substrate for presenilin in the adult forebrain causes deficits in associative memory and presynaptic plasticity. *Experimental Neurology* [en línea], vol. 347. DOI 10.1016/j.expneurol.2021.113896.

Presenilins (PS) form the active subunit of the gamma-secretase complex, which mediates the proteolytic clearance of a broad variety of type-I plasma membrane proteins. Loss-of-function mutations in PSEN1/2 genes are the leading cause of familial Alzheimer's disease (fAD). However, the PS/gamma-secretase substrates relevant for the neuronal deficits associated with a loss of PS function are not completely known. The members of the neurexin (Nrxn) family of presynaptic plasma membrane proteins are candidates to mediate aspects of the synaptic and memory deficits associated with a loss of PS function. Previous work has shown that fAD-linked PS mutants or inactivation of PS by genetic and pharmacological approaches failed to clear Nrxn C-terminal fragments (NrxnCTF), leading to its abnormal accumulation at presynaptic terminals. Here, we generated transgenic mice that selectively recreate the presynaptic accumulation of NrxnCTF in adult forebrain neurons, leaving unaltered the function of PS/gamma-secretase complex towards other substrates. Behavioral characterization identified selective impairments in NrxnCTF mice, including decreased fear-conditioning memory. Electrophysiological recordings in medial prefrontal cortex-basolateral amygdala (mPFC-BLA) of behaving mice showed normal synaptic transmission and uncovered specific defects in synaptic facilitation. These data functionally link the accumulation of NrxnCTF with defects in associative memory and short-term synaptic plasticity, pointing at impaired clearance of NrxnCTF as a new mediator in AD. © 2021 The Author(s)

SÁNCHEZ-ORO, J., LÓPEZ-SÁNCHEZ, A.D. y COLMENAR, J.M., 2022. A multi-objective parallel variable neighborhood search for the bi-objective obnoxious p-median problem. *Optimization Letters*, vol. 16, no. 1, pp. 301-331. DOI 10.1007/s11590-020-01690-0.

Researchers and practitioners have addressed many variants of facility locations problems. Each location problem can be substantially different from each other depending on the objectives and/or constraints considered. In this paper, the bi-objective obnoxious p-median problem (Bi-OpM) is addressed given the huge interest to locate facilities such as waste or hazardous disposal facilities, nuclear power or chemical plants and noisy or polluting services, among others. The Bi-OpM aims to locate p facilities maximizing two different objectives: the distance between each customer and their nearest facility center and the dispersion among facilities. To address the Bi-OpM problem a Multi-objective Parallel Variable Neighborhood Search approach (Mo-PVNS) is implemented. Computational results indicate the superiority of the Mo-PVNS compared to the state-of-art algorithms. © 2021, The Author(s), under exclusive licence to Springer-Verlag GmbH, DE part of Springer Nature.

SANCHEZ-SAEZ, J.A., MORILLO-BARO, J.P., SANCHEZ MALIA, J.M., LARA COBOS, D. y ARIAS-ESTERO, J.L., 2022. Pilot study on players' and coaches' motor and psychological responses during competition to the proposed mini-beach handball rules. *Retos-Nuevas tendencias en Educacion Fisica Deporte y Recreacion*, no. 43, pp. 623-633. ISSN 1579-1726.

A proposal for a mini-beach handball regulation has recently been put forward to adapt the adult game to children up to 11 years of age. The aim of the study was to find out the motor and psychological responses of players and coaches after training and playing with the proposed mini-beach handball rules. Thirty-five players (16 boys and 19 girls, age: 8-11 years, M = 10.06, SD = 0.91) and five coaches (4 males and 1 female) participated. The study followed a mixed methods approach, quantitative and qualitative. The design was quasi-experimental with post-test measures. The intervention consisted of three procedures: (a) the presentation of the regulation to the coaches, (b) to train taking advantage of the new regulations, (c) to compete in a mini-beach handball tournament. Quantitatively, the dependent variables were motor and psychological. Qualitatively, participants were asked about their experiences training and playing with the new rules. High values were obtained in terms of equality in participation, roles played, appropriate decisions in passing, turning and shoot-outs, perceived competence, enjoyment, and intention to practice in the future. In conclusion, the proposed rules for mini-beach handball seem to be adapted for participants in the present study (up to 11 years of age), given that, in general, it favoured equal participation of players, without specialising in one role, equity between boys and girls, appropriate decisions and adherence to the activity.

