

# 2016

**Science news Yearbook**  
Campus de Gandia of the Universitat Politècnica de València



UNIVERSITAT  
POLITÈCNICA  
DE VALÈNCIA

CAMPUS DE GANDIA

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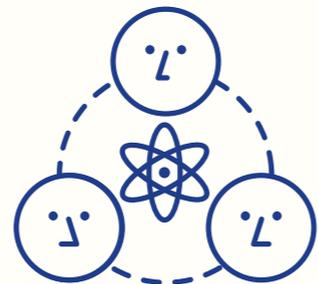


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# Greetings from the director

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Pepe Pastor, director of Campus Gandia

The Campus Gandia of the Universitat Politècnica de València is a young and dynamic academic institution that adapts constantly to its socioeconomic environment. Its aim is to train professionals with the capacity to integrate into society and the labor market and generate knowledge that contributes to the technological development and progress of a modern and advanced society.

One of the firmest commitments is promoting interest and bringing scientific research closer to society through the dissemination of R&D activity and promoting the transfer knowledge from the different research groups on the Campus.

The aim of this yearbook is to bring the science and research activities of our campus closer to everyday people. We will share news of technological and scientific interest, as well as science-popularization events and activities.

We want to connect with all those who you love the world of science and want to be permanently informed about our contribution to the world of research and technological development.

In December Jesus Alba takes over as director of the Campus Gandia.

Would you like to accompany us? #UPVGandiaScience **#UPVGandiaCiencia**



## **Environmental Sciences**

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# In science, every effort has its reward

Virginia Garófano

Virginia Garófano Gómez, who completed her doctoral dissertation at Campus Gandia, tells us about her pre-doctoral and current post-doctoral experience at the [Blas Pascal University of Clermont-Ferrand \(France\)](#).

My interest in river ecosystems and riparian vegetation got its start when I was studying Environmental Sciences at the University of Granada, which is why I decided to look for doctoral programs in the field. I found the program in the [Department of Hydraulic and Environmental Engineering](#) at the UPV, with a specialization in on Environmental Impact Assessment (EIA). At an Ecohydraulics conference I coincidentally met [Francisco Martínez Capel](#), professor and researcher at the same department, who was working at Campus Gandia and who would later become my thesis director. With this set of circumstances, I decided to move to Gandia to begin my doctorate.

It was a difficult start because, despite receiving a warm welcome, I started my PhD without any financial aid. While I waited for it to come through, I was lucky enough to start working on some studies with the consulting firm TECNOMA, which allowed me to collect the first data for my thesis. Simultaneously I received the CEIC Alfons el Vell de Gandia research grant to fund the publication my monograph on the banks of the Serpis River



Garófano during his stay in France

But the turning point came when I received the Research Personnel in Training Fellowship from the UPV, allowing me to spend the following four years working on research projects and finishing my doctoral dissertation. And thanks to several other grants, I was able to carry out part of my PhD in the UK, Italy and Austria, which helped me to qualify for the PhD with International Mention. For me, these academic residencies were the best part of the entire PhD. After finishing my PhD, I applied for several national postdoctoral calls, but with no luck, mainly because of the cuts in funding for research and because competition becomes greater as you advance in your scientific career.

After being out of work for more than a year, in March 2014 I was offered a part-time position as a research technician at the UPV, where I was able to help direct a doctoral dissertation. In June 2014 I was notified that I had been chosen for one of the 4 postdoctoral positions for foreigners at the Blas Pascal University in France. I received the news with mixed feelings: I was thrilled that I would be working with people I really admired, but I was also sad and unsure about moving away from my family and my partner, and to have to postpone possible motherhood. And doing a postdoc is a decision that you do not make on your own.

I have been working on my postdoctoral project for a year and a half now at the [GEOLAB CNRS-UBP Laboratory](#) in collaboration with the INRA-UBP research unit from PIAF. Both are leading research units and I am lucky to be surrounded by very competent people who welcomed me in an extraordinary way

In my postdoctoral project we are conducting

experiments in semi-controlled conditions to characterize the morphological and biomechanical response of the black poplar (one of the most emblematic riparian species in the northern hemisphere) to different fluvial processes. Furthermore, I have the privilege of working on various studies in the Allier River, one of the few European rivers that still retain their natural dynamism. In June 2015 I presented the first results of postdoc in the [I.S. RIVERS Conference](#) in Lyon, where I received one of the two [Best Poster Audience Awards](#).

Times are tough for finding a job both in science as well as in any other field. In Spain, many people have a job uncertainty and while it is true that finding a job in science has always been difficult, now it has become more difficult than ever. Many young people are being kicked out of the country; leaving Spain is their only option and this is dramatic. Spanish society must demand greater funding for research, because it is fundamental in order to create knowledge and progress; without it, a country has no future. Improving the access of young people to careers science in decent conditions (salaries) should be a priority for our governments, although they remain seemingly indifferent to the "brain drain"

I would like to conclude by offering some advice to new doctoral candidates: although a PhD is a long process, don't get discouraged, you have to enjoy the ride, benefit from the experience and make the most of it, especially by liaising with other professionals and learning to use tools and techniques that will be useful later on, even if you decide to take another career path.

**Every effort has its reward.**

# Campus Gandia Studies Ecological Flows in Tanzania

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Francisco Martínez-Capel, researcher and professor of Environmental Sciences at Campus Gandia, has taken part along with his team in the study of environmental flows in the Kilombero river basin in Tanzania, providing technical support. The international project was coordinated by the [UNESCO- IHE Institute for Water Education](#) (Netherlands), with the participation of other universities in Tanzania. The project is promoted by the [United States Agency for International Development](#), under the coordination of the renowned Professor [Michael McClain](#), with extensive international experience in water-related studies.

The ultimate goal is to establish new **infrastructure and irrigation** in this area of Tanzania, so as to contribute to the development of this country and its food safety, while making it compatible with the conservation of the tremendous natural wealth of the country.

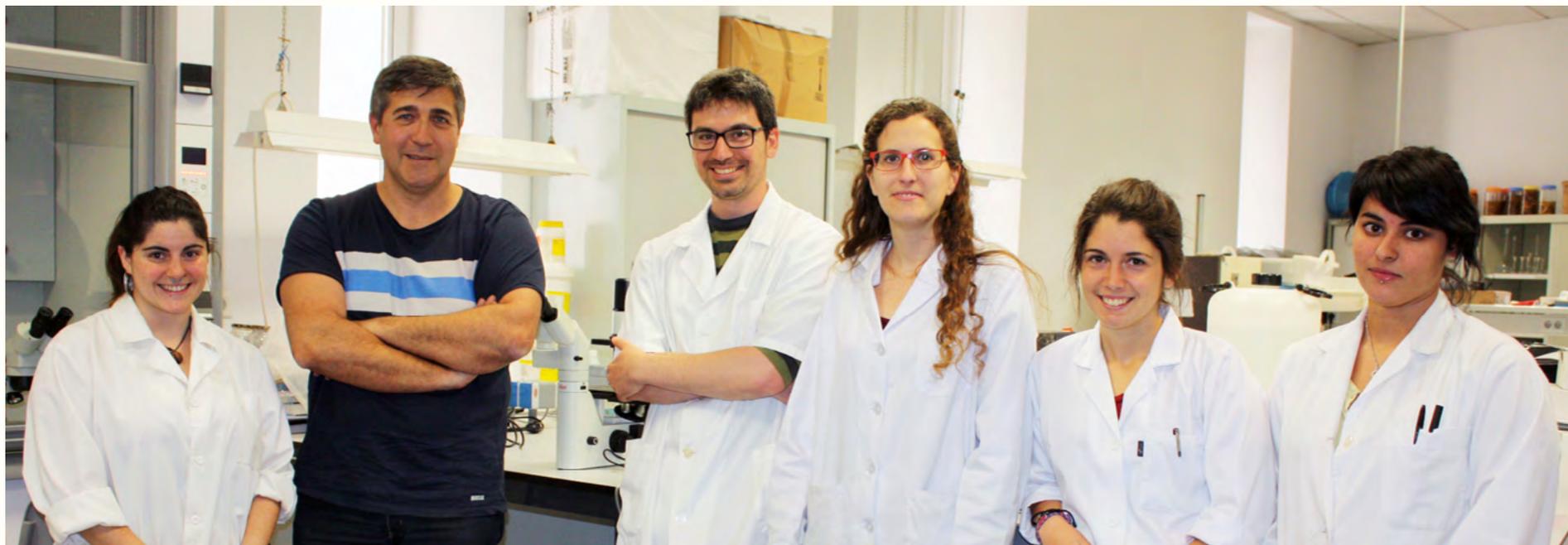
The team from the **Universitat Politècnica de València** has played an important role in determining the environmental **flows of the rivers**, which are in charge of maintaining the high biodiversity of these ecosystems. This meant a series of field trips to study the tropical fish, interview local fishermen and share information with the scientists and technicians involved in the project, according to explanations by the researcher Martínez-Capel. Along with Martínez Capel from Campus Gandia, the researchers [Rafael Muñoz-Mas](#) and **Carlos Puig** also participated in the project.

#### COORDINATOR OF THE ECOHYDRAULIC COMMITTEE

Furthermore, the researcher Francisco Martínez-Capel has been named **this year's coordinator** of the [IAHR Ecohydraulics Committee](#), which conducts scientific collaborations among researchers from five continents in this field and mainly studies the relationships between aquatic organisms and riverbank vegetation with the streamflow in rivers and lakes.



· Martínez-Capel and Michael McClain ·



## We have to take action to conserve the tellinas

Scientists from **Campus Gandia** are conducting **research** to find out the status of tellinas off the coast of Valencia to try recover the diminished stocks. The yearly catches of tellinas have gone down from 300,000 kg to 1,900 kg in the last ten years in the **Region of Valencia**, leading to a fishing ban, in place since June 2015.

The research consisted of a study conducted between May and November 2015 in zone 3 of the coast (from the port of Valencia to Denia) that revealed a **decrease** in both the size of the of **tellinas, and the density of their stock**. However, between September and December 2015 they found a significant recovery in the stocks due to the late summer **rains** that provided these **mollusks** with valuable nutrients.

### PROPOSALS

The outcomes of these **studies** from the UPV have been shared with the **Fishermen's Guild of Gandia**. With the result of these and other studies, the researchers have made three proposals to help improve the conditions of the tellina populations: **breeding tellinas** in captivity and later releasing them in the sea when they are less vulnerable to predators, such as jellyfish; locate areas where populations are larger to permit **controlled fishing**; and study the effect that new and widely used contaminants, such as **sunscreen**, have on these mollusks.

**Miguel Rodilla**, director of the **Master's Degree Program in Environmental Assessment and Monitoring of Marine and Coastal Ecosystems**, heads this project: "The information is now in the hands of the **administrations** in charge of resource management, as well as the **fishermen**, who are concerned about the **conservation** of tellinas. It is very important for the scientific community to work alongside them, providing them with key information about the factors that contribute to this situation so they can also take actions to improve it," said Rodilla.

### STUDY AND DIAGNOSIS

According to **Miguel Rodilla**, the study established control spaces to determine the evolution of the stocks, as well as **marking certain tellinas** to track their growth. Although they were able to determine the scant supply and small size of these mollusks, a cause for optimism was the subsequent verification that the rainfall between September and December had significantly **increased the size of the tellinas**. "This is because the nutrients required by **phytoplankton**, which is what the tellinas feed on, are provided by rainfall, rivers and aquifers. The drought that we have been experiencing this last decade on the Valencian coast is the reason why the tellinas are receiving so little food."

### OPTIMISM

Despite this, Miguel Rodilla is not pessimistic and believes that positive actions can be taken. "Given how easy it is for these populations to thrive under favorable conditions, we need to discover what they are and be able to provide them. Meanwhile, it would be worthwhile to establish **controlled fishing zones** and involve the fishermen in the management of these zones, as they are major stakeholders in the conservation of these marine populations. This way," he says, "we could preserve the knowledge these fishermen have on traditional fishing methods and continue to support the **sustainability of tellinas**", concludes Rodilla.

# The Mediterranean Agroforestry Landscape in Danger

The Mediterranean agroforestry landscape is at risk of disappearing and being replaced by low-biodiversity shrubs and woodlands. This is the main conclusion of a study conducted by Campus Gandia research scientist, [Rafael Delgado Artés](#). The work is part of his [doctoral thesis](#), which analyzed the patterns of evolution of the forest cover in the province of **Castellon** over the past 50 years. "It's a paradigm of the territorial **depopulation process** and, therefore, representative in the Mediterranean basin," according to Delgado.

