

Ana Conesa, PhD

Synopsis

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| Publications: 137 Citations ¹ : > 26,000 h-index ¹ : 52 Conference Talks: 101 | Projects as PI: 32 Lead-PI @ Multi-PI: 5 Total raised ~11M\$ | PhD thesis completed: 9; in progress: 8 Group members in the last 5 years: 33 Visiting students/post-docs last 5 years: 64 |
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Scientific statement

I am Research Professor at the Spanish National Research Council (CSIC) I graduated as Agricultural Engineer at the Polytechnical University of Valencia in 1993 and obtained my PhD in Molecular Microbiology at the University of Leiden in the Netherlands with a research project at the Microbiology Department of the Dutch Institute for Food Research (TNO). After a short appointment as bioinformatics project leader at the same institute, I obtained a Ramon y Cajal award and joined the Valencia Agricultural Research Institute (Spain) in 2003 to develop bioinformatics tools for citrus genomics. I moved into CIPF in 2007 and became Senior Group Leader in 2010, creating the Genomics of Gene Expression Laboratory. From August 2014 to May 2021 I was Full professor at the Microbiology and Cell Science Department and Genetics Institute of the University of Florida. From May 2021 I joined the CSIC Institute for Integrative Systems Biology (I2SysBio) and became courtesy faculty of the University of Florida.

I am interested in understanding functional aspects of gene expression at the genome-wide level, across different organisms and in relation to pathological processes. My group has developed statistical methods and software tools that analyze the dynamics aspects transcriptomes, integrate these with other types of molecular data and annotate them functionally, with a special focus on Next Generation Sequencing (NGS) data. I am creator of popular bioinformatics software such Blast2GO, Paintomics, maSigPro, NOISeq, Qualimap, SQANTI, tappAS, with tens of thousand users world-wide. I have published over 135 research papers that have received more than 23,000 citations and I have an h-index of 51. My research has been well-funded through national and international funding agencies including H2020, Marie Curie Actions, NIH, NASA and USDA, as well as by private foundations such as Santander, JDRF and Helmsley. I am leading PI of several EU and USA consortium projects: the STATegra (11 partners) project on multiomics data integration and the Marie Curie Action DEANN for creating an NGS network with American countries (16 partners). I am WP4 leader in ChromE Marie Curie ITN (12 partners) and I lead a team of 6 PIs at UF to develop multi-omics models for Type 1 Diabetes progression. I have (co)-organized numerous bioinformatics and NGS conferences –including the major conference in the Computational Biology field ISMB- and delivered specialized bioinformatics courses in over 10 countries in 5 continents with over 500 attendants. I serve as scientific advisor in several European and USA scientific institutions, as associate editor of different specialized journals and as reviewer at research agencies world-wide. I am co-founder and scientific advisor of Biobam Bioinformatics, a company operating since 2010 to create bioinformatics solutions for biologists.

My most current research interests are the development of statistical methods for multiomics data integration for systems biology, the creation of tools for the analysis of third-generation sequencing data, and the understanding microbial interactions through community modeling.

¹ Source: Google Scholar

Current scientific appointments

Pre-eminence Professor in Bioinformatics
Microbiology and Cell Science Department
University of Florida at Gainesville
aconesa@ufl.edu

web: <http://conesalab.org>

google scholar <https://scholar.google.es/citations?user=KMTiIH4AAAAJ&hl=es&oi=ao>

ORCID code: 0000-0001-9597-311X

Education University of Leiden/ TNO *Leiden, The Netherlands*
Ph.D. Molecular Microbiology, June 2001.
Thesis: Overproduction of Peroxidases by Filamentous Fungi.

Polytechnic University of Valencia *Valencia, Spain*
Agricultural Engineering Degree
Graduation Project: *Development of a plant breeding program in common bean (Phaseolus vulgaris)*

Languages Spanish (Mother tongue)
English (Correct at Reading, Oral and Writing)
Dutch (Correct at Reading, Oral and Writing)
Italian (Good at Oral and Reading)

Awards and Fellowships El Mundo Award Best start up in Valencia 2013 to Biobam
Mobility Grant Castillejo – Four-month sabbatical at UC-Berkeley (2012)
Mobility Grant GA – Two month visit to Copenhagen University (2008)
Ramón y Cajal Award for international talent attraction (2003-2008)
Comett Fellowship for international mobility of graduate students (1993-1994)
Undergraduate research grant, Polytechnical University of Valencia (1993)
Research Fellowship at the Valencia Institute for Agricultural Research (1992)
Granted Internship at Interlegsa Breeding Company, Valencia (1992)
Erasmus Fellowship for international mobility of undergraduate students (1991)

Positions

2021- present, **CISC** *Valencia, Spain*
Research professor, I2SysBio

2021- present, *University of Florida* *Gainesville, Florida, USA*
Courtesy professor, Microbiology and Cell Science

2014-2021, *University of Florida* *Gainesville, Florida, USA*
Professor Dept. Microbiology and Cell Science

2010-2018: *Centro de Investigación Príncipe Felipe* *Valencia, Spain*

Head Genomics of Gene Expression Laboratory

2008-2010: *Centro de Investigación Príncipe Felipe* *Valencia, Spain*
Junior PI at Bioinformatics Department (permanent position)
Development of bioinformatics tools for functional genomics

2007- 2008: *Centro de Investigación Príncipe Felipe* *Valencia, Spain*
Ramon y Cajal Fellow at CIPF
Development of bioinformatics tools for functional genomics

2003- 2007: *Valencia Institute for Agricultural Research* *Valencia, Spain*
Ramon y Cajal Fellow at Plant Genomics Center
Develop supporting bioinformatics research for the Citrus Genome Project

2001-2003: TNO Nutrition and Food Research Institute Zeist, The Netherlands
Project Leader Bioinformatics
Setup the bioinformatics infrastructure for microarray gene expression analysis at the Department of Toxicology.

1996-2001: *TNO Nutrition and Food Research Institute* *Zeist, The Netherlands*
PhD student at Molecular and Applied Microbiology Department
Synthetic biology for the industrial production of peroxidases enzymes in fungal cellular factories.
Supervisor: Cees van de Hondel and Peter Punt

1994-1995: *Institute for Plant Pathology (IPO) Wageningen, The Netherlands*
Research Fellow at Monoclonal Antibodies Laboratory
Plantibodies to infer resistance to cyst nematodes in potato
Supervisor: Jack Stockkermans

1993-1994: *Institute for Plant Breeding (CPRO) Wageningen, The Netherlands*
Research Fellow at Molecular Flowering Department
Microsatellite markers in lilies
Supervisor: Hans Sandbrink

1992 July-August: *Instituto VALENCIANO DE Investigación Agraria*
Introduction to Research grant from Valencian Government
Molecular Markers in tomato
Supervisor: María José Asíns

Software Developed

Functional Annotation

Blast2GO. Functional annotation & analysis of novel sequence data (Java desktop)

isoAnnot: Functional annotation with isoform resolution (Python)

spongeScan. Search for miRNA Multiple Recognition Elements in lncRNAs (Web)

Quality Control in NGS

Qualimap. Quality analysis of mapped NGS data (Java desktop)
NOISeq. Differential expression analysis of NGS data (R package)
SQANTI. Structural and Quality Analysis of Transcripts Isoforms (Python script)
Statistical analysis of gene expression
maSigPro. Analysis of time-series gene expression data (R package)
ASCA-genes. Analysis of multifactorial gene expression data (R package)
SEA. Analysis of serial gene expression data (Web site)
tappAS. Functional profiling at the isoform resolution (Java desktop)
Multiomics data analysis
STATegraEMS. Experiment Management System for multiomics (Java desktop)
Paintomics. Integration of multiple omics on KEGG pathways (Web site)
RGmatch. Linking genomics regions to gene models by NGS data (Python script)
MOSim. Simulation of multiomics datasets (R package)
MORE: Multiomics regulatory models (R package)
MultiBac: Batch correction across omics (R package)
Padhoc: Pathway Reconstructon on the fly (Python)
MirCure: Quality control of microRNA annotations (Shiny app)
DeCovid: Analysis of COVID19 disease map gene expression (Shiny app)

