

Producción científica, noviembre 2020

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

Nº. Boletín: 9 / 2020

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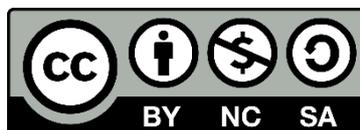
Sevilla, diciembre de 2020



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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=(Universidad Pablo de Olavide)

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

Período de tiempo=Año hasta la fecha

Scopus

Estrategia de búsqueda avanzada:

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

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 y Scopus: 10/12/2020

Web of Science: 11/12/2020



Publicaciones

ALVAREZ-CASTRO, M.C. y RIBERA, P., 2020. Long-Term Climate Variability in the Mediterranean Region. *Atmosphere*, vol. 11, no. 11, pp. 1172. DOI 10.3390/atmos11111172.

The Mediterranean region is an area where prediction at different timescales (subseasonal to decadal or even longer) is challenging. In order to help constrain future projections, the study of past climate is crucial. By improving our knowledge about the past and current climate, our confidence in understanding the future climate will be improved. In this Special Issue, information about long-term climate variability in the Mediterranean region is assessed, including in particular historical climatology and model applications to assess past climate variability, present climate evolution, and future climate projections. The seven articles included in this Special Issue explore observations, proxies, re-analyses, and models for assessing the main characteristics, processes, and variability of the Mediterranean climate. The temporal range of these articles not only covers a wide period going from the present day to as far back as 25 centuries into the past but also covers projections of future climate over the next century.

ARBOLEDA GOLDARACENA, J.C., 2020. Las cofradías de la Baja Andalucía y su relación con el vino (ss. XIV-XVI). *Bajo Guadalquivir y mundos atlánticos*, no. 2, pp. 5- 0. ISSN 2605-0560. 10.46661/bajogadalquivirmundosatl.5318

In this work we aim to study the connection between confraternities and wine in Western Andalusia at the end of the Middle Ages and during the Early Modern Period. We have used different kinds of documents, especially confraternities' rules and notarial documentation from the most important cities around the Kingdom of Seville.

ASIAN-CLEMENTE, J., RABANO-MUNOZ, A., MUNOZ, B., FRANCO, J. y SUAREZ-ARRONES, L., [sin fecha]. Can Small-side Games Provide Adequate High-speed Training in Professional Soccer? *International Journal of Sports Medicine*, ISSN 0172-4622. DOI 10.1055/a-1293-8471.

The aim was to compare the running activity in official matches with that achieved in two small-sided games, designed with the same relative area per player but with different constraints and field dimensions, aiming to stimulate high-speed and very-high-speed running. Seventeen young professional players played one 5 vs . 5+5 with 2 floaters, varying in terms of whether there was a change of playing area (SSG (CA)) or not change (SSG (NC)). Running activity was monitored using GPS and the following variables were recorded: total distance covered; high-speed distance (18-21km.h (-1)); very high-speed distance (>21km.h (-1)); peak speed; accelerations and decelerations between 2-3m.s (-2) and above 3m.s (-2) . SSG (CA) achieved statistically higher total distance, high-speed, peak speed and number of accelerations and decelerations than SSG (NC) (large to small magnitude). Both drills showed statistically greater high speed, number of accelerations and decelerations than official matches (large to small magnitude). Moreover, SSG (CA) exhibited statistically more total distance and distance at higher speed than official matches (moderate and small magnitude,

respectively). In contrast, official matches showed statistically higher peak speeds than both training tasks and more very high speed than SSG (NC) (large and moderate magnitude, respectively). Coaches could use SSG (CA) to promote greater running activity in soccer players.

AULESTIA, M., FLORES, A., MANGAS, E.L., PEREZ-PULIDO, A.J., SANTERO, E. y CAMACHO, E.M., [sin fecha]. Isolation and genomic characterization of the ibuprofen-degrading bacterium *Sphingomonas* strain MPO218. *Environmental Microbiology*, ISSN 1462-2912. DOI 10.1111/1462-2920.15309.

The presence of pharmaceutical compounds in waters and soils is of particular concern because these compounds can be biologically active, even at environmental concentrations. Most pharmaceutical contaminants result from inefficient removal of these compounds during wastewater treatment. Although microorganisms able to biodegrade pharmaceuticals compounds have been described, the isolation and characterization of new bacterial strains capable of degrading drugs remain important to improve the removal of this pollutant. In this work, we describe the *Sphingomonas wittichii* strain MPO218 as able to use ibuprofen as the sole carbon and energy source. The genome of MPO218 consists of a circular chromosome and two circular plasmids. Our analysis shows that the largest plasmid, named pIBU218, is conjugative and can horizontally transfer the capability of growing on ibuprofen after conjugation with another related bacterium, *Sphingopyxis granuli* TFA. This plasmid appears to be unstable since it undergoes different deletions in absence of selection when growth on ibuprofen is not selected. This is the first described example of a natural and conjugative plasmid that enables growth on ibuprofen and is another example of how horizontal gene transfer plays a crucial role in the evolution of bacteria.

BATLLORI, E., LLORET, F., AAKALA, T., ANDEREGG, W.R.L., AYNEKULU, E., BENDIXSEN, D.P., BENTOUATI, A., BIGLER, C., BURK, C.J., CAMARERO, J.J., COLANGELO, M., COOP, J.D., FENSHAM, R., FLOYD, M.L., GALIANO, L., GANEY, J.L., GONZALEZ, P., JACOBSEN, A.L., KANE, J.M., KITZBERGER, T., LINARES, J.C., MARCHETTI, S.B., MATUSICK, G., MICHAELIA, M., NAVARRO-CERRILLO, R.M., PRATT, R.B., REDMOND, M.D., RIGLING, A., RIPULLONE, F., SANGÜESA-BARREDA, G., SASAL, Y., SAURA-MAS, S., SUAREZ, M.L., VELEN, T.T., VILÀ-CABRERA, A., VINCKE, C. y ZEEMAN, B., 2020. Forest and woodland replacement patterns following drought-related mortality. *Proceedings of the National Academy of Sciences of the United States of America*, vol. 117, no. 47, pp. 29720-29729. ISSN 00278424 (ISSN). DOI 10.1073/pnas.2002314117

Forest vulnerability to drought is expected to increase under anthropogenic climate change, and drought-induced mortality and community dynamics following drought have major ecological and societal impacts. Here, we show that tree mortality concomitant with drought has led to short-term (mean 5 y, range 1 to 23 y after mortality) vegetation-type conversion in multiple biomes across the world (131 sites). Self-replacement of the dominant tree species was only prevalent in 21% of the examined cases and forests and woodlands shifted to nonwoody vegetation in 10% of them. The ultimate temporal persistence of such changes remains unknown but, given the key role of biological legacies in long-term ecological succession, this emerging picture of postdrought ecological trajectories highlights the potential for major ecosystem

reorganization in the coming decades. Community changes were less pronounced under wetter postmortality conditions. Replacement was also influenced by management intensity, and postdrought shrub dominance was higher when pathogens acted as codrivers of tree mortality. Early change in community composition indicates that forests dominated by mesic species generally shifted toward more xeric communities, with replacing tree and shrub species exhibiting drier bioclimatic optima and distribution ranges. However, shifts toward more mesic communities also occurred and multiple pathways of forest replacement were observed for some species. Drought characteristics, species-specific environmental preferences, plant traits, and ecosystem legacies govern postdrought species turnover and subsequent ecological trajectories, with potential far-reaching implications for forest biodiversity and ecosystem services. © 2020 National Academy of Sciences. All rights reserved.

BERDEJO BEATO, A.R., 2020. El vino y sus hombres: una aproximación a partir de los Libros de hermanos de la Cofradía de la Vera Cruz de Sevilla en el siglo XVII. *Bajo Guadalquivir y mundos atlánticos*, no. 2, pp. 6- 0. ISSN 2605-0560. 10.46661/bajoguadalquivirmundosatl.5320

In this paper, we study wine workers that we find for the XVII century in the Books of Members of Seville Vera Cruz Confraternity's Archive of Rare and Historical Manuscripts. With this work, we go into detail about their daily life (professions, record book year, typologies, names and devotions, or localizations). In this way, we describe wine sector socioeconomic profile in one of the most booming modern Seville confraternities

CAMBRA-FIERRO, J., MELERO-POLO, I., PATRÍCIO, L. y SESE, F.J., 2020. Channel Habits and the Development of Successful Customer-Firm Relationships in Services. *Journal of Service Research*, vol. 23, no. 4, pp. 456-475. ISSN 10946705 (ISSN). DOI 10.1177/1094670520916791

Technology advances have profoundly changed the way customers and service organizations interact, leading to a multitude of service channels. This study investigates consumer habits toward service channels in order to understand the influence of these channel habits on perceptions and intentions (perceived switching costs and attitudinal loyalty) and on consumer behavior (service usage and cross-buy). We empirically test the framework in the financial services industry, and the results reveal that physical store habit increases perceived switching costs and that acquired habits toward the physical store and self-service kiosks have a positive influence on attitudinal loyalty. Perceived switching costs positively affect service usage, and attitudinal loyalty positively influences cross-buy. In addition, habits in each channel lead to an increase in the number of services acquired (cross-buy), but online and self-service kiosks channel habits negatively impact service usage, as the lack of physical presence may increase customer uncertainty. Because habits are built on the frequency and stability of channel usage, firms can manage habits by encouraging frequent interactions under stable contexts. In addition, firms should stimulate customer habits toward the physical store as it is central to the promotion of loyalty and for increasing service usage. © The Author(s) 2020.

CAMBRA-FIERRO, J.J., FLORES-HERNÁNDEZ, J.A., PÉREZ, L. y VALERA-BLANES, G., 2020. CSR and branding in emerging economies: The effect of incomes and education. *Corporate Social Responsibility and Environmental Management*, vol. 27, no. 6, pp. 2765-2776. ISSN 15353958 (ISSN). DOI 10.1002/csr.2000

Sustainable development is a fundamental objective for guaranteeing the future of the planet. Taking into account the impact of emerging economies on the global economy and the scarcity of papers that have considered the effect of CSR initiatives on consumer behavior on those economies, it seems that further research on this issue is necessary. In particular, we analyze the extent to which CSR affects the connection and links of the consumer to the brand (i.e., self-brand connection, brand engagement). The main contribution of the paper to the field is the analysis of the interaction between CSR and branding in the context of an emerging economy. To that aim, and also in a novel way, we use the Stimuli-Organism-Response (SOR) model for a sample of more than 400 food and beverage consumers in Metropolitan Lima, Peru. Our results show that CSR effectively acts as a stimulus for consumers to identify and link to brands and that, in addition, these links generate buy-back (i.e., loyalty) and recommendation behaviors (i.e., WOM) which, in turn, create a great commercial value for companies. This research also analyses how incomes and educational levels moderate the intensity of such links. For practical implications, global trends in managing CSR and branding may be useful, although some cross-cultural and context-specific adaptations are necessary. © 2020 ERP Environment and John Wiley & Sons Ltd.