The project seeks to explain **changes in the landscape** by way of the socio-economic and ecological factors that have occurred between the years **1957 to 2007**, period during which **the greatest sociological transformation** took place in history. This change, according to Rafael Delgado is the result of two specific phenomena: on the one hand deagrarianization, and on the other depopulation of large areas after centuries of **intense human pressure**.

In this regard, rural abandonment has led to a very significant increase in dense forest cover. This situation, which is "**unique in history**" in the words of Rafael Delgado, means that for the first time ever, "the use of forest resources is lower than its growth, with all of its attendant adverse effects."

In fact, the Valencian researcher argues that there has been a "huge decline in agricultural use, especially of **the crops** that have been the structuring of the landscape, while urban uses have higher relative growth, with limited impact at a territorial level, but with great local repercussions."

## **GREATER ROLE OF FORESTLAND, SMALLER ROLE OF AGRICULTURE**

The data collected in the investigation, which was directed by researchers at the [Reforest](#) group, predict that agriculture will stop having the major role in landscape structure that it has had in the past, **in favor of forestland**.

In this regard, Rafael Delgado indicates that the extent of the forest area "will continue to grow, as well as its internal densification, with a clear advantage in both cases of woodland over scrubland under current conditions and in a future scenario of aridification or changing conditions."

Therefore, he considers it a "troubling" situation, since "there is a risk of **ecological homogenization** in the medium term" at an environmental level, while at the social level, "territorial dislocation will mean the desertification of large areas." To address the problem he advocates for strategies to manage this territorial space and its resources, "if we don't want the situation to develop into other serious problems."

Thus, he stresses that an intense fire regime or other determining factors can modify the forecasts, but "in no case does it seem likely that the current conditions can reverse the enormous growing global trend of the densest forest cover that has been analyzed".

## **DELGADO CONTINUES AS DIRECTOR OF THE CEIC ALFONS EL VELL**

Recently the Campus Gandia of the UPV professor has [once again been chosen unanimously](#) as director of the [CEIC Alfons El Vell](#), an organization whose main objective is the restoration of the cultural landscape of Gandia. Rafael Delgado serves on the Consell Executiu of this autonomous and independent organization alongside Maite Fernandez, Juli Chapel, Pasqual Molina, Vicenta Llorca, Agustina Perez, as well as the UPV research professor Lluís Miret and Enric Sigalat.



Rafa Delgado

# New Smart System Detects Toxic Waste in the Sea

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Jaime Lloret, Sandra Sendra, Lorena Parra and José Miguel Jiménez

Researchers from **Campus Gandia** of the UPV have designed a new smart sensor system that helps **detect and delineate toxic waste, oil spills or hydrocarbons in general, in any aquatic environment**, whether it is the sea, rivers lakes, etc. and at very low concentrations.

As IGIC researcher **Jaime Lloret** points out, marine pollution is a global problem that can affect both the natural environment (flora and fauna), and the economy and health.

“Depending on the type of contaminants, specific techniques will be necessary to eliminate the spills. But undoubtedly, **the most important thing is to be able to detect the spill quickly enough** so as to avoid further impact and to reduce damage in the affected area. In this regard, **oil spills** are especially critical, since they are almost impossible to completely eliminate if decontamination is not begun immediately,” according to Jaime Lloret.

The system developed by the researchers at the UPV is embedded in **small floating devices**. It is based on an intelligent algorithm and consists of **wireless nodes** that are able to move towards the end of the spills to find its edges.

“These devices take the information obtained from the oil pollution sensors and its position relative to the other nodes so it can place itself on the edge between the non-contaminated water and the contaminated spill. This way **it can pinpoint the final position of the spill, the edge** between the contaminated and non-contaminated areas,” Lloret highlights.

The researchers presented the results and features of the new system at the **IEEE International Conference on Communication (ICC 2015)**, held last June in London.

The research being carried out by **Jaime Lloret**, along with the rest of the team made up by **Lorena Parra, Sandra Sendra and José Miguel Jiménez**, is one of the **main lines of research** coming out of the **Master's Degree Program in Environmental Assessment and Monitoring of Marine and Coastal Ecosystems** taught at the Gandia Campus of the Universitat Politècnica de València.

# New Project to Protect Loggerhead Turtles in Danger of Extinction



Turtle with tracking device installed



Eduardo Belda

Various institutions, including the **Campus Gandia of the Universitat Politècnica de València**, are collaborating on a project involving satellite monitoring of juvenile **loggerhead turtle** (*Caretta caretta*) from breeding programs of the clutches found in the Spanish **Mediterranean** basin. The ultimate goal is to understand the behavior of this species to establish marine planning strategies for their protection, since loggerhead turtles **are under threat**. According to the team of scientists, the main risks encountered by the turtles in the Mediterranean are problems of anthropogenic origin, such as fishing or accidental ingestion of plastics, as well as the effects of climate change.

The project launched in 2015 with the marking of eight specimens from the loggerhead turtle clutch found in **San Juan (Alicante)**. In 2016, on June 16th **World Sea Turtle Day**, 12 turtles were released into the sea at **Playa de las Palmeras, in Almería**, where they were hatched ten months earlier. Four of the specimens, measuring between 15 and 20 centimeters in length and weighing between 700 and a 1000 grams, have satellite transmitters attached that will track their movements and habits. You can follow the turtles' movements and locations on this blog as well as [www.seaturtle.org](http://www.seaturtle.org).

The equipment is pioneer in satellite tracking of juvenile loggerhead in the Mediterranean under the age of one year, and there **are very few studies of this kind** in the world. This way they can collect information about the habits of the turtles during the majority of their lifetime, not just when they are adults.

**COLLABORATION AMONG INSTITUTIONS**  
Collaborating on the project are the **Universitat de València** doctors **Ohiana Revuelta and Jesus Tomas**, sea turtle specialists with previous experience in marking and satellite telemetry tracking of these species in the western Mediterranean and Caribbean Seas.

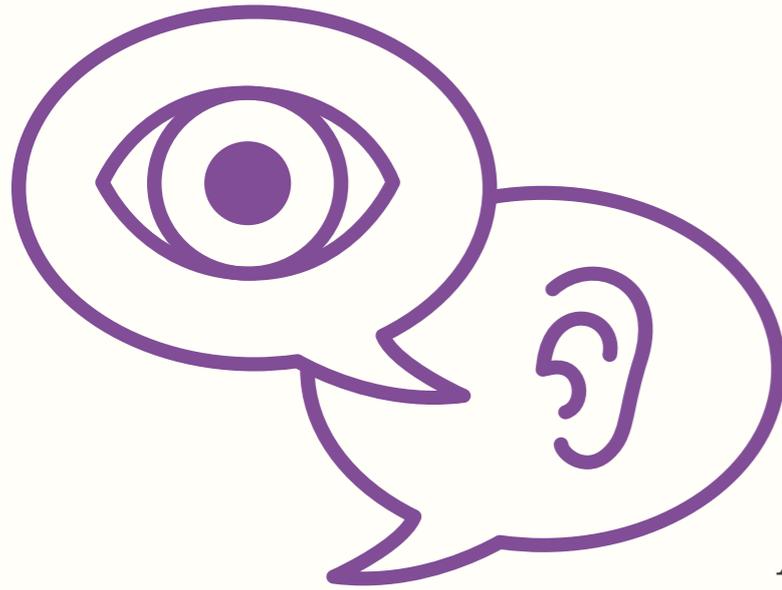
It should be noted that the UPV- UV team has been collaborating for a number of years in the marking of the turtles, both in the technical aspects and the funding of the transmitters.

Also participating in this project a team scientists from the **Higher Council for Scientific Research (CSIC)** directed by **Adolfo Marco**, the **Department of Environmental Affairs of the Junta de Andalucía**; the **CEGMA of Algeciras** and the **Aquarium of Seville**. Participating from the Valencia region are the **Department of Environment of the Generalitat Valenciana** and the Valencian NGO **Xaloc**, who have been permanent collaborators throughout the marking process during the last few years.

## UPV GRADUATE STUDENTS COLLABORATE IN THE STUDY

The data collected in the release of these turtles will be analyzed in the doctoral thesis of research scientist Sara Abalo, graduate of the **Master Degree Program in Environmental Assessment and Monitoring of Marine and Coastal Ecosystems** at the UPV Gandia, and collaborator of the team led by **Eduardo Belda**. In her thesis, titled "Distribution and Habitat Use of the Loggerhead Turtle in the Mediterranean: Implications for Marine Planning Strategy", she will study the behavior of young turtles in the Mediterranean, evaluating parameters such as dispersal, habitat use, seasonality on our shores and migratory routes to the breeding sites, with the aim of contributing to **marine planning and management**.

**Antonio Febrer** is also collaborating on the project by analyzing data for his Thesis Project in the same Marine and Coastal Ecosystems Masters degree program.



## **Audiovisual Communication**

- 1. Science is Cool!**
- 2. We'll Miss You, Dr. Cooper .**
- 3. A "Live Census" of over 850 New Spanish Language Media Websites.**
- 4. Animated cartoons bring the game of chess closer to children.**
- 5. A Graduate of Campus Gandia Wins the Young Talent Award of the Valencian Community in the Business Category**
- 6. Science Up Close and Personal: Science in the First Person**

# Science is Cool!



Ainhoa Goñi during the workshop in Comunica2 / Comunica2

The sixth edition of the conference was hosted by the journalist **Toni Garrido**, and offered an intense program with frontline speakers addressing some of the most important issues and challenges facing the Internet of things. The conference attendees reviewed the situation of the new media with **Esther Vargas**, world leader in digital journalism, learned about the excellent dissemination conducted by the **National Library** in social networks, and discovered the humor and satire on the internet with some of the best known tweeters in Spain.

In addition, the conference discussed social mobilization 2.0, with **Change.org and Doctors without Borders**; we heard from young female **YouTubers** who are authentic social phenomena; we listened to **2.0 poetry** and talked to the people behind the social media accounts of major **television series** and more. All this was carried out with the support of **Fundéu- BBVA** for the third consecutive year.

The Comunica2 program addressed both **scientific and professional** issues, and was rounded out with the **reading of communications and workshops** that went more in-depth on specific issues.

## POPULAR SCIENCE 2.0

Once more, the conference included a science popularization workshop. Present at the event was **Ainhoa Goñi, Director of Communications at the CSIC**, who, together with her team, won the **2015 Concha Garcia Campoy Journalism Award** from the Academy of Sciences and Television Arts. In Comunica2, Goñi lead the workshop **"Instagram as an Instrument for Scientific Dissemination"**, where she shared the knowledge she has acquired throughout her extremely interesting career.

The journalist started preparing the launch of CSIC in Social Media in 2010, landing with a splash on Facebook, Twitter and Instagram. And this expert in **scientific and institutional communication** wants to prove that science is anything but boring, She knows this because she has had a lot of fun along the way, for example, when **NASA** asked her to live tweet the launch of the last rover robot on Mars, Curiosity, on board the Mars Science Laboratory.

## A BETTER FUTURE THANKS TO SCIENCE

Since its inception, the **Campus Gandia of the Universitat Politècnica de València** has opted for **popular science**: lectures and conferences, **Science Week**, workshops in schools, science journalism in collaboration with the Science Communication Unit of the UPV, audiovisual broadcasting through its own television show **Telegrafies**, social networks and this blog are examples.

We know that the popular science is one of the best ways to **spread knowledge and ideas**. Scientific knowledge, placed in the hands of society, can help to create a better, more efficient, sustainable and just future. Since 2013, we have held popular science workshops in Comunica2, taught by recognized professionals, with whom we want to contribute to the training of science communicators. We did it with **José María Herranz de la Casa**, PhD in journalism and professor at the UCM in 2015, from whom we learned about dissemination and personal branding for researchers in the 2.0 era. Also with **José Miguel Mulet**, popularizer and researcher at the Polytechnic University of Valencia – CSIC, who introduced us to his way of seeing popular science on social media. Great experts that we learned from and enjoyed. We expect the same from this workshop. **We've already signed up**; does anyone else want to be cool?

# We'll Miss You, Dr. Cooper

Pablo Luján



Characters from the CBS series "The Big Bang Theory" / CBS ©

The popular CBS sitcom, *The Big Bang Theory*, enters its ninth and final season. Over the last nine years we have shared an apartment in Pasadena, Ca. with **Leonard** (Johnny Galecki) and **Sheldon** (Jim Parsons), two physicists who work at the **California Institute of Technology** (Caltech). We have also met their two best friends and coworkers, **Howard** (Simon Helberg) and **Raj** (Kunal Nayyar). In the pilot episode, **Penny** (Kaley Cuoco) moves into the apartment across the hall and Leonard gets a crush on her.