Funding as PI

Current

- 27.** 1R21HG011280-01 01.Sep.2020-31.Aug.2022
 NIH
Development of methods for transcript quantification and differential expression analysis using long-read sequencing technologies
 Role: **PI**
- 26.** 19-EXO19-0029 01.Feb.2020-31.Jan.2022
 NASA
Microbial Dark Matter
 Role: **Co-PI** (PI: Jamie Foster)
- 25.** FSGC 08 TO No NNX15_033 01.Aug.2019-31.Jul.2020
 Florida Space Research Program
Facilitating knowledge exchange between microbiology and computer science students: a computationally intensive approach to discover new adaptation genes in extreme environment
 Role: **PI**
- 24.** 2-SRA-2019-805-S-B 01.Jul.2019-30.Jul.2021
 JDRF-PILOT STUDIES FOR MECHANISMS OF T1D DISEASE PATHOGENESIS
Genotype by Environment interaction analysis to understand mechanisms of T1D pathogenesis
 Role: **PI**

23. R01DK116954 28.Feb.2018-27.Feb.2022
NIH(R01).
Critical role for alternative splicing in conferring risk for T1D
Role: **Co-PI** (PI: Concannon)

Past

22. RFA-RM-17-001 19. Sep.2017-19.Sep.2020
NIH(R03)
Galaxy platform for integrative metabolomics and transcriptomics analysis
Role: **PI**

21. 2015-70016-23029 01.Oct.2015-30.Sep.2022
USDA
A Novel Antimicrobial Approach To Combat Huanglongbing
Role: **Co-PI** (PI: Lorca)

20. UF Start-up funds 01.Sep.2014-31.Dec.2019
Developing the Functional Iso-Transcriptomics framework.
Role: **PI**

19. 2018 SECIM 01.Jul.2018-30.Jul.2019
U24DK097209 NIH Common Fund metabolomics program
Development of multiomics methods for the integrative study of the Yeast Metabolic Cycle
Role: **PI**

18. PT17/0009/0015
ISCIII
Plataformas de apoyo a la investigación en ciencias y tecnologías de la salud de la convocatoria 2017 de la Acción Estratégica en Salud.
Role: **PI Nodo Valencia**

17. UFII Seed Funds 2017
University of Florida Informatics Institute
Understanding the functional role of alternative splicing in crop traits
Role: **PI**

16. PROMETEO/2016/093
The Next Systems Biology: statistical methods for multiomics systems biology
Generalitat Valenciana
Role: **Lead PI**

15. BIO2015-1658-R
MINECO
Novel methods for new challenges in the analysis of high-throughput sequencing data (NOVELSEQ)

The goal of this project is the development of new methods in the massive data analysis sequencing.

Role: **PI**

14. MSCA-ITN-2015. 2016-2019

Horizon 2020

CHROME

Computational methods for the integration of ChIP-seq, metabolomics and RNA-seq data to model chromatin metabolism.

Role: **WP4 leader**

13. Proyectos sinérgicos CIPF

Identification and modelling of molecular and cellular events of the immune response associated to the appearance of minimal hepatic encephalopathy in cirrhotic patients

Role: **PI**

12. Ayuda Complementaria Jeronimo Forteza

Desarrollo de métodos estadísticos para la integración de múltiples datos ómicos y de secuenciación masiva.

Generalitat Valenciana

Support finalization STATegra project.

Role: **Lead PI**

11. TEDDY

Helmsley Charitable Trust

Integrative Analysis of TEDDY data to improve T1D diagnosis.

Integration of multiomics, nutritional, demographic and clinical data from a cohort of 1.000 T1D patients to find Type 1 Diabetes triggers.

Role: **Lead PI**

10. BIO2012-40244

MINECO

Development of Computational Approaches for the characterization and functional annotation of long-non-coding RNA (Annot-lncRNA)

The goal of this project is the development of computational approaches to unravel function of long non-coding RNAs

Role: **PI**

9. GA-612583

EU Marie Curie IRSES

Developing a European American NGS Network (DEANN)

Scientific network of European and Latin America researchers in the field of Next Generation Sequencing (DEANN) applied to the analysis of variation in human and natural endemic populations

Role: **Lead PI**

Partners: TGAC(UK), UCL(UK), SLU(Sweden), Udine University(Italy); UPF(Spain), CIPF(Spain), IMEGEN(Mexico), CINVESTAV(Mexico), Brasilia Univ. (Brazil), INTA (Argentina), CONICET (Argentina), INACH (Chile)

8. GA-30600

FP7 HEALTH

User-driven development of statistical methods for experimental planning, data gathering, and integrative analysis of next generation sequencing, proteomics and metabolomics data

Statistical methods for multiomics data integration

Role: **Lead PI**

Partners: Imperial College(UK), IDIBELL(Spain), Karolinska Institute(Sweden), FORTH(Greece); CIPF(Spain), University Munich (Germany), Biomax(Germany), University Amsterdam (Holland), University Leiden (Holland), Qiagen Aarhus (Denmark), University California (USA)

7. ACOMP/2012/058

Generalitat Valenciana 2012 complementary actions

Complementing Grant for Pathogenomics- Metabolomics and Interactomics of the relationship host-pathogen

RNA-seq analysis in pathogenic bacteria

Role: **PI**

6. FPA/2013

Jerónimo Forteza 2012 Programme

Supporting technician for the Project “Development of transcriptional networks regulating virulence in filamentous fungi”

RNA-seq analysis in fungi

Role: **PI**

5. 16ER

GentxGent 2012

Analysis of discordant twins to investigate correlation of gene expression changes and DNA methylation in Lupus

RNA-seq y Methyl-seq analysis in a rare disease

Role: **PI and Scientific Coordinator**

Partners: CIPF (Spain) and Idibell (Spain)

4. PIB2010AR-00266

Acción Internacional MICINN

Genomics and Transcriptomics of detoxification pathways in Drosophila

NGS-based genomic and transcriptomics analysis of natural fly strains fed under different nutritional conditions

Role: **PI and Scientific Coordinator**

Partners: CONICET (Argentina), UPF (Spain) and CIPF (Spain)

3. BIO2009-10799

MICINN Proyectos de Investigación Fundamental 2009

Exploring novel genome-transcriptome relationships by Next Generation Sequencing approaches

Desarrollo de plataformas informáticas para el estudio de la regulación genómica mediante técnicas de ultrasecuenciación

Role: **PI**

2. BIO2008-04638-E

MICINN, Acciones Complementarias -ERA-NETs 2009

Pathogenomics: Development of transcriptional networks regulating virulence in filamentous fungi

Role: **PI**

1. BIO2008-05266-E/

MICINN, Acciones Complementarias -ERA-NETs 2009

Pathomics: Metabolomics and Interactiomics of the relationship host-pathogen

Role: **PI**

Participation in Projects

Research Contracts

5. Kwait University

01.January.2018

KFAS

Identification of Novel Drought-responsive Genes in the Date Palm (Phoenix dactylifera L.) Using a Combination of Illumina and Pacbio NGS-based RNA-seq Technologies

Role: **PI**

4. Slovenian Institute of Biology

01.Oct.2017

Analysis and annotation of Solanum tuberosum Pacbio data

Role: **PI**

3. IGENOMIX

01.Oct.2014

Identificación de factores secretados y vinculados a alteraciones cromosómicas en embriones pre-implantacionales

Role: **PI**

2. IMEGEN

14.Mar.2014

Consulting RNA-seq data analysis

1. ROSLIN Institute

08.Jun.2009

Functional annotation of microarray data in livestock

Technology Transfer

1. **Co-founder and Scientific Advisor of Biobam Bioinformatics S.L.** 2010. Biobam is a leading bioinformatics solution provider which accelerate research in disciplines such as agricultural genomics, microbiology and environmental NGS studies, amongst others. Biobam is committed to the development of user-friendly software solutions for biological research. Our mission is to transform complex data analysis procedures into an attractive and interactive task. Biobam is devoted to close the gap between experimental work, bioinformatics analysis and applied research. (<http://biobam.com>)
2. **Co-founder of Genometra S.L.** 2011. Genometra is a service provider company for the bioinformatics analysis of high-throughput genomics data (<http://www/genometra.com>). The company ceased activity in 2018.