CANO-DÍAZ, C., MAESTRE, F.T., ELDRIDGE, D.J., SINGH, B.K., BARDGETT, R.D., FIERER, N. y DELGADO-BAQUERIZO, M., 2020. Contrasting environmental preferences of photosynthetic and non-photosynthetic soil cyanobacteria across the globe. *Global Ecology and Biogeography*, vol. 29, no. 11, pp. 2025-2038. ISSN 1466822X (ISSN). DOI 10.1111/geb.13173

Aim: Cyanobacteria have shaped the history of life on Earth and continue to play important roles as carbon and nitrogen fixers in terrestrial ecosystems. However, their global distribution and ecological preferences remain poorly understood, particularly for two recently discovered non-photosynthetic cyanobacterial classes (Sericytochromatia and Melainabacteria). Location: Two hundred and thirty-seven locations across six continents encompassing multiple climates (arid, temperate, tropical, continental and polar) and vegetation types (forests, grasslands and shrublands). Time period: Sampling was carried out between 2003 and 2015. Major taxa studied: Photosynthetic and non-photosynthetic cyanobacterial taxa. Methods: We conducted a field survey and used co-occurrence network analysis and structural equation modelling to evaluate the distribution and environmental preferences of soil cyanobacteria across the globe. These ecological preferences were used to create a global atlas (predictive distribution maps) of soil cyanobacteria. Results: Network analyses identified three major groups of cyanobacterial taxa, which resembled the three main cyanobacterial classes: the photosynthetic Oxyphotobacteria-dominated cluster, which were prevalent in arid and semi-arid areas, and the non-photosynthetic Sericytochromatia- and Melainabacteria-dominated clusters, which preferred hyper-arid oligotrophic and acidic/humid environments, respectively. Main conclusions: This study provides new

insights into the environmental preferences of non-photosynthetic cyanobacteria in soils globally. Our findings highlight the contrasting environmental preferences among the three clusters of cyanobacteria and suggest that alterations in environmental conditions linked to climate change might result in important changes in the ecology and biogeography of these functionally important microorganisms. © 2020 John Wiley & Sons Ltd

CANTERO, J.L., ATIENZA, M., RAMOS-CEJUDO, J., FOSSATI, S., WISNIEWSKI, T. y OSORIO, R.S., 2020. Plasma tau predicts cerebral vulnerability in aging. *Aging-Ur*, vol. 12, no. 21, pp. 21004-21022. ISSN 1945-4589. DOI 10.18632/aging.104057.

Identifying cerebral vulnerability in late life may help prevent or slow the progression of aging-related chronic diseases. However, non-invasive biomarkers aimed at detecting subclinical cerebral changes in the elderly are lacking. Here, we have examined the potential of plasma total tau (t-tau) for identifying cerebral and cognitive deficits in normal elderly subjects. Patterns of cortical thickness and cortical glucose metabolism were used as outcomes of cerebral vulnerability. We found that increased plasma t-tau levels were associated with widespread reductions of cortical glucose uptake, thinning of the temporal lobe, and memory deficits. Importantly, tau-related reductions of glucose consumption in the orbitofrontal cortex emerged as a determining factor of the relationship between cortical thinning and memory loss. Together, these results support the view that plasma t-tau may serve to identify subclinical cerebral and cognitive deficits in normal aging, allowing detection of individuals at risk for developing aging-related neurodegenerative conditions.

CARNEROS, D., LÓPEZ-LLUCH, G. y BUSTOS, M., 2020. Physiopathology of lifestyle interventions in non-alcoholic fatty liver disease (NAFLD). *Nutrients*, vol. 12, no. 11, pp. 1-23. ISSN 20726643 (ISSN). DOI 10.3390/nu12113472

Non-alcoholic fatty liver disease (NAFLD) is a major health problem, and its prevalence has increased in recent years. Diet and exercise interventions are the first-line treatment options, with weight loss via a hypocaloric diet being the most important therapeutic target in NAFLD. However, most NAFLD patients are not able to achieve such weight loss. Therefore, the requisite is the investigation of other effective therapeutic approaches. This review summarizes research on understanding complex pathophysiology underlying dietary approaches and exercise interventions with the potential to prevent and treat NAFLD. © 2020 by the authors. Licensee MDPI, Basel, Switzerland.

CASTELLO, F., FERNÁNDEZ-PACHÓN, M.-S., CERRILLO, I., ESCUDERO-LÓPEZ, B., ORTEGA, Á., ROSI, A., BRESCIANI, L., DEL RIO, D. y MENA, P., 2020. Absorption, metabolism, and excretion of orange juice (poly)phenols in humans: The effect of a controlled alcoholic fermentation. *Archives of Biochemistry and Biophysics* [en línea], vol. 695. ISSN 00039861 (ISSN). DOI 10.1016/j.abb.2020.108627.

The consumption of orange juice provides high concentrations of health-promoting bioactive

compounds, the amount of which may increase upon alcoholic fermentation. Although fermentation may offer new prospects for the industry of orange-related products, there is a lack of studies reporting the influence of controlled alcoholic fermentation on the bioavailability of orange juice (poly)phenols in humans. The aim of this study was to evaluate the absorption profile, pharmacokinetic parameters, and urinary excretion of orange juice (poly)phenols in nine volunteers after acute administration of an orange juice and a beverage prepared after controlled alcoholic fermentation of the juice. Plasma and urine samples were analysed through a UHPLC-ESI-MS/MS targeted approach. A total of 24 (poly)phenol metabolites including both flavanone and phenolic acid derivatives were quantified, most of them being recorded only in urine. Phase II conjugates of hesperetin and naringenin were the main metabolites in plasma, while phenolic acids, in particular hydroxybenzoic acids, were the main compounds in urine. (Poly)phenols in both beverages were highly bioavailable (between 46 and 59%) and a notable inter-individual variability was seen. Significant treatment \times time interactions were recorded for the sum of flavanones and phenolic acids in plasma, the (poly)phenols in the fermented juice being absorbed faster than after orange juice intake. Nevertheless, despite the food matrix having an impact on the absorption profile of orange juice (poly)phenols, this did not influence the pharmacokinetic parameters and urinary excretion of the (poly)phenol metabolites. © 2020 Elsevier Inc.

COLLADO CAMPAÑA, F., 2020. La sociedad civil y el partido político como fuentes del poder de los líderes locales en Andalucía. *Athenea Digital: revista de pensamiento e investigación social*, vol. 20, no. 3, pp. 23- 0. ISSN 1578-8946. 10.5565/rev/athenea.2635

This review presents a synthesis of the doctoral thesis defended with the title Leadership and local political strategies: the mayors of the Andalusian provincial capitals (1979-2011) by the author in September 2018. This work analyzes the process of construction, maintenance and loss of local power of the mayor of the mentioned cities between 1979 and 2015. The author uses a qualitative methodology based on two stages: a first, based on the historiographic method; and a second implementation of semi-structured interviews with these mayors and the subsequent production of biographical stories. Finally, the conclusion of this thesis emphasizes the importance of the power bases of the mayors and showing, two typologies differentiated according to whether their support comes more from the party structures, or from the local community.

COLOM PIELLA, G., 2020. Teoría y práctica de la disuasión en el mundo globalizado. *Ejército: de tierra español*, no. 954, pp. 4-9. ISSN 1696-7178.

Considerada como uno de los pilares de los estudios estratégicos, la disuasión articuló las políticas de defensa de las grandes potencias durante la Guerra Fría. Tras permanecer en un plano secundario en los noventa, los sucesos del 11-S y la situación actual de degradación del régimen de no-proliferación, la disuasión en el ciberespacio, el potencial desestabilizador de las armas hipersónicas o las actividades en las zonas grises están motivando profundos replanteamientos de la disuasión, en los que ahonda el artículo para promover un debate en nuestro país sobre la conveniencia de desarrollar nuevos modelos de disuasión.

CONTE, L., BENDINI, A., VALLI, E., LUCCI, P., MORET, S., MAQUET, A., LACOSTE, F., BRERETON, P., GARCÍA-GONZÁLEZ, D.L., MOREDA, W. y GALLINA TOSCHI, T., 2020. Olive oil quality and authenticity: A review of current EU legislation, standards, relevant methods of analyses, their drawbacks and recommendations for the future. *Trends in Food Science and Technology*, vol. 105, pp. 483-493. ISSN 09242244 (ISSN). DOI 10.1016/j.tifs.2019.02.025

Background: The physical, chemical and organoleptic characteristics of olive oil (OO) are regulated by the European Union (EU) by Reg. (EEC) 2568/91 as amended, which also establishes methods for their analysis. Despite the fact that the OO sector is highly regulated, it is acknowledged that there are still problems; fats and oils, including OOs, are ranked third, after meat and meat products and fish and fish products, in the 2016 EU Food Fraud report on non-compliances per product category. For this reason, EU legislation, among the most advanced in the field, continuously chases after the emerging frauds. The process of proposing new methods or reviewing those current is constantly in progress, to ensure the robustness and the clarity required by official standardised procedures. Scope and approach: This review will identify current gaps in EU legislation and discuss drawbacks of existing analytical methods with respect to OO. Suggestions for replacement of specific steps within the present EU methods with more efficient analytical solutions to reduce time and/or solvent consumption will be proposed. Key findings and conclusions: This review critiques existing regulatory methods and standards, highlights weaknesses and proposes possible solutions to safeguard the consumer and protect the OO market. © 2019 The Authors

DEL MORAL, G., FRANCO, C., CENIZO, M., CANESTRARI, C., SUAREZ-RELINQUE, C., MUZI, M. y FERMANI, A., 2020. Myth Acceptance Regarding Male-To-Female Intimate Partner Violence amongst Spanish Adolescents and Emerging Adults. *International Journal of Environmental Research and Public Health*, vol. 17, no. 21, pp. 8145. DOI 10.3390/ijerph17218145.

(1) Background: General beliefs and attitudes toward Male-to-Female Intimate Partner Violence (MFIPV) play a fundamental, critical role in the expression of violent behaviors in relationships during both adolescence and adulthood. The objective of the present study was to contrast the degree of myth acceptance regarding MFIPV, based on the sex and age of Spanish teenagers and emerging adults. (2) Methods: A sample of 1580 participants aged between 15 and 24 took part in the study. The subjects were enrolled in 34 secondary schools and two university centers spread across Seville (Spain). A multivariate analysis of variance (MANOVA) was carried out for the data analysis. (3) Results: Overall, males had a higher level of myth acceptance than females in all the dimensions considered in the study. In the case of significantly high levels of myth acceptance, males quintupled females. The research dimension that revealed the greatest differences was romantic love. Regarding age, a degree of stability was observed in the age period of 15-17 years and 18-20 years, but this subsequently decreased for the age range of 21-24 years. (4) Conclusions: Efforts should be focused on promoting actions to challenge male mandates and narratives concerning romantic or true love.

DI FRANCESCO, A., CHOI, Y., BERNIER, M., ZHANG, Y., DIAZ-RUIZ, A., AON, M.A., KALAFUT, K., EHRLICH, M.R., MURT, K., ALI, A., PEARSON, K.J., LEVAN, S., PRESTON, J.D., MARTIN-MONTALVO, A., MARTINDALE, J.L., ABDELMOHSEN, K., MICHEL, C.R., WILLMES, D.M., HENKE, C., NAVAS, P., VILLALBA, J.M., SIEGEL, D., GOROSPE, M., FRITZ, K., BISWAL, S., ROSS, D. y DE CABO, R., 2020. NQO1 protects obese mice through improvements in glucose and lipid metabolism. *Npj Aging and Mechanisms of Disease*, vol. 6, no. 1, pp. 13. DOI 10.1038/s41514-020-00051-6.

Chronic nutrient excess leads to metabolic disorders and insulin resistance. Activation of stress-responsive pathways via Nrf2 activation contributes to energy metabolism regulation. Here, inducible activation of Nrf2 in mice and transgenesis of the Nrf2 target, NQO1, conferred protection from diet-induced metabolic defects through preservation of glucose homeostasis, insulin sensitivity, and lipid handling with improved physiological outcomes. NQO1-RNA interaction mediated the association with and inhibition of the translational machinery in skeletal muscle of NQO1 transgenic mice. NQO1-Tg mice on high-fat diet had lower adipose tissue macrophages and enhanced expression of lipogenic enzymes coincident with reduction in circulating and hepatic lipids. Metabolomics data revealed a systemic metabolic signature of improved glucose handling, cellular redox, and NAD(+) metabolism while label-free quantitative mass spectrometry in skeletal muscle uncovered a distinct diet- and genotype-dependent acetylation pattern of SIRT3 targets across the core of intermediary metabolism. Thus, under nutritional excess, NQO1 transgenesis preserves healthful benefits.