SANTORO, S., FERNANDEZ-DIAZ, P., CANAL, D., CAMACHO, C., GARAMSZEGI, L.Z., MARTINEZ-PADILLA, J. y POTTI, J., 2022. High

frequency of social polygyny reveals little costs for females in a songbird. *Scientific Reports*, vol. 12, no. 1. ISSN 2045-2322. DOI 10.1038/s41598-021-04423-0.

Mating system theory predicts that social polygyny-when one male forms pair bonds with two females-may evolve by female choice in species with biparental care. Females will accept a polygynous male if the benefit of mating with a male providing high-quality genes or rearing resources outweighs the cost of sharing mate assistance in parental care. Based on this rationale, we hypothesise that the population frequency of social polygyny (FSP) varies due to changes in mate sharing costs caused by changing environmental conditions. We predicted that: (1) polygamous females (i.e. mated with a polygynous male) pay a survival cost compared to monogamous females; (2) FSP would be higher in years with better rearing conditions and (3) the difference in survival rates between monogamous and polygamous females would be small following years with higher FSP. We tested these predictions using regression and multistate analyses of capture-recapture data of pied flycatchers, Ficedula hypoleuca, in central Spain collected over 26 years (1990-2016). Monogamous females had a higher mean survival rate than polygamous females (prediction 1), but there was no difference in survival between polygynous and monogamous males. In addition, FSP was positively associated with annual reproductive success (a proxy of the quality of rearing conditions-prediction 2). Finally, following years with high FSP, the survival of polygamous females was similar to that of monogamous females (prediction 3), while the chance of breeding in a polygamous state for 2 years in a row increased for both males and females. Our findings suggest that fluctuating environmental conditions may be a necessary but neglected aspect of understanding social polygyny mechanisms.

SANZ-ARNAL, M., BENITEZ-BENITEZ, C., MIGUEZ, M., JIMENEZ-MEJIAS, P. y MARTIN-BRAVO, S., 2022. Are Cenozoic relict species also climatic relicts? Insights from the macroecological evolution of the giant sedges of Carex sect. Rhynchocystis (Cyperaceae). *American Journal of Botany*, vol. 109, no. 1, pp. 115-129. ISSN 0002-9122. DOI 10.1002/ajb2.1788.

Premise Most of the Paleotropical flora widely distributed in the Western Palearctic became extinct during the Mio-Pliocene as a result of global geoclimatic changes. A few elements from this Cenozoic flora are believed to remain as relicts in Macaronesia, forming part of the laurel forests. Although the origins of the present species assembly are known to be heterogeneous, it is unclear whether some species should be considered climatic relicts with conserved niches. An ideal group for studying such relict characteristics is a Miocene lineage of Carex sect. Rhynchocystis (Cyperaceae), which comprises four species distributed in mainland Palearctic and Macaronesia. Methods We reconstructed the current and past environmental spaces for extant mainland and Macaronesian species, as well as for Pliocene fossils. We also studied the bioclimatic niche evolution. Species distribution modeling and ensemble small modeling were performed to assess the potential distribution over time. Results Climatic niche analyses and distribution modeling revealed that the ecological requirements of Macaronesian species did not overlap with those of either mainland species or with the Pliocene fossils.

Conversely, the niches of mainland species displayed significant similarity and equivalence. Conclusions Macaronesian species are not climatic relicts from the Paleotropical flora, but instead seem to have changed the ecological niche of their ancestors. By contrast, despite their ancient divergence (Late Miocene), mainland C. pendula and C. agastachys show conserved niches, with competitive exclusion likely shaping their mostly allopatric ranges.