Publications

2021

142. *Acorde: unraveling functionally interpretable networks of isoform co-usage from single-cell data*
Arzalluz-Luque A, Salguero P, Tarazona S, **Conesa A.**
<https://www.biorxiv.org/content/10.1101/2021.05.07.441841v1>
Nature Communications: *submitted*
141. *Diverse maize inbreds share the leaf transcriptome but diverge in response to ozone*
Morse, Alison; Nanni, Adalena; Newman, Jeremy; Choquette, Nicole; Wedow, Jessica; Leakey, Andrew; **Conesa, Ana**; Ainsworth, Elizabeth; McIntyre, Lauren
Genome Research: *submitted*
140. Global methylome scores correlate with histological subtypes of colorectal carcinoma and different associations with common clinical and molecular features. María del Carmen Turpín, José García-Solano MD PhD, Patricia Sebastián-León, Javier Trujillo-Santos MD, Pablo Carbonell, Fernando Pérez-Sanz, Eduardo Estrada, Anne Tuomisto, Irene Herruzo, Markus J Mäkinen MD, **Ana Conesa**, Pablo Conesa-Zamora.
Submitted
139. *GAIT-GM: Galaxy tools for modelling metabolite changes as a function of gene expression.*
Lauren M. McIntyre, Francisco Huertas, Olexander Moskalenko, Marta Llansola, Vicente Felipo, Alison M. Morse, **Ana Conesa.**
bioRxiv 2020.12.25.424407; doi: <https://doi.org/10.1101/2020.12.25.424407>
138. *MOSim: MultiOmics Simulation in R.*
Carlos Martínez, **Ana Conesa***, Sonia Tarazona.
BiorXiv 2018. <https://doi.org/10.1101/421834>. *Corresponding author
137. *Precise transcriptional control of cellular quiescence by BRAVO/WOX5 complex in Arabidopsis roots.*
Isabel Betegón-Putze1, Josep Mercadal2, Nadja Bosch, Ainoa Planas-Riverola, Mar Marquès-Bueno, Josep Vilarrasa-Blasi, David Frigola, Rebecca Corinna Burkart, Cristina Martínez, Ana

Conesa, Rosangela Sozzani ,Yvonne Stahl, Salomé Prat, Marta Ibañes and Ana I. Caño-Delgado. *Molecular Systems Biology*, *in press*.

- 136.** *Undisclosed, unmet and neglected challenges in multi-omics studies.*
Tarazona S, Arzalluz-Luque A, **Conesa A.**
Nature Computational Methods, *in press*.
- 135.** *STATegRa: Multi-omics Data Integration. A conceptual scheme with a bioinformatics pipeline.*
Nuria Planell, Vincenzo Lagani, Patricia Sebastian-Leon, Frans Van Der Kloet, Ewoud Ewing, Nestoras Karathanasis, Arantxa Urdangarin, Imanol Arozarena, Maja Jagodic, Ioannis Tsamardinis, Sonia Tarazona, **Ana Conesa**, Jesper Nils Tegner, David Gomez-Cabrero
Front. Genet., 04 March 2021, <https://doi.org/10.3389/fgene.2021.620453>
- 134.** *Integrative analyses of TEDDY Omics data reveal lipid metabolism abnormalities, increased intracellular ROS and heightened inflammation prior to autoimmunity for type 1 diabetes.*
Balzano-Nogueira L, Ramirez R, Zamkovaya T, Dailey J, Ardisson AN, Chamala S, Serrano-Quílez J, Rubio T, Haller MJ, Concannon P, Atkinson MA, Schatz DA, Triplett EW, **Conesa A.**
Genome Biol. 2021 Jan 21;22(1):39. doi: 10.1186/s13059-021-02262-w.
- 133.** *Multi-omic analysis unveils biological pathways in peripheral immune system associated to minimal hepatic encephalopathy appearance in cirrhotic patient.*
Rubio T, Felipe V, Tarazona S, Pastorelli R, Escudero-García D, Tosca J, Urios A, **Conesa A**^{CA}, Montoliu C.
Sci Rep 2021 Jan 21;11(1):1907. doi: 10.1038/s41598-020-80941-7.
- 132.** *A multi-omics study for uncovering molecular mechanisms associated with hyperammonemia-induced cerebellar function impairment in rats.* Tarazona S, Carmona H, **Conesa A**, Felipe V, Llansola M.
Cell Biology and Toxicology 2020 <https://doi.org/10.1007/s10565-020-09572-y>

2020

- 131.** *Transcriptional Differences for COVID-19 Disease Map Genes between Males and Females Indicate a Different Basal Immunophenotype Relevant to the Disease.*
Liu T, Balzano-Nogueira L, Lleo A, **Conesa A**
Genes 2020 11, 1447.
- 130.** *Sequencing and Analysis of Gerbera Daisy Leaf Transcriptomes Reveal Disease Resistance and Susceptibility Genes Differentially Expressed and Associated with Powdery Mildew Resistance.*
Bhattarai K, **Conesa A**, Xiao S, Peres NA, Clark Parajuli S, Deng Z.
BMC Plant Biology, 2020, volume 20, Article number: 539
- 129.** *A network approach to elucidate and prioritize microbial dark matter in microbial communities*
Zamkovaya T, Foster J, de Crezy V, **Conesa A.**
ISME Journal 2020 Sep 22. doi: 10.1038/s41396-020-00777-x
- 128.** *Padhoc: A computational pipeline for pathway reconstruction on the fly*
Casani S, Pereira C, **Conesa A**
Bioinformatics, Volume 36, Issue Supplement_2, December 2020, Pages i795–i803
- 127.** *MirCure: A tool for quality control, filter, and curation of microRNAs of animals and plants*
Ylla G, Liu T, **Conesa A.**

- 126.** *Harmonization of Quality Metrics and Power Calculation in Multi-Omic Studies.*
Tarazona S, Balzano-Nogueira L, Gómez-Cabrero D, Schmidt A, Imhof A, Hankemeier T, Tegnér J, Westerhuis JA, **Conesa A.**
Nature Communications. 2020 Jun 18;11(1):3092. doi: 10.1038/s41467-020-16937-8
- 125.** *tappAS: a comprehensive computational framework for the analysis of the functional impact of differential splicing.*
de la Fuente L, Arzalluz-Luque Á, Tardáguila M, Del Risco H, Martí C, Tarazona S, Salguero P, Scott R, Lerma A, Alastrue-Agudo A, Bonilla P, Newman JRB, Kosugi S, McIntyre LM, Moreno-Manzano V, **Conesa A**
Genome Biol. 2020 May 18;21(1):119. doi: 10.1186/s13059-020-02028-w
- 124.** *Assessment of unconventional antimicrobial compounds for the control of Candidatus Liberibacter asiaticus, the causative agent of citrus greening disease.*
Gardner CL, da Silva DR, Pagliai FA, Pan L, Padgett-Pagliai KA, Blaustein RA, Merli ML, Zhang D, Pereira C, Teplitski M, Chaparro JX, Folimonova SY, **Conesa A**, Gezan S, Lorca GL, Gonzalez CF.
Scientific Reports. 2020 Mar 25;10(1):5395. doi: 10.1038/s41598-020-62246-
- 123.** *A multi-omics dataset of heat-shock response in the yeast RNA binding protein Mip6.*
Nuño-Cabanes C, Ugidos M, Tarazona S, Martín-Expósito M, Ferrer A, Rodríguez-Navarro S, **Conesa A**
Scientific Data, 2020;7(1):69. Published 2020 Feb 27. doi:10.1038/s41597-020-0412-z.
- 122.** *MultiBaC: a strategy to remove batch effects from different omic data type.*
Ugidos M, Tarazona S, Prats-Montalbán JM, Ferrer A, **Conesa A.**
Statistical Methods in Medical Research. Published 2020 March 4
<https://doi.org/10.1177/0962280220907365>
- 2019**
- 121.** *Making multi-omics data accessible to researchers.*
Ana Conesa, Stephan Beck.
Scientific Data, 2019 6:251. <https://doi.org/10.1038/s41597-019-0258-4>
- 120.** *Large expert-curated database for benchmarking document similarity detection in biomedical literature search.*
Brown P, RELISH Consortium (**Conesa, A**), Zhou Y.
Database, 2019, 1–67 doi: 10.1093/database/baz085
- 119.** *Mip6 binds directly to the Mex67 UBA domain to maintain low levels of Msn2/4 stress dependent mRNAs.*
Manuel Martín-Expósito, M^a Eugenia Gas, Nada Mohamad, Carme Nuño-Cabanes, Pau Pascual-García, Lorena de la Fuente, Belén ChavesArquero, Jonathan Merran, Jeffrey Corden, **Ana Conesa**, José Manuel Pérez-Cañadillas, Jerónimo Bravo and Susana Rodríguez-Navarro
EMBO reports 2019, e47964
- 118.** *A Multiomic Study To Unravel The Effects Of Developmental Exposure To Endosulfan In Rats Molecular Explanation For Sex-Dependent Effects.*

Sonia Tarazona, Elena Bernabeu, Héctor Carmona, Belén Gómez-Giménez, Javier García-Planells, Pim Leonards, Stephan Jung, **Ana Conesa***, Vicente Felipo, Marta Llansola. ACS Chem Neurosci. 2019 Sep 10. doi: 10.1021/acschemneuro.9b00304 (* Corresponding author)