DURAN, J., BREWER, M.K., HERVERA, A., GRUART, A., DEL RIO, J.A., DELGADO-GARCÍA, J.M. y GUINOVRT, J.J., 2020. Lack of Astrocytic Glycogen Alters Synaptic Plasticity but Not Seizure Susceptibility. *Molecular Neurobiology*, vol. 57, no. 11, pp. 4657-4666. ISSN 08937648 (ISSN). DOI 10.1007/s12035-020-02055-5

Brain glycogen is mainly stored in astrocytes. However, recent studies both in vitro and in vivo indicate that glycogen also plays important roles in neurons. By conditional deletion of glycogen synthase (GYS1), we previously developed a mouse model entirely devoid of glycogen in the central nervous system (GYS1Nestin-KO). These mice displayed altered electrophysiological properties in the hippocampus and increased susceptibility to kainate-induced seizures. To understand which of these functions are related to astrocytic glycogen, in the present study, we generated a mouse model in which glycogen synthesis is eliminated specifically in astrocytes (GYS1Gfap-KO). Electrophysiological recordings of awake behaving mice revealed alterations in input/output curves and impaired long-term potentiation, similar, but to a lesser extent, to those obtained with GYS1Nestin-KO mice. Surprisingly, GYS1Gfap-KO mice displayed no change in susceptibility to kainate-induced seizures as determined by fEPSP recordings and video monitoring. These results confirm the importance of astrocytic glycogen in synaptic plasticity. © 2020, Springer Science+Business Media, LLC, part of Springer Nature.

FERIA-DOMÍNGUEZ, J.M., PANEQUE, P. y DE LA PIEDRA, F., 2020. Are the financial markets sensitive to hydrological risk? Evidence from the bovespa. *Water (Switzerland)* [en

línea], vol. 12, no. 11. ISSN 20734441 (ISSN). DOI 10.3390/w12113011.

This research analyzes the BOVESPA stock market response to the worst drought occurred in the last 100 years in Brazil. For this purpose, we conducted a standard event study analysis in order to assess the financial response to such hydrological risk on a sample of seven Brazilian agri-food firms. We found statistically significant negative cumulative average abnormal returns (CAARs) around the drought official announcement for different event windows used. Particularly, the highest impact was obtained for the narrowest temporary window, five days around the event disclosure. Moreover, we also found the drought announcement affects even more negatively those companies that sell perishable products, five out of seven in our sample, versus those selling nonperishable ones by running a two-sample t-test on CAARs. This study brings awareness to the climate change impact into the emerging financial markets and the risk faced by shareholders when investing in the agri-food sector, not only in Brazil but also in other Latin American countries, due to the increasing probability to suffer from droughts. © 2020 by the authors. Licensee MDPI, Basel, Switzerland.

FERNANDEZ-CRUZ, E., CARRASCO-GALAN, F., CEREZO-LOPEZ, A.B., VALERO, E., MORCILLO-PARRA, M.A., BELTRAN, G., TORIJA, M.-J., TRONCOSO, A.M. y GARCIA-PARRILLA, M.C., 2020. Occurrence of melatonin and indolic compounds derived from L-tryptophan yeast metabolism in fermented wort and commercial beers. *Food Chemistry*, vol. 331, pp. 127192. ISSN 0308-8146. DOI 10.1016/j.foodchem.2020.127192. Melatonin and serotonin are bioactive compounds present in foods and beverages and related to neuroprotection and anti-angiogenesis, among other activities. They have been described in wines and the role of yeast in their formation is clear. Thus, this study evaluates the content of these bioactives and other related indolic compounds in beer. For this purpose, commercial beers were analyzed by a validated UHPLC-HRMS method and sample treatment optimized due to the low concentrations expected. Moreover, a wort was fermented with different commercial beer yeast (Abbaye, Diamond, SafAle, SafLager) in order to monitor the formation of these bioactives during the elaboration process. Results show that indolic compounds such as N-acetylserotonin and 3-indoleacetic acid are produced during the alcoholic fermentation of wort. Moreover, the occurrence of four indolic compounds (5-hydroxytryptophan, N-acetylserotonin, 3-indoleacetic acid, L-tryptophan ethyl ester) in commercial beers is reported for the first time.

FUHRMANN, J.F., BUONO, L., ADELMANN, L., MARTINEZ-MORALES, J.R. y CENTANIN, L., 2020. Genetic developmental timing revealed by inter-species transplantations in fish. *Development (Cambridge, England)* [en línea], vol. 147, no. 22. ISSN 14779129 (ISSN). DOI 10.1242/dev.192500. The path from a fertilised egg to an embryo involves the coordinated formation of cell types, tissues and organs. Developmental modules comprise discrete units specified by self-sufficient genetic programs that can interact with each other during embryogenesis. Here, we have taken advantage of the different span of embryonic development between two distantly related teleosts, zebrafish (*Danio rerio*) and medaka (*Oryzias latipes*) (3 and 9 days, respectively), to explore modularity principles. We report that inter-species blastula transplantations result in the ectopic formation of a retina formed by donor cells - a module. We show that the time taken for the

retina to develop follows a genetic program: an ectopic zebrafish retina in medaka develops with zebrafish dynamics. Heterologous transplantation results in a temporal decoupling between the donor retina and host organism, illustrated by two paradigms that require retina-host interactions: lens recruitment and retino-ectal projections. Our results uncover a new experimental system for addressing temporal decoupling along embryonic development, and highlight the presence of largely autonomous but interconnected developmental modules that orchestrate organogenesis. © 2020. Published by The Company of Biologists Ltd.

GALÁN MUÑOZ, A., 2020. Fraudes a los consumidores y derecho penal: ¿problemas y soluciones? *La intervención penal en la protección de los intereses económicos de los consumidores*. S.l.: Marcial Pons, pp. 315-332. ISBN 978-84-9123-799-0.

GALLARDO, P., REAL-CALDERON, P., FLOR-PARRA, I., SALAS-PINO, S. y DAGA, R.R., 2020. Acute Heat Stress Leads to Reversible Aggregation of Nuclear Proteins into Nucleolar Rings in Fission Yeast. *Cell Reports*, vol. 33, no. 6, pp. 108377. ISSN 2211-1247. DOI 10.1016/j.celrep.2020.108377.

Upon acute heat stress (HS), overall mRNA transcription, processing, and export are inhibited, leading to cell growth arrest. However, how cells turn off mRNA metabolism is not fully understood. Here, we show that acute HS results in the segregation and aggregation of multiple nuclear and nucleolar proteins into ringlike structures located at the nucleolar periphery (nucleolar rings [NuRs]). NuRs sequester essential factors required for nuclear mRNA metabolism and nuclear pore complex function, as well as cell-cycle regulators. When cells are switched back to growing temperatures, NuRs disaggregate, and their components relocate to their functional environments in an Hsf1- and Hsp104-dependent manner, and concomitantly with the reinitiation of cell growth. These findings highlight the contribution of reversible protein aggregation to the inhibition of overall RNA-related activities in the nucleus and its functional relevance in the maintenance of cellular homeostasis during acute HS.

GARCIA-PEREZ IGNACIO, J. y RENDON, S., 2020. Family job search and wealth: The added worker effect revisited. *Quantitative Economics*, vol. 11, no. 4, pp. 1431-1459. ISSN 1759-7323. DOI 10.3982/QE1092.

We propose and estimate a model of family job search and wealth accumulation with data from the Survey of Income and Program Participation (SIPP). This dataset reveals a very asymmetric labor market for household members who share that their job finding is stimulated by their partners' job separation. We uncover a job search-theoretic basis for this added worker effect, which occurs mainly during economic downturns, but also by increased nonemployment transfers. Thus, our analysis shows that the policy goal of increasing nonemployment transfers to support a worker's job search is partially offset by the spouse's cross effect of decreased nonemployment and wages. The added worker effect is robust to having more children and more education in the household and does not just result as a composition of heterogeneous individuals. We

also show that the interdependency between household members is understated if wealth and savings are not considered. Finally, we show that gender equality in the labor market not only improves women's labor market performance, but it also increases men's accepted wages and nonemployment rates.

GAUTHIER, B.R., SOLA-GARCÍA, A., CÁLIZ-MOLINA, M.Á., LORENZO, P.I., COBO-VUILLEUMIER, N., CAPILLA-GONZÁLEZ, V. y MARTIN-MONTALVO, A., 2020. Thyroid hormones in diabetes, cancer, and aging. *Aging Cell* [en línea], vol. 19, no. 11. ISSN 14749718 (ISSN). DOI 10.1111/accel.13260.

Thyroid function is central in the control of physiological and pathophysiological processes. Studies in animal models and human research have determined that thyroid hormones modulate cellular processes relevant for aging and for the majority of age-related diseases. While several studies have associated mild reductions on thyroid hormone function with exceptional longevity in animals and humans, alterations in thyroid hormones are serious medical conditions associated with unhealthy aging and premature death. Moreover, both hyperthyroidism and hypothyroidism have been associated with the development of certain types of diabetes and cancers, indicating a great complexity of the molecular mechanisms controlled by thyroid hormones. In this review, we describe the latest findings in thyroid hormone research in the field of aging, diabetes, and cancer, with a special focus on hepatocellular carcinomas. While aging studies indicate that the direct modulation of thyroid hormones is not a viable strategy to promote healthy aging or longevity and the development of thyromimetics is challenging due to inefficacy and potential toxicity, we argue that interventions based on the use of modulators of thyroid hormone function might provide therapeutic benefit in certain types of diabetes and cancers. © 2020 The Authors. *Aging Cell* published by the Anatomical Society and John Wiley & Sons Ltd.

GAZOL, A., CAMARERO, J.J., SÁNCHEZ-SALGUERO, R., VICENTE-SERRANO, S.M., SERRA-MALUQUER, X., GUTIÉRREZ, E., DE LUIS, M., SANGÜESA-BARREDA, G., NOVAK, K., ROZAS, V., TÍSCAR, P.A., LINARES, J.C., MARTÍNEZ DEL CASTILLO, E., RIBAS, M., GARCÍA-GONZÁLEZ, I., SILLA, F., CAMISÓN, Á., GÉNOVA, M., OLANO, J.M., HEREŞ, A.-M., CURIEL YUSTE, J., LONGARES, L.A., HEVIA, A., TOMAS-BURGUERA, M. y GALVÁN, J.D., 2020. Drought legacies are short, prevail in dry conifer forests and depend on growth variability. *Journal of Ecology*, vol. 108, no. 6, pp. 2473-2484. ISSN 00220477 (ISSN). DOI 10.1111/1365-2745.13435

The negative impacts of drought on forest growth and productivity last for several years generating legacies, although the factors that determine why such legacies vary across sites and tree species remain unclear. We used an extensive network of tree-ring width (RWI, ring-width index) records of 16 tree species from 567 forests, and high-resolution climate and normalized difference vegetation index (NDVI) datasets across Spain during the common period 1982–2008 to test the hypothesis that climate conditions and growth features modulate legacy effects of drought on forests. Legacy effects of drought were calculated as the differences between detrended-only RWI and NDVI series (i.e. after removing long-term growth trends) and pre-whitened RWI and NDVI series predicted by a model including drought intensity. Superposed Epoch Analysis (SEA) was used to estimate whether legacy effects differed from random. Finally, legacy effects were related to water balance, growth persistence and variability, and tree species identity. We found a widespread occurrence of drought

legacy effects on both RWI and NDVI, but they were seldom significant. According to SEA, first-year drought legacies were negative and different from random in 9% and 5% of the RWI and NDVI series respectively. The number of significant second- and third-year legacies was substantially lower. Differences between RWI and NDVI legacies indicate that canopy greenness and radial growth responses to drought are decoupled. We found variations in legacies between tree species with gymnosperms presenting larger first-year drought legacies than angiosperms, which were exposed to less severe droughts. Greater growth variability can explain the presence of first-year RWI legacies in gymnosperms from dry sites despite that the relationship between growth variability and legacies was complex. Synthesis. Accounting for species and site responses to drought provides a better understanding of the magnitude and duration of drought legacies on forest growth and productivity. Despite the widespread occurrence of growth reductions in the years during and after drought occurrence, significant legacies were not very common, mostly lasted one year, and were more widespread in gymnosperms. These are relevant factors to be considered in the future when studying the consequences of drought on forest productivity and tree growth. © 2020 British Ecological Society

GIL, E. y CANELA RUANO, A.J., 2020. La Guerra Civil española en los cónsules ecuatorianos.: Migraciones limitadas por miedo al contagio revolucionario. *Cuadernos republicanos*, no. 104, pp. 119-140. ISSN 1131-7744.