SEGOVIA-VILLARREAL, M. y ROSA-DÍAZ, I.M., 2022. Promoting Sustainable Lifestyle Habits: "Real Food" and Social Media in Spain. *Foods* [en línea], vol. 11, no. 2. DOI 10.3390/foods11020224.

Obesity and state of being overweight are beginning to be treated as global epidemics. In this context, health professionals are increasingly acting as expert opinion leaders that use social media to connect with the public, in order to promote healthy lifestyles and provide specific recommendations for different product categories, including fresh, processed, and ultra-processed meat products. This study investigates how exposure to content created by health professionals, and posted on social media, influences consumers' attitudes. For this purpose, the collaboration of one relevant nutritionist influencer in Spain has been obtained. The online survey created has provided 4.584 responses, received from followers (from May to June 2019). After applying a partial least squares path modeling approach, the results suggest that trust in the content shared, the perceived credibility of the professional sharing the information and the informative value, determine the strength with which consumers acquire more knowledge about endorsed products, develop a favorable predisposition towards them, prefer them over their options, and modify their behaviour by purchasing them, instead of their usual foods. The link is stronger, in the case of trust and influencer's credibility, than for informative value. However, the latter has an indirect effect on the attitude phases through the former. © 2022 by the authors. Licensee MDPI, Basel, Switzerland.

SILES, J.A., DIAZ-LOPEZ, M., VERA, A., EISENHAUER, N., GUERRA, C.A., SMITH, L.C., BUSCOT, F., REITZ, T., BREITKREUZ, C., VAN DEN HOOGEN, J., CROWTHER, T.W., ORGIAZZI, A., KUZYAKOV, Y., DELGADO-BAQUERIZO, M. y BASTIDA, F., 2022.Priming effects in soils across Europe. *Global Change Biology*, ISSN 1354-1013. DOI 10.1111/gcb.16062.

Land use is a key factor driving changes in soil carbon (C) cycle and contents worldwide. The priming effect (PE)-CO2 emissions from changed soil organic matter decomposition in response to fresh C inputs-is one of the most unpredictable phenomena associated with C cycling and related nutrient mobilization. Yet, we know very little about the influence of land use on soil PE across contrasting environments. Here, we conducted a continental-scale study to (i) determine the PE induced by C-13-glucose additions to 126 cropland and seminatural (forests and grasslands) soils from 22 European countries; (ii) compare PE magnitude in soils under various crop types (i.e., cereals, nonpermanent industrial crops, and orchards); and (iii) model the environmental factors influencing PE. On average, PEs were negative in seminatural (with values ranging between -60 and 26 mu g

C g(-1) soil after 35 days of incubation; median = -11) and cropland (from -55 to 27 mu C g(-1) soil; median = -4.3) soils, meaning that microbial communities preferentially switched from soil organic C decomposition to glucose mineralization. PE was significantly less negative in croplands compared with seminatural ecosystems and not influenced by the crop type. PE was driven by soil basal respiration (reflecting microbial activity), microbial biomass C, and soil organic C, which were all higher in seminatural ecosystems compared with croplands. This cross European experimental and modeling study elucidated that PE intensity is dependent on land use and allowed to clarify the factors regulating this important C cycling process.

SORIANO GONZÁLEZ, M.L., 2022. La defensa de la República y los derechos a la renta del suelo y a la existencia en Thomas Paine y Maximilen Robespierre. Análisis comparativo. *Derechos y libertades: Revista de Filosofía del Derecho y derechos humanos*, no. 46, pp. 115-144. ISSN 1133-0937. 10.20318/dyl.2022.6516

The work is a comparative analysis on two issues present in the writings of Tomas Paine and Maximilen Robespierre: the defense of the Republic and the recognition of the social rights. Both defend a representative republic but differ in the process of construction and the use of violence. Both also pursuethe suppression of poverty, but the right to income of Paine is universal and unconditional while the right to the existence of Robespierre does not refer to all persons but those who are poor and lack of work. As a result, Paine can be considered the forerunner of universal basic income and Robespierre a pioneering advocate of the conditional subsistence right.