- 117.** *STATegra: a comprehensive multi-omics dataset of B-cell differentiation in mouse.*
David Gomez-Cabrero, Sonia Tarazona, Isabel Ferreirós-Vidal, Ricardo N. Ramirez, Carlos Company, Andreas Schmidt, Theo Reijmers, Veronica von Saint Paul, Francesco Marabita, Javier Rodríguez-Ubreva, Antonio Garcia-Gomez, Thomas Carroll, Lee Cooper, Ziwei Liang, Gopuraja Dharmalingam, Leandro Balzano-Nogueira, Vincenzo Lagani, Ioannis Tsamardinos, Michael Lappe, Dieter Maier, Johan A. Westerhuis, Thomas Hankemeier, Axel Imhof, Esteban Ballestar, Ali Mortazavi, Matthias Merckenschlager, Jesper Tegner, **Ana Conesa**.
Scientific Data, 2019, doi:10.1038/s41597-019-0202-7.
- 116.** *Building gene regulatory networks from scATAC-seq and scRNA-seq using Linked Self-Organizing Maps.*
Camden Jansen, Ricardo N. Ramirez, Nicole C. El-Ali, David Gomez-Cabrero, Jesper Tegner, Matthias Merckenschlager, **Ana Conesa**, Ali Mortazavi.
PLoS Computational Biology 15(11) e1006555. <https://doi.org/10.1371/journal.pcbi.1006555>
- 115.** *Differential modulation of Quorum-Sensing signaling through QslA in Pseudomonas aeruginosa strains PAO1 and PA14.*
Sana T, Lomas R, Gimenez M, Laubier A, Soscia C, Chauvet C, **Cones A**, Voulhoux R, Iz D, Bleves S.
Journal of Bacteriology, 2019 Aug 12. pii: JB.00362-19
- 114.** *Feedforward regulation of Myc coordinates lineage-specific with housekeeping gene expression during progenitor cell differentiation.*
Ferreirós-Vidal I, Carroll T, Zhang T, Lagani V, Ramirez RN, Ing-Simmons E, Gómez-Valadés AG, Cooper L, Liang Z, Papoutsoglou G, Dharmalingam G, Guo Y, Tarazona S, Fernandes SJ, Noori P, Silberberg G, Fisher AG, Tsamardinos I, Mortazavi A, Lenhard B, **Conesa A***, Tegner J*, Merckenschlager M*, Gomez-Cabrero D.
PLoS Biol. 2019 Apr 12;17(4):e2006506 (* Corresponding authors)
- 113.** *Differences in gene expression profiling and biomarkers between histological colorectal carcinoma subsets from the serrated pathway.*
García-Solano J, Turpin-Sevilla MDC, García-García F, Carbonell-Muñoz R, Torres-Moreno D, **Conesa A**, Conesa-Zamora P.
Histopathology. 2019 Apr 26. doi: 10.1111/his.13889.

2018

- 112.** *Elucidating the role of chromatin state and transcription factors on the regulation of the Yeast Metabolic Cycle: a multi-omic integrative approach.*
Sánchez-Gaya V, Casaní Galdón S, Ugidos M, Kuang Z, Mellor J, **Conesa A**, Tarazona S.
Front. Genet., 30 November 2018 | <https://doi.org/10.3389/fgene.2018.00578>.
- 111.** *Transcriptional profiling of the mutualistic bacterium Vibrio fischeri and a hfq mutant under modeled microgravity.*
Alexandrea A. Duscher, **Ana Conesa**, Mary Bishop, Sergio D. Zubizarreta, and Jamie S. Foster
Nature Microgravity 4, Article number: 25 (2018).

- 110.** *Changes in the uterine metabolome of the cow during the first seven days after estrus.*
Tribulo P, Balzano L, **Conesa A**, Siqueira L, Hansen PJ.
Molecular Reproduction and Development, 2018, DOI: 10.1002/mrd.23082
- 109.** *Two histologically colorectal carcinomas subsets from the serrated pathway show different methylome signatures and diagnostic biomarkers.*
García-Solano J, Turpin MC, Torres-Moreno D, Estrada E, Huertas-López F, Toumisto A, Makinen MJ, **Conesa A**, Conesa-Zamora P.
Clinical Epigenetics. 2018; 10: 141.
- 108.** *Tumor Microenvironment-Targeted poly-L-glutamic acid-based Combination Conjugate for Enhanced Triple Negative Breast Cancer Treatment.*
Juan J Arroyo-Crespo, Ana Armiñan, David, Charbonnier, Leandro Balzano-Nogueira, Francisco Huertas-López, Cristina Marti, Sonia Tarazona, Jeronimo Forteza, **Ana Conesa**, María J. Vicent.
Biomaterials, Volume 186, December 2018, Pages 8-21.
- 107.** *Gene expression profile and molecular pathway datasets resulting from benzo(a)pyrene exposure in the liver and testis of adult tilapia.*
Colli Dula RC, Fang X, Moraga-Amador D, Albornoz-Abud N, Zamora-Bustillos R, **Conesa A**, Zapata-Perez O, Moreno D, Hernandez-Nuñez E.
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15. *Discovering gene expression patterns in time course microarray experiments by ANOVA-SCA.*
 Nueda MJ, **Conesa A**, Westerhuis JA, Hoefsloot HC, Smilde AK, Talon M, Ferrer A.
 Bioinformatics 2007 Jul 15;23(14):1792-800.
14. *Analysis of 13000 unique Citrus clusters associated with fruit quality, production and salinity tolerance.*
 Terol J, **Conesa A**, Colmenero JM, Cercos M, Tadeo F, Agusti J, Alos E, Andres F, Soler G, Brumos J, Iglesias DJ, Gotz S, Legaz F, Argout X, Courtois B, Ollitrault P, Dossat C, Wincker P, Morillon R, Talon M.
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2000-2006

13. *Development of the GENIPOL European flounder (*Platichthys flesus*) microarray and determination of temporal transcriptional responses to cadmium at low dose.*
 Williams TD, Diab AM, George SG, Godfrey RE, Sabine V, **Conesa A**, Minchin SD, Watts PC, Chipman JK.
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12. *Blast2GO Goes Grid: Developing A Grid-Enabled Prototype For Functional Genomics Analysis.*
Aparicio G, Götz S, **Conesa A**, Segrelles D, Blanquer I, Hernandez V, Robles M, Talón M. IN: Challenges and Opportunities in GealthGrids.Eds. V. Hernández, I. Balaquer, T. Solomonides, Y. IOS Press. ISBN 1-58603-617-3, pgs: 194-204.
11. *maSigPro: a method to identify significantly differential expression profiles in time-course microarray experiments.*
Conesa A, Nueda MJ, Ferrer A, Talon M.
Bioinformatics 2006, May 1;22(9):1096-102.
10. *Blast2GO: a universal tool for annotation, visualization and analysis in functional genomics research.*
Conesa A, Gotz S, Garcia-Gomez JM, Terol J, Talon M, Robles M.
Bioinformatics 2005, Sep 15;21(18):3674-6.
9. *Development of a citrus genome-wide EST collection and cDNA microarray as resources for genomic studies.*
Forment J, Gadea J, Huerta L, Abizanda L, Agustí J, Alamar S, Alos E, Andres F, Arribas R, Beltrán JP, Berbel A, Blázquez MA, Brumos J, Canas LA, Cercos M, Colmenero-Flores JM, **Conesa A**, Estables B, Gandía M, Garcia-Martinez JL, Gimeno J, Gisbert A, Gomez G, Gonzalez-Candelas L, Granell A, Guerri J, Lafuente MT, Madueno F, Marcos JF, Marques MC, Martinez F, Martinez-Godoy Studies on the Production of Fungal Peroxidases in *Aspergillus niger* MA, Miralles S, Moreno P, Navarro L, Pallas V, Pérez-Amador MA, Pérez-Valle J, Pons C, Rodrigo I, Rodriguez PL, Royo C, Serrano R, Soler G, Tadeo F, Talón M, Terol J, Trenor M, Vaello L, Vicente O, Vidal Ch, Zacarías L, Conejero V.
Plant Mol Biol. 2005 Feb;57(3):375-91.
8. *Examining the role of glutamic Acid 183 in chloroperoxidase catalysis.*
Yi X, **Conesa A**, Punt PJ, Hager LP.
J Biol Chem. 2003 Apr 18;278(16):13855-9.
7. *Calnexin overexpression increases manganese peroxidase production in *Aspergillus niger*.*
Conesa A, Jeenes D, Archer DB, van den Hondel CA, Punt PJ.
Appl Environ Microbiol. 2002 Feb;68(2):846-51.
6. *Filamentous fungi as cell factories for heterologous protein production.*
Punt PJ, van Biezen N, **Conesa A**, Albers A, Mangnus J, van den Hondel C.
Trends Biotechnol. 2002 May;20(5):200-6.
5. *Fungal Peroxidases: Molecular Aspects and Applications.*
Conesa A, Punt PJ, van den Hondel CA.
J Biotechnol. 2002 Feb 14;93(2):143-58.
4. *The C-terminal propeptide of the *Caldariomyces fumago* chloroperoxidase: an intramolecular chaperone?*
Conesa A, Weelink G, van den Hondel CA, Punt PJ.
FEBS Lett. 2001 Aug 17;503(2-3):117-20.
3. *The secretion pathway in filamentous fungi; a biotechnological view.*
Conesa A, Punt PJ, van Luijk N, van den Hondel CA.