The Spanish Civil War (1936-1939) has been the bloodiest war in contemporary Spain. We propose to give a vision of it through the eyes of the Ecuadorian consuls, analyzing their actions and their positions both of the warlike conflict and of the position they transmitted to Ecuador in that war. In the same way, we want to analyze the repercussion of the civil war both on the Ecuadorian citizens and on the Spaniards who were desperately looking for a place to go into exile.

GOMEZ-GALAN, J., VAZQUEZ-CANO, E., DE LA ROSA, A.L. y LOPEZ-MENESES, E., 2020. Socio-Educational Impact of Augmented Reality (AR) in Sustainable Learning Ecologies: A Semantic Modeling Approach. *Sustainability*, vol. 12, no. 21, pp. 9116. DOI 10.3390/su12219116.

The current educational processes must be supported by sustainable learning ecologies, where the digitalization of training is enhanced. In this area, augmented reality (AR) plays an important role. It is a technology that for certain educational goals can facilitate the understanding of the course contents and increase the motivation and interest of the student. This research aims to measure the socio-educational impact that AR presents in the teaching processes of university students of social education. These are professionals in training dedicated, precisely, to social and educational actions. In order to reach the pursued objective, an exploratory study of qualitative and descriptive nature was approached from a methodological conception based on the action-research. The study was carried out during three academic courses and consisted of an experience of integration of AR in the classroom in order to determine which applications, and advantages or limitations of a socio-educational nature, were

perceived by the participants in that process. The documents generated were analyzed mainly using semantic methods. The main results were that AR is positive overall for its use in learning processes and, specifically in its field, optimal for the development of professional skills within the framework of social education. As to benefits, it highlighted the strengthening of learning dynamism, motivation, and interaction among students; as to limitations, these included the fact that it is not an accessible technology, the need for previous training and that it can reduce sociability. It was also stressed that it can be a useful resource in many areas of social education (childhood and adolescence, gerontology, drug addiction, etc.). In general, therefore, it can be concluded that the use of AR in university training, in this area of knowledge, allows content to be more dynamic and real in a sustainable way, thus achieving a highly transferable and motivating path to develop content and competencies.

GONZALEZ-ZAMAR, M.-D., ABAD-SEGURA, E., LUQUE DE LA ROSA, A. y LOPEZ-MENESES, E., 2020. Digital Education and Artistic-Visual Learning in Flexible University Environments: Research Analysis. *Education Sciences*, vol. 10, no. 11, pp. 294. DOI 10.3390/educsci10110294.

The constant development of digital technologies has allowed living in a digital environment based on connections, also transforming the context of the educational process. Experiences show that digital technologies have influenced the way of learning and, consequently, the way of teaching. Learning in the digital age is a complex process since it is a multifaceted and diverse action. The aim of this research is to identify global trends in digital education and its link with the learning of artistic and visual education in higher education settings, during the period 2000-2019. For this, bibliometric techniques have been applied to 1291 documents, obtaining results from the scientific activity of the main authors, research institutions, and countries that promote this topic. The data show increasing relevance, particularly in the last three years. The main subject area is the social sciences. The study has detected the lines of research that are related to the Internet, education, visuals, computer programs, learning, digital media literacy, and educational technology. This work contributes to the academic, scientific, and institutional debate to enhance decision-making based on existing information.

HERNÁNDEZ-JASSO, I., DOMÍNGUEZ-DEL-TORO, E., DELGADO-GARCÍA, J.M. y QUINTANAR, J.L., 2020. Recovery of sciatic nerve with complete transection in rats treated with leuprolide acetate: A gonadotropin-releasing hormone agonist. *Neuroscience Letters* [en línea], vol. 739. ISSN 03043940 (ISSN). DOI 10.1016/j.neulet.2020.135439.

It has been reported that the Gonadotropin-releasing hormone (GnRH) and its agonist leuprolide acetate (LA) can act as promoters of nerve regeneration. The aim of this study is to evaluate the effect of LA in a complete transection model. Sciatic nerve injury (SNI) was performed using a complete nerve transection and immediately repaired by epineural sutures. Rats were divided into three groups: SHAM, SNI treated with LA (SNI + LA) or saline solution (SNI + SS) for 5 weeks. Sciatic nerve regeneration was evaluated by kinematic gait analyzes, electrophysiological, morphological and biochemical tests. SNI + LA group had a functional recovery in kinematic gait, an increase in ankle angle value and a faster walking speed, compound muscle action potential amplitude, nerve conduction velocity (NCV). Furthermore, the number of

myelinated axons and microtubule-associated protein 2 (MAP-2) expression were also higher compared to SS group. In conclusion, LA treatment improves of gait, walking speed, NCV, axons morphometry and MAP-2 expression in rats with sciatic nerve complete transection. These results suggest that LA can be a potential treatment for peripheral nerve injuries. © 2020 Elsevier B.V.

ILLARREGUI GÓMEZ, E., TEICHNER, F., ARRIBAS LOBO, P., MORENO ESCOBAR, M. del C. y HERMANN, F., 2020. "Ver lo invisible": prospecciones geofísicas en el yacimiento arqueológico de Tiermes (Montejo de Tiermes, Soria). *Estudios y recuerdos In Memoriam Prof. Emilio Illarregui Gómez*. S.l.: IE Universidad, pp. 105-123. ISBN 978-84-09-18073-8.

JÁUREGUI-LOBERA, I., 2020. Pharmacogenetics and mental disorders. *Journal of Negative and No Positive Results: JONNPR*, vol. 5, no. 11, pp. 1262-1267. ISSN 2529-850X. 10.19230/jonnpr.3596

JÁUREGUI-LOBERA, I., HERRERO MARTÍN, G., MONTES MARTÍNEZ, M. y PUNTIVERO NAVARRO, A., 2020. ¿Es más cara la alimentación saludable?, *Journal of Negative and No Positive Results: JONNPR*, vol. 5, no. 11, pp. 1390-1425. ISSN 2529-850X. 10.19230/jonnpr.3883

Introduction. Occasionally, the price of food has been linked to its nutritional quality so that foods with lower nutritional value are the cheapest. Thus, the high availability of low-priced food could be a factor to consider among the ones responsible for the increased frequency of obesity that is now been observed.Objective. The main objective of this study was to make an economic comparison between the cost of healthy eating vs unhealthy eating.Methods. A cross-sectional descriptive study. The sample was made up of 15 individuals aged 18-57. Eating habits were collected for 3 days via 24- hour dietary recall and diet diary. The criteria for a healthy or unhealthy diet was established according to the SENC Food Guidance- December 2016. Daily cost of shopping basket, analysis of the average shopping basket for three days and the cost of food eating outside were made. The cost of shopping basket was compared between healthy and unhealthy eaters. The BMI was also considered in this study.Results. The results obtained confirm that a healthy diet is cheaper than an unhealthy one and that there is not direct and exclusive correlation between the BMI and healthy or unhealthy eating.Conclusions. If we consider that the economic factor is the most important one regarding healthy eating patterns, further study based on a wider simple and an educational-nutritional intervention would be interesting in order to provide individuals with tools to make possible the most adequate election of the food and a greater personal involvement in time, technical knowledge, etc. beyond the economic aspect.

JIMÉNEZ HERNÁNDEZ, A. y CARRASCO GÓMEZ, I., 2020. Los anfiteatros de Écija e Itálica: similitudes para la definición de un modelo en la Bética. *Mastia: Revista del Museo Arqueológico Municipal de Cartagena*, no. 15, pp. 37-64. ISSN 1579-3303.

JIMÉNEZ-SALCEDO, J., 2020. La compleja cohabitación jurídica del catalán y el Francés en el Rosellón: Análisis de políticas lingüísticas en el ámbito educativo. *International Journal of the Sociology of Language*, vol. 2020, no. 266, pp. 77-94. ISSN 01652516 (ISSN). DOI 10.1515/ijsl-2020-2112

The article describes the legal configuration of France as a monolingual state and analyzes the specific case of the educational system. A certain accommodation of regional languages as a means of instruction has been accomplished, either in time-parity bilingual sections or in immersion schools. In this respect, the data provided by the literature on the case of Catalan in the historic territory of Roussillon are reviewed. The sources analyzed show two main conclusions: (1) the breakdown of intergenerational transmission, which means that there are practically no dialect speakers and that the standard language can only be learned at school; and (2) the enrollment rate either in time-parity bilingual sections or immersion schools is too low to be able to reverse language shift. 2020 En el artículo se describe, en primer lugar, la configuración jurídica de Francia como un Estado monolingüe, en el que la legislación y la jurisprudencia han blindado la preeminencia del francés frente a unas lenguas regionales con un régimen jurídico subsidiario. Posteriormente se analiza el caso concreto del sistema educativo, en el que se ha conseguido superar el paradigma republicano de la enseñanza monolingüe en francés para acomodar la presencia de las lenguas regionales como medio de instrucción, ya sea en sistemas bilingües de paridad horaria o en sistemas de inmersión. A ese respecto, se revisan los datos que proporciona la literatura sobre el caso del catalán en el Rosellon, su zona de implantación histórica en Francia. Las fuentes analizadas muestran principalmente dos conclusiones: (1) la ruptura de la transmisión intergeneracional, lo que quiere decir que ya prácticamente no existen dialectofonos y que la lengua estándar solo puede aprenderse en la escuela; y (2) la tasa de matriculación en sistemas de paridad horaria o de inmersión es demasiado baja como para poder revertir ese cambio lingüístico, por lo que son necesarias políticas más activas. © 2020 Walter de Gruyter GmbH, Berlin/Boston.