Over time, secondary characters have joined the show to later become main characters:

**Bernadette** (Melissa Rauch) and **Amy** (Mayim Bialik), Sheldon's female carbon copy and a second golden goose for the series. And despite the fact that all the characters are very interesting and entertaining, **Sheldon is undoubtedly the lord and master of the series.**

**Jim Parsons** is magnificent playing the role of a highly gifted, extremely rational and very arrogant theoretical physicist who lacks social skills, empathy or the ability to detect the simplest sarcasm. There is no doubt that **the tremendous success of the series rests on Sheldon's shoulders** and Parson's performance.

## THE GEEKS GET POPULAR

The Big Bang Theory is like a refreshing and innovative comedy. Technically, it is shot in the classic multicam setup in front of a live studio audience used in sitcoms such as *Friends* (NBC, 1994-2004) or *Seinfeld* (NBC, 1989-1998), though the topics are much bolder and more contemporary. No one expected a series about **science geeks to give so much of itself.** And above all, that it could be so wildly successful with a lay audience.

Who would have thought that one day a TV series or movie would focus on the day-to-day life of an ordinary scientist, who, like thousands more around the world, is seeking a better understanding of the universe that surrounds him? Though it is true that the filmmakers have tried to bring the lives of scientists to the big screen with more or less success, they have tended to be biopics about great scientists, with superficial stories of personal achievement, like *The Theory of Everything* (James Marsh, 2014) and *A Beautiful Mind* (Ron Howard, 2001).

There is no need to demerit the lives of these great scientists portrayed on screen, or the cinematographic quality, but they do not represent the day-to-day life of the majority of scientists. On the other hand, the everyday life depicted in **The Big Bang Theory** is as accurate as it gets. In addition to biopics, scientists have been central characters in other film genres, but are usually portrayed as mad scientists such as Emmett Brown in *Back to the Future* (Robert Zemeckis, 1985), or people endangering humanity due to scarce moral values as in *Outbreak* (Wolfgang Petersen, 1995), or both things at once as in *Re-Animator* (Stuart Gordon, 1985). Needless to say, they could not be more wrong.

## SCIENCE POPULARIZATION THROUGH LAUGHTER

**The Big Bang Theory is the best depiction to date of the contemporary scientific community.** Perhaps they are not all as nerdy as these four main characters, though they are accurate representations of a fair number. Without doubt, the best portrayal of your average scientist is the character of Bernadette.

Finally, not only is the series entertaining, it is also educational. **It addresses scientific principles in simple ways that audiences can understand and laugh at**, like Sheldon's 'Doppler Effect' costume or his 'Schrödinger's cat' references to explain a love relationship.

Unfortunately, nine years is a long time for a sitcom and the **series is becoming monotonous.** It stretches out plot lines and gags that were once swift and ingenious and are now becoming repetitive, disjointed and forced. In the last few seasons, the truly bright moments have begun to dwindle and perhaps it is time for the show to end its run. Still, I will really miss Sheldon when he's gone.

# A “Live Census” of over 850 New Spanish Language Media Websites

Campus Gandia professor, [Marga Cabrera](#), is heading the project “[Observatory of New Spanish Language Media](#)”. It was funded by one of the “2015 Research and Innovation Grants in the Field of Culture” of the BBVA Foundation. The Observatory is a live census that collects information about new online media initiatives being driven by journalists. “The borders of Internet are drawn by language, the language we use to search with. That’s why we’re collecting as many initiatives as possible, including **Latin America and the United States**, where Spanish-language media is a growing niche,” explains the researcher [Marga Cabrera](#).

“The Observatory will help **researchers and entrepreneurial journalists** to identify their competitors in the Spanish language, as well as the best practices in terms of business models, initiatives, new narratives and results,” continues the Communications Professor.

## MUCH MORE THAN A DIRECTORY

“This living census classifies new media outlets internationally by subject area and geolocates and detects their areas of influence. From the data that the platform extracts automatically, it will create an info sheet for each media website, including the rates of engagement, reach, amplification, brand recognition, mean emission time, audience growth, lists, history... creating an automatic ranking based on the data analyzed. All this will make it easier for researchers to numerous **studies on trends**, besides being very useful for any person or institution wanting to identify who’s who in new media,” says the **UPV** professor.

The researcher, Marga Cabrera, says that the project is still under construction: “We are generating the media ranking and outlining the search engines. But the platform is already launched and has identified more than **850 new Spanish language media websites**. The idea is to hone it and improve it over time. We also expect the census to increase in number of media sites, as well as in data visualization and integrated tools and that it can generate a many synergies with other institutions in the industry’.



Part of the team: Benjamín Arroquia, Ivette Peña, Pablo Pascual, Blas Hernández, Emilio Rico, Salva Zaragoza, Evelio Martínez, Marga Cabrera, Enric Domínguez, Vicent Ibáñez, Coke Morillo

## RESEARCH IN DIGITAL MEDIA AND NARRATIVES

In 2015 Professor Marga Cabrera was the recipient of one of the “2015 Research and Innovation Grants in the Field of Culture” of the BBVA Foundation which served to fund the project. Marga Cabrera has had a successful research career in the field of communication and this project provides her the opportunity to continue her research in digital narratives and its digital evolution in new media. Furthermore, she is the codirector of [Comunica2](#) the International Social Media Conference at Campus Gandia She was also the coordinator of the [CALSI Master’s Degree Program in Digital Communication at the UPV](#).

She coordinated the BBVA Fundéu book, “Writing for Internet: A Guide for New Media and Social Networks”, and is coauthor of the book by UOC Press, “Entrepreneurship in Journalism, Tools for the New Professional Online”. She founded two new technology companies and has over 20 years experience in management, training and research.

# Animated cartoons bring the game of chess closer to children

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Professors from the [Digital Post Production Master's Degree Program](#) at Campus Gandia have developed a series of animated videos created for the purpose of getting young children interested in chess and acquainting them with the chess pieces and their movements. The graduate student, [Raul Estevez Montero](#) has taken part in the development of this animated video project.

“**Chess** is recommended as an **educational tool** to teach thinking skills, because it helps develop the ability **to concentrate, strategize and anticipate** the potential **consequences and responses** of the opponent. In a way, it helps develop skills that will be useful in the future and that are worthwhile acquiring as soon as possible,” said [Jaime Lloret](#), coordinator of the Master's Program.

So with the aim of creating **playful and fun** content for children **from the age of three**, the animated series was designed to arouse their interest in an entertaining way and teach them the basics of the game.

The videos teach children how to identify the basic elements, such as the chessboard and the chess pieces, how to place them correctly on the board, and even learn some basic game rules, such as the different movements of each piece. It does this in a way that is always **educational and entertaining**.



# A Graduate of Campus Gandia Wins the Young Talent Award of the Valencian Community in the Business Category



Maya Callejo, head of the KiBi Toys project

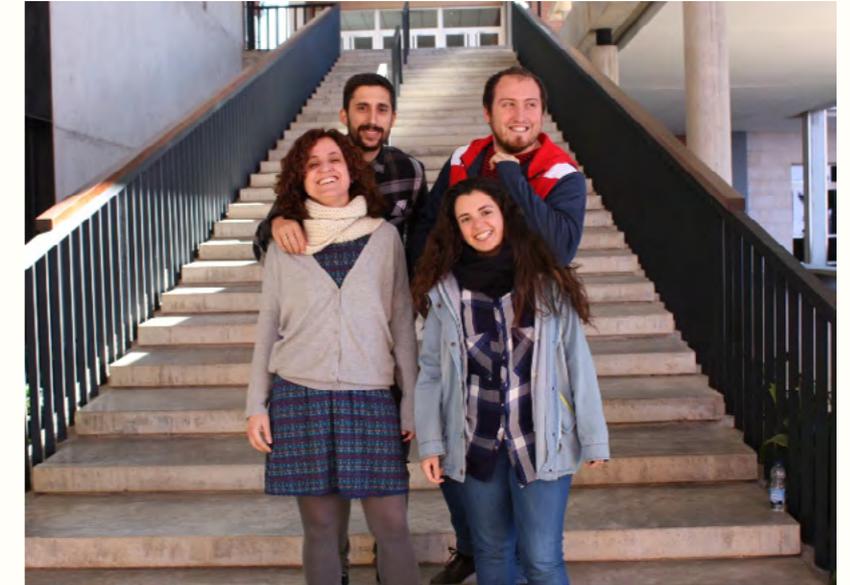
Maya Callejo Saavedra, Valencia native based in Gandia for several years, B.A. in Audiovisual Communication at the Campus of Gandia and M.A. in Visual and Media Arts at the Polytechnic University of Valencia, received the Young Talent Award of the Valencian Community in the business category for her KiBi Toys project. These interconnected educational games that combine tablets and physical toys, were developed in the StartUPV business incubator of the Polytechnic University of Valencia, at the Vera campus.

Maya Callejo and her partner, Isaac Saneleuterio, created KiBi Toys one year ago, with the aim of bringing back sensory type educational toys that can complement tablets or other screens. "Children from 0 to 6 years of age should make maximum use of their senses to develop their full potential: touching, holding objects with his hands, falling and learning from their mistakes... however, the tendency is to spend more and more time in front of the tablets," according to Maya. In KiBi Toys, we use technology as bait to go back to interaction with the physical toy and to entertain children as they learn. "For example, in one of the toys, when

they touch something soft, a teddy bear appears on the tablet so that they can associate the object they're seeing in 3D with texture." KiBi Toys works directly with schools to incorporate educational principles in their toys that arise from the interactions with teachers and children.

Maya Callejo had worked in other companies but finds more satisfaction in her own startup: "When you work for someone else you make their dreams come true, but when you work for yourself, you make your own come true," she explains. The most satisfying thing about her work is the great added value. "You don't know how it feels like until you experience it for yourself: doing something useful for children to learn and have fun. It is a combination of feeling: risk because you don't know the outcome, and joy because you're doing exactly what you want to do. You manage your own time and dedicate yourself to fulfilling your dream." Maya Callejo affirms that her experience at the Campus Gandia laid the groundwork for the person she is now: "I consider myself a communicator and listener and I have wonderful memories of the campus and the years I spent there," she said.

# Science Up Close and Personal: Science in the First Person



Throughout history, science has given rise to **countless advances** that have improved the lives of people, their health, nutrition and welfare, as well as serving as a **driver of economic growth** with new products, services and industries. However, as stated in the [2013 – 2020 Spanish Strategy for Science and Technology and Innovation](#), in order for scientific and technological progress to have repercussions on social progress, “we need a society that is **willing and open to innovation**, that embraces development and adopts new ideas and their incorporation into new processes, products and services.”

This is one of the objectives of [Science Up Close and Personal](#), an initiative developed by the Universitat Politècnica de València in its Campus of Gandia, funded by the [FECYT](#) and co-funded by the [Department of Innovation at Campus](#)

[Gandia](#). The project, which is running throughout 2016, combines the production of audiovisual and radio content that is rebroadcast over the Internet in three languages: Valencian, Castilian and English.

Leading researchers from Campus Gandia, the UPV and other centers, have been featured in the science section of the **fourteen television programs** produced within the framework of this project, and where they talk about the progress that is currently taking place and that can improve lives and the economy. The topics addressed include research on the [penetration of the blood brain barrier with ultrasound](#) for the treatment of diseases; [the conservation of tellinas on the Valencian coast](#); analysis of [gender bias in engineering](#); [gravitational waves](#), etc.. Personal interviews have also been conducted with researchers in order to serve as

references and inspiration to young people and also to help normalize the perception of those individuals that devote themselves to science and that generally share three traits: **curiosity, passion and hard work**.