TORRES-MÉNDEZ, A., POP, S., BONNAL, S., ALMUDI, I., AVOLA, A., ROBERTS, R.J.V., PAOLANTONI, C., ALCAINA-CARO, A., MARTÍN-ANDUAGA, A., HAUSSMANN, I.U., MORIN, V., CASARES, F., SOLLER, M., KADENER, S., ROIGNANT, J.-Y., PRIETO-GODINO, L. y IRIMIA, M., 2022. Parallel evolution of a splicing program controlling neuronal excitability in flies and mammals. *Science Advances* [en línea], vol. 8, no. 4. DOI 10.1126/sciadv.abk0445.

Alternative splicing increases neuronal transcriptomic complexity throughout animal phylogeny. To delve into the mechanisms controlling the assembly and evolution of this regulatory layer, we characterized the neuronal microexon program in Drosophila and compared it with that of mammals. In nonvertebrate bilaterians, this splicing program is restricted to neurons by the posttranscriptional processing of the enhancer of microexons (eMIC) domain in Srrm234. In Drosophila, this processing is dependent on regulation by Elav/Fne. eMIC deficiency or misexpression leads to widespread neurological alterations largely emerging from impaired neuronal activity, as revealed by a combination of neuronal imaging experiments and cell type–specific rescues. These defects are associated with the genome-wide skipping of short neural exons, which are strongly enriched in ion channels. We found no overlap of eMIC-regulated exons between flies and mice, illustrating how ancient posttranscriptional programs can evolve independently in

different phyla to affect distinct cellular modules while maintaining cell-type specificity. Copyright © 2022 The Authors, some rights reserved;

TRIGUEROS MARTÍN, M.J., 2022. La responsabilidad subsidiaria: su extensión a las sanciones tributarias. *Forum fiscal: la revista tributaria de Álava, Bizkaia y Gipuzkoa*, no. 282, pp. 5- 0. ISSN 2340-7301.

VAZQUEZ RAMOS, F.J., IRENE SOSA-GONZALEZ, P. y DE PABLOS PONS, J., 2022. Decisional profile, gender and sports practice in sports at school age. *Retos-Nuevas Tendencias en Educacion Fisica Deporte y Recreacion*, no. 43, pp. 379-387. ISSN 1579-1726.

The objective of this study was to determine the decisional profile of school-age boys and girls based on spatio-temporal aspects through the software "Interactive Volleyball Game" (JIVB (R)), based on different variables: spatio-temporal difficulty, type of sports practice, age, sex and time of sports practice. The sample has been made up of all the children's category clubs in the city of Seville in the modalities of handball, volleyball and athletics, as well as students of Compulsory Secondary Education (ESO) of a Secondary Education Institute that did not practice anymore physical-sporting activity than the one carried out in their physical education classes. In addition, to complete the sample at the sporting level, it was decided to include a volleyball club and an athletics club from neighboring towns with Seville, leaving the final sample consisting of 109 participants, of both sexes, aged 12-14 years.To determine the decisional profile, the JIVB (R) was used and descriptive and inferential analyzes were carried out. The results show that there are no significant differences in decision-making capacity, although it is possible to speak of trends.

VILLARREAL-SALAZAR, M., BRULL, A., NOGALES-GADEA, G., ANDREU, A.L., MARTÍN, M.A., ARENAS, J., SANTALLA, A., LUCIA, A., VISSING, J., KRAG, T.O. y PINÓS, T., 2022. Preclinical Research in McArdle Disease: A Review of Research Models and Therapeutic Strategies. *Genes* [en línea], vol. 13, no. 1. DOI 10.3390/genes13010074.