LATORRE-ROMÁN, P.Á., CONSUEGRA GONZÁLEZ, P.J., MARTÍNEZ-REDONDO, M., CARDONA LINARES, A.J., SALAS-SÁNCHEZ, J., LUCENA ZURITA, M., MANJÓN POZAS, D., PÉREZ JIMÉNEZ, I., ARAGÓN-VELA, J., GARCÍA-PINILLOS, F., ROBLES-FUENTES, A. y PÁRRAGA-MONTILLA, J.A., 2020. Complex Gait in Preschool Children in a Dual-Task Paradigm Is Related to Sex and Cognitive Functioning: A Cross-Sectional Study Providing an Innovative Test and Reference Values. *Mind, Brain, and Education*, vol. 14, no. 4, pp. 351-360. ISSN 17512271 (ISSN). DOI 10.1111/mbe.12256

The purpose of this study was to design and validate a complex gait test (CGT) in preschool children and to examine the relationship between CGT performance and age, sex, and cognitive functioning. A total of 1,040 preschool children, aged 3 to 6 years, participated in this study. In all children, standardized dynamic balance test, and several cognitive functioning measures were used. The results indicate that the CGT has adequate reliability and validity. In the test-retest analysis ($n = 90$), the intraclass correlation coefficient was 0.901 ($p < .001$). A significant correlation between the initial test and retest ($r = 0.821$, $p < .001$) and between the CGT and dynamic balance test ($r = -0.432$, $p < .001$), Porteus Maze Test (PMT) ($r = -0.416$, $p = .011$), and Goodenough-Harris Drawing Test (GHDT) ($r = -0.386$, $p < .001$) was found. Boys showed a better performance than girls at 3–6 years old. The CGT showed excellent reliability and

validity in preschool children and may serve as a potential biomarker in cognitive development. © 2020 International Mind, Brain, and Education Society and Wiley Periodicals LLC

LÓPEZ BARONI, M.J., 2020. Essay on the pandemic. *Revista de Bioetica y Derecho*, no. 50, pp. 113-131. ISSN 18865887 (ISSN)

So many things have happened, and in such a short time, that it is not easy to select some topic without leaving out other equally relevant ones. We will probably spend the next few years debating what happened, among other things, due to the scant information that we still have today about the steamroller that has crushed our lifestyle. Well, I have selected, from the innumerable ones that remain to be studied, four narratives. Specifically, the pandemic as a fray between neoKantians and utilitarians; as herd dating; as an epistemological reckoning and as a Spanish singularity. With this analysis we will be able to interrelate, albeit briefly, the ethical, legal, political and scientific implications of a history that has just begun. Copyright © 2020 Manuel Jesús López Baroni.

LÓPEZ-FERNÁNDEZ, A., RODRÍGUEZ-BAENA, D.S. y GÓMEZ-VELA, F., 2020. gMSR: A multi-GPU algorithm to accelerate a massive validation of biclusters. *Electronics (Switzerland)*, vol. 9, no. 11, pp. 1-15. ISSN 20799292 (ISSN). DOI 10.3390/electronics9111782

Nowadays, Biclustering is one of the most widely used machine learning techniques to discover local patterns in datasets from different areas such as energy consumption, marketing, social networks or bioinformatics, among them. Particularly in bioinformatics, Biclustering techniques have become extremely time-consuming, also being huge the number of results generated, due to the continuous increase in the size of the databases over the last few years. For this reason, validation techniques must be adapted to this new environment in order to help researchers focus their efforts on a specific subset of results in an efficient, fast and reliable way. The aforementioned situation may well be considered as Big Data context. In this sense, multiple machine learning techniques have been implemented by the application of Graphic Processing Units (GPU) technology and CUDA architecture to accelerate the processing of large databases. However, as far as we know, this technology has not yet been applied to any bicluster validation technique. In this work, a multi-GPU version of one of the most used bicluster validation measure, Mean Squared Residue (MSR), is presented. It takes advantage of all the hardware and memory resources offered by GPU devices. Because of to this, gMSR is able to validate a massive number of biclusters in any Biclustering-based study within a Big Data context. © 2020 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

LOPEZ-IGUAL, P. y RODRIGUEZ-MODRONO, P., 2020. Who is Teleworking and Where from? Exploring the Main Determinants of Telework in Europe. *Sustainability*, vol. 12, no. 21, pp. 8797. DOI 10.3390/su12218797.

Telework and ICT-based mobile work (TICTM) arrangements have emerged in response to technological changes driven by digitalisation, increasing flexibility within the labour market, and globalisation. As telework becomes more widespread, these flexible models of work are rapidly expanding to new categories of employees, changing the factors traditionally found to be important for telework eligibility. The aim of this study is to gain a deeper understanding of new profiles of teleworkers, examining main factors that increase or decrease the likelihood of different TICTM arrangements. We apply multinomial logistic regression models to a sample of more than 20,000 workers from the 6th European Working Conditions Survey. Our findings confirm the heterogeneity in the profiles of teleworkers, particularly distinguishing by TICTM arrangement. Occasional teleworkers are usually male managers or professionals, but a relevant percentage of highly mobile teleworkers are technicians and associate professionals, while clerical support workers amount to a large group of home-based teleworkers. The majority of occasional and highly mobile teleworkers are still men, but this can no longer be said of home-based teleworkers. The correlations between telework and permanent contracts, full-time jobs, and living in urban areas are weak, showing that TICTM is spreading into more precarious, temporary, and lower-paid jobs, especially among home-based teleworkers and highly mobile teleworkers.

LU, X., VICENT-LUNA, J.M., CALERO, S., ROLDÁN-RUIZ, M.J., JIMÉNEZ, R., FERRER, M.L., GUTIÉRREZ, M.C. y DEL MONTE, F., 2020. Aqueous Co-Solvent in Zwitterionic-based Protic Ionic Liquids as Electrolytes in 2.0 V Supercapacitors. *ChemSusChem*, vol. 13, no. 22, pp. 5983-5995. ISSN 18645631 (ISSN). DOI 10.1002/cssc.202002028

High-performance energy-storage devices are receiving great interest in sustainable terms as a required complement to renewable energy sources to level out the imbalances between supply and demand. Besides electrode optimization, a primary objective is also the judicious design of high-performance electrolytes combining novel ionic liquids (ILs) and mixtures of aqueous solvents capable of offering “à la carte” properties. Herein, it is described the stoichiometric addition of a zwitterion such as betaine (BET) to protic ILs (PILs) such as those formed between methane sulfonic acid (MSAH) or p-toluenesulfonic acid (PTSAH) with ethanolamine (EOA). This addition resulted in the formation of zwitterionic-based PILs (ZPILs) containing the original anion and cation as well as the zwitterion. The ZPILs prepared in this work ([EOAH]+[BET][MSA]⁻ and [EOAH]+[BET][PTSA]⁻) were liquid at room temperature even though the original PILs ([EOAH]+[MSA]⁻ and [EOAH]+[PTSA]⁻) were not. Moreover, ZPILs exhibited a wide electrochemical stability window, up to 3.7 V vs. Ag wire for [EOAH]+[BET][MSA]⁻ and 4.0 V vs. Ag wire for [EOAH]+[BET][PTSA]⁻ at room temperature, and a high miscibility with both water and aqueous co-solvent (WcS) mixtures. In particular, “WcS-in-ZPIL” mixtures of [EOAH]+[BET][MSA]⁻ in 2 H₂O/ACN/DMSO provided specific capacitances of approximately 83 F g⁻¹ at current densities of 1 A g⁻¹, and capacity retentions of approximately 90 % after 6000 cycles when operating at a voltage of 2.0 V and a current density of 4 A g⁻¹. © 2020 Wiley-VCH GmbH

LUCEÑO GARCÉS, M., GONZÁLEZ CANALEJO, A., ROMÁN HERNÁNDEZ, R., SÁNCHEZ, L., MARTÍNEZ GARCÍA, B.M. y SÁNCHEZ VILLEGAS, R., 2020. Novedades corológicas para la flora vascular de la Sierra de Gredos (Sistema Central), II. *Flora Montiberica*, no. 78, pp. 112-119. ISSN 1135-5952.

In the present paper, 43 chorological novelties for Gredos range (Central System, Spain) are showed. These citations are the result of the works leaning to the elaboration of the sierra de Gredos vascular flora catalogue. Some of them pose relevant disjunctions regarding their known Iberian distribution, as the cases of *Myosotis hervei* Sennen, *Cyperus brevifolius* (Rottb.) Hassk. and *Rosa vosagiaca* N.H.F. Desp. Other taxa imply novelties for the Spanish Central System, Gredos range or Ávila province. Moreover, we provide new citations of threatened taxa, with interest towards their conservation, namely *Puccinellia pungens* (Pau) Paunero. Eventually, some taxonomical considerations about species of difficult delimitation have been made, e. g. *Delphinium halteratum-gracile* and *Sedum albumgypsicola* complexes

MARCHENA FERNÁNDEZ, J., 2020. Los buques de la Real Armada española en las guerras de independencia americanas. El teatro de operaciones del Caribe 1810–1825. *Gentes, pueblos y batallas. Microhistorias de la Ruta de la Libertad*. S.l.: Universidad Pedagógica y Tecnológica de Colombia, pp. 21-79. ISBN 978-958-660-371-3.

MARTIN-DURAN, J.M., VELLUTINI, B.C., MARLETAZ, F., CETRANGOLO, V., CVETESIC, N., THIEL, D., HENRIET, S., GRAU-BOVE, X., CARRILLO-BALTODANO, A.M., GU, W., KERBL, A., MARQUEZ, Y., BEKKOUCHE, N., CHOURROUT, D., GOMEZ-SKARMETA, J.L., IRIMIA, M., LENHARD, B., WORSAAE, K. y HEJNOL, A., [sin fecha]. Conservative route to genome compaction in a miniature annelid. *Nature Ecology & Evolution*, ISSN 2397-334X. DOI 10.1038/s41559-020-01327-6.

This study reports the genome of the miniature segmented annelid *Dimorphilus gyrociliatus* and reveals no drastic changes in genome architecture and regulation, unlike other cases of genome miniaturization. The causes and consequences of genome reduction in animals are unclear because our understanding of this process mostly relies on lineages with often exceptionally high rates of evolution. Here, we decode the compact 73.8-megabase genome of *Dimorphilus gyrociliatus*, a meiobenthic segmented worm. The *D. gyrociliatus* genome retains traits classically associated with larger and slower-evolving genomes, such as an ordered, intact Hox cluster, a generally conserved developmental toolkit and traces of ancestral bilaterian linkage. Unlike some other animals with small genomes, the analysis of the *D. gyrociliatus* epigenome revealed canonical features of genome regulation, excluding the presence of operons and trans-splicing. Instead, the gene-dense *D. gyrociliatus* genome presents a divergent Myc pathway, a key physiological regulator of growth, proliferation and genome stability in animals. Altogether, our results uncover a conservative route to genome compaction in annelids, reminiscent of that observed in the vertebrate *Takifugu rubripes*.

MARTÍNEZ LÓPEZ, D., 2020. Las finanzas autonómicas en la pandemia Covid-19. Las disfunciones se multiplican. *Hacienda Canaria*, no. 53, pp. 51-79. ISSN 1696-6945.

Este artículo ofrece una breve panorámica de las condiciones financieras y de gobernanza fiscal en que se encuentran las CCAA a lo largo de 2020. Desde el punto de vista financiero, no se prevén tensiones de liquidez ni sostenibilidad en el corto plazo. Ello es debido a que las entregas a cuenta del sistema de financiación autonómica (SFA) fueron actualizadas ignorando la situación económica actual y se dotó a favor de las CCAA, además, un fondo de 16.000 millones de euros no reembolsables; las dificultades financieras se percibirán con intensidad en 2021 y 2022. Por su parte, la gobernanza fiscal ya se encontraba considerablemente deteriorada antes de la Covid-19, con una reforma del SFA aplazada sine die y una normativa sobre disciplina fiscal con serios problemas de diseño y credibilidad; en estas condiciones el marco institucional no ayudará a superar la crisis.

MATA-CABANA, A., GOMEZ-DELGADO, L., ROMERO-EXPOSITO, F.J., RODRIGUEZ-PALERO, M.J., ARTAL-SANZ, M. y OLMEDO, M., 2020. Social Chemical Communication Determines Recovery From L1 Arrest via DAF-16 Activation. *Frontiers in Cell and Developmental Biology*, vol. 8, pp. 588686. ISSN 2296-634X. DOI 10.3389/fcell.2020.588686.