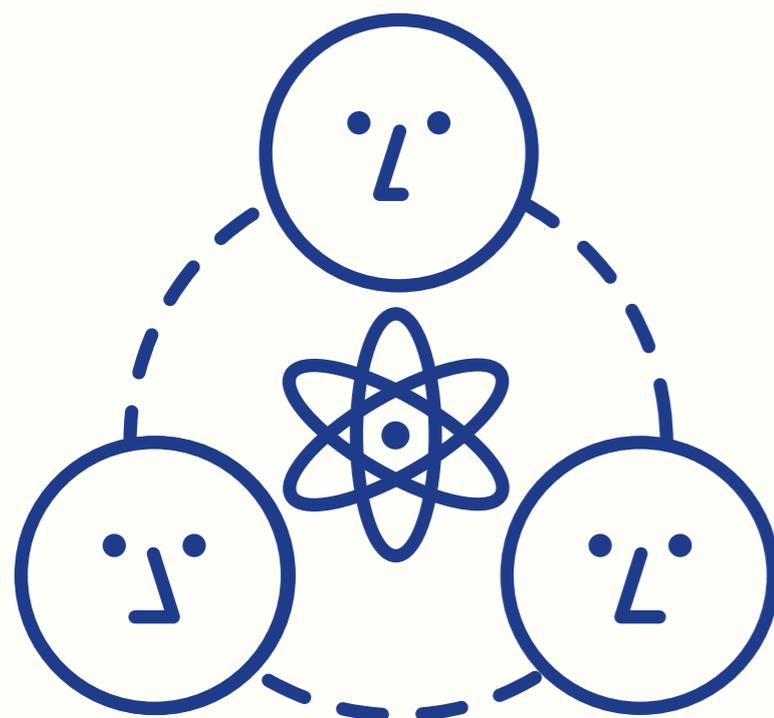
The audiovisual contents air in the [UPVGandiaCiencia](#) and [Diari de](#) sections of the [Telegrafies](#) television program that is syndicated on the [UPV-RTV](#) website, the [Campus Gandia Youtube Channel](#) and the local television station, [Tele7Safor](#). These sections have been subtitled in Catalan, Spanish and English and have been rebroadcast online, through this website, [Facebook](#) and [Twitter](#).

The estimated audience of the project was **15,000 viewers** in conventional broadcasting. Internet publications have had a mean reach on [Facebook](#) of **5,000 users**.

## TRAINING AND NEW SCIENTIFIC DEVELOPMENT

Likewise, the project has allowed **50 Audiovisual Communication** students to obtain training and learn firsthand how to carry out science popularization, understand new concepts and interact with scientists.

Finally, thanks to Science Up Close and Personal, for the first time ever an interactive and customizable subtitle system has been implemented in a real environment that can be integrated into second screens, developed by the research group [Immersive Interactive Media R&D Group](#).



## Science & Society

- 1. What is Chemistry, Mr. White?**
- 2. Gandia Earns the Distinction of City of Science and Innovation**
- 3. Gravitational waves, a One-Hundred-Year Wait**
- 4. A Vote for Science**
- 5. Conference at Campus Gandia by Nobel Prize in Chemistry, Avram Hershko**
- 6. Science for Everyone at the XII Science Week**
- 7. Eduardo Balguerías, director of the Spanish Institute of Oceanography, gave the Inaugural Conference at Campus Gandia**

# What is Chemistry, Mr. White?

Francisco Camarena

*Breaking Bad* is all about the midlife crisis, and what better way to explore it than a burned-out high school teacher who was meant to be a multimillionaire business tycoon, but took a wrong turn along the way. This is the story of **Walter White**, the lead character of the series, but that's not why he's **a bad teacher**.

The writers cleverly show him giving class in the first episode, setting us up for the sheer **decrepitude of his current life**. A teacher. Twenty listless students. The feeling that what you're doing is useless... The scene only lasts a minute, but what a minute!

Walter begins by defining what chemistry is: "**it is the science of matter**." The students don't seem interested. Then he offers his personal thoughts on chemistry: "**It is the science of change**." That's what's important, how things change and how change means everything. The cycle of life itself. His eyes shine; you can tell that he loves chemistry, that what he's telling them fascinates him. **The students, however, are yawning.**

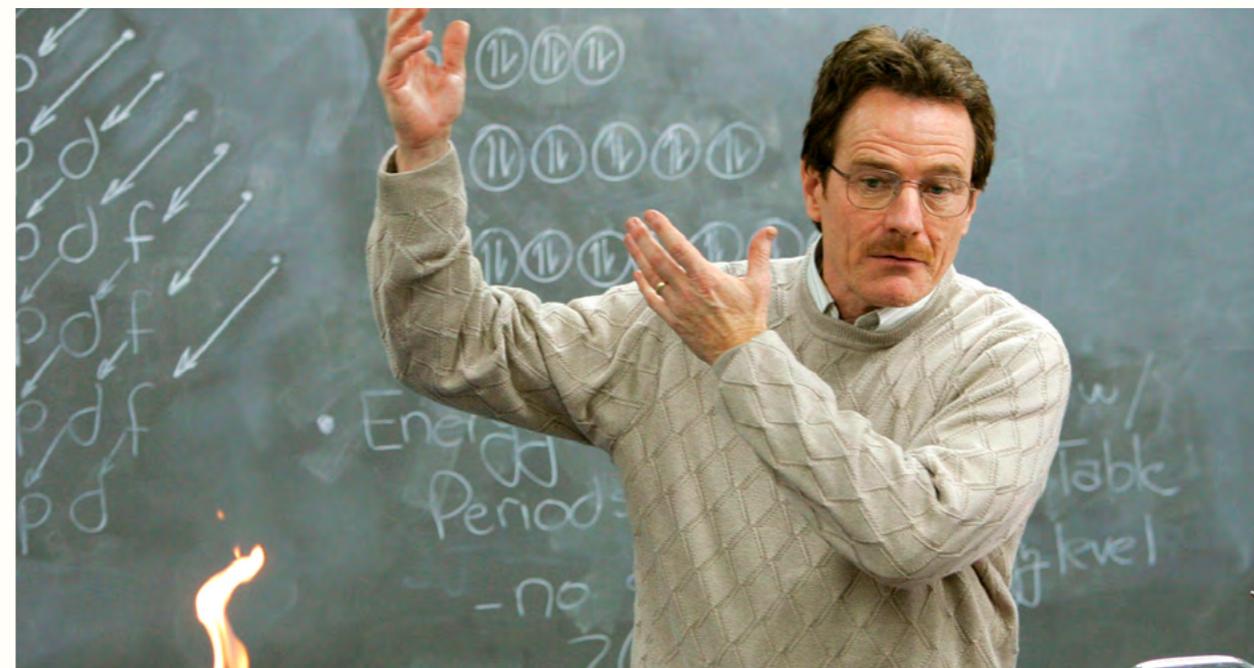
Then he gives **a demonstration** by lighting a bunsen burner and spraying chemicals into it, producing colored flames. And while he does this, he continues to talk about **the idea of change**, how the elements combine to transform into those vivid colors, managing to grab the halfhearted attention of a few of the students. The scene ends with a broad yet fleeting smile on Walter's face as he says, "**It's really fascinating**."

Although the main character of **Breaking Bad** fails to capture his students' attention, it is undeniable that he possesses teaching skills. We can list some of these skills:

**1. He is orthodox**, clearly seen in how he defines the subject: Chemistry is the science of matter and change. Nevertheless, **he does not stick to the standard definition**, but draws from his knowledge and experience, giving extra value. On this occasion he offers his own opinion when he emphasizes the importance of change. At the same time, it is a subtle foreshadow of the tremendous changes that are about to take place in his life.

**2. He is enthusiastic** about the subject he teaches. You can tell by the way he talks about it, with reverence and admiration. Enthusiasm is contagious, that's why it's important for a teacher to possess it.

**3. He masters the subject.** Proof of this is how accurately he describes the chemical processes taking place while carrying out the experiment with fire: energy levels, molecular bonds, combinations of elements...



Bryan Cranston as Walter White/ AMC ©)

**4. He uses practical and showy examples.**

They are an important tool for catching the attention of the students. At this point, I have to say that I consider it poetic license that the experiment did not surprise the students. It is not believable. Unless, of course, they see colorful fireworks in class every day.

As we said, despite these important qualities, good old Walter **does not gel with his students**. There is something off. Something missing. But what is it? In my opinion, the students aren't paying attention to Walter because what he's telling them **is of no use to them**. Chemistry is of no use to them. **The only way to learn is through necessity.**

The series makes this point a few days later, when one of Walter White's former students, the quirky and endearing **Jesse Pinkman**, needs to learn how to cook up some **good methamphetamine** in order to make a living. That's when the know-how of his old teacher comes in handy. That's when he looks up and carefully observes his teacher at work, without missing a single detail. And it is at that precise moment when **the bad student becomes an outstanding student**.

Obviously, this is no merit of Walter's, but it is the system, or the market, that is **giving value to this know-how**. But you can't be good teacher on your own.

# Gandia Earns the Distinction of City of Science and Innovation

**Gandia** is one of nine Spanish cities to be chosen this year to receive the distinction of “**City of Science and Innovation**”. The Campus Gandia of the UPV has actively participated in the development of the project that has obtained the recognition granted by the Secretariate of Research, Development and Innovation of the Ministry of Economy and Competitiveness Government of Spain

With this achievement, Gandia joins the ranks of the “**Red Innpulso**” (Innpulso Network), which is made up by 62 municipalities in Spain. This recognition has a **three-year duration** and can be renewed if the city is eligible to continue being part of this network. The project counted with **the collaboration of as many as 26 organizations from Gandia and the Safor county**, both businesses and business associations, that expressed their written support for the candidacy of Gandia as City of Science and Innovation.

The award was publicly announced on July 29th at the City Hall by the Mayor of Gandia, **Diana Morant**, Councilwoman for Economic Policies and Innovation, **Alicia Izquierdo** and the Director of Campus Gandia of the UPV, **Pep Pastor**.

## A CITY PROJECT

Pastor highlighted that over the past 20 years, it has been “very important for Gandia to have a university campus that, in addition to educating people, has managed to open the doors of the UPV by **transferring technology, knowledge** to businesses or institutions.” The Director referred to the numerous research and science projects that are currently taking place in collaboration with other companies. “Activities related to **science and dissemination** take place virtually every week. The only thing missing to complete the circle was joining the City of Science and Innovation project. This recognition will allow us to take **a quantum leap** and be more demanding of ourselves.”

Diana Morant wanted to thank the ongoing work of the Campus Gandia of the UPV with the city. “The Campus is **our number one ally in innovation and research** and, as usual, we were able to collaborate closely in developing the project.” Morant expressed great satisfaction over the relationship between city and the university, “We want to take advantage of the added bonus of a city like ours being a university town, and with partnerships like this one, it is worthwhile fostering the **excellent relationship** between the two institutions and the better they get along, the better it will be for Gandia.”



Alicia Izquierdo (Councilwoman for Economic Policies and Innovation), Diana Morant (Mayor of Gandia) and Pepe Pastor (Director of Campus Gandia of the UPV) / © Àlex Oltra / Ajuntament de Gandia

## INNPULSO NETWORK

**The Spanish Strategy for Science, Technology and Innovation** recognizes the role of municipalities as agents of innovation and establishes the Innpulso Network as a strategic platform for fostering innovation in cities. With these new distinctions there are now 62 municipalities making up the Innpulso Network.

Since 2010 it has brought together the distinguished municipalities in a Network, a forum of permanent contact to share resources and information with the aim of defining local innovative policies and strengthening public-private cooperation. The distinction is obtained for a period of three years.

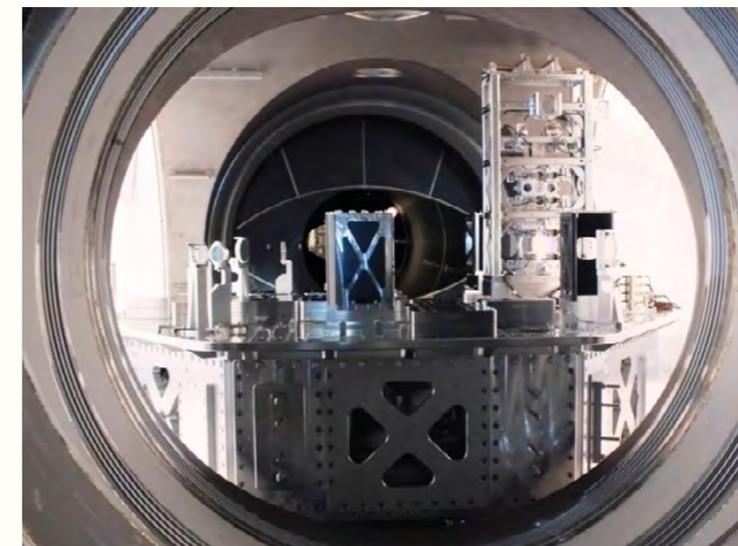
Among the advantages of belonging to this network is benefiting from collaborative projects between municipalities, prioritizing locations for scientific and technological facilities and preferential treatment for hosting conferences, seminars and other events.