- Fungal Genet Biol. 2001 Aug;33(3):155-71.
2. *Expression of the Caldariomyces fumago chloroperoxidase in Aspergillus niger and characterization of the recombinant enzyme.*
Conesa A, van De Velde F, van Rantwijk F, Sheldon RA, van Den Hondel CA, Punt PJ.
J Biol Chem. 2001 May 25;276(21):17635-40.
 1. *Studies on the Production of Fungal Peroxidases in Aspergillus niger*
Conesa A, van den Hondel CA, Punt PJ.
Appl Environ Microbiol. 2000 Jul;66(7):3016-23.

Conferences and Seminars

101. *Methods and tools for the integration of multi-omics data to model biological processes*

Mechanisms of Oncogenesis program, UF Cancer Institute, 25th January 2021

100. *The Functional Iso-Transcriptomics toolset to leverage long reads sequencing for unravelling isoform transcriptional networks from single cells.*

(keynote)

ECCB2020 iRNA COSI, 13th July 2020

99. *Full-Length RNA-Seq Analysis using PacBio long reads: from reads to functional interpretation*

Tutorial, ECCB2020, 12th July 2020

98. *The functional iso-transcriptomics pipeline: from long reads to biological insights*

SMRT Informatics, May 2020

97. *Leveraging long reads to unravel isoform-expression networks in single cells.*

(keynote)

SMRT Leiden online, May 2020

96. *Bioinformatics tools for multi-omics integration and single molecule sequencing: application to human disease.*

(invited)

Topics in Cancer Seminar Series

Gainesville, December 6th, 2019

95. *Tools for transforming multi-omics data into disease models.*

(selected talk)

Advances in Computational Biology

Barcelona, November 28th, 2019

94. *From Long Reads to Transcript Function: Bioinformatics Tools for Iso-Transcriptomics Analysis*

(keynote)

North America PacBio Users Group Meeting

Delaware University, September 25th, 2019

93. *Tools for transforming multiomics data into disease models.*

(flash presentation)

EMBO | EMBL Symposium: Multiomics to Mechanisms - Challenges in Data Integration

EMBL Heidelberg, September 13th, 2019

92. *Multiomics approaches to model development and disease*

(invited)

Institute for Integrative Systems Biology (I2SysBio)

Valencia, July 16th, 2019

91. *Multiomics and Third Generation Sequencing: at the forefront of genomics research*

(invited)

Barcelona Supercomputing center (BSC)

Barcelona, June 11th, 2019

90. *Multiomics and Third Generation Sequencing: at the forefront of genomics research*

(invited)

Centre for Research in Agro Genomics (GRAG)

Barcelona, June 11th, 2019

89. *From long reads to functional analysis of isoforms: bioinformatics tools to understand differential isoform expression in neural differentiation* (invited)

ENCODE Long reads meeting

Barcelona, June 9th- 10th, 2019

88. *Multiomics and Third Generation Sequencing: at the forefront of genomics research*

(invited)

Animal Science Program, University of Florida

Gainesville, April 22th, 2019

87. *Multi-omics and third generation sequencing strategies for the future of genome research. The functional transcriptomics story* (keynote)

#20YEARSOFGENOMICS,

École normale supérieure, Paris, March 28th, 2019

86. *From biomarkers to systems models: methods and software for multi-omics data integration* (keynote talk)

Challenges and perspectives in integrative bioinformatics

Paris, France, September 17th 2018.

85. *SQANTI: extensive characterization of long-read transcript sequences for quality control in full-length transcriptome identification and quantification* (highlight talk)
European Conference in Computational Biology, ECCB2018.
Athens, Greece, September 11th 2018.

84. *Bioinformatics methods for the integrative analysis of multi-omics and third generation sequencing data* (invited lecture)
Spetses ChroMe summer school.
Spetses Greece, August 26th 2018.

83. *Integrative analysis of multiomics TEDDY data reveals dysregulation at molecular events up to 12 months before seroconversion* (invited lecture)
TEDDY project meeting
Washington DC, May 2nd 2018.

82. *Bioinformatics and Statistical Approaches for the Integration of Metabolomics and Transcriptomics Data* (invited lecture).
2018 SECIM Metabolomics Symposium
Gainesville, Florida, April 26th 2018.

81. *Functional Profiling of Alternative Isoform expression on Mouse Neural Differentiation using Single Molecule Sequencing and tappAS*
Bermuda Principles. Impact on Splicing. 2nd Annual Conference.
Bermuda, February 21st-25th, 2018

80. *SQANTI and TAPPAS: Making sense of Iso-seq data* (invited lecture).
SMRT Informatics Developers Conference @ PAG XVXXI
San Diego, January 17th 2018

79. *Multiomics data integration to unravel local gene regulatory networks* (invited lecture).
International Workshop in Environmental Omics Integration and Modeling
CosmoCaixa, Barcelona, Spain, October 20th 2017

78. *The STATegra road map for the design and analysis of multiomics perturbation experiments* (invited lecture).
Leeds Advanced Statistical Research 2017/ Mimomics Workshop
University of Leeds, June 29th 2017

77. *Unravelling novel transcriptome functional features*
Conference Lectures of the Bioinformatics Master of the University of Murcia
University of Murcia, May 19th, 2017.

76. *Multiblock integration of T1D gene expression and metabolomics data to study T1D progression*
TEDDY fall meeting
Tysons Corner, Virginia, November 8th, 2016.

75. *Developing statistical approaches for the integration of multi-omics data. (invited lecture)*

Frontiers in Genomics Program. Universidad Autónoma de Mexico.
Cuernavaca, 24th October 2016

74. *Functional transcriptomics in the post-NGS era: multiomics integration and new technologies (Plenary lecture).*

Third International Conference of Computational Biomedicine, CBM 2016
Gainesville, Florida 25th-27th February 2016

73. *Functional Analysis at Isoform Resolution.*

Pacbio industrial workshop. XXIV Plant and Animal Genome Conference
San Diego, California 12th January 2016.

72. *Unravelling novel transcriptome functional features by NGS technologies (opening lecture).*

VI Argentinian Conference in Bioinformatics and Computational Biology.
Bahia Blanca, Argentina, 14th-16th October 2015

71. *Comparison of temporal gene expression profiles with other omics to understand gene expression regulation.*

Workshop on Statistical Methods for Omics Data Integration and Analysis.
Valencia, Spain. 14th-16th September 2015

70. *Lessons and results of multi-omics data analysis (keynote speaker)*

JOBIM 2015

Clermont-Ferrand, 6th- 9th July 2015

69. *Integration of multi-omics data to study B-cell differentiation: experimental design and analysis issues (keynote speaker)*

ABS4NGS Workshop

Paris, France, 22nd-23rd June 2015

68. *STATegra: Statistical and Bioinformatics Resources for Analysis of Multi-Omics Projects*

5th NGS Conference (distinguished speaker)

Boston, USA, 21st-22nd May 2015

67 *Functional Alternative Isoform Expression Analysis Using Long Read Technologies.*

Post-transcriptional Gene Regulation Workshop, **Plant and Animal Genome Conference XXIII**

San Diego, January 11th, 2015

66. *Functional Alternative Isoform Expression Analysis Using Long Read Technologies.*

Centro de Investigación Príncipe Felipe

Valencia, January 30th, 2015

65. *The STATegra Initiative Develops Novel Methodologies for the Integrative Analysis of Multiple Types of NGS & Omics Data*

Bioinformatics Workshops, **Plant and Animal Genome Conference XXIII**

San Diego, January 13th, 2015

64. *The STATegra NGS Experiment Management System*

Computer Demo Session, **Plant and Animal Genome Conference XXIII**

San Diego, 14th January 2015

63. *Functional Annotation of a mouse neural differentiation process (keynote speaker)*