In a population, chemical communication determines the response of animals to changing environmental conditions, what leads to an enhanced resistance against stressors. In response to starvation, the nematode *Caenorhabditis elegans* arrest post-embryonic development at the first larval stage (L1) right after hatching. As arrested L1 larvae, *C. elegans* become more resistant to diverse stresses, allowing them to survive for several weeks expecting to encounter more favorable conditions. L1 arrested at high densities display an enhanced resistance to starvation, dependent on soluble compounds released beyond hatching and the first day of arrest. Here, we show that this chemical communication also influences recovery after prolonged periods in L1 arrest. Animals at high density recovered faster than animals at low density. We found that the density effect on survival depends on the final effector of the insulin signaling pathway, the transcription factor DAF-16. Moreover, DAF-16 activation was higher at high density, consistent with a lower expression of the insulin-like peptide DAF-28 in the neurons. The improved recovery of animals after arrest at high density depended on soluble compounds present in the media of arrested L1s. In an effort to find the nature of these compounds, we investigated the disaccharide trehalose as putative signaling molecule, since its production is enhanced during L1 arrest and it is able to activate DAF-16. We detected the presence of trehalose in the medium of arrested L1 larvae at a low concentration. The addition of this concentration of trehalose to animals arrested at low density was enough to rescue DAF-28 production and DAF-16 activation to the levels of animals arrested at high density. However, despite activating DAF-16, trehalose was not capable of reversing survival and recovery phenotypes, suggesting the participation of additional signaling molecules. With all, here we describe a molecular mechanism underlying social communication that allows *C. elegans* to maintain arrested L1 larvae ready to quickly recover as soon as they encounter nutrient sources.

MATELLÁN, L., MANZANO-LÓPEZ, J. y MONJE-CASAS, F., 2020. Polo-like kinase acts as a molecular timer that safeguards the asymmetric fate of spindle microtubule-organizing centers. *eLife* [en línea], vol. 9. ISSN 2050084X (ISSN). DOI 10.7554/eLife.61488.

The microtubules that form the mitotic spindle originate from microtubule-organizing centers (MTOCs) located at either pole. After duplication, spindle MTOCs can be differentially inherited during asymmetric cell division in organisms ranging from yeast to humans. Problems with establishing predetermined spindle MTOC inheritance patterns during stem cell division have been associated with accelerated cellular aging and the development of both cancer and neurodegenerative disorders. Here, we expand the repertoire of functions Polo-like kinase family members fulfill in regulating pivotal cell cycle processes. We demonstrate that the Plk1 homolog Cdc5 acts as a molecular timer that facilitates the timely and sequential recruitment of two key determinants of spindle MTOCs distribution, that is the γ -tubulin complex receptor Spc72 and the protein Kar9, and establishes the fate of these structures, safeguarding their asymmetric inheritance during *Saccharomyces cerevisiae* mitosis. © 2020, Matellán et al.

MEJÍAS ESTÉVEZ, M.J., 2020. Primary and home care at the end of life in the COVID-19's time. *Semergen*, vol. 46, no. 8, pp. 507-509. ISSN 11383593 (ISSN). DOI 10.1016/j.semerng.2020.08.003

MOLINA, J.C., SALMERON, J.L. y EGUÍA, I., 2020. An ACS-based memetic algorithm for the heterogeneous vehicle routing problem with time windows. *Expert Systems with Applications*, vol. 157, pp. 113379. ISSN 0957-4174. DOI 10.1016/j.eswa.2020.113379.

This paper presents a solution methodology to solve the heterogeneous vehicle routing problem with time windows (HVRPTW). This problem appears when a limited fleet of vehicles, characterized by different capacities, fixed costs and variable costs, is available for serving a set of customers which have to be visited within a predefined time window. The objective is to perform the route design minimizing the total fixed vehicle costs and distribution costs and satisfying all problem constraints. The problem is solved using an Ant Colony System (ACS) algorithm which has been successfully applied to combinatorial optimization problems. Moreover, to improve the performance of the ACS on the HVRPTW, a hybridized ACS with local search, called memetic ACS algorithm is proposed where the local search is performed by a variable neighborhood Tabu Search algorithm. Experiments are conducted on sets of benchmark instances from the scientific literature to evaluate the performance of the proposed algorithm. The results show that the algorithm has a good performance on the HVRPTW. In particular, out of the 80 instances, it obtained 65 new best solutions and matched 6 within reasonable computational times. (C) 2020 Elsevier Ltd. All rights reserved.

MOLINA MORALES, F.X., HERRERO, I. y LARRAÑETA, B., 2020. Centrality in networks of geographically proximate firms and competitive capabilities. *Business Research Quarterly*, vol. 23, no. 4, pp. 254-269. ISSN 2340-9436.



We examine how a firm's centrality within a network of geographically proximate firms affects its competitive capabilities. Our study of the total population of one Spanish cluster of fishing firms shows that the effects of centrality on a firm's competitive capabilities are contingent on the effects of two relational characteristics of its direct ties: strength and degree of cognitive cohesion. Specifically, our results indicate that the centrality of a firm within the cluster network enhances its competitive capabilities as the strength of its direct ties increases. Furthermore, firms can capture the value of centrality for enhancing competitive capabilities with a combination of strong (or weak) direct ties and low (or high) degree of cognitive cohesion. We contribute to the network and strategy literatures by reconciling conflicting results with regard to the strategic benefits of a firm's centrality in a cluster and the relational characteristics of its direct ties.

MORALES, P.A., MONFERRER, J.M., GUERRERO, T.J., BOTÍA-MORILLAS, C. y BOGINO-LARRAMBEERE, V., 2020. SMEs who facilitate co-responsible work-life balance to men. *Política y Sociedad*, vol. 57, no. 2, pp. 499-519. ISSN 11308001 (ISSN). DOI 10.5209/poso.65122

The novelty of this work lies in analysing the conditions that favour a co-responsible work-life balance to men who are fathers and how it can be explained that some Spanish companies are innovating in this direction. We will focus on the qualitative analysis of 11 small and medium-sized enterprises (SMEs), the main productive fabric in Spain. We have compared the evolution of companies over time and also similar companies in terms of economic sector. This has allowed us to understand the most relevant internal and external factors. The results show that dialoguing and transforming leadership and the organizational culture marked by the compromise-trust tandem are key elements for understanding how business policies can be implemented for co-responsible work-life balance. © 2020 Universidad Complutense de Madrid. All rights reserved.

MORÁN FAGÚNDEZ, L.J., 2020. Nutrición Deportiva. Citius, altius, fortius. *Nutrición hospitalaria: Órgano oficial de la Sociedad española de nutrición parenteral y enteral*, vol. 37, no. 5, pp. 887-889. ISSN 0212-1611. 10.20960/nh.03333

MORENO CRESPO, P.A., IVY HUNT GÓMEZ, C., MORENO FERNÁNDEZ, O. y FERRERAS LISTÁN, M., 2020. Los Escape Rooms como recurso didáctico inclusivo y motivacional en las aulas de primaria. *Prisma Social: revista de investigación social*, no. 31, pp. 352-367. ISSN 1989-3469.

One of the greatest difficulties that teachers currently encounter in their classes is maintaining student attention and interest. This paper is presented as part of the initial phase of a project that aims to train teachers in initial training in the use of various educational strategies and methodologies, one of which is the Escape Room. This is an exploratory study of a descriptive-interpretative nature with 2nd, 3rd and 4th year-students from the Degree on Primary Education (n=155). A 17 items questionnaire was administered that combined multiple choice questions with open questions for exploring participants' views on various didactic and methodological aspects. Results show

participants consider Escape Rooms a highly motivational activity that enhances group cohesion as well as the inclusion of all students. They are also thought to foster significant learning and to be easily implemented in the Primary Education classroom.

OCHOA-HUESO, R., ARCA, V., DELGADO-BAQUERIZO, M., HAMONTS, K., PIÑEIRO, J., SERRANO-GRIJALVA, L., SHAWYER, J. y POWER, S.A., 2020. Links between soil microbial communities, functioning, and plant nutrition under altered rainfall in Australian grassland. *Ecological Monographs* [en línea], vol. 90, no. 4. ISSN 00129615 (ISSN). DOI 10.1002/ecm.1424.

The size, frequency, and timing of precipitation events are predicted to become more variable worldwide. Despite these predictions, the importance of changes in precipitation in driving multiple above- and belowground ecosystem attributes simultaneously remains largely underexplored. Here, we carried out 3 yr of rainfall manipulations at the DRI-Grass facility, located in a mesic grassland in eastern Australia. Treatments were implemented through automated water reapplication and included +50% and -50% amount, reduced frequency of events, and an extreme summer drought. We evaluated the spatiotemporal responses of multiple ecosystem attributes including microbial biomass, community composition and activity, soil nutrient content and availability, and plant nutritional status to altered rainfall regimes. We found that changing precipitation patterns resulted in multiple direct and indirect changes in microbial communities and soil and plant nutrient content. Main results included greater availability of soil macronutrients and reduced availability of micronutrients under drought, and taxon-specific changes in the composition of soil microbial communities in response to altered rainfall. Moreover, using structural equation modeling, we showed that, in summer 2015, plant macronutrient contents, a widely used ecological indicator of pasture quality, were simultaneously explained by greater soil nutrient availability and the structure of soil microbial communities, and significantly reduced by lower rainfall. Plant micronutrients were also reduced by lower rainfall and explained by changes in microbial attributes. Despite treatment effects on many of the soil, microbial, and plant variables analyzed across the 3 yr of study, many of these ecosystem attributes varied greatly across sampling events. This resulted in many significant interactions between the rainfall treatments and experimental duration, suggesting complex system-level responses to changing rainfall in our grassland, and a high natural buffering capacity of the ecosystem to varying rainfall conditions. Some interactions manifested as changes in the coefficient of variation of ecosystem attributes, particularly in response to changes in the timing of precipitation events and the extreme summer drought. Finally, we posit that a detailed understanding of plant-soil-microbial interactions, and the role of climate in modifying these linkages, will be key for adapting the sustainability of grasslands to a future that will be shaped by climate change. © 2020 by the Ecological Society of America

OLIVA BLÁZQUEZ, F., PÉREZ VELÁZQUEZ, J.P. y CADENAS OSUNA, D., 2020. *Revistas españolas. Anuario de derecho civil*, vol. 73, no. 3, pp. 1241-1272. ISSN 0210-301X.

OSTOS-DÍAZ, B., CASUSO-HOLGADO, M.J., MUÑOZ-FERNÁNDEZ, M.J., CARAZO, A.F., MARTÍN-VALERO, R. y MEDRANO-SÁNCHEZ, E.M., 2020. Early physical rehabilitation after sentinel lymph node biopsy in breast cancer: Is it feasible and safe? *International Journal of Environmental Research and Public Health*, vol. 17, no. 22, pp. 1-14. ISSN 16617827 (ISSN). DOI 10.3390/ijerph17228382

The primary purpose of this research was to investigate the feasibility and safety of delivering an early supervised physical therapy intervention to women after sentinel lymph node biopsy (SLNB); furthermore, we aimed to provide explorative data on its effects. This was a singlesite feasibility study. Pre-and post-evaluation was conducted from baseline to follow-up at 6 months. Primary outcomes were participant recruitment, participant retention, compliance with the intervention, and safety. Secondary outcomes were shoulder range of motion, handgrip strength, upper limb pain and disability, scar recovery, quality of life, and the incidence of axillary web syndrome (AWS) and/or lymphoedema. A total of 43 participants (mean age 55.37 years) completed the trial and the follow-up period. A total of 91% of women who met the inclusion criteria agreed to participate, and the adherence rate was 80%. No adverse events were reported. Incidence of AWS was 9.3%, and there was no incidence of lymphoedema at 6 months. Our results support that this intervention is feasible and safe. The results presented in this study also provide preliminary evidence for the use of a rehabilitation program as a supportive intervention after SLNB, but future research on effectiveness is needed. © 2020 by the authors. Licensee MDPI, Basel, Switzerland.