# Gravitational waves, a One-Hundred-Year Wait

Miquel Ardid



LIGO Laboratory



LIGO Laboratory

In February 2016, the [LIGO Scientific Collaboration for the Observation of Gravitational Waves](#) announced the [first ever direct detection of gravitational waves](#) through their two ultra precise laser interferometers located in the USA, exactly 100 years after [Albert Einstein's Theory of General Relativity](#) predicted these waves as ripples in space-time. Specifically, on September 14, 2015 twin LIGO stations detected vibrations caused by the gravitational waves generated by the collision of two black holes about 1.3 billion light- years ago, an **event dubbed GW150914**.

I wouldn't call this a "historic" event, since lately everything is considered historic, so this is not really a tremendous distinction. It does, however, further confirm **Einstein's Theory of General Relativity**, one that was already confirmed by proof that light bends in the presence of

gravitational fields, a fact so assimilated that we have incorporated it in satellite technology for proper GPS referencing. Moreover, GW150914 is just the **first breath of fresh air coming through a new window that has opened onto the Universe** and through which we can now detect the most energetic and long-reaching phenomena in the Universe. I am certain that we will soon discover new sounds and unfamiliar smells, ones very different from the masquetades, but equally intoxicating.

I would also like to approach the GW150914 event from a more emotional standpoint. The signal detected by LIGO, which seems modest at first glance (I have seen hundreds of similar signals through a microphone connected to an oscilloscope), can provide us with a great topic of conversation if we ever succeed in making contact with civilizations from other planets. I

don't think we could really talk about the last Barça-Madrid match, or even about the weather.

Furthermore, the GW150914 widens the imagination of **Star Wars or Doraemon** fans fantasizing with **traveling through hyperspace** at superluminal speeds, or through time. With GW150914, we can once again say, "**How tiny is humanity in such an immense universe, and how wonderful we are!**" as we are able to decipher it more and more with new tools and challenges (it's a shame that we are unable to apply the same level of collaboration to all our problems)

I can also imagine the immense satisfaction of the thousands of scientists or engineers, such as my colleague [Alicia Sintes](#), who have spent decades working to detect these waves; or the sheer jitters of [Miquel Oliver](#), a doctoral student who participated in the operation of the experimental

control when the waves were detected. Not to mention the excitement of my friend [Pau Amaro](#) upon seeing that his studies and predictions on gravitational waves in binary collisions of this type had been confirmed. Looking inward, I also feel satisfied with my own contribution through [ANTARES](#) monitoring this phenomenon to [look for the appearance of neutrinos](#) coinciding with gravitational waves, and making me feel a part of this HISTORIC event.

Sorry, but I couldn't help myself.

# A Vote for Science

On June 26, 2016 we will be asked to vote again. A new opportunity to decide in a **general election** who will represent us during the next four years. In just two of weeks we will be able to choose the **parties and people** who will have the responsibility, both in the government and the opposition, to decide what course the country is to take in economic, social, equality, territorial and labor terms. But we also get the chance to choose the Representatives and Senators who will decide the policies on **research and science**.

That's why we asked the **professors and researchers at the UPV**, preferably at **Campus Gandia**, to help us out. We've asked the four major **political parties** to give us more information about the science and research measures proposed in their electoral programs. Below, we share the views of representatives from the **Popular Party, PSOE, #ALaValenciana** and the **Citizens party**. The order of publication we have followed correspond to the results of the [December 20, 2015](#) elections, from the highest to the lowest percentage of votes.

## POPULAR PARTY – CARLOS GIL

For the Popular Party, the university plays a key role in the future labor market. Many students today, in the future will work in jobs that haven't been invented yet. Given this reality, the central role of the university should not be limited to the transmission of knowledge, but providing students with the necessary skills to successfully tackle the continuous learning that they will

face during their working life.

To do this, we consider that, notwithstanding equity, excellence should be promoted in the lecture halls, developing the creative/ investigative character of the student and transversal competences such as flexibility and resilience, that allow for greater adaptability to the future demands of the labor market, with special focus on emerging niches and the application of ICT." [More information](#)

## PSOE - ROMINA DEL REY

Because we know that science is the key to the economic future and well being and knowledge of our society, science is a priority for the Socialists. R&D&I is a pillar of our program:

- We will increase resources in research and development: public investment will double in research, a new line of funding will open for institutional programs of universities and government agencies, public-private partnerships will be stimulated, participation in the various H2020 programs will be encouraged, among others.
- We will bring back our scientists and improve cooperation and coordination, with a plan for the incorporation, recovery and consolidation of scientific talent, bringing Society, Businesses, Universities and Research Centers closer together.
- We review the administrative obstacles in R&D, because we Socialists know the bureaucratic ocean that a researcher has to navigate.



In short, we will promote a Culture of Innovation with a plan for dissemination, communication and scientific culture, promoting the social transfer of science, technology and innovation.

[More information](#)

## #ALAVALENCIANA – ISABEL PÉREZ

We believe that a deep change is needed in the current production model, requiring investment – with both public and private funds – in economic activities with high added value. For us, the University and research are the key drivers of innovation, development, cohesion and social, cultural and economic revitalization. We want to increase investment in R&D&I to 2.7% in 2017, to 3% (the European average) in 2020, and that this becomes a protected budgetary provision. The biggest economic effort needs to go towards the increase in staff capacity rather than infrastructure or equipment.

We are aware of the excessive bureaucracy and we aim to reduce it. A research career needs to be a profession from day one, and not just the continuation of a higher education. It is essential to structure and coordinate the R&D&I system, from the agents who create knowledge, development and transfer, to its productive use, explicitly considering the role of basic science. We propose measures to reverse the “brain drain” and avoid this economic and intellectual loss of human capital. Always supporting and seeking consensus with the public University.

[More information](#)

## CITIZENS – Vicente J. Casanova

Our national program includes three sets of measures:

- A new Spanish innovation system, emulating the German model of public-private cooperation, so that the generation of ideas is transformed into jobs and businesses. This includes a significant reinforcement of spending on R&D that can be funded with a change in the priorities of Spanish public investment. We are particularly concerned that the R&D needs to transcend to the scope of research applied to SMEs, where there is a real transfer of knowledge.
- A set of measures to facilitate the entry of highly innovative companies.
- A set of measures to promote the operation, productivity and growth of the most productive small and medium businesses, facilitating the business activity of self-employed entrepreneurs and SMEs.

[More information](#)

# Conference at Campus Gandia by Nobel Prize in Chemistry, Avram Hershko

Israeli Biologist and Professor, Avram Hershko, winner of the Nobel Prize in Chemistry in 2004 and jury member of the Rey Jaime I Awards, gave an open conference-colloquium for the entire university community at the Campus Gandia the Universitat Politècnica de València on **June 6th**.

Dr. Hershko spoke about his personal and academic journey, as well as his research, which led him to discover the degradation process of proteins by means of ubiquitins, proteins that are found in each cells and that 'mark' the other proteins to be destroyed. These findings, for which he won the Nobel Prize along with the scientists Aaron Ciechanover and Irwin Rose, have proven key to research on cancer and rare diseases and could be in some aging and degenerative processes associated with age. Avram Hershko focused his lecture specifically on the young research scientists, "because they are the future," he said. Dr. Hershko stressed the importance of knowing how to choose a good mentor because, "you can't learn how to do good research just by reading books." He also recommended choosing a research topic that is relevant but that not a lot of other scientists are working on, so that you find your own niche of investigation. Moreover, it is important to

recognize luck when it comes along and seize it. Hershko said that one of his greatest discoveries was the result of an experiment that he expected the opposite results from and that was actually a stroke of luck. He also advised researchers to be innovative in their approach, even if it means breaking the established processes.

Finally, he recommended to never totally abandon lab work and to design experiments that keep up your the excitement and scientific curiosity. According to Hershko, a scientist must first and foremost be a curious person and enjoy the work, not be a mere collector of data. Jose E. Capilla, Vice Chancellor for Research, Innovation and Transfer of UPV, presented the event. Dr. Avram Hershko, jury member of the 2016 Jaime I Awards, briefly visited the city of Gandia after his lecture.

## REY JAIME I AWARDS

The conference given by Dr. Avram Hershko at the Campus Gandia of the UPV was an initiative of the Rey Jaime I Awards to bring Nobel Laureates closer to society. The organizers of the Awards also sponsored another conference in Ontinyent, as well as talks with students and researchers.



El biólogo Avram Hershko durante la conferencia en el Campus de Gandia

The jury met on June 6th and 7th in Valencia to deliberate over the Rey Jaime I Awards 2016. The jury, composed of about 80 members, 23 of whom are Nobel laureates, chose the winners of the 6 categories from among the candidates. The winners were Francisco J. Martinez, for Basic Research; Albert Marcet Torrens, for Economics; Elías Campo Güerri, for Medical Research; Miguel Bastos Araújo, for Environmental Protection; **Hermenegildo García Gómez** (Professor of Chemistry at the Institute of Chemical Technology of the CSIC-Polytechnic University of Valencia), for **New Technologies**; Rafael Moneo, for Urban Planning, Landscape and Sustainability; Alberto Gutierrez Garrido, for the Entrepreneur category; and the Spanish Cancer Society, for Social Commitment.

The Rey Jaime I Awards are dedicated to promoting Science, Research and Entrepreneurship in Spain. The six prizes (€100,000 per prize), the gold medal and diploma makes them one of the highest paying prizes in the country. The winners of each category have the commitment to allocate a portion of the prize money for research in Spain.

# Science for Everyone at the XII Science Week



An **exhibition** on the deep ocean, environmental education **workshops**, scientific **monologues** and **conferences** on multimedia technology, tourism, the Valencian coast, ultrasound, digital communication or 5G networks are part of the full program we have prepared for the **XII Week Science**.

Like every year here at the **Campus Gandia of the Universitat Politècnica de València**, we have organized activities with the best of the best in **research** and **scientific dissemination**. And we do it in an approachable manner for everyone interested in science or the fields of knowledge to be featured.

## **Experiential Tourism: Great Expectations for the Tourist and a Great Challenge for the Destination**

Although traditional vacation packages are made up either of recreational activities or passive sightseeing tours, the new trends in tourism are aimed at “experiences” that more and more travellers seek.

This new paradigm in tourism will be address at the conference given by [María José Viñals](#), Full Professor of Geography at the Universitat Politècnica de València (UPV). She will present the keys to designing experiential products based on emotions, analyzing the factors that influence it before, during and after the visit to the destination. “The future lies in the experience of the place and in the memorable emotions that accompany us the rest of our lives,” said Viñals.

## **The Sea: An Endangered Treasure**

Climate change in the oceans and coastlines is responsible for the rise in water temperatures, increased salinity, lower the pH, higher sea levels, changes in wave intensity and unusual extreme events.

In the conference that will be given by [Miguel Rodilla](#), Doctor in Marine Biology and Director of the Masters Program in Environmental Assessment and Monitoring of Marine Ecosystems of the UPV, the ecological consequences of these changes will be analyzed. Some of the consequences are, “the increase in invasive species, mass slaughter of vulnerable species and changes in the structure and functioning of the Mediterranean ecosystems”, warns the research scientist.

In addition, Rodilla implores us not forget that the ecological consequences will have “serious economic and social repercussions.” Finally measures will be discussed to adapt and mitigate these processes.

## **A Sea of Data**

This exhibition, organized by the [Higher Council for Scientific Research – CSIC](#), presents to the general public some of the most important discoveries made so far in the [Malaspina](#) in a visually appealing way

On December 15, 2010, more than 250 researchers aboard the oceanographic research vessels, Hespérides and Sarmiento de Gamboa, began an expedition that took them around the world in different stages over a nine-month period. The objective was to understand the impact of global change on the ocean and explore its biodiversity, especially in the deep ocean.

# Science for Everyone at the XII Science Week (continuation)



## Communication in the Digital Age: “If You’re Not on Google, You Don’t Exist”

The world has gone digital, at least in this part of the globe, where it is increasingly important to carve a good digital reputation and have the internet talk about us. The media, relationships, teaching, communication ... everything has undergone a digital transformation.

Dr. [Marga Cabrera](#), professor of Audiovisual Communication at the Universidad Politécnica de Valencia and director of Comunica2 conference, will review the revolution we have been experiencing these last few years and will reflect on its affects on us and how to adapt to the changes of the digital generation. These changes affect the majority of us. “You don’t need to be a soccer star or a famous singer, everyone needs to be well positioned in Google and not miss out on opportunities,” says Cabrera.