Australian Bioinformatics Conference

Melbourne, Australia, 11th October 2014

62. *The STATegra project: new tools for analysis and integration of multi-omics data (keynote speaker)*

Conference of the Australasian Genomics Technologies Association

Melbourne, Australia, 13th October 2014

61. *The STATegra project: new statistical tools for analysis and integration of diverse omics data (invited lecture).*

EpiConcept Workshop 2014

Gran Canarias, Spain, 8th May 2013

60. *NGS in Functional Genomics. NGS data integration (invited seminar)*

SeqAhead Workshop: NGS after the Gold Rush

Norwich, UK, 6th May 2014

Bioinformatics for the Diverse Life Sciences (invited seminar)

Genetics Institute, University of Florida

Gainesville, Florida, USA, 17th February **2014**

59. *A Tour Though Data Integration Approaches at the GGE Lab.*

Centro de Investigación Príncipe Felipe

Valencia, January 24th, 2014

58. *Nuevos retos de la medicina personalizada (invited conference)*

MIT EmTech Valencia

Valencia, 5th November 2013

57. *The STATegra project: new statistical methods and tools for integrative omics data analysis (invited seminar).*

ALLBIO Meeting

Uppsala, 7th-8th October 2013

56. *Multidisciplinary multi-institutional PhDs (invited seminar).*

ISCB/GOBLET Meeting

Berlin 19th July 2013

55. *The STATegra project: new statistical methods and tools for integrative omics data analysis* (invited seminar).

Workshop in Translational Genomics

Barcelona, 26th April 2013

54. *Pathway-based linear models* (invited conference)

SeqAhead/STATegra High throughput and data integration workshop

Barcelona, 15th February 2013

53. *Analysis of Fungal Transcriptomics with CLC Genomics Workbench and Blast2GO.*

XXI Plant and Animal Genome Conference (invited conference)

San Diego, 15th January 2013

52. *Transcriptome analysis with RNAseq: promises and biases* (invited seminar)

Department of Genetics, Stanford University

Stanford, 28th September 2012

51. *Pathway based methods to unravel functional relationships: application to pathway network inference and drug repurposing* (invited seminar)

UCB Statistics and Genomics Seminars

Berkeley, 27th September 2012

50. *NGS of a transdifferentiation system and other RNA-seq tricks* (invited conference)

Joining Forces Symposium

Zurich, 22nd June 2012

49. *Functional Annotation of Sequence Data* (seminar)

COST Action SeqAhead Course in Next Generation Sequencing

Uppsala, 31st May 2012

48. *Next generation sequencing in transcriptomics: new views on the genome and much confusion* (invited conference)

Langebio Institute, CINVESTAV

Irapuato, Mexico, 8th May 2012

47. *Transcriptional networks controlling virulence in filamentous fungal pathogen.*

Joint Status Seminar of the ERA-Net PathoGenoMics

Tenerife, 23rd January 2012

46. *Sequencing the Snake Venom Transcriptome for Its Applications in Biomedicine.*

Plant and Animal Genome Conference XX

San Diego, California, 15th January 2012

45. *Differential expression with RNA-seq: new potentials and new concerns* (invited seminar)

Instituto Valenciano de Biomedicina.

Valencia, 18th November 2011

44. *NOISeq: a RNA-seq differential expression method robust for sequencing depth biases.*

COST SeqAhead meeting.

Brussels, 8th November 2011

43. *Aplicaciones de las nuevas tecnologías de secuenciación masiva al estudio de la relación genoma-proteoma.*

Conferencia de la Sociedad Española de Bioquímica y Biología Computacional.

Barcelona, 7th September 2011

42. *Differential expression in RNASeq: a matter of depth* (conference)

Conference of the International Society of Computational Biology/ European Conference in Computational Biology (ISCB/ECCB)

Austria Center Vienna, 18th July 2011

41. *Differential expression in RNASeq: a matter of depth* (conference)

Critical Assessment of Massive Data Analysis (CAMDA) 2011

Austria Center Vienna, 15th July 2011

40. *Ontología Génica y Anotación Funcional* (seminar)

AECID CYDET Curso Bioinformática y Genómica Vegetal

Cartagena de Indias, Colombia, 11th-13th July 2011

39. *Differential expression in RNAseq Studies* (seminar)

Practical Course on Bioinformatics and Network Biology.

Centro de Investigación del Cáncer, Salamanca, Spain, 23rd June 2011

38. *Blast2GO: A Gene Ontology annotation, visualization and analysis tool for functional genomics projects* (seminar)

Practical Course on Bioinformatics and Network Biology.

Centro de Investigación del Cáncer, Salamanca, Spain, 23rd June 2011

37. *Introduction to NGS technology* (seminar)

Data analysis workshop for massive sequencing data

E.T.S. de Ingenierías Informática y de Telecomunicación

University of Granada, Spain, 13th June 2011

36. *Differential expression with RNASeq: length and depth does matter* (conference)

Bioinformatics and High Throughput Sequencing 2011

Institute Pasteur Paris, France, 22nd March 2011

35. *High performance sequencing and gene expression quantification* (conference)

RES Scientific Seminar of Supercomputing and Next Generation Sequencing
Parque Tecnológico de Andalucía, Málaga, Spain, 17th March 2011

34. *Variable Selection for Multifactorial Genomic Data*
XXXII Congreso Nacional de Estadística e Investigación Operativa y VI Jornadas de Estadística Pública
Universidad Da Coruña, September 17th, 2010

33. *Biología cuantitativa ¿cuántos son dos más dos?* (conference)
Departamento de Matemáticas
Universitat de València, Spain, May 2010

32. *Pathway Analysis of Transcriptomics Data* (conference)
IX Jornadas Nacionales de Bioinformática
Calouste Gulbenkian Foundation, Lisbon, Portugal, 4th November 2009

31. *Pathway Analysis of Transcriptomics Data* (conference)
Séptima reunión de la red valenciana de genómica y proteómica
Facultad de Farmacia de la Universitat de València, Spain, 12th November 2009

30. *Pathway Network Analysis in Systems Biology* (conference)
XII Conferencia Española de Biometría
Universidad de Cádiz, Spain, 24th September 2009

29. *The Joined GEPAS, Babelomics and Blast2GO Suites: Statistical and Functional Analysis of Genomics Data on the Web* (computer demo)
Plant and Animal Genome Conference, XVII
San Diego, USA, 14th January 2009

28. *B2G-FAR: The Blast2GO Functional Annotation Repository* (computer demo)
Plant and Animal Genome Conference, XVII
San Diego, USA, 14th January 2009

27. *PLS Analysis with Gene Ontology data: inferring the phenotype from the function of genes* (conference)
11th Conference on Chemometrics in Analytical Chemistry
Montpellier SupAgro, Montpellier, France, 3rd July 2008

26. *Finding relationships between high throughout data sources through multiway projection methods* (seminar)
MIPS, University of Munich
Munich, Germany, 4th March 2008

25. *Systems Level Analysis of Time Course Omics Data* (seminar)
Department of Statistics, University of Barcelona
Barcelona, Spain, November 2008

24. *Systems Level Analysis of Time Course Omics Data* (conference)
(EMBnet) Conference 2008: 20th Anniversary Celebration
Martina Franca, Italy, 19th September 2008
23. *Functional Genomics: Concepts, Databases and Methods* (seminar)
First International Course in Environmental Genomics
DISAV, University of Piemonte Orientale, Italy, 15th December 2008
22. *An approach to the characterization of the date palm genome* (conference)
II Congreso Internacional Oasis y Turismo Sostenible
La Tribuna del Agua de Expo Zaragoza, 9th August 2008
21. *Finding relationships between high throughput data sources through multiway projection methods* (conference)
Jornadas Nacionales de Bioinformática
Centro de Investigaciones Príncipe Felipe, 13th February 2008
20. *Partial Least Squares on Gene Functional Classes* (conference)
Critical Assessment of Gene Expression Data Analysis (CAMDA Conference)
Centro de Investigación Príncipe Felipe, Valencia, Spain, 14th December 2007
19. *High throughput functional annotation and analysis with the Blast2GO suite* (seminar)
EMBRACE Gene Ontology Workshop,
University of Bari, Italy 7th-9th November 2007
18. *Multi-way methods for integrating data and knowledge in genomics research* (conference)
XI Española y Primer Encuentro Iberoamericano de Biometría
Universidad de Salamanca, Spain, 20st June 2007
17. *N-way methods to functional genomics: can we integrate all data in a multidimensional box?* (conference)
Systems Biology Symposium
Universidad Complutense de Madrid, Spain, 8th June 2007
16. *Bioinformática en genómica vegetal: anotación de funciones génicas y análisis de respuestas transcripcionales* (seminar)
University of Malaga
Málaga, Spain, 4th May 2007
15. *Anotación funcional de secuencias en especies no modelo* (seminar)
Introduction to Bioinformatics
University of Alicante, Spain 19th December 2007