PACHECO COSTA, V., 2020. Cicely Hamilton y el fin de la humanidad. *Memoria traumática: visiones femeninas de guerra y posguerra*. S.l.: Dykinson, pp. 227-240. ISBN 978-84-13-24638-3.

PAREDES-FUENTES, A.J., JULIA-PALACIOS, N.A., MONTERO, R., YUBERO, D., CASCAJO-ALMENARA, M.V., GARCIA-CAZORLA, A., SANTOS-OCANA, C. y ARTUCH, R., 2020. Laboratory Diagnosis of a Case with Coenzyme Q(10) Deficiency. *Clinical Chemistry*, vol. 66, no. 11, pp. 1465-1467. ISSN 0009-9147. DOI 10.1093/clinchem/hvaa202.

PAREJA-BLANCO, F., ALCAZAR, J., CORNEJO-DAZA, P.J., SÁNCHEZ-VALDEPEÑAS, J., RODRIGUEZ-LOPEZ, C., HIDALGO-DE MORA, J., SÁNCHEZ-MORENO, M., BACHERO-MENA, B., ALEGRE, L.M. y ORTEGA-BECERRA, M., 2020. Effects of velocity loss in the bench press exercise on strength gains, neuromuscular adaptations, and muscle hypertrophy. *Scandinavian Journal of Medicine and Science in Sports*, vol. 30, no. 11, pp. 2154-2166. ISSN 09057188 (ISSN). DOI 10.1111/sms.13775

Objective: This study aimed to compare the effects of four velocity-based training (VBT) programs in bench press (BP) between a wide range of velocity loss (VL) thresholds—0% (VL0), 15% (VL15), 25% (VL25), and 50% (VL50)—on strength gains, neuromuscular adaptations, and muscle hypertrophy. Methods: Sixty-four resistance-trained young men were randomly assigned into four groups (VL0, VL15, VL25, and VL50) that differed in the VL allowed in each set. Subjects followed a VBT program for 8-weeks using the BP exercise. Before and after the VBT program the following tests were

performed: (a) cross-sectional area (CSA) measurements of pectoralis major (PM) muscle; (b) maximal isometric test; (c) progressive loading test; and (d) fatigue test. Results: Significant group x time interactions were observed for CSA ($P < .01$) and peak root mean square in PM (peak RMS-PM, $P < .05$). VL50 showed significantly greater gains in CSA than VL0 ($P < .05$). Only the VL15 group showed significant increases in peak RMS-PM ($P < .01$). Moreover, only VL0 showed significant gains in the early rate of force development (RFD, $P = .05$), while VL25 and VL50 improved in the late RFD ($P \leq .01-.05$). No significant group x time interactions were found for any of the dynamic strength variables analyzed, although all groups showed significant improvements in all these parameters. Conclusion: Higher VL thresholds allowed for a greater volume load which maximized muscle hypertrophy, whereas lower VL thresholds evoked positive neuromuscular-related adaptations. No significant differences were found between groups for strength gains, despite the wide differences in the total volume accumulated by each group. © 2020 John Wiley & Sons A/S. Published by John Wiley & Sons Ltd

PAREJA-BLANCO, Fernando, DE VILLARREAL, E.S., BACHERO-MENA, B., MORA-CUSTODIO, R., ASIAN-CLEMENTE, J.A., LOTURCO, I. y RODRIGUEZ-ROSELL, D., 2020. Effects of Unloaded Sprint and Heavy Sled Training on Sprint Performance in Physically Active Women. *International Journal of Sports Physiology and Performance*, vol. 15, no. 10, pp. 1356-1362. ISSN 1555-0265. DOI 10.1123/ijsp.2019-0862.

Purpose: This study aimed to compare the effects of unresisted versus heavy sled sprint training (0% vs 40% body mass [BM]) on sprint performance in women. Moreover, the effects of the aforementioned loads on resisted sprint and jump performance were analyzed. Methods: Twenty-eight physically active women were randomly allocated into 2 groups: unloaded sprint training group (G0%, $n = 14$), and resisted sprint training with 40% BM group (G40%, $n = 14$). Pretraining and posttraining assessments included countermovement jump, unloaded 30-m sprint, and 20-m sprint with 20%, 40%, 60%, and 80% BM. Times to cover 0 to 10 (T10), 0 to 20 (T20), 0 to 30 (T30), 10 to 20 (T10-20), 20 to 30 (T20-30), and 10 to 30 m (T10-30) were recorded. Both groups were trained once a week for 8 weeks and completed the same training program, but with different loads (0% vs 40% BM). Results: No significant time x group interactions were observed. For unloaded sprint performance, G0% showed significant ($P = .027$) decreases only in T10-20, while G40% attained significant decreases in T30 ($P = .021$), T10-30 ($P = .015$), and T20-30 ($P = .003$). Regarding resisted sprint performance, G0% showed significant ($P = .010$) improvements only for the 20% BM condition. The G40% group attained significant improvements in all loading conditions (20%, 40%, 60%, and 80% BM). Both groups showed significant improvements ($P < .001$) in countermovement jump height. Conclusions: In physically active women, no significant differences in sprint and countermovement jump performance were detected after 8 weeks of resisted and unresisted sprint training programs. Future studies should, therefore, be devoted to how sprint training should be individualized to maximize performance.

PASTOR-MALDONADO, C.J., SUÁREZ-RIVERO, J.M., POVEA-CABELLO, S., ÁLVAREZ-CÓRDOBA, M., VILLALÓN-GARCÍA, I., MUNUERA-CABEZA, M., SUÁREZ-CARRILLO, A., TALAVERÓN-REY, M. y SÁNCHEZ-ALCÁZAR, J.A., 2020. Coenzyme q10: Novel formulations and

medical trends. *International Journal of Molecular Sciences*, vol. 21, no. 22, pp. 1-23. ISSN 16616596 (ISSN). DOI 10.3390/ijms21228432

The aim of this review is to shed light over the most recent advances in Coenzyme Q10 (CoQ10) applications as well as to provide detailed information about the functions of this versatile molecule, which have proven to be of great interest in the medical field. Traditionally, CoQ10 clinical use was based on its antioxidant properties; however, a wide range of highly interesting alternative functions have recently been discovered. In this line, CoQ10 has shown pain-alleviating properties in fibromyalgia patients, a membrane-stabilizing function, immune system enhancing ability, or a fundamental role for insulin sensitivity, apart from potentially beneficial properties for familial hypercholesterolemia patients. In brief, it shows a remarkable amount of functions in addition to those yet to be discovered. Despite its multiple therapeutic applications, CoQ10 is not commonly prescribed as a drug because of its low oral bioavailability, which compromises its efficacy. Hence, several formulations have been developed to face such inconvenience. These were initially designed as lipid nanoparticles for CoQ10 encapsulation and distribution through biological membranes and eventually evolved towards chemical modifications of the molecule to decrease its hydrophobicity. Some of the most promising formulations will also be discussed in this review. © 2020 by the authors. Licensee MDPI, Basel, Switzerland.

PEREZ-CHACON, R., ASECIO-CORTES, G., MARTINEZ-ALVAREZ, F. y TRONCOSO, A., 2020. Big data time series forecasting based on pattern sequence similarity and its application to the electricity demand. *Information Sciences*, vol. 540, pp. 160-174. ISSN 0020-0255. DOI 10.1016/j.ins.2020.06.014.

This work proposes a novel algorithm to forecast big data time series. Based on the well established Pattern Sequence-based Forecasting algorithm, this new approach has two major contributions to the literature. First, the improvement of the original algorithm with respect to the accuracy of predictions, and second, its transformation into the big data context, having reached meaningful results in terms of scalability. The algorithm uses the Apache Spark distributed computation framework and it is a ready-to-use application with few parameters to adjust. Physical and cloud clusters have been used to carry out the experimentation, which consisted in applying the algorithm to real-world data from Uruguay electricity demand. (c) 2020 Elsevier Inc. All rights reserved.

REBOLLO-SANZ, Y.F. y DE LA RICA, S., [sin fecha]. Gender gaps in skills and labor market outcomes: evidence from the PIAAC. *Review of Economics of the Household*, ISSN 1569-5239. DOI 10.1007/s11150-020-09523-w.

Our paper makes the first attempt to address the empirical relationship between cognitive skills and gender gaps in labor market performance. We do so in a cross-country setting. To that end we use the PIAAC dataset, which contains information on OECD and non-OECD economies. Firstly, we document the existence of gender gaps in cognitive skills for numeracy, which are found to be around 2.5-4.6% and increase with age. These gaps remain even when comparing men and women within the same level and field of study. Next, we document sizable gender gaps in labor market outcomes, such as Labor Force Participation and hourly wages-around 18%, increase with age and rise remarkably for parents. Math skills are positively and strongly associated with

these two labor market outcomes and its contribution to explain gender gaps, although significant, is limited-between 10 15% at most-in particular for parents.

REQUENA HERNÁNDEZ, C., JIMÉNEZ MOLA, S. y PLAZA CARMONA, M.I., 2020. Características funcionales de mujeres octogenarias con fractura de cadera después del alta hospitalaria. *Index de enfermería: información bibliográfica, investigación y humanidades*, vol. 29, no. 3, pp. 2- 0. ISSN 1132-1296.

Objective: To identify the main clinical, functional and cognitive characteristics of hospitalized octogenarian women diagnosed with hip fracture at the University Hospital of León (Spain). In addition, to determine the influence home, to which patients are transferred upon discharge from the recovery from wandering. Method: Prospective descriptive pilot study cross-sectional analysis of the physiological characteristics of hospitalized older women with a diagnosis of hip fracture at the Hospital de León. Results: It included 96 women with an average age of 85.95 ± 5.1 years. The total number of comorbidities presented by patients was 3.7. The most common type of fracture frequent was the petrochanteric. All patients worsened with respect to the capacity of basal wandering, finding the greatest differences in those who were institutionalized as opposed to those who remained at their usual residence. Conclusions: The address to which patients are transferred when they are discharged from hospital is a determining factor in the recovery of mobility and independence of themselves. In this regard, it is important to note that the usual practice of institutionalisation of older people after a hip fracture is associated with a worse recovery.

RINCON-ROLDAN, F. y LOPEZ-CABRALES, A., [sin fecha]. Ethical values in social economy for sustainable development. *Annals of Public and Cooperative Economics*, ISSN 1370-4788. DOI 10.1111/apce.12300.

This article examines the relationships between ethical values and business sustainability. Using previously validated measuring scales, we analyzed the relationship between three values (perceived support, respect and responsibility) in the three dimensions of sustainability (economic, social and environmental) with a sample of 124 cooperative entities of social economy. A structural equations model was used to evaluate the relationships between the proposed constructs, employing the Partial Least Squares (PLS-SEM) method. The results confirm the positive relationships between some of the studied values and the sustainability of social entities, demonstrating that the emphasis on some values over others will result in different impacts on economic, social and environmental sustainability.

ROSILLO-LOPEZ, C., 2020a. Cicero and roman education: the reception of the speeches and ancient scholarship. *Journal of Roman Studies*, vol. 110, pp. 280-282. ISSN 0075-4358.

ROSILLO-LOPEZ, C., 2020b. Cicero, greek learning, and the making of a roman classic. *Journal of Roman Studies*, vol. 110, pp. 280-282. ISSN 0075-4358.