McArdle disease is an autosomal recessive disorder of muscle glycogen metabolism caused by pathogenic mutations in the PYGM gene, which encodes the skeletal muscle-specific isoform of glycogen phosphorylase. Clinical symptoms are mainly characterized by transient acute "crises" of early fatigue, myalgia and contractures, which can be accompanied by rhabdomyolysis. Owing to the difficulty of performing mechanistic studies in patients that often rely on invasive techniques, preclinical models have been used for decades, thereby contributing to gain insight into the patho-physiology and pathobiology of human diseases. In the present work, we describe the existing in vitro and in vivo preclinical models for McArdle disease and review the insights these models have provided. In addition, despite presenting some differences with the typical patient's phenotype, these models allow for a deep study of the different features of the disease while

representing a necessary preclinical step to assess the efficacy and safety of possible treatments before they are tested in patients. © 2021 by the authors. Licensee MDPI, Basel, Switzerland.

ZENG, Q., MEI, T., DELGADO-BAQUERIZO, M., WANG, M. y TAN, W., 2022. Suppressed phosphorus-mineralizing bacteria after three decades of fertilization. *Agriculture, Ecosystems and Environment* [en línea], vol. 323. DOI 10.1016/j.agee.2021.107679.

Phosphorus (P) mineralization from organic matter is one of the most important microbially-driven soil processes in natural ecosystems. However, little is known about how long-term fertilization affect the abundance, diversity and community composition of these important organisms in croplands wherein P is directly supply via fertilizers. Here, we investigated the fate of phosphorus-mineralizing bacteria in a citrus plantation chronosequence (5–30 years) including information on management practices (no covering, straw covering and peanut covering after 15 years). We found that the diversity and abundance of phoD-harboring bacteria and the activity of phosphatase was largely suppressed after 30 years of fertilization. Moreover, long-term fertilization altered the bacterial community associated with P mineralization, decreasing the relative abundance of Methylobacterium, Aquabacterium and Rhizobacter in comparison with adjacent natural forests. Remarkably, land management practices associated with land covering helped to increase the diversity of phoD-harboring bacteria, after 15 years of experiment. This result is likely associated with the entrance of organic matter to the system. Our results provide new evidence that long-term fertilization drastically suppressed the abundance and diversity of bacteria associated with P mineralization, with implications for soil health and sustainability. © 2021 Elsevier B.V.

ZHANG, H., VICENT-LUNA, J.M., TAO, S., CALERO, S., JIMÉNEZ RIOBÓO, R.J., FERRER, M.L., DEL MONTE, F. y GUTIÉRREZ, M.C., 2022. Transitioning from Ionic Liquids to Deep Eutectic Solvents. *ACS Sustainable Chemistry and Engineering*, vol. 10, no. 3, pp. 1232-1245. DOI 10.1021/acssuschemeng.1c06999.

Ionic liquids (ILs) and deep eutectic solvents (DESs) have been lately the solvents of choice in a number of processes because they offer a valid alternative to conventional solvents. Despite main interactions in ILs differ from those in DESs (e.g., electrostatic-type in the former and H-bond-type in the latter), these two neoteric solvents are more closely related that appeared and can be seen as the two sides, the face and the cross, of the same coin. Herein, we hypothesized about a way for transitioning from one to the other. In particular, we promoted the transition from 1-ethyl-3-methylimidazolium chloride (EMIMCl) to EMIMCl·nAcOH-based DESs by the simple addition of stoichiometric amounts of acetic acid (AcOH) to EMIMCl. 1H NMR spectroscopy and DSC studies confirmed the occurrence of such a transition. Molecular dynamics (MD) simulations revealed the capability of the Cl anion to fully accommodate up to 4 AcOH molecules (e.g., EMIMCl·1AcOH, EMIMCl·2AcOH, EMIMCl·3AcOH,

and EMIMCl·4AcOH) without signs of H-bond self-interactions between AcOH molecules. These DESs also exhibited quite different solvent properties, with α and β Kamlet-and-Taft parameters that differed from those of EMIMCl and 1-ethyl-3-methylimidazolium acetate (EMIMOAc). Interestingly, excess molar volume and excess viscosity measurements as well as Brillouin spectroscopic experiments indicated that aqueous dilutions of EMIMCl·AcOH-based DESs deviated from ideality as a consequence of the formation of HBs between water molecules and the anion, as observed by 1H NMR spectroscopy. © 2022 American Chemical Society