14. *Blast2GO v2.0: A comprehensive functional annotation and analysis tool for the genomics of non-model species* (computer demo)

Plant and Animal Genome Conference, XV

San Diego, USA, 15th January 2007

13. *A multi-way strategy for the integrative analysis of high dimensionality 'omics' data*

7th Spanish Symposium on Bioinformatics and Computational Biology

Zaragoza, November 22nd, 2006

12. *Blast2GO: Conceptos de anotación funcional automática y su aplicación en una herramienta bioinformática* (seminar)

BiT-Lab. Departamento de Arquitectura de Computadores, Universidad de Málaga,

Málaga, Spain, 6th October 2006

11. *Blast2GO: Conceptos de anotación funcional automática y su aplicación en una herramienta bioinformática* (seminar)

Foro de Biotecnología de Plantas, Taller Bioinformática

Universidad de Murcia, Spain, 28th September 2006

10. *maSigPro: A method to identify significantly differential expression profiles in time-course microarray experiments*

X Conferencia Española de Biometría

Oviedo, Spain, 27th May 2006

9. *Aplicación de la Genómica Funcional como Respuesta a Problemas Biológicos* (seminar)

Instituto de Productos Lácteos de Asturias

Oviedo, Spain, May 25th, 2005

8. *Analysis and interpretation of genome wide datasets: from sequence to function to biology* (seminar)

School of Biosciences, University of Birmingham

Birmingham, UK, 2005

7. *Finding significant differential gene expression profiles through maSigPro* (seminar)

Departamento de Estadística, Universidad de Barcelona

Barcelona, Spain, 2005

6. *Functional genomics in citrus or the bioinformatics of non model species* (seminar)

Department of Molecular Biology, University of Groninghem.

Groninghem, The Netherlands, 28th November 2005

5. *Functional genomics in citrus or the bioinformatics of non model species* (seminar)

TNO Nutrition and Food Research,

Zeist, The Netherlands, 3rd November 2005

4. *Blast2GO* (conference)
Gene Ontology Users Meeting
Bergen, Norway, 14th September 2005

3. *Blast2GO y maSigPro: herramientas bioinformáticas para Genómica Funcional en Investigación Agraria* (conference)
Tercera reunión de la red valenciana de genómica y proteómica
IATA, Valencia, 28th October 2004

2. *Expression of caldariomyces fumago chloroperoxidase in aspergillus niger*
VII International Fungal Biology Conference
Groningen, Netherlands, August, 1999

1. *Expression of the heme-peroxides in Aspergillus*
Symposium NvvM section Mycology
Wageningen, October 29th, 1998

Thesis as supervisor

1. **Maria José Nueda Roldán.** *Statistical methods for Time Course Microarray data.* Universitat Politècnica de València, 2009.
2. **Sonia Prado López.** Efectos del oxígeno en la expresión genética y diferenciación de líneas de células madre embrionarias humanas (hESC). Universitat de València, 2009.
3. **Stefan Goetz.** *Functional characterization of genome-wide sequence data: development of methods and tools for high-throughput analysis.* Universitat Politècnica de València, 2010.
4. **Sonia Tarazona Campos.** *Statistical methods for transcriptomics: from microarray to RNA-seq.* Universitat Politècnica de València, 2014
5. **Rafael Hernández de Diego.** *Development of Bioinformatics Resources for the Integrative Analysis of Next Generation Omics Data.* Universitat Politècnica de València, 2016.
6. **Lorena de la Fuente.** *Development of a Bioinformatics Approach for the Functional Analysis of Alternative Splicing.* Universitat Politècnica de València, 2019.
7. **Pedro Furió Tarí.** *Development of bioinformatic tools for massive sequencing analysis.* Universitat Politècnica de València, 2020
8. **Tatyana Zamkovaya.** *Network analysis of Microbial Dark Matter.* University of Florida, 2020
9. **Manuel Guerrero Ugidos.** *Desarrollo de métodos estadísticos para la Biología de Sistemas multiómica.* Universitat Politècnica de València, in progress.
10. **Francisco José Pardo Palacios.** *Desarrollo de métodos bioinformáticos y experimentales para el estudio del impacto funcional de las isoformas alternativas.* Universitat Politècnica de València, in progress.
11. **María Teresa Rubio Martínez-Abarca.** *Métodos de integración de datos multiómicos para el estudio de enfermedades.* Universitat Politècnica de València, in progress.
12. **Salvador Casaní Gabaldón.** *Bioinformatics methods to link metabolic and epigenetic regulation.* Universitat València, defense on February 8th 2021.
13. **Rocío Amorín.** *Methods for long reads analysis in non-model organisms.* University of Florida, in progress
14. **Angeles Arzalluz-Lopez,** Universitat Politècnica de València, in progress

15. **Pedro Salguero**, Universitat Politècnica de València, in progress
16. **Tianyuan Liu**, University of Florida, in progress
17. **Max Glanz**, University of Florida, in progress

Member of PhD thesis defense committees

7. Jordi Durban i Sánchez
Facultat de Biològiques, Universidad de Valencia
2015
6. Stanley Kimbung
University of the Western Cape
2014
5. Tamara Garrido Gómez
Facultad de Medicina, Universidad de Valencia
2012
4. Patricia Díaz Gimeno
Departamento de Pediatría, Obstetrician i Ginecologi, Universidad de Valencia
2011
3. D. Rubén Noglas Cadenas
Facultad de Informática, Universidad Complutense de Madrid
2010
2. Laura Pascual Bañuls
Departamento de Biotecnología, Universidad de Valencia
2010
1. Aureliano Bombarely Gómez
Departamento de Biología y Bioquímica, Universidad de Málaga
2007

Supervision of graduate and master thesis

14. Pedro Salguero
Máster de Bioinformática, Universidad de Valencia
tappAS: marco computacional para el análisis del impacto funcional del splicing alternativo.
2019
13. Hector Carmona Salido
Máster de Bioinformática, Universidad de Valencia
Multi-omics integration to elucidate the effects of hyperamonemia in minimal hepatic

encephalopathy.
2018

12. Victor Sanchez Gaya

Licenciatura biotecnología, Universidad Politécnica de Valencia

Estudio del efecto de la exposición a pesticidas en el neurodesarrollo mediante la integración de datos ómicos.

2017

11. Francisco Huertas López

Master de Bioinformática, Universidad de Murcia

DNA Methylation and Metagenomic sequencing data integration in a colorectal cancer study.

2017

10. Jordi Martorell

Licenciatura biotecnología, Universidad Politécnica de Valencia

Análisis de expresión alternativa de isoformas en el tiempo mediante datos de RNA-seq.

2015

9. Rodrigo García Valiente

Máster de Bioinformática, Universidad de Valencia

Desarrollo de recursos computacionales para la anotación y caracterización funcional del ARN largo no codificante en especies no modelo.

2015

8. Rafael Hernández de Diego

Licenciatura biotecnología, Universidad Politécnica de Valencia

Caracterización funcional de lncRNAs a partir de datos de NGS.

2012

7. David Jovani Sales

Licenciatura biotecnología, Universidad Politécnica de Valencia

Estudio de la organización funcional de los genes humanos y la regulación de la expresión de sus funciones en distintos tejidos mediante técnicas de secuenciación de nueva generación.

2012

6. Aaron Weimann

Master Program in Bioinformatics, Saarland University (Germany)

Functional Profiling and Quantitative Comparison of Microbial Communities.

2012

5. Federico Jose García López

Licenciatura biotecnología, Universidad Politécnica de Valencia

Desarrollo de un método bioinformático de integración y visualización de datos de t. transcriptómica y metabolómica.