RUILOBA NÚÑEZ, J.M. y NAVARRO GONZÁLEZ, R., 2020. ¿Administraciones públicas “genderizadas”? *Revista Derecho del Estado*, no. 47, pp. 343-369. ISSN 0122-9893. 10.18601/01229893.n47.11

Actions designed by States to achieve equality between men and women seek to develop normative instruments and gender policies to break down structural inequalities. This paper, which examines the case study of Spain’s Public Administration, reviews the measures adopted in terms of access to public sector employment and staffing policy during the democratic period, in order answer the questions: When and how were they designed? Which political actors have been driving them? What stage are we at now? The ultimate aim is to identify the advances made and specific measures implemented, bringing to the debate the general and contextual elements that are hampering the effective achievement of equality. The study of the Spanish Public Administration could exemplify a journey, in particular but very illustrative, of the difficulties, challenges and strategies in favor of equality and public policies with a gender perspective.

SÁNCHEZ GÓMEZ, R., 2020. Cortés Martín, J. M.; Ruiz Yamuza, F. G. (Coords.), Retos actuales de la cooperación penal en la Unión Europea, Dykinson, Madrid, 2020, 366 pp. *Revista General de Derecho Europeo*, no. 52, pp. 20- 0. ISSN 1696-9634.

SINGH, B.K., TRIVEDI, P., EGIDI, E., MACDONALD, C.A. y DELGADO-BAQUERIZO, M., 2020. Crop microbiome and sustainable agriculture. *Nature Reviews Microbiology*, vol. 18, no. 11, pp. 601-602. ISSN 17401526 (ISSN). DOI 10.1038/s41579-020-00446-y

SOLAGUREN-BEASCOA, M., BUJAKOWSKA, K.M., MEJECASE, C., EMMENEGGER, L., ORHAN, E., NEUILLE, M., MOHAND-SAID, S., CONDROYER, C., LANCELOT, M.-E., MICHIELS, C., DEMONTANT, V., ANTONIO, A., LETEXIER, M., SARAIVA, J.-P., LONJOU, C., CARPENTIER, W., LEVEILLARD, T., PIERCE, E.A., DOLLFUS, H., SAHEL, J.-A., BHATTACHARYA, S.S., AUDO, I. y ZEITZ, C., [sin fecha]. WDR34, a candidate gene for non-syndromic rod-cone dystrophy. *Clinical Genetics*, ISSN 0009-9163. DOI 10.1111/cge.13872.

Rod-cone dystrophy (RCD), also called retinitis pigmentosa, is characterized by rod followed by cone photoreceptor degeneration, leading to gradual visual loss. Mutations in over 65 genes have been associated with non-syndromic RCD explaining 60% to 70% of cases, with novel gene defects possibly accounting for the unsolved cases. Homozygosity mapping and whole-exome sequencing applied to a case of autosomal recessive non-syndromic RCD from a consanguineous union identified a homozygous variant in WDR34. Mutations in WDR34 have been previously associated with severe ciliopathy syndromes possibly associated with a retinal dystrophy. This is the first report of a homozygous mutation in WDR34 associated with non-syndromic RCD.

SOLANO, G., LARRAÑETA, B. y AGUILAR, R., 2020. Absorptive capacity balance and new venture performance: cultivating knowledge from regional clusters. *Technology*

Analysis and Strategic Management, vol. 32, no. 11, pp. 1264-1276. ISSN 09537325 (ISSN). DOI 10.1080/09537325.2020.1760236

Applying the knowledge-based theory to the context of very young firms (new ventures) this study examines whether and how the knowledge characteristics of regional clusters influence the development of capabilities and performance of new ventures. Specifically, we focus on a crucial capability for new ventures to benefit from external knowledge and harness it for advantage: absorptive capacity. Using a sample of 140 new ventures located in 7 distinct regional clusters in Spain, we find that both, the intensity of knowledge sharing among clients and suppliers, and the social structure of regional clusters encourage new ventures to develop their absorptive capacity differently, having consequences for the balance between its potential and realised dimensions. Further, the results support the important role of absorptive capacity in mediating the effects of the knowledge environment (cluster characteristics) on new ventures' performance. Implications for building new ventures' absorptive capacity and cultivating knowledge from clusters are discussed. © 2020 Informa UK Limited, trading as Taylor & Francis Group.

SUÁREZ-RELINQUE, C., DEL MORAL ARROYO, G., JIMÉNEZ, T.I., CALLEJA, J.E. y SÁNCHEZ, J.C., 2020. Predictive Psychosocial Factors of Child-to-Parent Violence in a Sample of Mexican Adolescents. *Frontiers in Psychology* [en línea], vol. 11. ISSN 16641078 (ISSN). DOI 10.3389/fpsyg.2020.576178.

The aim of this study was to carry out a psychosocial analysis of child-to-parent violence (CPV) in a sample of school adolescents, considering a set of individual variables (psychological distress, problematic use of social networking sites, and perceived non-conformist social reputation) and family variables (open and problematic communication with parents) according to sex. The sample consisted of 3,731 adolescents (54% boys), aged between 14 and 16 years ($M = 14.6$ years, $SD = 0.567$), from the state of Nuevo León, Mexico. The scores of the boys and girls were analyzed to check for differences. Also, correlations between all the study variables were calculated. Finally, a multiple stepwise regression analysis was carried out for the total sample and also for boys and girls separately. Results confirmed the important role of individual variables as predictors of CPV in boys and girls. The main difference between boys and girls was observed in the predictive weight of problematic use of social networking sites, which was higher in girls than in boys. Open communication with the father was a significant factor for predicting the decrease of CPV levels in the case of boys, while open communication with the mother predicted the decrease of CPV in girls. Problematic communication with the mother showed similar values in boys and girls when predicting CPV, however, the predictive weight of problematic communication with the father was higher in girls than in boys. These results are interesting and have important implications for the prevention of CPV. © Copyright © 2020 Suárez-Relinque, del Moral Arroyo, Jiménez, Calleja and Sánchez.

SZYMYSLIK, R., 2020. Foundation de Isaac Asimov y la traducción de neologismos en la ciencia ficción. *Lingüística prospectiva: tendencias actuales en estudios de la lengua entre jóvenes investigadores*. S.l.: Universidad de Sevilla, pp. 561-572. ISBN 978-84-472-

2120-2.

TSCHAKERT, J., ZHONG, Q., MARTIN-JIMENEZ, D., CARRACEDO-COSME, J., ROMERO-MUNIZ, C., HENKEL, P., SCHLODER, T., AHLES, S., MOLLENHAUER, D., WEGNER, H.A., POU, P., PEREZ, R., SCHIRMEISEN, A. y EBELING, D., 2020. Surface-controlled reversal of the selectivity of halogen bonds. *Nature Communications*, vol. 11, no. 1, pp. 5630. ISSN 2041-1723. DOI 10.1038/s41467-020-19379-4.

Intermolecular halogen bonds are ideally suited for designing new molecular assemblies because of their strong directionality and the possibility of tuning the interactions by using different types of halogens or molecular moieties. Due to these unique properties of the halogen bonds, numerous areas of application have recently been identified and are still emerging. Here, we present an approach for controlling the 2D self-assembly process of organic molecules by adsorption to reactive vs. inert metal surfaces. Therewith, the order of halogen bond strengths that is known from gas phase or liquids can be reversed. Our approach relies on adjusting the molecular charge distribution, i.e., the sigma-hole, by molecule-substrate interactions. The polarizability of the halogen and the reactivity of the metal substrate are serving as control parameters. Our results establish the surface as a control knob for tuning molecular assemblies by reversing the selectivity of bonding sites, which is interesting for future applications. Halogen bonds are emerging in numerous areas of application for building molecular assemblies due to their directionality and tunability. Here, the authors establish the surface as a control knob for tuning molecular assemblies by reversing the selectivity of bonding sites.

VERGARA RODRÍGUEZ, D., ORDÓÑEZ OLMEDO, E., FERNÁNDEZ ARIAS, P. y GÓMEZ VALLECILLO, A.I., 2020. La gamificación como técnica de adquisición de competencias sociales. *Prisma Social: revista de investigación social*, no. 31, pp. 388-409. ISSN 1989-3469.

Although the term gamification has its origin in unforgettable times, when people achieved goals through games, currently this technique has become one of the most used in this global and digital society. From a deterministic perspective, gamification allows users to obtain results based on the objectives set, thanks to three fundamental factors: (i) the creation of a consistent user experience; (ii) the achievement of challenges; and (iii) reward and growth. Gamification is a creative and multidisciplinary technique, which also presents a series of substantial advantages for today's society, such as, for example, the possibility of acquiring skills demanded by a society increasingly aware of fundamental issues such as gender equality, environmental conservation or community development. Through the review of the scientific literature on gamification in the social sciences and the technique of correlational study, this article develops a theoretical framework so that, through the elements of gamification, any subject can acquire and develop the social skills necessary and demanded in today's society.

VIGIER-MORENO, F.J., [sin fecha]. Creating research-based resources for court interpreters: an illustrative study on translation-oriented terminological records about Spanish criminal proceedings. *Perspectives-Studies in Translation Theory and Practice*, ISSN 0907-676X. DOI 10.1080/0907676X.2020.1839522.

The quality of the interpreting services provided in criminal courts has come to the fore in Spain as a result of the transposition into domestic law of the EU Directives on the right to interpretation and translation in criminal proceedings and on the right to information in criminal proceedings. Since one of the greatest challenges faced by court interpreters is precisely the lack of appropriate terminological resources, in this article we describe how we used empirical research results (to wit, the exploitation of a corpus of authentic, interpreter-mediated criminal proceedings) to create resources that can help court interpreters to perform their task with accuracy, rigour and diligence. More specifically, we focus on translation-oriented terminological records, as adopted in the TIPp project (on the quality of court interpreting) on the basis of the approach developed in previous research on the translation of technology law (Law10N). We describe in detail the process of creating the Spanish-English record for the illustrative term *letrado de la administracion de justicia*. By describing this process (including term selection, information mining, equivalence search and acceptability analysis), we highlight the usefulness of this type of terminological record and its potential for other thematic subfields and language pairs.

ZUNGU, N.S., EGBEWALE, S.O., OLANIRAN, A.O., PEREZ-FERNANDEZ, M. y MAGADLELA, A., 2020. Soil nutrition, microbial composition and associated soil enzyme activities in KwaZulu-Natal grasslands and savannah ecosystems soils. *Applied Soil Ecology*, vol. 155, pp. 103663. ISSN 0929-1393. DOI 10.1016/j.apsoil.2020.103663. Successful agriculture is dependent on soil quality and nutrition. Soil is the primary source of nutrients that are assimilated by plant root-systems to promote plant growth and development. The availability of these soil nutrients is regulated by factors such as pH, microbial composition and soil nutrient enzyme activities in ecosystem soils. This study aim was to determine the nutrition, microbe composition, and soil enzyme activities in four soils from different KwaZulu-Natal (KZN) grassland and savannah ecosystems. The four sites were found to differ significantly in their physical, chemical and biological properties. Microorganisms identified in the soils were from the families Bacillaceae, Hypocreaceae, Mucoraceae, and Nectriaceae. Bacterial and fungal genera identified among these soils showed varying diversity and species richness. Bergville soils had the lowest pH, cation exchange capacity, micro, and macro nutrient concentrations. Furthermore, Bergville soils showed reduced asparaginase and lignin peroxidase activities and had the lowest dehydrogenase activities. Therefore Bergville soils showed the minimum geochemical properties which may affect the growth of grassland and savannah ecosystem vegetation and sustainable agricultural practices.