## Environmental Education

As is now customary in Science Week, Campus Gandia has prepared a series of workshops on environmental education given by students of the [Bachelor’s Degree in Environmental Sciences](#) aimed at pre-university students

## Immersive and Interactive Multimedia Systems Applications

Virtual reality, video games or smart TV will be the focus of the conference given by the [Immersive Interactive Media R&D Group](#), a Gandia Campus research group made up by researchers from different areas and led by Dr. Fernando Boronat.

## Big Van, Scientists on Wheels

[Big Van](#) is a group of science geeks who explain their own scientific experiments in a very peculiar way: through humor. With their stand-up comedy routines, these scientists take the stage in true “comedy club” style, with a show for all audiences. Last year we had the opportunity to laugh and learn a lot with them.

## The Future of Mobile Communications. 5G networks

The revolution in this field has been spectacular in the last three decades, but do we really know how mobile communications work?

In the lecture given by Dr. [Jose F. Monserrat](#), professor at the UPV, the basic operation of wireless communication systems will be discussed, with a historical overview of the evolution of mobile systems from the 90s to today. In recent times, the focus has been on 5G and everything that this mobile technology can offer. “It is expected to significantly improve current communications, primarily wireless, and allow a wide range of communication application between machines, areas such as healthcare, road safety, industrial automation and augmented reality,” explained Monserrat.

## Ultrasonics: The Silent Revolution

Until recently, the human body, opaque by nature, could only be studied scientifically by palpation, the use of scalpels or X-rays. However, in the middle of the last century, thanks to advances in electronics, computing and piezoelectricity, it became transparent and were able to determine the contours of structures, internal movements, blood flows, density, hardness, sizes... And not just see it, also act on it.

[Paco Camarena Femenía](#), professor and researcher at the Department of Applied Physics of the UPV and director of the IVIO chair will take us through this fascinating story: the revolution that has introduced ultrasonic technology to modern medicine and the physical phenomena underlying the most popular harmless, non-polluting and non-invasive devices used in health centers and hospitals around the world.

# Eduardo Balguerías, director of the Spanish Institute of Oceanography, gave the Inaugural Conference at Campus Gandia



Eduardo Balguerías-

Eduardo Balguerías, director of the Spanish Institute of Oceanography (IEO), gave the Inaugural Conference at the Campus Gandia of the UPV, on Thursday, October 20th in the Aula Magna. The conference was titled "From the First Fishing Crisis to the Comprehensive Management of the Marine Ecosystem: A Century of Adaptive Evolution".

Born in Madrid in 1957, Eduardo Balguerías has a PhD in Marine Biology from the University of La Laguna. His research interests are the assessment of marine living resources, fishery biology and marine ecology. He has worked at the Spanish Institute of Oceanography (IEO) since 1982, having already collaborated on various projects there since 1976. He became a civil servant in 1989 and served as the Deputy General Director of Research at the IEO from 2008 to 2010.. From June 2010 to present he holds the position of General Director of the IEO.

The scientist has extensive professional experience and has participated in over 30 highly sought after, publicly financed R&D projects, both in Spain and internationally,

mainly related to biodiversity, assessment of marine living resources and marine ecology, which has led him to work in Africa, South America and the Antarctic. One of his leading projects focused on the fishery resources of the West African coast. He has also participated in 25 oceanographic research campaigns in all the world's oceans except the Arctic.

He has been a scientific representative of the Spanish and European administrations, many working groups and scientific committees related to the conservation and management of marine living resources. He has published more than 70 articles in several national and international scientific journals, as well as numerous technical reports.

## Science Adapting to Needs

In his lecture entitled "From the First Fishing Crisis to the Comprehensive Management of the Marine Ecosystem: A Century of Adaptive Evolution", Eduardo Balguerías analyzed the past, present and future of the management of the marine environment. His lecture started chronologically the middle of 19th century,

when the first fishing crisis gave rise to a new field of science; fishery biology. Then Balguerías presented the different approaches that have been used in fisheries management and protection of the marine environment up until now, when the authorities are trying to apply the ecosystemic approach through various legal and financial instruments.

According to this research scientist, "Science has adapted at all times to respond to the needs of the different administrations." He also said that the present challenge in marine management is the fulfillment of the three principles of sustainability: ecology, economy and society. In Spain, in general, and on the Mediterranean coast, in particular, we are currently focused on adopting the sectoral policies of the European Union for the management of the marine environment, namely the Common Fisheries Policy, the Marine Strategy Directive Framework and the latest Maritime Spatial Planning Directive Framework, all integrated into the so-called Integrated Maritime Policy of the European Union.

In this regard, Balguerías explained that technical measures are being taken to try to restore the over-exploitation of a significant part of Mediterranean fishery resources. Representatives from the administration, the fishing industry, environmental and research organizations are taking part in the identification and adoption of these measures. Among these measures are the dialog initiatives with the member States of the southern Mediterranean basin to promote a better understanding of the current situation and offer a joint and coordinated response to the problem of overfishing and conservation of the marine environment. "In addition", said Balguerías, "it is important to make use of the information accumulated throughout history, interpret it correctly and make a proper and coordinated action plan with all the economic and social sectors involved."



## **Telecommunications**

- 1. Campus of Gandia and Columbia University Partner to Improve Treatment of Neurological Diseases**
- 2. New Device for Early Diagnosis of Cardiovascular Diseases**
- 3. New Technologies to Help Improve Dentistry**
- 4. Diary of a scientist in New York**
- 5. Mario Montagud from Campus Gandia, Extraordinary Doctorate Award**
- 6. A mobile curtain against light, noise, heat, fire and electromagnetic radiation**

# Campus of Gandia and Columbia University Partner to Improve Treatment of Neurological Diseases



3D Simulation / Columbia University

Improving the delivery of drugs to the brain to treat neurological diseases such as **Alzheimer's or Parkinson's**. This is the objective of the project that researchers from Campus Gandia and Columbia University are working on.

According to the investigators, diseases such as Parkinson's or Alzheimer's are **difficult to treat because of the blood-brain barrier**, which protects the brain from infection, **preventing drugs from reaching the affected areas of the organ**. To overcome this, scientists are working on a system that can permeate the blood-brain barrier with **ultrasound** in order to **deliver medications without damaging the wall**. The first trials were successfully carried out on humans in November 2015, although several years must pass until the procedure can replace the current techniques.

## INTERNATIONAL PARTNERSHIP

The research being conducted in Gandia is the result of an **international partnership** that began in 2010 between UPV professor **Francisco Camarena** and **Elisa Konofagou's** team at Columbia University. The researchers in the United States were working on the ultrasonic transducer and biomedical engineering system to open the blood-brain barrier and transport the drugs; while in Gandia they were focusing on **understanding the ultrasonic wave paths as it travels through different tissues** to enable the delivery of the drug to the exact locations required.

## PREDICTING THE BEHAVIOR OF ULTRASOUND

According **Francisco Camarena**, the blood-brain barrier is a dense layer of cells lining the capillaries of the brain, creating a protective barrier against infection. It is the only reversible, located and noninvasive system that can open the blood-brain barrier without damaging with the use of focused ultrasound. "The problem we found in the experiments in the United States is that the **ultrasound beams were not being directed where we expected them**. Ultrasounds are subject to physical phenomena such as absorption, reflection, refraction or diffraction, affecting their paths and that vary according to external conditions and the conditions of the pinger," Francisco Camarena explained.

## DEVELOPMENT OF A MODELING TECHNIQUE

The first step in the collaboration of the researchers from the UPV Gandia was the development of a **computer-based modeling technique to simulate the path** of the ultrasound beam as it travels through the skull into the area of the brain area we want to treat. This technique, which was conducted by **Noé Jiménez**, with a **Master's Degree in Acoustic Engineering** and a **PhD from the UPV**, in collaboration with Professor Javier Redondo, involves solving the finite-difference equations of waves (which governs their behavior) in a leapfrog manner, so that the irregularities of the skull and other tissues can be easily be incorporated. The technique, known as **Finite-Difference Time-Domain (FDTD)** has been used to solve acoustic problems in general and the scientists were able to adapt it to ultrasound.

## ON THE WAY TO DEVELOPING AN ACOUSTIC LENS

After developing the modeling technique, the research team is focusing on solving specific issues, such as **determining the influence of increased energy and the angle of incidence of the focus** in the path of the ultrasound beam; also they are investigating **how the skull capture ultrasonic energy and what problems arise from this**, as the heating of the bone structure.

As they focus on this line of research, the scientists are currently working on the development of **acoustic lenses** made from sonic crystals, which would help correct the path of the ultrasound beam, "the same way that **eyeglasses correct the path of light**," explained the researcher Francisco Camarena. Once the design has been completed, **these lenses can be produced with a 3D printer**.

# New Device for Early Diagnosis of Cardiovascular Diseases

The **Nanophotonics Technology Center** (NTC) of the Universitat Politècnica de València is spearheading the **PHOCNOSIS** European project, whose aim is to develop a new portable and user-friendly device for **early diagnosis of cardiovascular diseases**. The project also incorporates the SYM group from the **Center for Molecular Recognition and Technological Development** as a second partner of the UPV. PHOCNOSIS launched in September 2015 and will **continue running through to August 2018**. RAPID, ULTRASENSITIVE AND SIMULTANEOUS DETECTION

According to **Jaime García**, project coordinator and research scientist at the **Campus Gandia**, the device he is working on aims to facilitate **rapid detection – fewer than 10 minutes** -and is ultra-sensitive, does not use markers (label-free) and can be used simultaneously with different cardiac biomarkers of relevance (several types of troponin-reactive protein C, etc.), by analyzing only a **few drops of the patient's blood**.

It will be based mainly on the combination of two advanced nanotechnology concepts, key to achieving a compact and highly sensitivity final system. "First, we will make use of a **micro-nanofluidic system** to separate, purify and concentrate the biomarkers we want to detect. Subsequently, these concentrated biomarkers will be detected using a **new nanophotonic sensing technique** whose aim is to achieve final detection limits below 1 ng/L," says Jaime García.

With regard to price, the research scientist points out that the **objective is for the cost of chip production** – which integrate the photonic sensor and the concentration/purification systems – **to be lower than 3 euros** and the reading device to be lower than 3,000 euros.

"This POC (point-of-care) device will significantly help to implement mass screening programs, with the subsequent **impact on healthcare management and on reducing the cost of treatment**," added García.

The **PHOCNOSIS** project is funded by the **European Union Horizon 2020 program**. The Polytechnic University of Valencia is partnering with Bionos Biotech SL and Genera Biotech SL (Spain); Fraunhofer-Gesellschaft and CDA GmbH (Germany); University of Twente (Netherlands); University of Aalborg (Denmark); EV Group GmbH (Austria); Art of Technology AG (Switzerland); and St. George University of London (UK).

It is important to highlight that the team being led by the professor and research scientist at the **Campus Gandia** has been active for several years producing significant advances in early detection of diseases. In this regard, **Jaime García** and his group are also working on the development of a **device for quick and early diagnosis of cancer** called the **SAPHELY**.



The project manager, Jaime García, and the research team.

# New Technologies to Help Improve Dentistry



Research team at the meeting with Biocenosis. Francisco Mora, rector of the UPV and Pepe Pastor, director of Campus Gandia of the UPV

No one likes going to the dentist, but we all love to smile and have other people smile back. Having bright and healthy teeth that give you the confidence to smile or laugh out loud is the aim of the **IVIO-UPV** the new partnership agreement between the **Universitat Politècnica de València** and the company, **Biocenosis**.

The initiative, which is valid for at least one year and renewable, is ascribed to the **Campus Gandia of the UPV** and its director is **Francisco Camarena**, Professor in the Department of Applied Physics. The partnership agreement will first focus on conducting research in **technologies applied to the field of dentistry** and, and then on **educational and dissemination** activities at the Campus Gandia. In particular, the Chair will participate in graduate programs and continuing education; organize symposia and conferences; promote the fields of dentistry, medicine and bioengineering among the university community, as well as oral health.

## ULTRASONICS AND MICROWAVES APPLIED TO DENTAL RESEARCH

At the signing ceremony, **Francisco Camarena**, director of the department, said that they are planning to conduct **four lines of research**: “Medical imaging through ultrasound, bruxism sleep monitors, creating new materials through microwave processing, and developing multisensory and virtual reality systems.”

“We also want to innovate in the **physical design** of incisors, canines and molars using new materials created through microwave processing. And lastly, we’ve started working on the use of **micro-cameras with 3D images** in surgical operations with the aim of showing students what is going on inside the patient’s mouth,” concluded Camarena.