2009

4. Jorge Ruiz Otera
Licenciatura biotecnología, Universidad Politécnica de Valencia
Análisis funcional del splicing alternativo mediante técnicas de ultrasecuenciación.
 2010
3. Óscar David Sánchez Jiménez
Departamento de Física Aplicada, Universidad de Valencia
Técnicas del modelado conceptual aplicadas a la información biológica
 2007
2. María José Nueda Roldán
Departamento de Estadística e Investigación Operativa Aplicadas y Calidad
 2006
1. Gerri Weelink
Hogeschool Drenthe, Emmen, The Netherlands
The trans activity of the chloroperoxidase pro-peptide in Aspergillus niger
 1998/1999

Teaching

Organization and lecturer at specialized Bioinformatics courses

- Microarray Data Analysis, CIPF, Valencia, March 2008
- Microarray Data Analysis, CIPF, Valencia, March 2009
- Course in Automated Functional Annotation and Data Mining, Valencia, September 2009
- Course in Automated Functional Annotation and Data Mining, Florida, October 2009
- I Jornada de Tecnologías para la Salud, Valencia, November, 2009 (Only lecturer)
- Course in Automated Functional Annotation and Data Mining, Cape Town, December 2009
- Course in Automatic Functional Annotation and Data Mining, Oeiras, May 2010
- Microarray Data Analysis using GEPAS and BABELOMICS, Oeiras, May 2010
- Massive Data Analysis, CIPF, Valencia, June 2010
- Course in Automated Functional Annotation and Data Mining, Valencia, October 2010
- Course in Automated Functional Annotation and Data Mining, Florida, November 2010
- Course in Automated Functional Annotation and Data Mining, Cape Town, December 2010
- Massive Data Analysis, CIPF, Valencia, March 2011
- Course in Automated Functional Annotation and Data Mining, Davis, July 2011
- Course in Automated Functional Annotation and Data Mining, Valencia, October 2011
- Transcriptómica y modelización de proteínas empleando Supercomputación, Castilla y León, November, 2011
- Course in Transcriptome Assembly, Automated Functional Annotation and Data Mining, Oeiras, February 2012
- Course in Automated Functional Annotation and Data Mining, Irapuato. Mexico, May 2012
- Course in Automated Functional Annotation and Data Mining, Davis, July 2012
- Course in Automated Functional Annotation and Data Mining, Valencia, October 2012
- Course in Blast2GO and Babelomics, Portici, Italy, November 2012

- Course in Automated Functional Annotation and Data Mining, Brisbane, Australia, January 2013
- IX International Course of Massive Data Analysis, Valencia, March 2013
- Course in Automated Functional Annotation and RNA-seq, Oeiras, March 2013
- Course in Automated Functional Annotation and Data Mining, Valencia, October 2013
- Course in Automated Functional Annotation and Data Mining, Sao Paulo, November 2013
- Course in RNA-seq and Functional Annotation, Buenos Aires (Argentina), November 2013
- Course in Automated Functional Annotation and Data Mining, La Paz (México), January 2014
- NGS Course in transcriptomics, Cancun (México), April 2016
- Multiomics and Integrative Analysis of Gene Expression, Valencia, January 2017.
- Workshop in Multiomics Data Integration and Technology Transfer, Mexico City, November 2017.
- Bioinformatics III (Multiomics Technologies) at ChromE ETN Network, Stockholm, December 2017.
- Multiomics and Integrative Analysis of Gene Expression, Valencia, March, 2018.
- Full-Length RNA-Seq Analysis using PacBio long reads: from reads to functional interpretation, Virtual ISMB2020 Conference, July 2020
- Full-Length RNA-Seq Analysis using PacBio long reads: from reads to functional interpretation, Virtual ECCB2020 New Trends in Bioinformatics, September 2020
- PacBio Iso-Seq Workshop Online UC Davis, September 30th – October 2nd, 2020

Regular Teaching

- R for Functional Genomics, University of Florida, 3 Credits, 2015-17
- Human Genetics, University of Florida, 3 Credits, 2017
- Invited lecturer at the Polytechnical University of Valencia, 2004-2007
- Invited lecturer at the Master de Bioinformática, Universidad Complutense Madrid, 2007-2008
- Invited lecturer at the Master de Bioinformática, Universidad Valencia, 2013
- Invited lecturer at the Master de Bioinformática, Universidad Murcia, 2013
- Invited lecturer at the Master de Bioinformática, Polytechnical University of Valencia, 2018
- Member of 32 UF graduate student committees
- Supervisor 10 undergrad student internships, Polytechnic University of Valencia, 2004-2017
- Supervisor 3 undergrad student internships, University of Valencia, 2006-2017
- Supervisor undergraduate student theses, Polytechnic University of Valencia, 2004

Organization of Conferences.

1. Critical Assessment of Microarray Data Analysis Conference 2007 (CAMDA)
2. Jornadas Nacionales de Bioinformática, CIPF, January 2008
3. SeqAhead Workshop on High Performance Computing for Next Generation Sequencing Analysis (HPC4NGS), 2012
4. **The Next NGS Challenge Conference, CIPF, May 2013 (Chair)**
5. HiTSeq conference within ISMB, Boston (July 2014) and Dublin (July 2015), Orlando (July 2016), Prague (July 2017), Basel (July 2019)
6. SMODIA2015 Workshop, CIPF, September 2015 (Chair)

7. UF Genetics Institute Symposium 2019-2017
8. Organization Bioinformatics@Valencia, July 2018 (Chair)
9. UF Genetics Institute Symposium, November 2019 (Chair)
10. CSHL Genomics Informatics, November 2019 (Discussion leader)
11. European Conference in Computational Biology 2020 (GENES track chair)
12. HiTSeq: A special track of the ISMB 2020 meeting, Virtual Meeting July 15-16 2020

Advisory activity

1. Scientific Advisory Board member of the Instituto Biosanitario de Granada, Spain
2. Member of the Scientific Advisory Board of the Interdisciplinary Center for Biotechnological Research, University of Florida
3. Scientific Advisory Board member of the Informatics Institute, University of Florida
4. Scientific Advisory Board member of the Bioinformatics Core ICBR, University of Florida
5. Scientific Advisory Board member of the Scientific Computing Program, University of Florida
6. Scientific Advisory Board member of the French Bioinformatics Institute (IFB).
7. Committee member Juan de la Cierva Postdoctoral awards, Spanish Ministry of Economy and Competitiveness, 2016
8. Panel Member at the “Relationship between genome and epigenome” Workshop organized European Commission's Directorate General for Research and Innovation (DG RTD) and Cooperation in Science and Technology (COST), Brussels, 14th-15th February 2013.
9. Panel Member at the "Big data in health research: an EU action plan” Workshop organized European Commission's Directorate General for Research and Innovation (DG RTD), Luxemburg 30th October 2015.
10. Evaluation Committee member BioExcel H2020 project 2016-2017
11. Member Biotechnology Evaluation Committee Plan Nacional (Spain), 2017
12. Member NSF Advances in Biological Informatics (ABI) Career Panel, 2017
13. Senior Programme Committee Member as HiTSeq COSI Chair, ISMB Conference 2018
14. Member of Barcelona Supercomputing Center Access Committee, 2017-2019

Membership

1. International Society of Computational Biology (ISCB)
2. Sociedad Iberoamericana de Bioinformática (SoiBio)
3. Sociedad Española de Biotecnología (Sebio)
4. GOBLET, global organization for Bioinformatics training
5. American Association for Advance in Science

Reviewer and editor activities

Reviewer of journals: Nature Methods, Nature Protocols, Nature Biotechnology, Scientific Reports, Nature Communications, Genome Research, Genome Biology, Bioinformatics, BMC Bioinformatics, BMC Systems Biology, BMC Genomics, BMC Research Notes, BMC Neuroscience, PLoS ONE, Nucleic Acid Research, Genomics, Journal of Genomics, Journal of Chemometrics, Bioinformatics and Biology insights, JZUS-B (Biomedicine & Biotechnology), International Journal of Plant Genomics.

Reviewer for funding agencies: ANEP (Spain), The Executive Agency for Higher Education, Research, Development and Innovation Funding (Romania), European Commission, European

COST Action, Natural Environment Research Council (UK), Institute of Computer Science Foundation for Research & Technology-Hellas (FORTH) (Greece), UK Fight for Sight, Argentina Science, Technology and Productive Innovation Agency, National Science Foundation (USA), National Institutes of Health (NIH), Alzheimer Research UK, NWO The Netherlands, European Science Foundation

Reviewer at Conferences: CAMDA, Jornadas de Bioinformática, Bioinformatics Italy 2012, Bioinformatics 2014, ISMB conferences, Genome Informatics

Editorial Commitments

- Editor of Scientific Data (Nature publishing)
- Editor of Genes (MDPI-Open Access)
- Editor of Scientific Data Multiomics Collection (Nature publishing)
- Editor of BMC System Biology Special Issue in Data Integration (BioMed Central)
- Editor of BMC Bioinformatics Special Issue in Multiomics analysis (BioMed Central)