On behalf of the company, **Joan Faus**, CEO of Biocenosis, pointed out that they “approached Campus Gandia seeking closer cooperation between the two institutions. **The UPV has fantastic professionals and wonderful biomedical laboratories** that we thought could also accommodate dentistry.”

On behalf of the university, **Pepe Pastor**, director of Campus Gandia of the UPV, said that he was very pleased with the signing of this Chair agreement and that that he believed it would add a **whole new dimension to the university**.

Finally, the rector of the UPV, **Francisco Mora**, said, “what we signed today is not a run-of-the-mill Chair collaboration. It is a **broader and more comprehensive medium-term collaboration** that will allow us to , in this case telecommunications engineering, to the **field of health sciences**. The benefits of it all will impact both the students and society as a whole.”

# Diary of a Scientist in New York



Francisco Camarena

Today I begin (to the extent that my teaching, research and bureaucratic duties permit) the story of my day-to-day, or week-to-week adventures, whatever the case may be, in this faraway land. With this **Facebook-blog experiment** that I am embarking upon, I am actually fulfilling one of my duties, which is to publicly disclose what I am **researching with public funds.**

Thus began the 'experiment' of the Campus Gandia research professor, **Francisco Camarena**. Camarena is using [his Facebook profile](#) to narrate his personal experience during his research residency at a **pioneer laboratory** in the US specializing in the **development of medical imaging** and treatment based primarily on the use of **ultrasound**.

You can also follow this "Travel Journal" on the [Campus Gandia Science and Research website](#). Good luck, Paco!

## Here is the first chapter:

Today I begin (to the extent that my teaching, research and bureaucratic duties permit) the story of my day-to-day, or week-to-week adventures, whatever the case may be, in this faraway land. With this Facebook-blog experiment that I am embarking upon, I am actually fulfilling one of my duties, which is to publicly disclose what I am researching with public funds. Although this isn't common practice, it should be because the payer is always glad to find out how his or her money is being used. So I am pleased, actually happy to do this, believe me, but I have to find the time.

We arrived in New York in early June, on a hot day that seemed like it would never end until the taxi

driver stopped the car at the start of 125th Street and my daughter decided that enough was enough. She could put up with a taxi ride to Manises airport, and a flight to Madrid, and another eight-hour flight to at JFK; but she just could not put up with being stuck a taxi in the middle of traffic, with the heat of the pavements seeping in through the windows like invisible smoke, and all the noise and clatter of a Wednesday afternoon, with everything open and the cacophony of blaring horns, sirens and rap music. So she started crying and didn't stop until she ran out of steam.

It's my third time here for a long stay, so this time I had the foresight to rent an apartment before arriving, despite risking being a pig in a poke. But the apartment was there and it was actually pretty nice. It's big. It's bright. So far we haven't encountered any of the three plagues they say you always find in New York, and although it's in a rather boring part of the city (a residential area near the university), it has its charm. It's one minute away from an elevated subway station. One side faces Riverside Park and the other side faces the Cotton Club (I don't think I'll ever go). East of 125th is full of Pentecostal churches and north of it is Spanish Harlem, full of Cubans and Dominican. The Columbia University campus is a five-minutes walk to south, but my job is much farther away. I have to take the subway to 168th, where the Columbia University Medical Center is located. It is an academic medical center that belongs to the New York-Presbyterian Hospital. But I'll tell you more about this place in my next update.

# Mario Montagud from Campus Gandia, Extraordinary Doctorate Award

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Mario Montagud, graduate in Engineering Telecommunications Systems, Sound and Image from the Campus Gandia of the Universitat Politècnica de València, and native of Montitxelvo (Valencia), has just received one of the Extraordinary Doctorate Awards granted by the UPV, for his doctoral thesis entitled "Design, Development and Evaluation of an Adaptive and Standardized RTCP-Based IDMS Solution".

The UPV has awarded a total of 30 Extraordinary Awards, three of them in the category of Information and Communications Technology (ICT), in which Montagud's thesis falls under. This research, carried out on the Campus Gandia and the Netherlands, was also recently nominated by prestigious international researchers as a candidate for best thesis worldwide in the area of Multimedia Systems by the Association for Computing Machinery.

The work has focused on improving existing solutions for multimedia group communications over the Internet. Research scientist Mario Montagud explains that he has specifically analyzed the requirements for providing Inter-Receiver Multimedia Synchronization (IDMS), the technology that ensure that all users in a shared multimedia session perceive specific events simultaneously. On the one hand, this involves minimizing the magnitude of the delays in communications, and on the other hand, compensating for its variability in all the devices and active users in the shared multimedia sessions. Thus, interactions between users and between users-devices will be coherent and natural.

The thesis was supervised by Fernando Boronat, professor at Campus Gandia, and Pablo Cesar, professor at TU Delft (Netherlands) and researcher at CWI (National Research Center in Mathematics and Computer Science of the Netherlands, based in Amsterdam) where Montagud did three research residencies (six months for his thesis and one year post-doctorate in March 2015). Mario Montagud wrote a post for this website about his experiences researching and writing his dissertation: [My Experience as a PhD Candidate at Campus Gandia](#).



Mario Montagud

# A mobile curtain against light, noise, heat, fire and electromagnetic radiation

Protection against various types of radiation and the like is required in various technical fields: for example, to cell mobile phones in hospitals, reduce external noise, block electromagnetic signals in aircraft. To achieve this goal, the Campus Gandia researchers **Jesús Alba**, **Romina del Rey** and **Vicente Sanchis** and have designed a **new mobile curtain barrier** that provides **protection against electromagnetic light radiation and thermal, acoustic and protection against fire.**

Currently there are materials on the market with antipyretic, soundproof, fireproof and anti-electromagnetic properties, such as solid panels used to insulate walls and similar structures in construction. However, these panels do not permit quick and easy transportation, assembly and disassembly for temporary blocking of radiation.

In contrast, the product developed in the **Campus Gandia** is not a rigid structure, but rather a curtain that allows **temporary blockage of radiation**, and since it is mobile, **it can be unfolded or folded when necessary without any major construction.** In short, the key lies in the combination of materials, which are essential to achieving this protection, as well as its **reduced weight that allows for easier transport, installation and dismantling.**

## INDUSTRIAL APPLICATIONS

The main end-industry where this invention can be applied is the **textile industry**, particularly the part of the industry dedicated to **construction.** Moreover, in the scientific field it allows you to convert any room into an **electromagnetic anechoic chamber** and in **outdoor events**, it reduces background noise and interference between events. And in **transportation** it can serve as a mobile separator, cell phone signal reducer, etc.

Applications can also be found in the field of **medicine**, as it can provide a physical separation between hospital beds, reduce interference from different areas of the operating rooms. Similarly, it can also be applied in Neonatal Wards, ensuring the best acoustic and thermal conditions for babies.

## TECHNICAL ADVANTAGES AND BENEFITS FOR BUSINESSES

In the tests carried out in the Campus of Gandia laboratories, the curtain performs well against light and has **high sound absorption capacity and high sound insulation levels.** Electromagnetic testing offers evidence that insulating attributes equivalent to an electromagnetic chamber are obtained. With regard to **thermal insulation**, the materials chosen guarantee low thermal conductivity and high resistance to airflow, giving it tremendous heat insulation attributes. Finally, the reaction to fire is M1, which ensures that **the material is nonflammable.**



Los investigadores Romina del Rey y Jesús Alba

## STATE OF DEVELOPMENT OF THE TECHNOLOGY, PATENT AND PARTNERSHIPS

The Polytechnic University of Valencia **filed a patent** in the Spanish Patent and Trademark Office on July 3, 2015, with reference number P201530961. The technology has been fully developed and is in the trial phase, testing its behaviour in situ and in the laboratory. Currently, the University is seeking licensing, manufacturing or marketing agreements with companies

## WHY IS IT IMPORTANT TO PROTECT AND LICENSE RESEARCH RESULTS?

The protection of research results is, in many cases, a necessary condition for their financial profitability. Patent protection offers the operating company a **competitive advantage** that lets them recover the investments made in development to bring those results to a product on the market.



## **Tourism**

- 1. Sustainable Tourism to Drive Development**
- 2. Joan Carles Cambrils wins the FITUR Award for Best Academic Research Paper**
- 3. Tourism Comes to the Rescue of Valencian Artisanal Fishing**
- 4. A research project at the UPV is developing a tool to assess the communicative efficiency of sustainable tourist destinations**
- 5. Conference: “ De la Safor al món’ (From the Safor to the World)**

# Sustainable Tourism to Drive Development

The key to development is **sustainability**. It is unheard of today to keep talking only in **economic terms, when social and environmental** components are even more crucial for the success and continuity of the initiatives. We must also think of those coming after us in **future generations**, because if we do not act with them in mind, we may never get there.

In this regard, tourism plays a clear role that is not seen in other industries, and therefore it is very important to develop **sustainable tourism** and train and educate future professionals. The University is aware of the importance of tourism as a vehicle for promoting better coexistence and development of the countries of the world.

## CONFERENCE AT CAMPUS GANDIA

Precisely with the aim of handing down this vision to new generations of Tourism Managers, the conference "**Sustainable Tourism: The role of Institutions and Universities in Sustainable Tourism Development**" was held at **Campus Gandia of the UPV** on May 17, 2016. The event is part of the prelude to the celebration of **2017 International Year of Sustainable Tourism**, in which the UPV is carrying out various activities to promote and raise awareness about sustainable tourism development.

In her opening remarks and welcome to the conference, **Rosa Puchades**, Vice Rector for **Social Responsibility and Cooperation of the UPV**, highlighted the role the University is already playing in this field through research and participation in **international cooperation projects**. Meanwhile, **Federico Buyolo**, general

director of **Cooperation and Solidarity for the Generalitat Valenciana**, discussed the implementation of the new global agenda for sustainable development promoted by the United Nations and that the Regional Government is implementing.

Highlighting the role of the university, **Pepe Pastor**, director of **Campus Gandia**, explained the importance of training conscious and coherent professionals, which the UPV promotes in its undergraduate programs such as **Tourism in Gandia**.

The presentation made by **Shanon Mata**, an analyst at the **Global Compact Network Spain, a United Nations (UN)** initiative, focused on how the **private sector** could also play an active role in the development and implementation of sustainable actions in different industries. For example, they are working on a project with the **World Tourism Organization** to support companies in the sector to integrate **Sustainable Development Objectives** in their agenda.

## TOURISM WILL BE SUSTAINABLE OR IT WILL NOT BE

In short, **sustainable tourism** must involve all the stakeholders, starting with the Administration and the private sector, but especially with local communities and the **awareness of tourists**.

Tourism has **potential** that goes beyond being a simple economic sector to develop. It also affects the consciousness of the people visiting and being visited, **generating mutual understanding, empathy, solidarity, respect and tolerance**, values that are currently in crisis, and that will determine our future economic policies, and therefore our development.



Lidia García

# Joan Carles Cambrils wins the FITUR Award for Best Academic Research Paper

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Joan Carles Cambrils

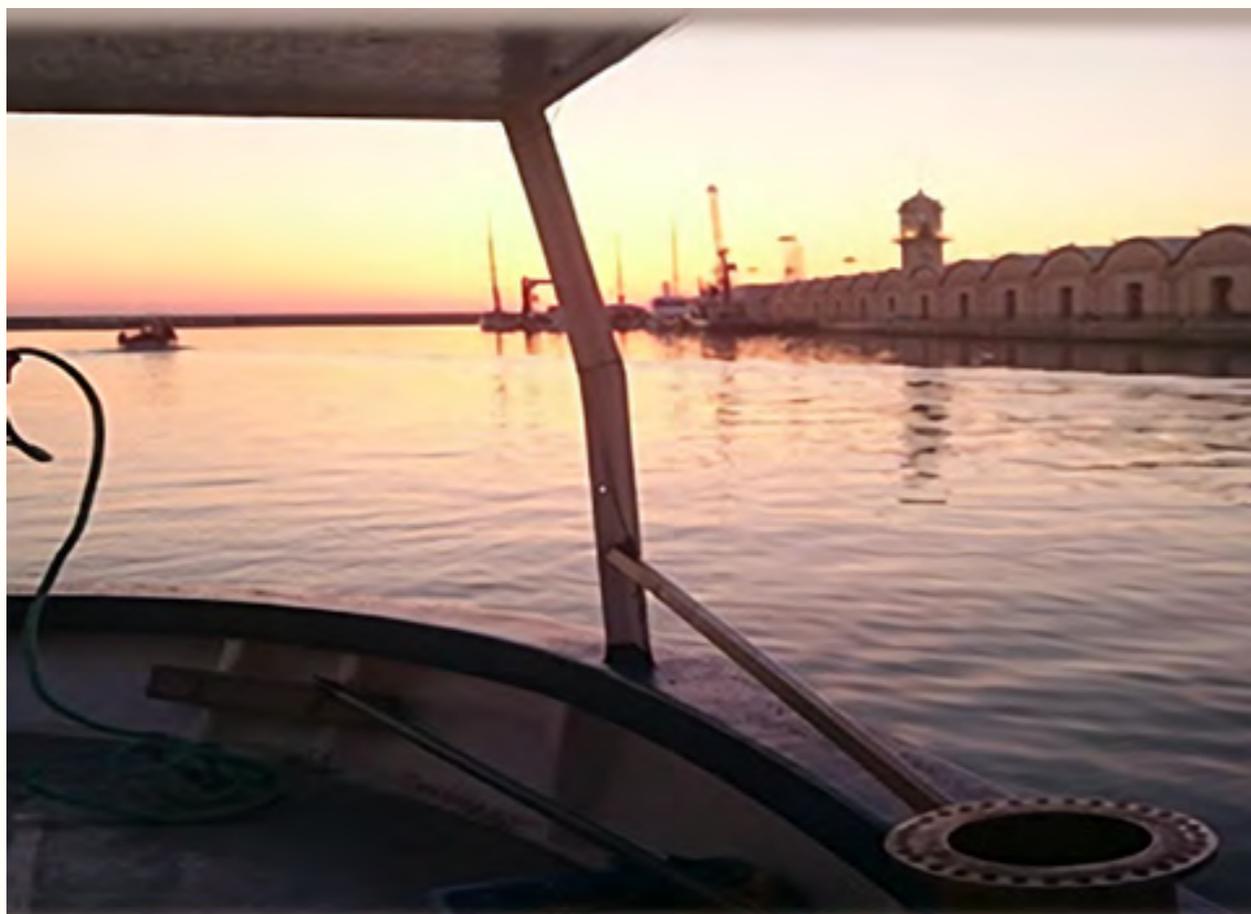
The International Tourism Fair, FITUR, chose the winner of the Tribuna FITUR-Jorge Vila Fradera Award, which has the purpose of selecting the best unpublished tourism-themed research paper. In this seventeenth edition, the award-winning paper was Public-Private Partnership in Mixed Tourism Management and Promotion Bodies, the Vision of Public and Private Partners, by Joan Carles Cambrils Camarena. This paper analyzes the public-private bodies that manage large areas of tourism in local destinations in Spain.

**Joan Carles Cambrils** works as a research professor in the Department of Tourism Studies in the Campus Gandia of the Universitat Politècnica de València (UPV).

This award recognizes the dedication and efforts made by the experts in the tourism industry to achieve excellence through research and study.

Other tourism research papers opting for this award were: The Internalization of Quality Standards in the Tourism Industry: Motives and Effects on Outcomes, which analyzes the motives, processes and effects of internalization taking place in tourism in Spanish organizations certified with the Q mark for tourist quality; and Internet Scoring Systems for Hotels, which performs a detailed study of web pages that collect hotel data and ratings, focusing on two main sites, Trip Advisor and Booking, to describe their internal systems and their main differences.

# Tourism Comes to the Rescue of Valencian Artisanal Fishing



Coastal artisanal fishing is a vital economic activity for a large number of families along the Valencian coast, and marks the character of our fishing villages. The importance of fishing is apparent in the local gastronomy, with dishes such as the “fideuà” from Gandia or the “arroz a banda” from many towns in Alicante, as well as in local traditions, such as the celebration of the “Virgen del Carmen” festivities. And we must not forget that it is also key to the conservation of marine and coastal ecosystems, since fishermen know their environment and are primarily interested in its protection.

In recent years, however, the sector has been losing steam and for this reason, institutions such as the European Union are searching for solutions to ensure its survival. Tourism can play a key role in protecting and revitalizing the fishing sector. According to Luis Miret, professor at the Universitat Politècnica de València (UPV), an activity such as fisheries-related tourism, that lets tourists experience artisanal fishing on the boat itself alongside the fishermen, is nothing new, “since tourists have always come and taken rides on fishing boats.” However, health and safety regulations effectively ended this practice and now the it is the administrations themselves that want to promote it.

For Enrique Ferrer, secretary of the Fishermen’s Association of Gandia, fishing tourism and fisheries-related tourism can be key to the sector and therefore they have been working for some time with the UPV and the City of Gandia to study its feasibility and the way of implementing it. Enrique Ferrer and Luis Enrique Miret claim that several Italian cities such as Genoa, or Spanish regions such as the Balearic Islands, are already developing initiatives that combine fisheries-related tourism that combine activities such as dolphin watching with eating some ‘arrocito’ right on the boat.

## CAMPUS GANDIA, MEETING POINT FOR THE STAKEHOLDERS

To address the synergies between tourism and fishing, the Campus Gandia of the UPV has organized two activities that bring together public administrations, the industry and society in general. The coordinator of both forums was the UPV research professor, Paloma Herrera.

The first of the activities was the seminar titled “Artisanal Fisheries. Diversification of Fishing Activities”, whose objective was the evaluation of courses of action that should be set into place in the short and medium term in the area of economic diversification of artisanal fisheries, according to Paloma Herrera.

In the first seminar, held on November 26th, examples of diversification in the fishing sector and fisheries-related and seafaring tourism were presented by the Fishermen’s Association of Roses, who have been carrying out these activities for several years. Likewise, they also talked about the transformation of the sector and the marketing of new services, and the impact on the environment. For Luis Miret, who took part in the session, the presence of government agencies is very important, since “they are currently working on rules to regulate fisheries-related tourism activities, that can either boost or paralyze their development.”

# A research project at the UPV is developing a tool to assess the communicative efficiency of sustainable tourist destinations

Strategic communication of heritage sites is a key tool for sustainable tourism management, according to [Lola Teruel](#), a Tourism research professor at the Universitat Politècnica de València. A tool is needed to evaluate the results of strategic communication and its goal should be to analyze of the communicative efficiency of information and communications technologies (ICT) in contributing to sustainable tourism management and as a way to interpretation local heritage. This is the instrument that is being developed by the researcher [Lola Teruel](#) and is one of the results of her doctoral thesis, "Analysis of Strategic Communication of Heritage Sites and Protected Areas Through Information and Communications Technologies and Its Relationship to Sustainable Tourism Management".

According to Teruel, the Communicative Efficiency Questionnaire identifies strategic communication as a tool for efficient and sustainable tourism management, and information and communications technology as a means to this end. "Strategic communication goes beyond the simple transmission of information and promotion of tourism. These new attributions are aimed at obtaining funding for heritage and protected sites, capacity building and as a tool to increase the appreciation of tourists and residents for the conservation of these spaces, among others," said the researcher.

For fieldwork research, the Professor of Tourism analyzed the strategic communication of 120 UNESCO World Heritage sites, including Yellowstone National Park in the United States, and the Petra Archaeological Park in Jordan.

In summary, the researcher concluded that information and communications technologies help increase communicative efficiency in the sustainable management of a heritage sites, provided they are put at the service of strategic communication. "Using technology for communication purposes allows us to get to know and fall in love with the destination before even visiting it. It helps us better understand the interpretive messages, for example, through interactive applications, or through social media posting. It also allows us to recommend the destination and its values after leaving it. And it allows the destination, for example, to use its online platforms to obtain funding," explained the researcher.

## **Improperly Managed Technology is useless**

[Lola Teruel](#) also said that websites, social networks, interactive technologies, mobile applications or video games are tools that are being used in the management of heritage sites with very good results in some cases. However, she also stated that it was not uncommon for the digital media manager of these sites to be more concerned with using advanced technologies than with creating effective strategic communication plans. To contribute to the sustainability of heritage site, the messages must



Lola Teruel at Yellowstone National Park

be carefully crafted in the communication plan in order to increase the awareness of users." They must be messages that interpret the heritage, that don't lie, that are not what's 'exotic', but highlight what's original and unique about the destination, so that predisposes visitors to want to visit it and protect it, because they are aware of its fragility," explains Dr. [Lola Teruel](#).

The researcher also pointed out that the ease of availability of these technologies can turn into a threat if they are not accompanied by proper maintenance and updating. "Even from a promotional standpoint, it is a negative sign to see outdated information. It looks sloppy and sheds a negative light on the destination as a whole," she said.

## **Lack of Training**

For [Lola Teruel](#), the most notable deficiency detected is a deficit in the professionalization in content development and maintenance of the websites analyzed. In this regard, "the need is observed for training of communication and heritage interpretation professionals to interact with users in an efficient and productive way. The aim of the training should be a communication program that enables the production of appropriate interpretive content to ensure sustainable management of the heritage destination. This way," she added, "they will be able to exploit the full potential of the information and communications technologies."

# Conference: “De la Safor al món” (From the Safor to the World)

“De la Safor al món” (From the Safor to the World) is the title of the conference organized by students in the Communication Strategies for Tourist Destinations class at the Campus Gandia of the Universitat Politècnica de València (UPV), and supervised by Professor **Enric Sigalat**. The aim of the conference was to raise awareness about the importance and potential of the local resources in the county, and the challenges of promoting them as global products, as well as cooperation between the various stakeholders in the in the tourism sector of the Safor.

The event, which was attended by companies and public sector institutions, was organized around three main pillars: promotion, communication and culture.

The speakers of the day were Raquel Huete (Director General of Tourism of the Generalitat Valenciana), **Joan Tur** (Journalist and communicator), Xavi Pérez (Cultural Manager) and **Rafa Delgado** (director of the CEIC Alfons el Vell and research professor at the UPV).

Dr. **Raquel Huete**, BA and PhD in Sociology and Associates Degree in Tourism from the Official School of Tourism in Madrid, is a full professor in the Department of Sociology at the University of Alicante. Before joining the University, she worked in several companies in the tourism and social research sectors.

In her presentation, Raquel Huete spoke on the

importance of creating a product through the values that define it, which in the case of Valencia can be hospitality, honesty and professionalism. She also broke down the strategy of the Directorate General of Tourism Creaturisme, focusing on four product blocks: Active Tourism and Sports in Contact with Nature; Rural and Inland Tourism based on the natural beauty of rivers and landscapes, among others; Cultural and Urban Tourism, which focuses on historical and cultural heritage; and Gastronomic (Culinary) Tourism. According to the researcher, the tourist is after inspirational and authentic experiences; therefore the first step in defining a tourism product should be determining which values make it authentic, its very essence.

Joan Tur, journalist and communicator, stressed the need to professionalize tourism communication in order to promote a destination, and although promoters believe that communication is a priority, they do not want invest in trained personnel.

“Communication is a profession, and it needs to be performed accordingly by professionals,” declared this expert. According to Tur, investments are often made in technology, but not in the people who needed to craft the messages for a specific purpose. Consequently, the expected results are not obtained.

**Xavi Pérez**, a graduate in Tourism from the Campus Gandia at the Universitat Politècnica de València, is an entrepreneur and managing

director of the cultural tourism company, Inicatives Culturals. “We believed in the things they taught us in school and put them in practice,” he said. Xavi Pérez explained that there are many interesting cultural assets capable of generating excitement in the public if you know how to present them in an entertaining and innovative way. Perez also highlighted the need for joint efforts and ongoing dialog between government and businesses so that local products can become global, because small businesses do not have the ability to do this on their own, even though they work along these lines.

Rafa Delgado, professor at the Universitat Politècnica de València and director of the Centre d’Estudis i Investigacions Comarcals (CEIC) Alfons el Vell, spoke on the importance of capitalizing on the knowledge generated by cultural and research organizations. “For several years now, the CEIC has been publishing books and materials highlighting the cultural, literary and historical resources found in the Safor, and some of them have been used to create tourism

products, such as those relating to the Borgia family. But we have many more and we encourage companies and public administrations to count on our collaboration,” assured Delgado.

After the presentations, there was a Q&A session with the audience, who contributed their experiences in different municipalities in the Safor, such as Potries, that has been able to create products of interest with limited resources. Mention was also made of the necessary of collaboration between municipalities in the Safor to offer joint tourist proposals that go beyond Gandia.

The event was sponsored by Propostes d’Accions Culturals 2016 from the UPV, the Department of Innovation Campus at Campus Gandia of the UPV and the Business Chair Program of the UPV.



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